MONOGRAPHS

RECENT SOCIAL TRENDS IN THE UNITED STATES

A SERIES OF MONOGRAPHS PREPARED UNDER THE DIRECTION OF THE PRESIDENT'S RESEARCH COMMITTEE ON SOCIAL TRENDS

Thompson and Whelpton—
POPULATION TRENDS IN THE UNITED STATES

Willey and Rice—
COMMUNICATION AGENCIES AND SOCIAL LIFE

Judd—
PROBLEMS OF EDUCATION IN THE UNITED STATES

McKenzie—
THE METROPOLITAN COMMUNITY

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RURAL SOCIAL TRENDS

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RACES AND ETHNIC GROUPS IN AMERICAN LIFE

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POLITICAL, SOCIAL AND ECONOMIC ACTIVITIES OF WOMEN

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THE ARTS IN AMERICAN LIFE

Sydenstricker—
HEALTH AND ENVIRONMENT

White—
TRENDS IN PUBLIC ADMINISTRATION

Wooddy—
GROWTH OF THE FEDERAL GOVERNMENT—1915–1932
RECENT SOCIAL TRENDS
IN THE UNITED STATES

REPORT OF THE
PRESIDENT'S RESEARCH COMMITTEE
ON SOCIAL TRENDS

With a Foreword by
HERBERT HOOVER
PRESIDENT OF THE UNITED STATES

VOLUME I

McGRAW-HILL BOOK COMPANY, Inc.
NEW YORK AND LONDON
1933
FOREWORD BY THE PRESIDENT OF THE UNITED STATES

IN the autumn of 1929 I asked a group of eminent scientists to examine into the feasibility of a national survey of social trends in the United States, and in December of that year I named the present Committee under the chairmanship of Dr. Wesley C. Mitchell to undertake the researches and make a report. The survey is entirely the work of the committee and its experts, as it was my desire to have a complete, impartial examination of the facts. The Committee's own report, which is the first section of the published work and is signed by members, reflects their collective judgment of the material and sets forth matters of opinion as well as of strict scientific determination.

Since the task assigned to the Committee was to inquire into changing trends, the result is emphasis on elements of instability rather than stability in our social structure.

This study is the latest and most comprehensive of a series, some of them governmental and others privately sponsored, beginning in 1921 with the report on "Waste in Industry" under my chairmanship. It should serve to help all of us to see where social stresses are occurring and where major efforts should be undertaken to deal with them constructively.

HERBERT HOOVER.

The White House, Washington, D. C.

October 11, 1932.

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President's Research Committee on Social Trends

Wesley C. Mitchell, Chairman
Charles E. Merriam, Vice-chairman
Shelby M. Harrison, Secretary-Treasurer
Alice Hamilton
Howard W. Odum
William F. Ogburn

Executive Staff

William F. Ogburn, Director of Research
Howard W. Odum, Assistant Director of Research
Edward Eyre Hunt, Executive Secretary
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A REVIEW OF FINDINGS
BY THE
PRESIDENT’S RESEARCH COMMITTEE
ON SOCIAL TRENDS

INTRODUCTION

IN September 1929 the Chief Executive of the nation called upon
the members of this Committee to examine and to report upon recent
social trends in the United States with a view to providing such a
review as might supply a basis for the formulation of large national
policies looking to the next phase in the nation’s development. The
summons was unique in our history.

A summary of the findings on recent social trends, prepared in re-
response to the President’s request, is presented in the twenty-nine chapters
which follow. In addition the Committee is publishing thirteen volumes
of special studies and supporting data, giving in greater detail the facts
upon which the findings rest.

The first third of the twentieth century has been filled with epoch-mak-
ing events and crowded with problems of great variety and complexity. The World War, the inflation and deflation of agriculture and business,
our emergence as a creditor nation, the spectacular increase in efficiency
and productivity and the tragic spread of unemployment and business
distress, the experiment of prohibition, birth control, race riots, stoppage
of immigration, women’s suffrage, the struggles of the Progressive and the
Farmer Labor parties, governmental corruption, crime and racketeering,
the sprawl of great cities, the decadence of rural government, the birth
of the League of Nations, the expansion of education, the rise and weak-
ening of organized labor, the growth of spectacular fortunes, the advance
of medical science, the emphasis on sports and recreation, the renewed
interest in child welfare—these are a few of the many happenings which
have marked one of the most eventful periods of our history.

With these events have come national problems urgently demanding
attention on many fronts. Even a casual glance at some of these points
of tension in our national life reveals a wide range of puzzling questions.
Imperialism, peace or war, international relations, urbanism, trusts
and mergers, crime and its prevention, taxation, social insurance, the
plight of agriculture, foreign and domestic markets, governmental
regulation of industry, shifting moral standards, new leadership in
business and government, the status of womankind, labor, child train-
ing, mental hygiene, the future of democracy and capitalism, the re-
organization of our governmental units, the use of leisure time, public
and private medicine, better homes and standards of living—all of these
and many others, for these are only samples taken from a long series of
grave questions, demand attention if we are not to drift into zones of
danger. Demagogues, statesmen, savants and propagandists have
attacked these problems, but usually from the point of view of some
limited interest. Records and information have been and still are in-
complete and often inconclusive.

The Committee does not exaggerate the bewildering confusion of
problems; it has merely uncovered the situation as it is. Modern life
is everywhere complicated, but especially so in the United States,
where immigration from many lands, rapid mobility within the country
itself, the lack of established classes or castes to act as a brake on social
changes, the tendency to seize upon new types of machines, rich natural
resources and vast driving power, have hurried us dizzily away from the
days of the frontier into a whirl of modernisms which almost passes belief.

Along with this amazing mobility and complexity there has run a
marked indifference to the interrelation among the parts of our huge
social system. Powerful individuals and groups have gone their own way
without realizing the meaning of the old phrase, "No man liveth unto
himself."

The result has been that astonishing contrasts in organization and
disorganization are to be found side by side in American life: splendid
technical proficiency in some incredible skyscraper and monstrous
backwardness in some equally incredible slum. The outstanding prob-
lem might be stated as that of bringing about a realization of the inter-
dependence of the factors of our complicated social structure, and
of interrelating the advancing sections of our forward movement so that
agriculture, labor, industry, government, education, religion and science
may develop a higher degree of coordination in the next phase of national
growth.

In times of war and imminent public calamity it has been possible
to achieve a high degree of coordinated action, but in the intervals of
which national life is largely made up, coordinated effort relaxes and
under the heterogeneous forces of modern life a vast amount of disorgan-
ization has been possible in our economic, political and social affairs.

It may indeed be said that the primary value of this report is to be
found in the effort to interrelate the disjointed factors and elements in
COMMITTEE FINDINGS

the social life of America, in the attempt to view the situation as a whole rather than as a cluster of parts. The various inquiries which have been conducted by the Committee are subordinated to the main purpose of getting a central view of the American problem as revealed by social trends. Important studies have recently been made in economic changes, in education, in child welfare, in home ownership and home building, in law enforcement, in social training, in medicine. The meaning of the present study of social change is to be found not merely in the analysis of the separate trends, many of which have been examined before, but in their interrelation—in the effort to look at America as a whole, as a national union the parts of which too often are isolated, not only in scientific studies but in everyday affairs.

The Committee's procedure, then, has been to look at recent social trends in the United States as interrelated, to scrutinize the functioning of the social organization as a joint activity. It is the express purpose of this review of findings to unite such problems as those of economics, government, religion, education, in a comprehensive study of social movements and tendencies, to direct attention to the importance of balance among the factors of change. A nation advances not only by dynamic power, but by and through the maintenance of some degree of equilibrium among the moving forces.

There are of course numerous ways to present these divergent questions but it may be useful to consider for the moment that the clue to their understanding as well as the hope for improvement lies in the fact of social change. Not all parts of our organization are changing at the same speed or at the same time. Some are rapidly moving forward and others are lagging. These unequal rates of change in economic life, in government, in education, in science and religion, make zones of danger and points of tension. It is almost as if the various functions of the body or the parts of an automobile were operating at unsynchronized speeds. Our capacity to produce goods changes faster than our capacity to purchase; employment does not keep pace with improvement in the machinery of production; interoceanic communication changes more quickly than the reorganization of international relations; the factory takes occupations away from the home before the home can adjust itself to the new conditions. The automobile affects the railroads, the family, size of cities, types of crime, manners and morals.

Scientific discoveries and inventions instigate changes first in the economic organization and social habits which are most closely associated with them. Thus factories and cities, corporations and labor organizations have grown up in response to technological developments.

The next great set of changes occurs in organizations one step further removed, namely in institutions such as the family, the government,
RECENT SOCIAL TRENDS

the schools and the churches. Somewhat later, as a rule, come changes in social philosophies and codes of behavior, although at times these may precede the others. Not all changes come in this order but sufficient numbers so occur in modern history to make the sequence of value in charting the strains of our civilization. In reality all of these factors act and react upon each other, often in perplexing and unexpected ways.

Of the great social organizations, two, the economic and the governmental, are growing at a rapid rate, while two other historic organizations, the church and the family, have declined in social significance, although not in human values. Many of the problems of society today occur because of the shifting roles of these four major social institutions. Church and family have lost many of their regulatory influences over behavior, while industry and government have assumed a larger degree of control.

Of these four great social institutions, the economic organization, in part at least, has been progressively adjusted to mechanical invention as is shown by the remarkable gains in the records of productivity per worker. Engineers hold out visions of still greater productivity, with consequent increases in the standards of living. But there are many adjustments to be made within other parts of the economic organization. The flow of credit is not synchronized with the flow of production. There are recurring disasters in the business cycle. Employer organizations have changed more rapidly than employee organizations. A special set of economic problems is that occasioned by the transformation in agriculture due to science, to electricity and gasoline, and to the growth of the agencies of communication. Another focus of maladjustments has its center in our ideas of property, the distribution of wealth and poverty—new forms of age-old problems.

The shifting of economic activities has brought innumerable problems to government. It has forced an expansion of governmental functions, creating problems of bureaucracy and inefficiency. The problems of still closer union between government and industry are upon us. It is difficult but vital to determine what type of relationship there shall be, for all types are by no means envisaged by the terms communism and capitalism. The conception of government changes as it undertakes various community activities such as education, recreation and health. Again, the revolutionary developments of communication already have shown the inadequacies of the present boundaries of local governments organized in simpler days, and on a larger scale foreshadow rearrangements in the relations of nations, with the possibility always of that most tragic of human problems, war.

Like government the family has been slow to change in strengthening its services to its members to meet the new conditions forced upon them.
COMMITTEE FINDINGS

Many of the economic functions of the family have been transferred to the factory; its educational functions to the school; its supervision over sanitation and pure food to government. These changes have necessitated many adaptations to new conditions, not always readily made, and often resulting in serious maladjustments. The diminishing size and increasing instability of the family have contributed to the problem.

The spiritual values of life are among the most profound of those affected by developments in technology and organization. They are the slowest in changing to meet altered conditions. Moral guidance is peculiarly difficult, when the future is markedly different from the past. So we have the anomalies of prohibition and easy divorce; strict censorship and risqué plays and literature; scientific research and laws forbidding the teaching of the theory of evolution; contraceptive information legally outlawed but widely utilized. All these are illustrations of varying rates of change and of their effect in raising problems.

If, then, the report reveals, as it must, confusion and complexity in American life during recent years, striking inequality in the rates of change, uneven advances in inventions, institutions, attitudes and ideals, dangerous tensions and torsions in our social arrangements, we may hold steadily to the importance of viewing social situations as a whole in terms of the interrelation and interdependence of our national life, of analyzing and appraising our problems as those of a single society based upon the assumption of the common welfare as the goal of common effort.

Effective coordination of the factors of our evolving society mean, where possible and desirable, slowing up the changes which occur too rapidly and speeding up the changes which lag. The Committee does not believe in a moratorium upon research in physical science and invention, such as has sometimes been proposed. On the contrary, it holds that social invention has to be stimulated to keep pace with mechanical invention. What seems a welter of confusion may thus be brought more closely into relationship with the other parts of our national structure, with whatever implications this may hold for ideals and institutions.

The problems before the nation as they are affected by social change fall into three great groups. One group is the natural environment of earth and air, heat and cold, fauna and flora. This changes very slowly; it is man's physical heritage. Another group is our biological inheritance—those things which determine the color of our eyes, the width of our cheek bones, our racial characteristics apart from environmental influences. And this also changes slowly. A third is the cultural environment called civilization, our social heritage, in which change is going forward rapidly. In this framework the problems of change will be presented.

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PART 1.—PROBLEMS OF PHYSICAL HERITAGE

The natural environment as a whole changes little—climate is fairly static; the crust of the earth retains much the same characteristics. Only those factors of the natural heritage which are susceptible to human influence show any appreciable change. Forests are cut, chemical constituents of the soil depleted, minerals are extracted and used.

I. MINERALS AND POWER

In the United States the extraordinary richness of the heritage of natural resources has often been stressed. The rate at which this heritage is drawn upon is significant because it is basic to our material well being. The extent to which we use these resources is shown by the increase between 1899 and 1929 of 286 percent in mining production, as compared with increases of 210 percent in manufacturing, of 48 percent in agriculture, and of 62 percent in population. Modern civilization rests upon power, upon energy derived from inorganic rather than human or animal sources. Since the beginning of the century the consumption of energy has increased about 230 percent; and the prices of coal, oil and electricity have not risen more than have general wholesale prices. Iron, the most common element in the tools and machines driven by power, has been plentiful and its price has risen much less than have general prices, and most of the other minerals have risen in price less than the general price level.

But the supply of minerals is limited and exhaustible. As the richer and more accessible deposits are used up, mining proceeds to leaner ores and greater depths, and from year to year the natural obstacles become more serious. How does it happen, then, that the minerals can be used in increasing quantities, yet produced at diminishing costs? The answer is given by a thousand technological improvements in production and consumption. This brilliant achievement is shown in the increasing output per worker; in the coal mines it rose more than 50 percent during the period 1900 to 1930; in the same period the reduction in fuel consumed per unit of product was over 33 percent. In the field of the metals, there is a great increase in recovery of scrap, and the drain upon the under-earth supply is thereby retarded. The revolving fund of metal thus created will increase with the years. All of these factors promise further victories in the battle against increasing costs. For the immediate future the outlook is for a growing abundance of minerals available at declining price. After that and long before exhaustion sets in, the problem of rising costs will become more acute. The ultimate outlook is suggested by the
COMMITTEE FINDINGS

position of England, where growing difficulties of mining have swallowed up the gains of technology and the output per worker in the coal mines is less than it was fifty years ago.

At the moment the problem which is absorbing the attention of the mineral industry is not one of scarcity but of surplus. Abundance of resources and the competitive organization of mining have led to excessive capacity, causing heavy loss to the capital and labor engaged. But in preoccupation over the problem of too many mines and too many miners, there is danger of forgetting the waste of the underlying resources which such destructive competition entails. The best seams and richest deposits are being rapidly stripped, leaving large quantities more or less unminable. In the bituminous coal industry this loss amounts to 150 million tons of minable coal a year, and oil production is a similarly conspicuous example of waste. The money losses in mining have stimulated attempts at control of production and even proposals to modify the anti-trust laws. From the public point of view it is important that any change in economic organization undertaken in the interest of steadier profits and wages should also insure conservation by preventing waste of the resources.

One of the most practical steps in conservation is to harness the inexhaustible sources of power. Power from the tides is still in the future, although a tidal project at Passamaquoddy Bay is now under consideration. Power from waterfalls, on the other hand, now supplies 36 percent of the electricity generated by public utilities. The capacity of installed waterwheels has increased sevenfold in thirty years, and projects now in hand insure further large increase. Even so, only about 40 percent of the potential horsepower has been harnessed. Except for the St. Lawrence the undeveloped resources lie chiefly in regions remote from present markets.

It is clear that development of water power as fast as it can be utilized is in the public interest. Yet there is danger of exaggerating the amount of energy obtainable from this source. At the present time only seven percent of the country’s energy consumption—if heat be included as well as power—is derived from water, and even maximum development of the potential resources would leave us primarily depending upon fuel. As far as the energy resources are concerned, the heart of the conservation problem lies in preventing waste of coal, petroleum and natural gas.

II. LAND

With regard to the soil the situation is different from that of the minerals. The growing of crops removes essential chemical elements but these can be replaced. It is estimated by our experts, however, that about
one-fourth of the cultivated land in the United States, chiefly in the southeast and southwest, has lost by erosion a third of its surface soil, and that from another quarter of the land a sixth or more of surface soil has been removed. These are colossal losses and they are increasing every year, yet the threat of an insufficient supply of food or fiber in the future now appears to exist no longer.

There are still nearly 300 million acres of land devoted mainly to pasture which can be put into crops by ploughing and planting, and another 300 million acres which could be used for crops after clearing of the forest or after drainage or irrigation. Despite this vast reserve of land available for crop production the nation can ill afford to permit waste of soil resources by erosion and allow the people of a district to be slowly reduced to poverty. Where the land cannot be protected by terracing it would seem that it may be restored to forest or grass. Erosion, of course, leads to the silting of the rivers and to floods, which are matters of national concern. The utilization of eroding lands for forest or grazing would also tend to reduce the surplus of farm products.

The economic prospects of agriculture have been changed by the rapid decline of the birth rate, the restrictions upon immigration, the great decrease in exports of farm products, and by progress in technique. There has been no increase in crop acreage for 15 years, nor in acre-yields of the crops as a whole for 30 years, yet agricultural production has increased about 50 percent since the beginning of the century. The advancing efficiency in land utilization is due principally to the increased use of power machinery in agriculture, and to the application of scientific knowledge. Use of the gas engine has reduced the number of horses and mules by 10 millions during the past 14 years, thereby releasing about 30 million acres of plough land and large areas of pasture for raising meat and milk animals or for growing food and fiber crops. Total mechanical power used on farms increased from 0.5 horse power per worker in 1900 to 5.6 in 1930. Improvements in animal husbandry have resulted in a further saving of probably 25 million acres of crop land since the World War.

It is estimated by our experts that agricultural output per worker increased 22 percent between the average of the decade 1912–1921 and the average of the decade 1922–1931. A farmer now provides food for himself and three members of his family, for 12 Americans not living on farms and for 2 foreigners—a total of 18 persons.

The result of these changing forces has been a volume of agricultural production in excess of market demands, and this in turn affords a partial explanation of the net loss in farm population of 1.2 million between 1920 and 1930, although a reversal of population flow has set in since the depression began in 1929. This migration of farmers to cities means an
abandonment of crop lands which should be first from the poorer lands, for there is a problem of the rural poverty areas as truly as there is a problem of the urban slums.

The power line is likely to supplement the automobile in drawing farmers to the highways and in causing the gradual abandonment of much land back in the hills. The selective abandonment of the poorer land is being facilitated by the agencies of communication such as the postal service, the newspaper, the telephone, and the radio.

Should government endeavor to facilitate or direct this migration from the farms in the handicapped areas, relocating on more fertile or favorably located land those who wish to continue farming? Often the economies to be obtained in the provision of schools and roads alone would justify the county or state in such action. This might lead to the zoning of rural lands. On the other hand, should government policy aim at retaining as much as possible of the natural increase of the farm population on farms or in rural areas as a means of maintaining the national population?

Abandoned farm lands return to brush but are not likely to be used for lumber production for some time. There are, however, other uses of low grade forest lands: conserving game and fur bearing animals, affording recreation, protecting water supplies and preventing floods. The responsibility for the development of such uses and the reorganization of the school and road systems in regions consisting in substantial part of such lands seem likely to devolve largely upon the state.

The problem of export markets may be serious for a time. Technological progress in land utilization in western Europe and in Russia is proceeding as in the United States, while in northwestern Europe, where most of the exports of farm products are sent, the prospect is for a stationary or declining population within a few decades. Losses in European markets in part may be compensated for by the growth of markets in the countries bordering on the Pacific Ocean. To deal with the agricultural surplus raises the broad question of land utilization and of domestic and foreign markets.

The tendencies which have given rise to these problems of surpluses, markets and shifts in population rest in large part upon two great movements: technological advance and declining population growth. The advance of science and invention may be expected to continue. It may lead to the widespread adoption of mechanical corn harvesters and cotton pickers for the handling of two of our greatest crops, and to the wider use of other agricultural machines now in existence. If so, it will give a premium in crop production to the larger farms on the more level lands, and it will lead to reduction in the number of people engaged in commercial agriculture and to further shifts in population.
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Part 2.—Problems of Biological Heritage

1. Quantity of Population

The Declining Rate of Growth.—The rate of population growth in the United States has long been declining but this fact has perhaps been obscured because of the size of the net increase decade by decade. Thus the increase from 1920 to 1930 was 17 millions as compared with 14 millions in the years 1910 to 1920, within which the World War occurred. Before the Civil War, however, the population was increasing at the rate of about 35 percent a decade. Between 1920 and 1930 it increased only 16 percent.

Experts on population have projected their curves into the future and the outlook is startling. Manufacturers who try to estimate future markets have been expecting a population of 140 million by 1940, but the calculations of our contributors, based on information not presented in the decennial censuses, show that the declining rate of increase has been particularly striking since 1923, and that hardly more than 132 or 133 millions are to be expected by 1940. This means that the markets for mine operators, farmers and manufacturers, whose plants may be over-equipped and whose problems are those of overproduction, will be considerably smaller than has been expected, unless foreign markets are expanded, or our domestic standards of consumption are raised.

As our statisticians look further into the future, they see possibilities of still greater declines in growth with the probability of a stationary population. They show that we shall probably attain a population between 145 and 190 million during the present century with the probability that the actual population will be nearer the lower figure than the higher. Such a prospect is radically different from that predicted a generation or even a decade ago.

Ideas regarding the domestic market will have to be revised in the light of these estimates, not only by manufacturers and farmers but also by real estate owners, lawyers, doctors, teachers and many others. The problem will be to compensate for less rapidly growing numbers by endeavoring to raise standards of purchasing power and consumption.

America, with its rapidly expanding population and its exploitation of abundant natural resources, has been characterized by exceptional optimism and initiative. Will these traditional traits of the American character suffer by a declining rate of population growth and increasing difficulties in exploiting our national resources? It may be that this will prove to be the case, but we must make allowance for the highly dynamic factor of invention which is likely to develop new industries, stimulating optimism and energy through the creation of new commodities and new desires.

The Problem of an Optimum Population.—Shall we aim to have a large or a limited population? This is a major problem in the development
of a population policy, and it is a question on which opinions differ. The manufacturer may see in a stationary or diminishing population a limitation of his market, whereas a smaller population may mean a higher standard of living for consumers. A patriotic militarist may have a very different idea of the optimum population from that of a labor leader. Similarly a real estate owner and a social worker may disagree concerning the most desirable numbers. Thus the population policy of the United States as it develops through the coming years will be affected by a variety of conflicting ideals and interests.

But while population policy is shaped by social wishes, knowledge may influence the decisions which are made. One influence may be the amount of unemployment which results from the displacement of men by machines and which may increase with the growing number of inventions. Similarly the methods of controlling the size of the population may differ. The policy of restricting immigration from Europe and of regulating the inflow from Mexico and Canada requires collective action, while it is difficult to control social attitudes toward the natural rates of increase.

The future is likely to bring continuing discussion of the optimum population, which in turn may affect the validity of present predictions. The forces which determine the size of our population may be expected to vary from time to time, so that in the future numbers may fall and later rise again, but within the near future the prospect is for further decline in rates of increase, as the use of contraceptives may spread, if not among those religious groups which now bar them, certainly farther into the farming areas and among the groups with lower incomes in cities and villages.

Distribution and Density of Population.—Population policy is concerned not only with the total numbers in the nation as a whole, but also with the numbers in particular regions and localities.

The most significant movements of peoples, however, relate to their concentration in centers of high density where the question is arising whether the larger cities are becoming too crowded to be comfortable and economical. Although this difficulty may be solved by the automatic working of economic forces and considerations of comfort, the delay and costs may prove great. There is evidence that factories have been moving from large cities to smaller places where land and labor are cheaper and living conditions are more favorable. Nevertheless, our largest two cities have continued to grow faster than the general population, though no faster than the total urban population which includes small towns as well as cities. The fastest rates of urban growth from 1920 to 1930 were found in the smaller cities within the orbits of the metropolitan centers. The ideal of the Greeks was to limit the size of their cities, but in the United States most of the effective vocal element in cities appears eager for greater size. Various economic forces have in the past offered en-
couragement to growth, in part because of the unearned increment of wealth accruing to real estate owners and to other established groups interested in expanding markets.

Suburban transportation has helped to disperse the population of cities. Indeed, the boundary line of the city becomes more and more shadowy in a social and economic sense. The surrounding country is linked to the metropolitan center by delivery services of stores, by extension of telephone exchange areas, by daily newspaper routes and other similar bonds. The automobile helps to fill up the suburbs, families move outward, and in some cases they engage in gardening or even in part time farming. Little cities, towns, trading centers and shops grow up along the highways. In short, a new type of population grouping is appearing: not the city, but the metropolitan community—a constellation of smaller groups dominated by a metropolitan center. As the railroad and telegraph tended earlier to create our cities, so the automobile and the telephone tend now to create our metropolitan communities.

This dramatic development of a new type of population grouping—the metropolitan community—has not only affected city planning but has led to regional planning. A problem for city planning has been left by the outward drift of the city’s population. Disorganized areas where the older residential sections impinge upon the business districts have been left to the weaker economic elements and sometimes to criminal groups with resultant unsatisfactory social conditions. The motor age has brought “boom” suburban towns planted with as little planning as the “boom” towns which burst into existence in the railway age.

This unanticipated type of aggregation has not only meant a reorganization of city planning, but has precipitated many adjustments of social habits. Large cities throughout the United States have been confronted with the task either of extending municipal services to surrounding suburban communities or of developing some new form of political association. Economic services, lured by gain, have responded promptly. The cultural institutions, schools, churches and similar organizations have found more difficulty in adjusting themselves to the rearranged population, political institutions, unppressed by competition, have been the least adaptive and have remained for the most part the same as in the pre-motor period. The costs involved in maintaining an obsolete political structure are now becoming the subject of conscious consideration and the problem cannot be neglected much longer.

The quantity of population in a particular region is affected by its distribution, the nature of which is changing rapidly; hence, the time is ripe for social and physical planning of these communities. How large our cities should be rests in part on conscious wishes and will power, but it will probably be decided for the most part by powerful economic
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factors, such as the dispersal of manufacturing and trading centers and business policies dictated by land values and labor costs.

II. QUALITY OF POPULATION

Processes for Improving the Inherited Qualities of the Population.—Of the two ways of improving the inherited qualities of a people, the first, mutation, may be dismissed, since our knowledge is still too limited; the second, selection and breeding for desirable qualities, offers possibilities.

But what are the practical possibilities of improving a people by conscious selection? The lack of knowledge concerning heredity and the composition of the chromosomes of prospective parents is undoubtedly an obstacle, but breeders of livestock have accomplished results without this information. The obstacles lie rather in obtaining the necessary control, in the lack of agreement as to which combination of traits is desirable, and in the difficulty in mating of combining sentimental and spiritual values with biological values. The problem is one of research from which in time higher eugenic ideals may emerge.

More immediately urgent is the need of preventing individuals with undesired inheritable traits from having offspring. Such a policy could be enforced in the more marked cases of feeblemindedness, of which there are less than 100,000 in institutions, but for the large numbers outside of institutions, variously estimated in the millions, who is to decide? The abilities of individuals shade down from competency to idiocy, and it is not at all certain that all low grades of mentality are caused by heredity. So with the other objectionable types, the insane and criminals, it is not known that the factors producing them are inherited. Men often commit criminal acts because of social conditions. Crime fluctuates with the business cycle. In a similar manner, certain types of social experience conduce to insanity. For example, there was a higher percentage of rejections because of mental disorder among men drafted for the United States Army from cities than from rural areas. A few states have passed laws providing for the sterilization of certain inmates of state institutions by an operation reported to be otherwise harmless.

If conscious control of selection now seems remote, it should be remembered that selection is continually occurring nonetheless, and that a policy is demanded. Natural selection has not ceased and the modern urban environment may be quite as rigorous as that of nature in developing or suppressing physical or mental traits. Discoveries regarding birth control already represent a powerful device for implementing policies of selection, and the birth rate, itself a selective agent, is much higher among the groups with a low income than among those with a higher income. The
association, however, between large incomes and desirable hereditary traits may not be very marked.

**Ethnic Groups and Immigration Policies.**—Birth rates, death rates and migrations have redistributed groups of our population in the past and these forces are at work among our ethnic stocks. Among Negroes death rates are about one and a half times as high as among whites. Death rates are also higher for the foreign born than for native born whites, although the differences are slight for those in the same income groups. Birth rates are somewhat higher among Negroes and foreign born whites than among native whites. The net result is that Negroes constitute a smaller proportion of the population than in earlier years and if present policies of restrictive immigration continue in force, the foreign born will be a declining element.

The present immigration policy of the United States not only regulates the quantity of the immigrant population but is selective as to quality. Designed to favor certain groups of nationalities, it encourages the Nordic racial types of northwestern Europe and restricts the Mediterranean and Alpine types of southern and southeastern Europe. This policy selects a physical type which closely resembles the prevailing stock in our country, for about 85 percent of the whites in the United States in 1920 were from strains originating in northwestern Europe where Nordics predominate. The immigration policy is inconsistent as applied to the non-white races. The entrance of Chinese and Japanese is limited, but not that of the Filipinos or the Mexicans.

The question of racial selection is confused by doubt as to which of the so-called racial traits are inherited. Crime and sickness, for instance, are frequently a matter of environment. Many personality traits peculiar to certain peoples are also acquired in the early home environment. The assimilation of immigrants may result in the loss of distinguishing personality traits, unless there is some marked physical characteristic to brand the individual and so to encourage prejudice and psychological isolation. The persistence of these distinguishing traits is encouraged by social segregation, separate languages, family life, and religions, whereas the schools tend to modify them. They persist more stubbornly among non-white immigrants than among the various racial types of European origin. It may be questioned if the present basis of selection according to racial types is a more desirable policy than selection within a race according to the merits and defects of individuals. However, to a certain extent our immigration laws take into account individual qualifications, for example by excluding aliens with records of crime or insanity.

**Environmental Influences on the Quality of Peoples.**—Breeding is not the only way in which to improve the quality of the people. Americans are taller than they used to be because of dietary changes and a reduction
in the diseases of childhood which permanently retard growth; at the same time bad housing and the reduction of violet rays by the smoky skies of cities are forces operating against growth. Participants in sports and athletics benefit thereby; though the number of indoor occupations involving less physical activity appears to be increasing. Such changes in the physical qualities are not inherited, but if the culture giving rise to them continues the gains may not be difficult to maintain. The problem is rather to extend wholesome environmental influences to those of us who now share them in lesser degree, particularly to the great numbers with low incomes. There are limits, however, to the improvements possible by these methods, limits set by biological laws; the stature of a people cannot be indefinitely increased; family strains may vary greatly in their possibilities of development.

Mental and social qualities are peculiarly susceptible to influences of the cultural environment. In early childhood in the family environment the more firmly imbedded traits of personality are fixed, particularly the basis for mental health or disorder. These cultural influences are the subject of the next section. It is clear that within limits the qualities of peoples are susceptible of great variation because of cultural change. There is one possible type of influence which may be overwhelming if it should be developed. This is the influence of physiological invention. One illustration is the possible influence of new chemical knowledge on the regulation, growth and functioning of the hormones, particularly those associated with certain endocrine glands, with possibly astounding effects on personality and the quality of the population.

Part 3.—Problems of Social Heritage

I. INVENTIONS AND ECONOMIC ORGANIZATION

Apart from rates of population growth, most of the social changes which are taking place today are in our social environment rather than in the natural environment and biological heritage. The fact that conditions in 1930 are different from those in 1920 or 1900 is explained by changes in culture, not in man or nature.

Material Culture.—The magnificent material portion of our culture has been developed by scientific discoveries and inventions applied to a rich natural heritage. This is well understood, but what is less understood is the dynamic nature of this material culture, and the fact that the problems of society arising out of a changing technology are produced in large measure by this dynamic element. More and more inventions are made every year, and there is no reason to think that technological developments will ever stop. On the contrary, there is every reason to expect that more new inventions will be made in the future than in the past. It has required on an average about a third of a century for an
invention to become successful after it has been made, and many new or unheard of inventions are now in existence which will have wide use in the future. The death rate of inventions is so great, however, that it is not easy to tell which will be successful. It may be that the world will find much use for talking books; school and college students may listen to lectures by long-running phonographs or talking pictures; moving pictures may be transmitted by wireless into houses; seeing with that new electric eye, the photo-electric cell, and recording what is seen, appear to have almost unlimited applications; new musical instruments different from any now in use may be given to us by electricity; the production of artificial climate may become widespread; an efficient storage battery of light weight and low cost might produce changes rivaling those of the internal combustion engine. And these are only a few of the myriad possibilities from new inventions in the future.

Social Problems Raised by the Communication Inventions.—The machine got its modern social significance from the earlier phase of the industrial revolution. Its later phase is characterized by inventions in the fields of communication and transportation which have brought about remarkable developments in the transmission of material objects, of the voice, of vision and of ideas.

The first problems raised by these inventions were those of coordination and competition, involving the railroad and the bus, the telegraph and the telephone, the newspaper and the radio. Similar problems are created by all new inventions, but because of their public aspects the recent inventions in communication have involved to an unusual degree planning, regulation and control.

Another set of problems cluster about mobility. These involve housing, home ownership, family life, child welfare, recreation, residence, voting and citizenship, land values, increases and declines in population and migrations of industry. The transmission of goods, of the voice and possibly of vision may act as a retarding influence on human mobility in the future and may cause a development of more remote and impersonal direction and controls.

A further set of problems center about the effectual shortening of distances and the increasing size of the land area which forms the basis or unit of operation for many organized activities. Closer communications favor centralization in social life, in domestic politics and in international relations. Thus the units of local governments laid out a century or more ago are now too small for the discharge of various functions. Problems of jurisdiction arising from the lessened significance of state boundary lines are increasing. Even national units may be too small in the future, but this is an embarrassment felt more acutely by other countries than the United States.

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A final group of problems arising from the inventions in the field of communications concern the greater ease and extent of their diffusion. Regional isolation is being broken down all over the world. Indeed, the spread of cultures throughout history has been dependent upon transportation and communication and a social revolution is now under way in the Orient fostered by these agencies. In general, both here and abroad cities are the great centers of dispersal of new developments, and from them new manners and customs, new ideas and useful objects spread to the villages and countryside. The agencies of mass communication increase the possibilities of education, propaganda and the spread of information. A collateral descendant of George Washington flew in 1832 in a single day over all the routes which Washington had traversed in the course of his lifetime. Today, a flight over the poles is known almost instantly and a single speaker may address an audience of 100,000,000. These developments bring problems of mass action, of mass production and of standardization. It is, of course, true that opening channels of communication tends to produce uniformities of speech, manners, styles, behavior and thought; but this tendency is counteracted in part by the increasing specializations arising from the accumulation of inventions which bring to us different vocabularies, techniques, habits and thoughts.

Problems Raised by Our Rapidly Changing Environment of Material Culture.—Among inventions other than those of communication, but especially in machines of production, there has been a continual development. A larger proportion of work by machines, and a smaller proportion of human labor is to be expected in the future. In 1870, 77 percent of the gainfully occupied persons in the United States were engaged in transforming the resources of nature into objects of usable form through manufacturing, mining and agriculture; in 1930 only 52 percent. There are indeed a few cases of wholly automatic factories and automatic stores and many automatic salesmen. Nor are the heavy productive machines the only ones which are increasing. The modern American surrounds himself with small tools and machines for personal use, such as the typewriter, the radio, the fountain pen, the toothbrush, the golf stick, the sunlight machine and the ice-making refrigerator.

In 1851–1855, 6,000 patents were granted in the United States, in 1875–1880, 64,000, in 1901–1905, 143,000, and in 1926–1930, 219,000. This growing number of inventions and scientific discoveries has brought problems of morals, of education, of law, of leisure time, of unemployment, of speed, of uniformity and of differentiation, and its continuation will create more such problems. Social institutions are not easily adjusted to inventions. The family has not yet adapted itself to the factory; the church is slow in adjusting to the city; the law was slow in adjusting to dangerous machinery; local governments are slow in adjusting to the

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transportation inventions; international relations are slow in adjusting to
the communication inventions; school curricula are slow in adjusting to
the new occupations which machines create. There is in our social or-

ganizations an institutional inertia, and in our social philosophies a
tradition of rigidity. Unless there is a speeding up of social invention or a
slowing down of mechanical invention, grave maladjustments are certain
to result.

**Industrial Technique and Economic Organization.**—To put inventions
to practical use often requires change in parts of the economic structure.
The character of the work called for, its amount, the classes by whom
it is performed, the materials used, the location of industrial plant, the
capital investment, the selling methods, the prices of materials and
products, the disbursement of wages, the profits made—these and a
hundred subsequent matters are affected by improvements in machinery
and industrial procedure. When the pace of technological progress is
rapid, the business enterprises which grasp the new opportunities for
gain bring to pass mass changes in economic conditions, and unwittingly
produce a host of economic problems. All of these problems may be
summed up in the question: How can society improve its economic organi-
sation so as to make full use of the possibilities held out by the march of
science, invention and engineering skill, without victimizing many of its
workers, and without incurring such general disasters as the depression
of 1930–1932?

**Distributing the Costs of Progress.**—Even before the business collapse
of 1929 Americans had become painfully alive to the rapid growth of
technological unemployment and during the depression the tidal wave of
cyclical unemployment has added its millions to the involuntarily idle.
The depression also has put employers under the severest pressure to
devise more economical methods of production, which mean in many
cases the use of less labor to turn out a given volume of goods. At best,
the problem of technological unemployment promises to remain grave
in the years to come.

One hope for a solution is that inventions of new products will add to
employment more rapidly than the invention of labor saving machines
and methods reduces it. A change in the distribution of income which
put more purchasing power in the hands of wage earners would enor-
mously increase the market for many staples and go far toward providing
places for all competent workers, but for the near future we see little
prospect of a rapid increase of wage disbursements above the 1929 level.
Another possibility is a great expansion of exports; but in a tariff-ridden
world that also seems a dim hope. Barring a marked growth of demand,
various palliatives for the suffering caused by unemployment will receive
much attention. The six hour day and the five day week are methods of
distributing the loss of jobs in a less inequitable fashion. Unemployment insurance has been rapidly gaining adherents in this country; but whatever its merits for tiding wage earners over slack seasons and moderate cyclical depressions, it cannot provide for those who are out of work for long periods. On the other hand, the technologically unemployed are a changing aggregation of individuals, and a solvent unemployment fund would do much to mitigate the distress which many now suffer before finding new openings. Perhaps the hardest cases to help are those of men and women thrown out of work too late in life to appear desirable applicants for new positions. An extension of old age pensions to care for such victims of progress may bulk large in future discussions.

The Committee is aware of the numerous objections urged against these schemes of social insurance, and of the heavy costs which they impose upon society; but it is also impressed by the inarticulate misery of the hundreds of thousands or millions of breadwinners who are deprived of their livelihoods through no fault of their own. To put the cost of unemployment squarely upon those who remain at work, upon employers and upon the public purse makes everyone conscious of the difficulty and focuses attention upon the need of devising more constructive methods for dealing with it.

While wage earners are the most numerous, they are by no means the sole sufferers from technological progress. People whose property is rendered valueless by new methods may in future demand compensation after some fashion. For example, investors in public utilities which have become unprofitable by reason of competition which they cannot meet and which the state will not prevent may demand that government buy their holdings. But this is a hazardous speculation and it may be premature to press it further.

The Problem of Economic Balance.—In the halcyon days of 1925–1929, there were many who believed that business cycles had been "ironed out" in this favored land. Everyone now realizes that we have been suffering one of the severest depressions in our national history. Those who are acquainted with past experience anticipate that, while business will revive and prosperity return, the new wave of prosperity will be terminated in its turn by a fresh recession, which will run into another period of depression, more or less severe.

Whether these recurrent episodes of widespread unemployment, huge financial losses and demoralization are an inescapable feature of the form of economic organization which the western world has evolved is a question which can be answered only by further study and experiment. That the severity of the current depression has been due in large measure to non-cyclical factors is generally admitted. But this admission means merely that besides checking the excesses of booms, we must learn
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how to avoid errors of other types as well before we can hope to make full use of the productive possibilities which modern technology puts at our disposal.

Reflection upon this range of ideas leads to more fundamental issues. The basic feature of our present economic organization is that we get our livings by making and spending money incomes. This practice offers prizes to those who have skill at money making; it imposes penalties upon those who lack the ability or the character to render services for which others are willing to pay. A decent modicum of industry and thrift is maintained by most men and women, and the incentive to improve industrial practice in any way which will increase profits is strong.

When business is active and employment full, this scheme of organizing the production and distribution of real income yields results upon which we congratulate ourselves. Probably no other large community ever attained so high a level of real income as the inhabitants of the United States enjoyed on the average in, say, 1925–1929.

But even in good times it is clear that we do not make full use of our labor power, our industrial equipment, our natural resources and our technical skill. The reason why we do not produce a larger real income for ourselves is not that we are satisfied with what we have, for in the best of years millions of families are limited to a meager living. The effective limit upon production is the limit of what the markets will absorb at profitable prices, and this limit is set by the purchasing power at the disposal of would-be consumers.

Yet how can larger sums be paid out in wages and dividends? No business can pay wages for making goods which will not sell at a profit, and no business can make a profit if it pays wages higher than its competitors for labor of the same grade of efficiency. Of necessity the business organizer's task is often the unwelcome one of keeping production down to a profitable level. There is always danger of glutting the markets—a danger which seems to grow greater as our power to produce expands and as the areas over which we distribute our products grow wider. Despite improvements in communication, increased accuracy in business reporting, the strenuous efforts of the Department of Commerce and the rising profession of business statisticians, the task of maintaining a tolerable balance between the supply of and the demand for the innumerable varieties of goods we make, between the disbursing and spending of money incomes, between investments in different industries and the need of industrial equipment, between the prices of securities and the incomes they will yield, between the credit needed by business and the volume supplied by the banks seems to grow no easier.

When these balances have been gravely disturbed, business activity is checked by a recession, which is followed by a depression of industry,
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trade and finance. Then our scheme of economic organization yields results which satisfy no one. The income of the whole population falls by 10 or 20 percent; in extreme depressions by a substantially greater figure. And these average losses are accompanied by appalling individual tragedies in millions of cases, scattered through all classes of society, but commonest among those who have few reserves.

To maintain the balance of our economic mechanism is a challenge to all the imagination, the scientific insight and the constructive ability which we and our children can muster.

Economic Planning.—To deal with the central problem of balance, or with any of its ramifications, economic planning is called for. At present, however, that phrase represents a social need rather than a social capacity. The best which any group of economic planners can do with the data now at hand, bulky but inadequate, is to lay plans for making plans. Those who know most about the actual conduct of the work of the world realize most keenly the magnitude of the task involved in planning. To work out schemes which could be taken seriously as a guide to production and distribution would require the long collaboration of thousands of experts from thousands of places. In addition to the accumulation and sifting of countless figures not now available, planners would have to decide intricate problems of social theory, either by thinking them out, or by accepting arbitrary rules. To gloss over the difficulties of the task is no service to mankind; to face them honestly should not discourage those who have faith in men’s capacity to find their way out of difficulties by taking thought. As the task of planning economic relations is faced in detail, it is not unlikely that modest schemes will be devised which will make the present organization work more steadily. It is more in line with past experience to anticipate a long series of cumulative improvements which will gradually transform existing economic organization into something different, than to anticipate a sudden revolution in our institutions.

Yet the segment of American experience which we are reviewing includes a brief period during which changes in economic organization were made at a rapid pace—quite overshadowing for the time being the pace of technological changes.

Promptly upon entering the World War, the United States followed the example of its allies and opponents by seeking to mobilize economic resources behind its military program. With extraordinary rapidity the federal government not only became incomparably the greatest employer in the country, incomparably the greatest buyer of goods—all of which it had become in earlier wars—but it also assumed direct control over fundamental economic activities. It took the railroads and many of the ships out of private hands. It regulated exports and imports system-
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atically by licenses. It gave priorities in transportation, materials and use of men to producers of war materials, and purposely repressed industries non-essential to military efficiency or civilian morale. It intervened between employer and employee through the war-labor boards. It set up a Food Administration and a Fuel Administration. It fixed maximum and minimum prices for thousands of commodities. And it imposed all of these drastic restrictions upon private initiative and free enterprise through the zealous cooperation of hundreds of business executives who served as officials on nominal pay.

Despite the wastes and confusion attending upon this sudden overturn in economic organization, the mobilization served its purpose. In retrospect it offers a significant illustration of the rapidity and the success with which a people can recast its basic institutions at need. Seemingly, what engineers regard as the slow pace of change in economic organization is due more to absence of unity in will and purpose than to lack of capacity to imagine and carry out alterations. In 1917 the country was nearly unanimous in putting victory in the war above all other aims. In this supreme aim it had a criterion sufficiently definite to determine what should be done. No similar revolution could be effected in times of peace, unless a similar agreement in purpose, supplying an equally definite criterion of social values, could be attained. But is it beyond the range of men's capacity some day to take the enhancement of social welfare as seriously as our generation took the winning of a war?

Current Changes in Economic Institutions.—To those who look behind cherished phrases to the actualities of current life, it is clear not only that economic institutions can be changed, but also that they have been changing during the period covered by this survey of social trends. Private property, for example, is commonly supposed to be one of the fixed principles of our polity. But generation by generation the right of a man to do what he will with his own has been curbed by the American people acting through legislators and administrators of their own election. Perhaps the most spectacular instances have been the abolition of property rights in slaves by the Proclamation of Emancipation and the calm disregard of property rights in the liquor traffic shown by the passage of the Eighteenth Amendment, but these are only two instances among thousands of cases in which consideration of the public welfare has been deemed to justify interference with property. Numberless detailed restrictions have been placed upon the uses of particular kinds of property—for example, municipal ordinances concerning the character of buildings which may be erected on city lots or the character of business which may be conducted therein. We have developed elaborate state and federal systems for regulating an expanding list of public utilities. Government discriminates between citizen and citizen on the basis of the amount of
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property owned. The fraction of his income or of his inheritance which a man is required to pay over to the public treasury depends upon how large that income or inheritance is. Recipients of “earned” incomes are often taxed less heavily than recipients of incomes from property. Nor are transformations of property rights effected solely by government. Competent legal students of modern business practice hold that quietly but surely the investor as a part owner in a corporation is being shorn in effect of almost all his privileges, except that of drawing such dividends as the directors declare and selling his stock when he sees fit. And of course the small business man often declares that his field of initiative is being gradually hemmed in by the rapid increase of great corporations.

How much farther such changes will go no man can say. It is conceivable that without any surrender of our belief in the merits of private property, individual enterprise and self-help, the American people will press toward a larger measure of public control to promote the common welfare. One possibility is a further extension of the list of public utilities to include coal mining and perhaps other industries. Progressive taxes may be graded at still steeper rates. An upper limit may be put upon inheritances. Public ownership may be extended, as suggested above, on the pleas of security owners who see no escape from heavy loss except through sale to the government. Small business men may succeed in getting drastic restrictions placed upon corporate enterprises. Farmers may demand and receive further special legislation to lighten their burdens. Labor organizations seem likely to push with vigor various plans for social insurance. And among the interests which will demand that government concern itself actively with their needs, large corporate enterprises will continue to occupy a prominent place.

It is not likely that all of the possibilities listed here will become actualities, but it seems inevitable that the varied economic interests of the country will find themselves invoking more and more the help of government to meet emergencies, to safeguard them against threatened dangers, to establish standards and to aid them in extending or defending markets. Our property rights remain, but they undergo a change. We continue to exercise an individual initiative, but that initiative has larger possibilities, affects others more intimately and therefore is subject to more public control. Since government action means more to us, we call for more of it when in need, and object to it more strenuously when it hampers our plans.

While changes of this type seem bound to continue they can be made more conducive to the general welfare if they are guided by understanding and good will than if they are the outcome of a confused struggle between shifting power groups. Whether we can win the knowledge which is needed to guide our behavior wisely and apply this knowledge effectively [ xxxiii ]
to our common concerns, are questions which the Committee must raise, but cannot answer.

II. SOCIAL ORGANIZATIONS AND SOCIAL HABITS

The economic structure of course affects the other institutions of society, setting the stage for many of the activities of mankind and modifying the potentialities of life in innumerable directions. Its influence is particularly powerful on that great group we call labor, on our consumption habits and on the conditions of rural life. It also affects various other groups and such institutions as the family, the church and the school, and has much to do with the way in which we spend our leisure time. And all of these social institutions and habits affect the economic organization as well. All, indeed, are interrelated, and often the economic changes come first and occur more rapidly than the correlated changes in other parts of the social structure.

Labor in Society.—Wage earners may be viewed both as a factor in production and as a great group in modern society. In the former role their record of labor in production has shown steadily increasing efficiency as measured in output per worker, an increase of 50 percent in the manufacturing industries since the beginning of the twentieth century. In part this has been due to the aid given by machines and in part to the organization of work more closely in accord with the principles of scientific management, supplemented by wiser consideration of personal factors in working relations. Strikes have declined about 80 percent since the World War. In so far as increasing production may be due to the growth of technology the prospect is very bright; in so far as it is due to harmony in relationships between employer and employee, the past decade may have been exceptional and friction and strife may arise more frequently in future.

One of the problems of the future will be the condition of labor in industry and the part played by wage earners and their organizations in influencing these conditions. This problem at one time centered around the question of decent physical conditions of work and the attitudes of employers and workers. Such conditions have been better since the war, and the growth of scientific management should bring about further improvements, but this is a vast task and there will no doubt remain many grievances and complaints without satisfactory means of adjustment.

The problem of the conditions and role of labor has been associated at other times with the idea of industrial democracy, an extension into industry of the idea of political democracy with revolutionary possibilities. For a time, around the period of the World War, it appeared as if the movement might make a beginning here and there. In post-war years, however, the movement for better management has advanced and less is
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heard today of industrial democracy. Solutions may be sought along the lines of management and plant organization or along the lines of industrial democracy. Which set of solutions proves dominant is an issue which will profoundly affect the status of labor in modern society and as such is vital not only to the workers but to the community as a whole.

From the beginning of the century until the depression beginning in 1929 labor's standard of life has been raised about 25 percent, as measured by the purchasing power of wages, although this increase prevailed through only a few of the thirty years. In the two years following 1929, the aggregate money earnings paid to American employees fell about 35 percent while the cost of living declined 15 percent.

Along with health and happiness, a high standard of living is a great desideratum of struggling mankind. Abundant natural resources, a slowly increasing or stationary population and an ever expanding technology all point over the years to a higher standard of living, if the various possible strains on the economic organization do not weaken it for too long periods. Such strains appear in business depressions, in wars, in revolutions or very rapid transformations and in weaknesses in some particular part of the structure. For the very near future the standard of living may decline because of the menace to wages caused by unemployment, the possible slowness of economic recovery from the depression and the weakness of collective action on the part of wage earners. Certainly every effort should be made to prevent any lowering of the plane of living.

No doubt the adequacy of wages for meeting minimum standards of living will long remain a matter of dispute. The problem of wage adequacy is affected by the appeals of new goods such as radios, automobiles, moving pictures, telephones and reading matter. The number of such items in the future will be greater, and sacrifices in food or in other ways which affect health will be made, unless all of us can be better educated as consumers. There is, however, one interpretation which should be considered. Death rates are still much higher in the lower income groups than in others. Until a point is reached where the death rate does not vary according to income, it seems paradoxical to claim that wage earners are receiving a living wage.

Poverty is by no means vanquished, although how widespread it may be is not now known for there have been no recent comprehensive studies of family income and expenditure. The indications are that even in our late period of unexampled prosperity there was much poverty in certain industries and localities, in rural areas as well as in cities which was not of a temporary or accidental nature. The depression has greatly intensified it. After this crisis is over the first task will be to regain our former standards, inadequate as they were. The longer and the greater task, to achieve standards socially acceptable, will remain.
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In addition to their effort to raise standards of living, wage earners have had a further objective in trying to shorten the hours of work, and since the beginning of the century hours have been shortened by about 15 percent. But such an average figure conceals a great variety of conditions. In several industries the hours worked were as high as 60 per week in 1930 and in others as low as 44. Pioneer and Puritan habits and philosophies regarding long hours of labor have given ground slowly before the oncoming machine, but long hours of toil promise to be less in the future and with this lessening of labor comes the problem of how best to utilize the hours thus saved.

While there has been gain to labor in higher earnings and shorter hours, there has been no such success against the terror of unemployment. Along with physical illness and mental disease unemployment ranks as a major cause of suffering. Fortunately it has been less extensive among married men than among the widowed, separated and divorced, and much less than among the single, if we may judge by a few sample studies. Fewer women than men have lost their jobs, and the old appear to have remained unemployed a much longer time than the young. According to an estimate commonly used there were 10,000,000 unemployed in the summer of 1932, although if there were a system of recording those out of work, the margin of error in this estimate might be found wide.

Insecurity of employment is characteristic of the economic process, and no doubt if control of rates of change were possible, unemployment could be greatly reduced. Free land no longer offers an outlet. Emergency relief is inadequate. The larger problem seems to be that of making the proper application of the principle of insurance, discussed elsewhere.

The membership of American trade unions declined from 5 million in 1920 to 3.3 million in 1931, the first time in American history that the unions did not gain in membership in a period of prosperity. Of great significance also is the fact that in the big industries such as coal, meat packing and steel, the unions have lost ground and have made no gains in others such as the manufacture of automobiles. When other functions than membership are considered it is clear that the organization of labor has not gone forward as have other parts of the economic system. Organizations of employers and of employees have changed at unequal rates of speed. Unless labor organizations show a more vigorous growth in the future other resources of society must be drawn upon to meet these problems.

Consumers and Their Perplexities.—The rising trend of money incomes after 1900 meant that millions of families had more money to spend than ever before. The shortening of working hours meant that these consumers had more leisure in which to enjoy goods. The expansion of
physical output meant that business men had a larger volume of goods to market. That recently invented goods bulked large among these products meant that manufacturers and merchants had to teach masses of men and women new tastes and ways. The changes which occurred in consumption habits before the depression seem explicable mainly in terms of these four underlying trends.

To begin with the task of forcing new products into family and individual budgets: The sponsors of novelties made use of all the arts of publicity to arouse unsatisfied longings. Their success was promoted by the fact that people with more than their accustomed sums of money to spend do not know from past experience how they can get the most satisfaction from the margin, and must experiment a bit. Hence they are more than usually open to suggestions conveyed by advertising, or the examples of others. By extending widely the device of instalment selling, this margin of unaccustomed purchasing power at the disposal of buyers was made broader, and gave the promoters of novel products a still better attack upon the consumer’s mind. Meanwhile, the increasing rapidity and efficiency of communications were making it possible to wage selling campaigns on a fighting front which stretched across the continent. It is doubtful whether any earlier decade in the country’s history had seen the wholesale adoption of so many new goods, such considerable changes in the habits of consumers, as the years 1920–1929.

The financial motives for launching new products have always been strong. The maker of a new article which appeals to buyers can hope to escape at least for a few years from close price competition. In 1920–1929, when output was increasing with unusual rapidity and wholesale prices on the whole were sagging, these motives were peculiarly strong. But the favorite methods of seeking to profit from new products seem to have changed in a measure. In the past, the novelty has often been held at a high price for years, and only gradually reduced to a level at which the masses of wage earners could afford to buy. Recently this process has been telescoped. Men who believed they had a novelty with a wide appeal often tried from the start to bring their article within the reach of as many consumers as possible, and hoped that they might realize the profits yielded by small margins multiplied by millions of sales.

Faced by such tactics, the purveyors of long familiar goods have had difficulty in maintaining their shares in the consumer’s dollar. In self-defense, they too have resorted to high pressure salesmanship, payment by instalments, and the like. Hence an enormous increase in the thought and the money lavished upon selling, and an enormous intensification of the attack upon the consumer’s attention. Not only is the housewife solicited to buy for two dollars down and a dollar a month a dozen attractive articles her mother never dreamed of; she is also told of unsuspected
merits in products she has used all her life, which now come in new packages under seductive brands. The task of making wise choices becomes harder the more products are diversified, the more genuine novelties appear in the list, the more old types are dressed up in new wrappings, and the more conflicting advice is dinned into the buyer's ears.

The difficulty is a profound one, resting in the twist given our thinking as individuals by our scheme of institutions. Under our form of economic organization, the economic status of a family depends primarily upon the size of its money income. Hence, we devote far more attention to making money than to spending it. For example, in passing upon tariff issues at the polls, we are influenced much more by arguments about the effect of import duties upon wages, employment, and profits than by arguments about their effects upon the cost of living. There is scarcely a trade or profession in the country which has not formed an association to safeguard its economic prospects. Every member of every one of these associations is also a consumer; that is the only economic characteristic we all have in common. But we give not a tithe of the thought to this basic common interest which we give to the task of getting more dollars for our individual selves.

Our emphasis upon making money is re-enforced by the technical difficulties of spending money. Consumption involves the buying of a large number of different commodities, mainly in small lots. No single price means much to us; nor does the quality of the single purchase mean a great deal. To make much trouble about any one item scarcely "pays." To act wisely about all the issues involved is beyond our capacity as individuals. Yet our interests as consumers constitute our fundamental economic interests. Or are we mistaken when we say that most men work in order that they and their families may enjoy a comfortable living?

It would seem that there is little likelihood of improving common practice except by the development of special organizations to promote our interests as consumers more effectively than we can promote them as individuals. Government bureaus might conceivably play that role; but so far as the American government is representative of the American people it shares the basic defect in our thinking, and therefore seems little likely to correct it. As money makers, we can be relied upon promptly to object to any official service to consumers which jeopardizes our individual interests as producers. To give detailed advice about the qualities and "values" of competing products would require continual revisions to keep the information up to date. Any bureau which undertook such a service would invite charges of favoritism. It is not easy to see how the government could surmount the difficulties. Private ventures toward supplying what is needed in the way of counsel are being tried;
but the scale of the services now rendered is small. "Home economics" courses are given to an increasing number of pupils in schools; but it is difficult to make these courses deal realistically with the rapidly shifting problems which the housewife confronts as a buyer. In short, the prospect of making our habits of consumption more rational and of getting the maximum satisfaction made possible by our technical progress is not bright. We may be losing ground, and perhaps we shall continue to lose for a long time to come.

Rural Trends and Problems.—The lives of the inhabitants of our great rural areas are being profoundly modified by a score of factors. Improved communications, the advantages of quantity production and possibilities of national marketing are increasing in all sections of the country that tendency toward uniformity of American life which has long impressed foreigners accustomed to the picturesque variations of housing, dress, manners and speech in Europe. Those groups of the population which change their economic and social habits most slowly are now objects of this pressure. Cities have long been subject to rural influences through migration. Now rural communities—villagers as well as farmers—are obtaining from the cities, where most inventions are made, more of the new conveniences and amenities which invention offers, and find that they are entangled in perplexities, arising from the fact that new and old habits do not fuse harmoniously. Thus the economic union of the country and the village is assuming new forms, largely shaped by the automobile and the communication inventions; but the adjustments of school, church and government are proving difficult. The trend toward the village has weakened the open country churches, and has not brought country members to the village churches as rapidly as the country churches are closed. In the districts which have not adopted the consolidated school, there are still many small open country schools with only a few pupils. Village high schools and commercial schools draw students from the surrounding farms which do not share in the control of educational policy. Local governments set up a century ago in jurisdictions based upon travel by horse and upon wealth largely in farm lands are not suited to the extended areas of operations caused by the automobile and the railroad or to the newer forms and distributions of wealth. These illustrations show the nature of the problems of rural and village life caused by the economic and technological forces of change. The issue in part is one of an improved coordination of villages and farms but it is also a problem of better union with the cities. These relationships affect not a small class, but the whole body of the nation. There are approximately 30 million people living on farms and 32 million more in communities with populations of less than 10,000. While many rural communities may have passed the peak of difficulties in making their adjust-
ments to the automobile and its concomitants and in these respects are becoming more stable, we must expect that further changes initiated elsewhere will necessitate further adjustments in the years to come. The process is one of diffusion of new agencies of change from centers of dispersal along the channels of communication, reaching last those places farthest removed from their point of origin.

The plane of living in many far outlying rural sections has been but slightly affected by recent improvements. In the richer districts higher standards of living are set up, education is strengthened, and there are more new improvements. In poorer sections usually far removed from the great zones of transportation, there are higher mortality rates, and the knowledge upon which effective citizenship is based is more difficult to obtain. The idea of a national minimum standard—in health, in education, in culture as well as in income—below which citizens should not be allowed to fall is applicable to localities as well as to individuals. Recognition of the difficulties of the poorer or more isolated communities in helping themselves effectively has led to a wide use of grants in aid, whereby assistance from central sources or richer centers is extended under certain conditions. Because of the utilization of this principle in the past decade, fewer mothers have died in childbirth and many children are better educated, to mention only two effects. It should be realized, moreover, that the state aid extended to rural schools and other rural institutions is small in comparison with the contribution which the countryside makes to the cities in the form of the millions of young people, ready for life’s work. The cost of rearing and educating the migrants from the farms to the cities during the decade 1920–1930 has been estimated by our experts at about 10 billion dollars.

Maintenance of a national minimum by grants in aid would not be necessary if a very large area were used as the base for collecting revenue and making expenditures. In cities the budgetary unit is not the ward but the whole city, and thus there is no need of a grant in aid to a poor ward in order to maintain sanitation, health and education. Since communication is unifying regions as cities are unified, the problem centers on grants in aid or changes in sizes of governmental units. In either case the spirit of local government is affected, but that has already been modified by the communication agencies.

How radically the countryside will be transformed by machinery, transportation and communication remains to be seen. These were the forces which made modern cities. Now they are extending their sway over rural regions with possible transformations in manners, morals and customs.

Of those gainfully occupied a smaller percentage is engaged in farming than in manufacturing, and the rural part of our population has fallen in
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numbers below the urban. Political institutions have lagged behind economic institutions, however, as is witnessed by the over-representation of rural regions in state legislatures. The population of three-fifths of the states remains more than half rural and by 1950 perhaps nearly half the states will still be more than one-half rural. These facts must be recognized in plans regarding education, business and other important phases of national policy.

Minority Groups.—Unless the recent restrictions upon immigration are relaxed or the declining trend in the natural increase of color groups is reversed, the much debated problem of minority ethnic groups will become less acute, although the relationship of Negroes and whites will raise continuing problems. From time to time new elements in the population may be introduced such as the recent accession of Filipinos and Mexicans. The development of distant peoples for whose welfare the United States has assumed a degree of responsibility has created a problem which requires attention, and there are signs of a more alert and sympathetic understanding. Yet our country is a colonial power without a well developed colonial policy.

The problem of the minority groups both within and without the continental United States is not so much racial as cultural. Adaptation needs to be mutual if the varied strains are to be knit into a productive and peaceful economic and social order.

Social discrimination, injustice and inequality of opportunity often block the path of adaptation both in the case of the foreign born and of native color groups. In the past the relations of Negroes and whites have been marred by evidence of friction and injustice, but more recently there has been a growing spirit of accommodation. As Negroes have moved northward and westward from southern towns and cotton fields, new questions have arisen over their entrance into industry and politics, questions which may become more widespread in the future. Their elevation in the economic and cultural scale will probably mean a more effective group consciousness. Rights of minorities need especially to be guarded and interpreted with understanding, such understanding as develops most soundly from mutual discussion and mutual action.

While some of the problems presented by minority groups based upon race and nationality seem likely to decline in prominence, the cognate problems of groups with special interests based upon economic or occupational needs will loom large in future. Many of these groups will undoubtedly become more insistent in their demands and their methods of securing recognition may raise new questions. The forces of technology and science are leading to a variety of associations based on economic interests, and in a country whose political representation is geographical these non-territorial interests have no direct government channels
through which to make themselves felt. Occupational and economic groups have thus been forced to devise other ways of expressing themselves—by propaganda, by lobbying and by work through associations. As society becomes more heterogeneous in its economic interests the problem of minority groups of this kind promises to become more complicated and more grave. Indeed group conflicts of one kind or another still remain as a national social problem.

The Family.—The family is primarily the social organization which meets the need of affection and provides for the bearing and nurture of children. It is sometimes forgotten that it could once lay claim on other grounds to being the major social organization. It was the chief economic institution, the factory of the time, producing almost all that man consumed. It was also the main educational institution. The factory displaced the family as the chief unit of economic production in large part because steam, which took the place of man power, could not be used efficiently in so small a unit as the home. Some of the economic functions of the family were transferred to the factory and store, although it remains the most important consumption unit. At the same time, the educational and protective functions were transferred in part to the state or to industry. Other institutions, organized on a large scale, less personal in character, less steeped in feeling, but with greater technical efficiency, grew up outside the home and gradually extended their influence upon the lives of members of the family in their outside activities.

The changes in industry have been more rapid than those in the family, as witnessed by the survival of old forms of family law, of the patriarchal-employer conception of the husband, of the old theories as to the proper place of women in society, and of the difficulties of adequate child training.

The various functions of the home in the past served to bind the members of the family together. As they weakened or were transferred from the home to outside agencies, there were fewer ties to hold the members with a consequent increase of separation and divorce. Divorces have increased to such an extent that, if present trends continue, one of every five or six bridal couples of the present year will ultimately have their marriage broken in the divorce court. This prospect has led to much concern over the future of the family, and prophecies that it will become extinct. Anthropologists, however, tell us that no people has ever been known without the institution of the family. On the other hand, many peoples have had higher rates of separation and remarriage, especially those with simpler cultures than ours. Few cultures, however, have or ever have had families which perform as few economic functions as do American families today dwelling in city apartments. These facts suggest, as does a projection of the divorce curve, that our culture may be con-
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ducive to further increases in divorce unless programs are instituted to
counteract this tendency. The growing divorce rate apparently has not
acted as a deterrent to marriage, for the married percentage of the
population has been increasing during the 40 years for which there are
records.

With the weakening of economic, social and religious bonds in the
family, its stability seems to depend upon the strength of the tie of affec-
tion, correlated sentiments and spiritual values, the joys and responsi-
bilities of rearing children. How to strengthen this tie, to make marriage
and the family meet more adequately the personality needs and aspira-
tions of men and women and children is the problem. This is a task in
which the clergy and clinics are already showing an increasing interest.
Much more knowledge is needed of the psychology of emotional expres-
sion and there is opportunity and need for the artist as well as the moralist.
There are few problems of society where success would bring richer
rewards.

Back of the facts on numbers of marriages and percentages of divorce,
there are diverse personalities and the play of human emotions which
defy exact measurement. Happiness and unhappiness have been little
studied by science, yet happiness is one of our most cherished goals. As
economic institutions are the clue to the standard of living, so, perhaps,
the institution of the family is nearest that elusive thing called happiness.
Opinions vary as to how much unhappiness there is in marriage, but in
several studies, with rather large samples, generally among educated
groups, around three-fourths or four-fifths are reported as happily
married, either by the married persons themselves or by close friends
of the families. The ratings are fairly constant. While science has thrown
little light on what happiness is, it appears to be closely bound up with
the affections. The family, of course, does not have a monopoly of the
affectional life, and happiness may be found in work, in religion and in
many other ways. Although closely related to the affections, happiness
is based upon the whole personality and its successful integration,
and this integration goes back to childhood and the family setting.
The family is not only concerned with the happiness of adults but by
shaping the personalities of its children more than any other institu-
tion it determines their capacity for happiness. Further progress in
mental hygiene may provide wholly unsuspected help in this field.
The study of marriage and divorce may not only aid in stabilizing the
family but may also help us on the road to happiness.

Children.—The world is just beginning to realize the importance of
our early years in making us what we are. Much of what is thought of as
heredity is really the family influence on the personality of the child, an
influence quite as significant socially as any that the family possesses. An
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attempt to realize the human potentialities here and to prevent some of the tragedies which occur is being made through parent education, but to reach the millions of mothers scattered in individual homes is no easy task and such influences on a large scale can be directed more easily through the schools. The home is a very conservative institution, as the leaders of Communism in Russia know, for the habits and beliefs of parents tend to be transmitted to the children. These potentialities of child development and the responsibility of parenthood make parent education a major problem of the future.

An influence affecting the status of children is their diminishing proportion in society. In 1930 for the first time there were fewer children under five years of age in one census year than in the one preceding. For the first time also there were fewer children under five years of age than from 5 to 10 years of age. In some cities already there are not enough children to occupy the desks in the earlier grades. This decreasing enrollment has not yet reached the high schools, but it is only a question of time, unless a larger proportion of those out of school are continued in school. Though the supply of children is being restricted, the demand for them continues. The value of children to society may be expected to rise and more attention will be given to their well being and training, especially if wealth continues to increase. This interest has already been shown by the three White House Conferences on the child, the first called by President Roosevelt in 1909, the second by President Wilson in 1919 and the third by President Hoover in 1929, dealing with all aspects of childhood and its conservation.

The prospect of increased interest in children and their well being should not lead to complacency, however, for there is still imminent danger to the child in nervousness and mental disorder, a danger which may be greater in the small family system. Nor should the damage to childhood from economic insecurity and its consequence for the family be forgotten. Furthermore, there is stimulus to action in the thought of the scarcely touched resources for better childhood. Indeed some educators believe that a better rearing of children may lead to a healthier psychological adjustment of man to civilization through the refusal to accept the irrational and unhealthy customs that exist all around us. Enthusiasts even see the possibility of directing social change through the manner of rearing children.

With this interest and hope for such high rewards, there is a pressing need of research yielding specific and exact knowledge which may be applied generally by mothers, fathers and teachers. Even now in a territory as large as ours and with knowledge so unequally distributed there is a lag in the application of available knowledge as well as in the desired coordination of home, school, church, community, industry and govern-
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ment. The problem here is to utilize available resources to conserve childhood in the midst of rapidly shifting conditions of family life. There is a possibility that the schools, nurseries or other agencies may enroll a larger proportion of the very young children in the future. In the United States 20 percent of all children 5 years old were in school in 1930 as compared with 17 percent in 1900.

Women.—As production of economic goods was transferred from the home to outside industry, men's work went from the homestead to factories and stores. Women did not work outside the home to the same extent, partly no doubt because children, cooking and housekeeping still occupied them at home, although a number of their occupations, such as spinning, weaving, soap making and laundering were transferred to outside institutions. The number of women working outside the home is increasing. In 1900, 21 percent of all women over 16 years of age were gainfully employed while in 1930 the percentage was 25. In manufacturing the percentage of women employed is declining, but it is increasing rapidly in the clerical occupations, in trade and transportation and in the professions. Women are employed in some 527 occupations; but they tend to concentrate in a few callings, for about 85 percent of the employed women are in 24 different occupations. It is the younger women and the unmarried who form the bulk of women at work outside the home. One in four of all females 16 years old and over is employed and only one in eight married women is employed, but the percentage of married women at work is increasing much more rapidly than the number of women gainfully occupied and the average age of women who are breadwinners is rising slowly.

Women constitute a potentially large supply of workers, their bargaining power is weak, there are some uncertainties regarding their continuity of employment, and for these reasons their wages are low. Their entrance into industry, then, presents a number of problems involving legislation and organization.

The transfer of functions from the home has not been solely economic. Many functions have gone to the government, as for instance educational and protective functions, as well as regulatory controls over industry. With the losses of the family as a social institution, other institutions, clubs and associations, amusements, libraries, and political organizations are centers of activities outside the home. It has been said that some homes are merely “parking places” for parents and children who spend their active hours elsewhere. In the political field, since the ratification of the Nineteenth Amendment the percentage of women registering for voting is a good deal less than that for men, but from sample studies available it appears to be increasing, and women have sat in both houses of Congress and have held office in federal, state and local jurisdictions.
The diminution of the home occupations and activities of women opens several possibilities. One is the entrance of women into industry as has been noted. If there were more part time jobs the movement would probably be accelerated. Another possibility is the entrance of women into civic work and political activities. A third is the heightened standard of the quality of housework. A fourth is more recreation and leisure. The future position of women will be determined by the degree of flow into these channels and the problem is to direct this flow into the channels most desirable. Meanwhile, the tradition lingers that woman's place is in the home and the social philosophy regarding her status has not changed as rapidly as have the various social and economic organizations. The problem of changing these lagging attitudes amounts in many cases to fighting for rights and against discrimination. Women are newcomers into the outside world hitherto mainly the sphere of men. Many barriers of custom remain and the community is not making the most of this potential supply of able services.

**Housing and the Household.**—Society is trying to strengthen the home and the family by many aids, such as courts, social legislation, home economics courses, and the church. An important effort to strengthen the family is concerned with good housing. The influence of housing in family life is observed in the case of the apartment house, which in its present form is ill adapted to children, but which presents savings in household duties and makes possible certain advantages of congregate living. New homes in multi-family dwellings were almost 50 percent of the new homes in cities constructed before the depression, but only a small proportion of families, twelve percent, live in apartments. Although the percentage of home ownership has been increasing slightly in the country as a whole, the mobility of population encourages renting rather than home owning. About half of the nation's families live in rented homes. The problem is how to secure reduction of construction costs, greater use of economic organization, science and invention. To meet the need of better housing at lower costs improved methods of financing by private organizations are being tried for families of the lower income groups. Proposals of changes in the system of taxation are also being made. The question of governmental aid in one form or another will probably arise in view of the social utility of good homes. The improvement of housing involves the organization of the whole community through city and regional planning. In cities the new distribution of population effected by the automobile has accentuated the housing problem in old residence sections near business districts. Bad housing in these areas and also in rural areas persists in part because of the durability of the construction materials used in the old houses. If the life of a house were short, or if the cost of modernization were small, it
would be easy to adopt the new standards and conveniences in kitchens and bath rooms and in heating and cooling systems. New inventions in materials and designs of homes as well as in equipment are said to foreshadow a revolution in housing methods and if so may greatly aid in working out the problem.

Electricity is a form of power which can be transferred considerable distances and is adapted to the size of the household so that the number of electrical appliances for the home now reaches well into the hundreds. While steam has been the enemy of the household, electricity is its friend, but that electricity will restore the home to its former economic prestige is not likely. There are, however, 26 million women who have part or full time jobs as housewives and where there is a housewife there is a home.

Schools.—Reverence for the home, especially for the part it plays in building the personality and character of children indicates our potential interest in values other than material ones. Another social institution, the school, is a center of hope and concern. Few countries have ever been so eager for education as the United States.

Nearly all children of the elementary school age now go to school in this country, although the attendance of the Negroes is much below that of the whites. Of those of high school age, about 50 percent are now in school—evidence of the most successful single effort which government in the United States has ever put forth. An eight-fold increase of high school enrollments and a five-fold increase for college since 1900 is a great achievement but it must be remembered that there are still many who do not share these advantages. If, however, the growth of higher education continues a question may well be raised as to whether there will be enough of the so-called "white collar" jobs for those with higher degrees. Yet the higher education is clearly cultural and not wholly vocational and plumbers may discuss Aristotle with intellectual if not financial profit.

As the volume of knowledge to be acquired increases in the future, the question as to how long a person should go to school will be raised. The biological age for marriage is reached some time in the teens and in most cases earning a living cannot long be delayed. This problem will be worked out no doubt by improvements in the curricula of the high school and the grade schools and by night schools and programs of adult education. With shorter hours of labor a program of education for adults may be developed and become widespread, although at present the great enemy to adult education is the competition of amusements.

It will always be difficult to keep curricula in adjustment with changing times and with new knowledge. Some schools and colleges still offer
courses which are survivals from the scholasticism of the Middle Ages. The proportion of emphasis to be placed on vocational courses and trade schools as compared with the proportion put on the less specifically utilitarian subjects is one of the questions of educational policy. A democracy with a mechanical civilization and with an increasing heterogeneity of shifting occupations must ask much of its schools.

The changes in industrial, economic and social conditions which have taken place in recent years create a demand for a kind of education radically different from that which was regarded as adequate in earlier periods when the social order was comparatively static. Members of a changing society must be prepared to readjust their ideas and their habits of life. They not only must be possessed of certain types of knowledge and skill which were common at the time when they went to school, but they must be trained in such a way as to make them adaptable to new conditions.

Indeed, it may be said that the failures of coordination in modern life are attributable in no small measure to the tendency of human beings to fall into fixed habits and conservative attitudes. Many individuals are unsuccessful because of their inability to adjust themselves to the changes which take place about them.

The schools deal with the world of ideas as well as vocational training. They are centers of thought. What ideas shall be passed on may be an issue in the future when the full power and influence of communication inventions in dealing with mass stimuli are realized. Among fascists, communists, churches, patriots and social reformers it is already a matter of grave concern who shall control the ideas of the children.

The Church.—The ideas and values of life have in the past centered in the church more than in any other social institution except the family. The role of the church in society was at one time extraordinarily broad. It dominated international relations; it was the patron of the arts; it taught the ethics of family life; medical practice and healing were among its functions; and education and learning were sponsored almost wholly by it. Religious issues determined migration and wars. As time went on the church became differentiated from the state, in large part it was separated from politics and education, and was dissociated from healing. Ethics and religion have been traditionally united, but whether this association will continue may be problematical.

Up to 1926, the date of the last religious census, the church in the United States had increased its membership at about the same rate that the general population had grown. In the five years following 1926, the Protestant church membership—the only one for which we have figures—is reported to have increased 2.5 percent, less than the increase in population. It may be inferred that the rate of gain in membership has grown
faster since 1929, as the influence of a depression is to increase church membership. From 1906 to 1926 the wealth of churches increased more rapidly than did the national income. This is explained in part by the adoption of better techniques of raising contributions. Sunday school enrollment increased, 1916–1926, less rapidly than did the number of children in the total population, although the youth organizations of a religious nature have grown very rapidly, especially during the World War.

What has happened to religious ideas and beliefs is not recorded by the census, but it has been possible to draw some conclusions from studies of religious publications. In the proportion of religious books per 1,000 listed in the United States Catalog, and in the percentage of religious articles listed in Reader's Guide there has been a decline since the beginning of the century, although both showed a marked increase when the right to teach the theory of evolution in the schools was before the courts. The proportion which the circulation of Protestant religious publications bears to all periodical circulation has also similarly declined. Analysis of religious writings for this period showed that the number of articles on traditional religious topics has decreased relatively, while certain revisions of traditional religious beliefs received increased attention, indicating a change in religious creeds. Some religious beliefs are coordinated with the scientific outlook of the day, and changes in science produce a lagging adjustment in religious beliefs. The problem of reconciling religion and science is often very serious for the troubled spirit of modern man. This is a special case of a general problem, namely, that of the adaptation of the church to changing conditions. The attempts to develop social programs under church auspices and the movements for church unity and cooperation among religious denominations are indications that the church is aware of this need.

There is reason to think that the structure of religious organizations will persist, however their functions change. There are 44 million church members; the youth organizations reach 6 million young people and church property is valued at 7 billion dollars. How their functions may evolve is a grave issue. One function is that of ministering to the needs of people who suffer in a world of stress and strain. Another is that of serving social and community life. Still another function is that of an ethical guide and force not only for individual but also for social conduct. The church is legally separated from the state; it is not formally in politics, but it has taken interest in such problems as those of the family, marriage and divorce, the prohibition of the sale of intoxicating drinks, capital and labor relationships, crime, and many local community questions. The question is with what varying degrees of vigor and resource will the forward movements of the churches be directed along these different routes.

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Morals and Attitudes.—Various agencies of society other than school and church are engaged in the generation and transmission of ideas, as for example, the press and the library and these sources yield information on changing attitudes and interests. Publications in books and in articles show a growing interest in science and the scientific outlook. Attitudes, as judged by publications, have also undergone changes in recent years, indicating a decline of the authority of the past in religion, science and sex. Precedent is very much stronger in the case of government and law.

Our experts made no extensive inquiry concerning trends in morals but it requires no special investigation to see the setting given by social change to the problem of rules of guidance for conduct. In a stationary and simple society such as is often found among primitive peoples the conditions of life are much the same from generation to generation. A father knows about what the conditions of life will be for his son and his son’s son. Rules of conduct can be worked out in great detail. They become tested by experience and can be applied minutely to specific situations. The authority of the past is mighty. There is majesty in the law.

In a changing heterogeneous society such as ours, many situations are new. Specific detailed rules of guidance based on the past are difficult to apply. Rules are worked out but they are abstract and tend to be too general for detailed guidance. The authority of the past tends to fade. Recourse to reason is difficult to apply and often fails in the emotional situations where the problems of conduct arise. Perhaps the study of mental hygiene may uncover new resources to help in these moral perplexities.

Codes of behavior and manners which are found carefully worked out in stationary societies serve the purpose of restricting the play of selfishness and egotism. In a changing society, the breaking down of these codes removes some of the restrictions on selfishness, and thus the problem of moral conduct is made more difficult in modern society.

Social philosophies are somewhat like codes of morals in their resistance to change. Their changes often lag behind the social organizations with which they are connected. Thus economic philosophies in regard to laissez-faire and competition persist in fields where the combination movement is an accomplished fact. Old fashioned attitudes toward work persist under urban factory conditions. Much confusion is engendered in the minds of men and women and young people generally by the gradual crumbling of many solid dependable beliefs which sustained the people of the nineteenth century.

Changes in habits are almost as difficult to measure as changes in ideas and morals. Habits and customs are being increasingly modified by
changes in occupation and in residence. Less than one quarter of the population now lives on farms. The change in the manner of life indicated by this small proportion is profound, and now the habits within the rural regions are changing too. Our expert studies in the shifting patterns of occupations show many alterations in daily life. The old skills of workmen which required years to build up are disappearing in the face of mass production. We have taken to wheels; farmers use machines, gasoline engines and electricity; the farmer, like the city man, no longer speaks to everyone he meets on the road in his far-ranging car; more workmen are wearing white collars; middlemen multiply; engineers are increasing greatly in number, while the proportion of clergymen is decreasing; there were ten newspaper men in 1930 to one in 1870. And these are only random observations illustrative of our changing habits.

Problems Presented by Increasing Leisure.—As has frequently been pointed out men work fewer hours per day and per week and the home tasks of women are less time consuming; child labor has been greatly reduced, and though school time has been extended children may share in growing leisure no less than their parents.

To profit by the potential market offered by increasing leisure, many forms of amusement or recreation have been provided on a commercial basis, as for instance, moving pictures, automobile touring, travel, radio, boxing, tennis, golf, baseball, football, dancing and "resorts." On these and similar recreations in the late 1920's our experts show that we spent 10 or 12 billion dollars a year. The curves of growth for most of these expenditures show steep slopes. Seemingly we spend more time, certainly we spend more money on these modern diversions than our forefathers spent on their typical recreations of fishing, hunting, riding and visiting.

How best to use growing leisure hours is an individual problem in which organized society has a large stake. Americans have but scanty traditional equipment for amusing themselves gracefully and wholesome. Advertisements set forth what our forefathers would have called temptations. We are urged to yield to their enticements by notions of human nature which differ radically from those entertained even in our own childhoods. Man is not a machine, we say; his nature is not adapted to long hours of work at repetitive tasks; recreation is a physiological need as much as food; if wisely chosen it is good for both mind and body.

In our early history what recreation was indulged in remained under the aegis of the home or the community, except for certain scarcely respectable types. We still feel that the recreation of other people should be supervised; but clearly the home cannot exercise efficient supervision when recreation, because of the greater mobility of people and for profit making reasons, is provided in the form of mass entertainment. A growing
Proportion of people admit that workers on machines or in shops and offices need recreation, and many of them also demand that the municipality or state assume censorship and control. On the other hand, we see evidence of rising impatience with government supervision of people in their free hours. One of the problems which will still need attention in supplying this almost insatiable hunger for amusement and diversion is to devise a method by which the standards held essential by the community may be protected, at the same time allowing for the free play of new ideas and entertaining novelties.

By virtue of commercialization, the problem of leisure is bound up with purchasing. Not only automobiles, radios and theater tickets, but also many objects of household decoration or personal adornment are bought to make leisure hours more enjoyable. By way of evidence concerning our national scale of values, consider the following miscellaneous list of American expenditures in 1929: 200 million dollars were spent on flowers and shrubs, 600 million on jewelry and silverware, 400 million on newspapers, 700 million dollars on cosmetics and beauty parlors, 900 million on games and sports, 2,000 million on motion pictures and concerts, and 4,000 million on home furnishings. The outlays upon some items in this list have been heavily cut during the depression; but there is little doubt that expenditures upon recreations and indulgences of many kinds will tend to rise in the future as per capita income grows. Study of family budgets shows that as available income rises, smaller percentages of the total are spent on such essentials as food, rent, fuel and light, while larger percentages are spent on miscellaneous items. These facts concerning present expenditures contain a forecast of changes in the allocations of average family budgets in the future.

Business, with its advertising and high pressure salesmanship, can exert powerful stimuli on the responding human organism. How can the appeals made by churches, libraries, concerts, museums and adult education for a goodly share in our growing leisure be made to compete effectively with the appeals of commercialized recreation? Choice is hardly free when one set of influences is active and the other set quiescent. From one and a half to two billion dollars were spent in 1929 on advertising—how much of it in appealing for use of leisure we do not venture to guess. Whether or not the future brings pronounced irritation with the increasing intrusions upon our psychological freedom by advertisements, the problem of effecting some kind of equality in opportunity and appeal as between the various types of leisure time occupations, both commercial and non-commercial, as between those most vigorously promoted and those without special backing, needs further consideration.

The growth of great cities with the accompanying overcrowding has interfered with leisure time activities in another way, namely, by leaving
space neither sufficient nor safe for active outdoor play. While the newer trends outward from the most congested central portions of these districts may relieve the deficiency in part, the reservation of necessary areas or the provision of equivalent facilities of other types remains as a problem for many communities.

The development by the government of parks, playgrounds, camping places and bathing beaches is an attempt to solve the problem. In recent years since automobiles have been commonly used, the natural scenery of our country has been enjoyed much more than ever before. This enjoyment has been facilitated by the policies of federal and state government in setting aside from private use for the enjoyment of future generations places of great natural beauty in which our country is singularly rich. Among the opportunities offered by the broader range of modern recreation there are few affording deeper and more lasting satisfaction than the contemplation of the scenes of nature. Indeed, one of the common bonds of experience among men of all groups and types is the enjoyment of natural beauty.

The Arts.—Not only in passive enjoyment, but in practice, art touches our hours of leisure much more closely than it does our working time, a comparison of the census records of 1920 and 1930 shows in general that artists of various kinds are increasing more rapidly than the general population. The trend of art in America must be treated primarily as a matter of opinion, but there is some factual material which indicates a growth in art interests, as for example the increase at all educational levels in art instruction as compared with other subjects, the growth of museum attendance—the Metropolitan Museum in New York showing today a greater annual attendance than the Louvre in Paris. Upon certain points there seems to be general agreement: the stimulating effect of certain inventions, as for example coal tar colors and cellulose products, or the influence of electricity on music, an increased interest in the appearance of the home, the enlistment of art and artists by commerce and industry as an aid to sales. In architecture, the United States is a recognized leader.

From a social point of view, as contrasted with art for art's sake, the problem of art, like that of religion and recreation, turns today on its service to man in his inner adjustment to an environment which shifts and changes with unexampled rapidity. Art appears to be one of the great forces which stand between maladjusted man and mental breakdown, bringing him comfort, serenity and joy.

It appears, from inquiries, that while conscious enjoyment of the fine arts is becoming more general, a much more widespread movement is the artistic appreciation, both as to color and design, of the common objects which surround us in our daily lives. That these changes are
largely unconscious, and that they are seldom recognized as touching the field of the arts, does not detract from their significance.

The artistic tradition of the United States is of course less rich than that of older countries. So far as beauty consists in the establishment of harmony between appearance and function, a rapidly changing society such as ours would appear to be a stimulating factor. So far as beauty depends on decoration, the history of the past would indicate that artistic adjustment to a cultural pattern cannot be achieved until that pattern has been in existence sufficiently long to permit of much experimentation with the various possibilities it offers. Private wealth has been extraordinarily lavish in its patronage but not always wise. Governments are just beginning to concern themselves with the encouragement of the arts. The school may well grow into an effective agency for the development on a nationwide basis of an elementary consciousness of beauty, and a more general understanding of the place of art in industry and commerce may prove to have great potentialities.

III. AMELIORATIVE INSTITUTIONS AND GOVERNMENT

Society has three problems which have existed throughout all history—poverty, disease and crime. In addition there are many other distressing conditions which the inequalities of life occasion, such as ignorance, physical defects, biological inadequacies, neuroses, alcoholism, family desertion and unprotected children. The amelioration of these conditions is a major objective involving the techniques of modern social science and public welfare. The larger but longer task is prevention and the building of a more effective social structure.

Public Welfare and Social Work.—Much ameliorative effort in the United States has been concentrated in social work and public welfare, the extension of social work under governmental auspices. Other agencies, however, share in these activities. Many of the services now rendered by social workers were once the responsibility of the family. The family still gives some degree of protection to its members, but much social work is occasioned by the failures of families to meet these needs. The church has often stepped in where the family was inadequate, and has maintained orphanages, hospitals, homes for the aged, and the like. The local government too has always had its provision for relief out of local taxes but private effort was for generations unorganized; beggars sought aid where they could and the rich acted as the spirit moved.

In the present century the growth of the services of social work has proceeded through social inventiveness to new standards transcending earlier conceptions. Governments have been extending their functions into these fields. More than two-thirds of the states have reorganized state boards or departments into state systems of public welfare, dealing
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with child welfare, widowed mothers, the poor, the aged and infirm, the physically handicapped and the subnormal. This work requires the newly developed efficiency in public administration and the recent technical advances of professional social work.

How far public welfare activities will extend depends in part upon the conception of the state and upon the tax situations. The trend has been toward the transfer of private social work to governmental auspices, especially during the present depression. The further growth of public welfare activities is to be expected, particularly because of the range of problems which are dealt with in other countries through social insurance. The changes are fundamental and will require the maintenance and further raising of standards by the government and continued experimentation by private agencies.

Ameliorative efforts will be greatly lessened if poverty is reduced. Prevention of poverty on a large scale may not seem practicable in the near future, yet much can undoubtedly be done in that direction. The guarding of dangerous machinery reduces the number of fatal or disabling accidents to the worker; increasing progress in fighting preventable sickness and disease reduces the amount of dependency caused by death of the breadwinner or by loss of earning power resulting from ill health; the practice of eugenics may lessen the number of indigents; and better education and training for productive work will have a beneficial effect, but above all higher wages and more regular employment will cut down the amount of poverty.

The accidents of life as well as deficiencies and delays in any program of prevention will continue to afflict many and to leave large numbers dependent and in distress. For some time in the future we shall undoubtedly be faced with the further problem not only of making more adequate provision for social case work treatment of those in need, treatment which will have preventive, corrective and relief aspects, but of providing more adequate relief in general. At the time these lines are written relief needs are running into the highest figures in our history. Coming after three winters of unprecedented drafts upon the public and private purse for unemployment relief the difficulties in the situation are forcing proposals aimed to provide relief on other than an emergency basis—among others, those which make use of the insurance principle.

Private insurance is now used by many to take care of burial, sickness and the needs of old age and to provide for dependents left behind at death. Optional insurance for individuals is purchased widely by those with adequate means. If wages were higher, larger numbers would undoubtedly follow this example. Group insurance is developing more widely. The most far reaching application of the principle is compulsory insurance ordained by the states. It is now applied in all but four of the
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states in compensating for industrial accidents. Beginnings have been made in this country of insurance against old age and against unemployment, but no state has yet undertaken to provide compulsory health insurance. Mothers' aid laws, now in nearly all states, operate as a form of state insurance to protect the home.

Social insurance does not remove the cause of dependency, although it may have an influence in stimulating preventive measures. It aims to spread the cost of the disabilities of life over a larger part of society and a longer period of time. The indications are that the United States in the near future will have to face the problem of providing more certainly and systematically for these ills which at all times, and particularly in periods of depression, have come to be a major task of public and private social work.

Medicine.—The practice of medicine is in a state of transition which is perhaps analogous to the state of industry during the early period of mechanization. There is a marked survival of traditional, individualistic practice, to which many physicians cling as did the early handicraftsmen seeing their independence and their creative skill threatened by the machine.

There is a serious dearth of physicians in rural districts, an oversupply in cities. The field of the physician has grown far too large for any one man to master, and the necessary equipment is often too elaborate and expensive, even for the rich doctor. Here the hospital and private clinic come in to play the part of the factory, furnishing the machinery which the individual craftsman cannot secure for himself or, indeed, use if he could, so complicated has it become.

The private clinic represents an effort at cooperation in the interest, not only of efficiency, but also of economy and protection against the evils of unrestricted competition. Such an effort does not, however, strike at the deeper lying problems of present day medical practice, namely the uneven distribution of service and the more uneven distribution of its costs. Medical organization has not changed as rapidly as scientific medical research.

To meet these problems organization is needed, of which three types may be mentioned. One is the growth of private organizations, of which examples are found in universities and industries, which might be developed on a community basis. Aid and regulation by the state may be a feature. Another type is found in the rise of governmental health bureaus, federal, state, county, and municipal, which apparently without much deliberate planning have increased the amount and scope of their work. A third type, compulsory health insurance, has been tried for many years by European nations. It seems probable that this latter method will be considered by the American public at some time in the future.
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Naturally, scrutiny will have to be given to the weaknesses of the European system and the changes which will be needed to be coordinated with the practice in this country.

The concern of social policy regarding medicine is with the extent and direction of the development of these different types of organized medicine. The problem is to make available to the whole people the results of scientific research and experiment at a reasonable cost.

Crime.—The modern view of crime is that it is not a thing apart, like cancer; not something which can be isolated and treated as a single phenomenon by such simple devices as punishment and prison walls. It is one manifestation of a complex set of forces in society; it is as complex as the environment which influences it; it is affected by the transition in business practices and morality; it is related to the gang life of children; it is influenced by inventions, notably by the automobile. The multiplication of laws, the presence of poverty and the overcrowding of urban areas are parts of its background. While crime is the net resultant of exceedingly complex forces, it has specific features which can be dealt with, as has been shown in the series of special reports from the National Commission on Law Observance and Enforcement.

Whether crime is increasing or not is difficult to determine. Those who know most about the subject hesitate to say that there has been a "crime wave," and where it has occurred. The collection at regular intervals of reliable and comparable statistics of crime and the various phases of its treatment and control has been sadly neglected in this country. One step toward dealing with crime is to get reliable information about its various manifestations. It has been possible, however, by selecting several states and cities which have fairly reliable statistics of crime to secure some indications as to trends, particularly since the various series run somewhat parallel. The index numbers of arrests per capita of adult population (after the subtraction of those for traffic, automobile law offenses and drunkenness) in 7 selected cities were 80 in 1900, 96 in 1910, 100 in 1920, 139 in 1925 and 110 in 1930. The data seem to show an increase in crime since the beginning of the century, but hardly a crime wave, if by that is meant an extraordinary rise in the number of criminal acts committed.

As to the total amount of crime, probably about 16 major offenses are committed in a year per 1,000 population in the smaller and larger cities. These are crimes reported to the police, which may not be a complete list. For the total population the rate would not be so high, since the very large rural population is not included, and there the rates are known to be lower.

To a certain extent crime is a creation of the changing regulations of society and of the attempts to enforce them. The more rules there are to break the larger is the number broken. Much law breaking arises, for
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instance, in the attempt to prohibit or regulate gambling, prostitution, or selling intoxicating beverages. Laws concerning these types of behavior vary from time to time and from country to country. The number of criminal laws is increasing. There has been a growth of about 40 percent in the 30 years from 1900 to 1930 in selected states as measured by sections in their criminal codes. Society seems to have a penchant for multiplying rules. The number of sections in the constitution and by-laws of the New York Stock Exchange increased 46 percent from 1914 to 1925, and the North Central Association of Colleges and Universities added 33 percent to the number of sections in its governing standards in the 18 years from 1912 to 1930.

This tendency to make rules and regulations is itself a significant phase of modern life and it stands out boldly against the pioneer background of America, where relatively few organizational rules existed or where they were changed less frequently. Rules multiply through the translation of customs into written regulations. This formal change is not the whole story; for it would seem that the process of social change itself leads to more regulations. New inventions, social or other, call for new standardizations of behavior in cases where tradition provides little guidance. Moreover the process of social change probably encourages rule making. Conformity to new regulations takes time to learn; it is a part of the complex adjustments to the increasing heterogeneity of society. Recent rules usually lack the established character of laws of the past.

There seems little prospect that the task of making new rules, revising old ones, and enforcing both sets will ever be finished, or that the problem of dealing with law breakers will grow less important. A society without crime appears more remote than a society without poverty. The number of prisoners committed for the more serious offenses has increased steadily in proportion to the population. Even though this may in part mean merely greater efficiency in apprehending and convicting offenders, we are in no position to say that the number of these more serious crimes is decreasing. Fines, however, are more predominant among the penalties inflicted. In Massachusetts they increased from 67 percent in 1910 to 87 percent in 1930.

Organized crime is a very serious phase of this general issue. Criminals who operate in significant numbers and repeat their acts organize for the purpose. Crime is in a way their business. Thus law breakers in other respects have taken over the "business" of bootlegging, gambling and prostitution, as well as robbery, kidnapping and blackmail and other crimes for profit. One can understand how illegal distilling of liquor in mountains, or how piracy on the high seas flourishes in isolation; but how illegal business can be carried on extensively in the heart of a city is less obvious. One explanation is that the organized gangs of
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criminals avoid contact with the law when possible, but where contact is unavoidable they seek to control the agencies of the law. The methods of organized crime are sometimes modeled after effective business techniques, in combination with many of the worst criminal practices. Racketeering, an especially insidious form of organized crime for profit, has grown up in many cities since the war. This attempt to control prices by violence instead of by business pressure levies a heavy tribute on the consumer and on the business activity concerned; and this appearance of the criminal in a dominating role over small business enterprise is a serious menace. Organized crime in general, however, is by no means a new or post-war phenomenon, although it has grown to unprecedented dimensions since the enactment of the Eighteenth Amendment. Bootlegging has put large funds in the hands of criminals.

The problem of the treatment of the prisoner is significant not only as a measure for protection but also for prevention. The most fruitful approach to this problem of treatment for those who have been convicted is not from the point of view of punishment, but from that of segregation according to the types of psychological defects or deviations of the prisoners, or according to the types of their social experiences, with a view to further diagnosis of their delinquent tendencies and the provision of care aimed to refit those who are not hardened and hopeless criminals to become safe and self-supporting members of society. The development of a policy in accordance with this view means many radical changes in prison procedure.

Another fruitful and even more important attack is that of prevention, especially for those who pursue crime as a business. A program of prevention is necessarily wide in scope and can not be limited to police, courts, and prisons. It touches politics, elections, business ethics, legislation, gang life among youths, rearing of children, playgrounds, housing, the disorganized dwelling areas of cities, medical service and mental hygiene. Indeed almost the whole structure of society is involved.

Basic Governmental Problems.—Government has come to perform many functions for social welfare through public welfare departments, but these, of course, are only a small part of its activities. As the one sovereign organization government is or may be concerned with the problems of men at all levels.

Problems of governmental reorganization and functioning constitute a major question of adaptation and adjustment. It cannot be supposed that the present procedures will be able to deal effectively with the complicated types of problems certain to arise in the future, indeed already upon us. Specifically the problems of government turn about the reorganization of areas, mechanisms, and authority; the recruitment of the necessary personnel for administration and leadership; adaptation of the techniques
developed through the social sciences; the elimination of spoils and graft; the determination of the scope of governmental activity in the fields of general welfare, social control, and moralistic supervision of behavior; the determination of the amount of governmental expenditure in relation to national income, and the ways and means of financing the government's operations; the position of the national government in its relations with other members of the family of nations; the development of liberty, equality and democracy, in the face of the concentration of great wealth in the hands of a few. Of major importance are the relations of government to industry.

Overshadowing all these problems is the final question as to how to develop a governmental mechanism which will serve the interests and ideals developing through the recent social changes indicated in this report, how to adapt the best in the American tradition to the changing forms of modern life.

**Growth of Governmental Functions.**—Governments in general have been increasing in size and power. The only other great social organizations to compare with them in rates of growth are our economic institutions. This growth seems to have occurred despite conflicting views as to what the functions of government should be. Some would restrict them to the minimum of agencies of protection, and resent any extension beyond the bare necessities of control and regulation. Others see government as a powerful organization which may be placed in the service of mankind in many different ways. The variety of governmental functions is amazing, when all types of government are considered, as is shown in several of the chapters which follow. Much of this extension has been through various administrative boards, which have been added from time to time and which eventually present a problem of coordination. Not many of these bureaus are discarded, although some, notably those of war time, have been dropped. The rate of obsolescence is greater for legislative enactments. Such an extension of the administrative side of government is probably one of the reasons for the enhanced power of executives and the administrative branches of the government.

In this field the most disquieting developments have been those of the intrusion of the graft system in the domain of the federal government, especially in the form of bootlegging, but also touching the Cabinet in the Teapot Dome case; and the rise of racketeering in certain urban communities. On the other hand notable progress has been made in many directions toward the strengthening of the public service in cities, states, and nation.

Evidences of this have been the development of a more powerful executive, both in leadership and in management, the rise of administrative boards with wide powers, the tendency toward consolidation of
administrative power on all levels of authority, the efficiency movement in the direction of professionalization of the service, the use of modern practices in dealing with the problems of personnel management and governmental operations and the growth of organizations of administrative officials throughout the country.

At the same time large ranges of government have been dominated by avowed spoilsmen, corrupt, incompetent and partisan, or all three together, while graft and buncombe have been common; but on the whole notable advance has been made in the direction of increasing competence and integrity in governmental service, notably in fields like educational administration, recreation, health, and welfare, special phases of urban, state and national administration. Even in less promising fields such as police administration the beginnings of substantial and even surprising progress have been made in various localities.

The broad question of the relation of the democracy to the expert in administration has not been solved, but in recent years surprising advances have been made toward the establishment of more satisfactory relations. Whereas in the period 1830–1870 the spoils idea was universally accepted and even acclaimed, and whereas in the period 1870–1900 the principle of merit as against party service and of continuity in tenure was recognized, in the period covered by this study the expert has been recognized because of his utility and indispensability in the practical operations of the government. While expertness and administrative skill were by no means universally recognized and adopted, the new trend was strongly in this direction, and the indications are that this movement will continue with increasing momentum.

Relations of Government to Business.—The increasing complexity and interdependence of social life precipitate more sharply than ever the problem of the interrelations between industrial and political forms of organization and control, and this has been accentuated by the rise of large scale industrial units resembling in form while rivaling in magnitude some of the governmental units to which they are technically subordinate.

Unemployment, industrial instability, tariffs, currency and banking, international loans, markets and shipping, agricultural distress, the protection of labor, have raised many vital questions respecting the relationship of government and business, and it is easy to foresee that many others will be raised in the future. Demands are now being made for more effective control over banking, investment trusts, holding companies, stock speculation, electric power industries, railroads, chain stores, and many other activities. The new forms of corporate structure raise many problems of legal control for the protection of the minority interests, and of the community itself. The service functions of govern-
ment are also likely to expand because of the demands of the special economic groups. The poverty of the marginal and submarginal farmers, the insecurity of the wage earners in industry, the perplexity of the consumers, the plight of the railroads, are likely to call for, indeed have already demanded the close cooperation of the government. Unemployment and industrial instability are of special urgency in their demands for governmental assistance, first of all in times of emergency, but also in preventing the recurrence of disastrous crises or in minimizing their rude shocks and ghastly losses.

Under such circumstances the problem of the interrelationship between government and industry is of grave importance. Shall business men become actual rulers; or shall rulers become industrialists; or shall labor and science rule the older rulers? Practically, the line between so-called "pure" economics and "pure" politics has been blurred in recent years by the events of the late war, and later by the stress of the economic depression. In each of these crises the ancient landmarks between business and government have been disregarded and new social boundaries have been accepted by acclamation. The actual question is that of developing quasi-governmental agencies and quasi-industrial agencies on the borders of the older economic and governmental enterprises, and of the freer intermingling of organization and personnel, along with the recognition of their interdependence in many relations.

Observers of social change may look here for the appearance of new types of politico-economic organization, new constellations of government, industry and technology, forms now only dimly discerned; the quasi-governmental corporation, the government owned corporation, the mixed corporation, the semi- and demi-autonomous industrial groupings in varying relations to the state. We may look for important developments alike in the concentration and in the devolution of social control, experiments perhaps in the direction of the self-government of various industries under central guidance, experiments in cooperation and accommodation between industry and government, especially as the larger units of industrial organization, cooperative and otherwise, become more like governments in personnel and budgets, and as governments become agencies of general welfare as well as of coercion.

The hybrid nature of some of these creations may be the despair of those theorists, both radical and conservative, who see the world only in terms of an unquestioning acceptance of one or the other of two exclusive dogmas, but these innovations will be welcomed by those who are less concerned about phobias than with the prompt and practical adjustment of actual affairs to the brutal realities of changing social and economic conditions. The American outcome, since all the possible molds of thought and invention have not yet been exhausted, may be a type sui generis,
adapted to the special needs, opportunities, limitations and genius of the American people.

Those who reason in terms of isms or of the theoretical rightness or wrongness of state activity may be profoundly perplexed by the range of governmental expansion or contraction, but the student of social trends observes nothing alarming in the widely varying forms of social adjustment undertaken by government, whether maternal, paternal, or fraternal from one period to another.

The Costs of Government.—Few governmental functions are self-supporting; most are paid for by the taxpayer. The question of the costs therefore is fundamental, particularly in the present depression when it is very difficult to pay the money with which to run the government. No one is in the mood for thinking of the growth of governmental functions when taxes are such a burden and when the costs of government continue on almost the same plane as before the depression. In a business depression, the costs of government remain high while the incomes of citizens fall and a larger percentage of income must be contributed to the government. This has been the case in all recent severe business depressions and the complaint of the taxpayer has always been loud on these occasions.

This problem has never been solved. It is very difficult to cut down the total expenses of government as will be seen later from the nature of the payments. Business adjusts more quickly to the business cycle than does agriculture, and perhaps both more quickly than governments. Yet something can doubtless be done toward adjusting government finances to the exigencies created by business cycles. The tax bill of all the governments in the country in 1930 was ten and a quarter billion dollars, perhaps 15 percent of the incomes of the people. Of course, the crucial question is what do we get for our money. We spend about the same amount of money or more on recreation, approximately one-seventh as much on tobacco, and perhaps about one-fifteenth as much on cosmetics. How this money paid to run the government is spent is seen in the chapters on government and taxation. No doubt there is waste, but attempts to cut down have recently led in hundreds of counties and cities to closing the schools for a time and also to cutting down normal relief, such as mothers' pensions, just when it is most needed. The problem of the extension of the functions of government is then in part a problem of paying for them, which leads inevitably to the question of how this burden shall be distributed among the citizens.

The tax burden was only 6.6 percent of the national income in 1913, or about one-half the proportion it was in 1930. How has this increase come about? One-fourth of it was due to the war; one-fifth of the increase went to education; about one-sixth was for good roads and about one-
seventh was for the various services of the municipalities, which are peculiar to great aggregations of people living in localities of high density. It is an interesting question what, if any, of these expenditures which doubled the tax burden we should have been willing to forego. The problem of the amount of taxes is the problem of what we want to spend our money for. The percentage of waste that can be eliminated, as the percentage of increase in efficiency, has not been measured.

The question of who pays the tax ranks with the question of how much tax should be paid. Even when some such principle as payment according to ability is adopted, the measure of ability remains to be determined, as well as the problem of administering the tax. The most noteworthy trend has been the rise of the income tax from 37 million dollars in 1913 to 2,700 million dollars in 1930, and of the inheritance and estate taxes from 26 million to 250 million, the rise of the gasoline tax and decline of the liquor tax. The general property tax still continues to yield nearly 50 per cent of the taxes raised, despite its almost universal condemnation as a tax once adapted to our rural life but which has survived into an era to which it is ill fitted. No doubt the struggle over who shall pay what proportion of the tax will be raised anew in every fiscal crisis of the future. If the government's functions should grow very large, this issue will become one of almost overshadowing importance.

Large possibilities of economy are found in the elimination of duplicating or outgrown units and agencies of government, in the adoption of sounder practices in purchasing and other governmental procedures, in the abolition of the graft and spoils system, in the better organization of personnel, and in general in the establishment of efficient public administration. These roads to economy are well understood and may readily be used whenever the will to do so is sufficiently developed. It must be recognized, however, that there are many fixed charges which are not readily reducible and contractual payments which must be met, and that extraordinary expenditures are necessitated in periods of grave unemployment. Less readily measurable, but equally important savings may be made for the community in such items as the reduction of the law's delay in the administration of civil justice, in the prevention of criminality and racketeering, in sounder policies of dealing with the defective and the delinquent, and still more broadly in larger planning and keener foresight in dealing with the terrible losses arising from the tragic tension of war and economic depression, with their heavy burdens on the taxpayer. In this range of opportunities material economies may be made without crippling essential public services, and without overburdening the community from which governmental contributions must come.
Representation.—The question of who pays the taxes leads naturally to the question, whom does the government represent. The theory of democracy is that the people own the government, but practice does not always follow theory. The provisions for representation were worked out long ago when distances were great and there were marked variations by locality and region. Now localities are marked rather by differences among their many groups and distances are short. Occupations are extremely varied; wealth is very unequally distributed; during all these changes the pattern of representation has remained the same. This lag has been partly compensated by the development of quick means of determining public opinion and by the propaganda activities of these highly organized groups. The slight decline in the percentages voting and the apparent increase in activities of pressure groups suggests a changing nature of representation. The problem of representation is the question of special interests in relation to general control—the very difficulty which gave birth to the modern representative government. This problem of representation of interests is seen in extreme form in the monarchies of the past and in the communistic state of today. It will also be a problem in the approaching closer relationships of business and government.

Laws.—The government is also the supreme law-making body of society, although rules of conduct are set forth by many other social agencies. New inventions like the radio, the airplane and the automobile call for laws as do new social conditions, such as child labor in factories, chain stores or trusts. Laws in general lag. No doubt unwise laws are passed, but in cases where the laws which have been passed are admittedly wise, the delay and effort to bring them to passage have been great, as in the case of child labor legislation. After legislation has been passed it must be interpreted in the light of the Constitution and given judicial review where the social philosophies of judges become a factor in determining legality. On the one hand is the problem of safeguarding the body of the law; on the other is the problem of bringing laws up to date with changing social conditions. The conflict is fundamental. By very definition a rule must be definite and reasonably fixed, otherwise it offers no satisfactory guidance. Yet these rules should be changed sufficiently often to meet the new situations in a changing society. Laws tend to appeal to the authority of the past but in a period of great change that authority may not offer any specific guidance.

The problem of advancement of the judicial administration remains pressing. The necessary flexibility in our legal system in order to supply the needs of a changing society is dependent on personnel and the training and philosophies of that personnel. The lower forms of collusion between the courts and crime, the intermediate types of job brokerage in judge-
ships and the more refined manifestations of judicial remissness are a challenge to our constructive statesmanship and at times an occasion of profound despair. Selection of enlightened and liberal judges is one effective approach. The awakening sense of responsibility on the part of the bar, the organizations of judicial councils and the broader social philosophy of the courts are indications of change. Modern legal education and socio-legal research are a leavening influence working toward the greatly desired adaptability.

Some of the problems of jurisprudence mentioned above are being worked out by the extension of another social invention, the administrative tribunal, which often combines administrative, legislative and judicial functions in one body. Thus a health board adopts rules, renders decisions and carries out orders. Administrative tribunals have had a remarkable development within the 20th century and are an adaptation to the changing conditions. Their success argues for their further development, but they offer a solution for only a phase of the lag of the law.

The immediate problem may be stated broadly as that of adapting an antiquated judicial system to rapidly changing urban industrial conditions, to new concepts and practices in the world of business and labor. A wide range of questions in the field of judicial organization, procedure and public relations must be covered along with the development of scientific methods and the adoption of a broader social spirit.

It may be anticipated that the vigorous protests of leaders of the bar will be heeded in the next period of our growth, and that the spirit and procedure of the judicial branch of our political system will undergo changes of a substantial and helpful nature. In this the quickened spirit of responsibility on the part of the bar and of the judges is likely to play an important role, while the scientific spirit now beginning to assert itself in centers of legal training and research will be widely influential.

Changes in the Structure of Government.—The authority of government in the United States has traditionally been weakened by the division of powers between the national government and the states, between states and localities, and further by the three-fold division of powers between legislature, executive and judiciary.

The first of these divisions was shattered by the events of the Civil War and has been progressively modified since that time, never more actively than during recent years. There is reason to anticipate the progressive development of centralization in the face of the rise of inter-state commerce under modern economic conditions, the increasing importance of foreign trade, finance and diplomacy, and the sweeping changes in modes of communication.

At the same time centralization in state government is growing, especially with respect to rural governments, and bids fair to advance
still farther. So rapidly is this movement progressing that the preserva-
tion of an adequate degree of local self-government is a matter of great
concern, and one of the large problems of the future is the determination
of the desirable primary unit of government.

In the meantime a new competitor for power has arisen in the form of
the metropolitan region, which now looms large both in numbers and in
wealth. Ninety-six such regions contain nearly half of the population of the
United States and show rates of growth far above that of other sections
of the country. This trend if projected for another generation would place
the center of political power in the larger cities. In view of the present
economic situation, there is some question whether this trend will be as
strongly marked in the near future, but in any case the upward thrust of
the urban center is one of the most striking features of the period under
consideration, and gives rise to innumerable problems of politics and
government. How shall the new metropolitan complex be drawn together
in some less chaotic form of governmental framework including the city
and its satellites, especially when they spread over more than one county
or state; what shall be their relation to the state and national govern-
ments; what shall be the principle of distribution of taxation and political
authority; shall the cities be given home rule, or strictly regulated by
states, or set up as independent commonwealths as has been suggested in
recent years; or shall some other method be found as a result of the present
day groping toward a way out of an admittedly impossible situation?

Broadly speaking, notable advances have been made in the govern-
ment of urban communities during the period just past, where indeed
both the brightest and the darkest spots in American public life were
evident. If freebooting has been highly organized in some cities, there has
also been an impressive development of organized efficiency. The atten-
tion given to public administration under the influence of such move-
ments as the city manager plan has not been surpassed anywhere in our
governmental system and gives promise of important advance.

Rural government, while less spectacularly corrupt, has been in many
cases incompetent, especially under the disrupting influence of the new
distribution of wealth and population and the new methods of transporta-
tion. At the end of this period, however, there has appeared intense in-
terest in the reorganization of these outworn units and the reconstruc-
tion of new types of rural or rural-urban government, with striking experi-
ments in rebuilding and strong prospects for an advance which ten years
ago would have been regarded as utopian. Transfer of functions, consoli-
dation, coordination and creation of new units are methods already under
way in the effort to establish a more practical form of local government.

The power to act within the three-fold separation of governmental
authorities likewise shows the emergence of centralized power, and the
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forecast indicates still further development toward the central focus of authority.

The executive has gained in prestige and power in the national and state governments, and in some cities where the power of the mayor has been expanded. Increased veto power, larger appointing power, facility in popular appeal, and growth of administrative functions have all tended to exalt the position of the executive. The familiarity of the public with the "strong man" with large authority in business and social relations has also helped in this movement.

The almost omnipotent legislative authority set up at the outset of our national development has steadily lost to the courts on the one side and the executive on the other; and this process has gone on more rapidly than ever during recent years. The only exception of note is the rise of the city council in the city manager cities and the board in school affairs.

Yet the maxim, "It is the function of many to deliberate and of one to act," contains the essence of much past experience and wisdom of government, under a variety of different systems, and it seems probable that representative bodies will occupy places of power and distinction in the organization of society, under any development of executive power or administrative authority.

Democracy.—Our country is cited as the great exemplar of democracy. Do the changing social conditions make the adaptation of democracy a problem? We note lines, which if projected into the future would lead in opposite directions, one away from democratic control and the other toward a more perfect realization of its principles.

From one point of view our observations show great cities from time to time in the grip of organized and defiant criminals, rural districts often forlornly governed, masses of persons losing confidence in the ballot and elections, and regarding liberty, equality, and democracy as mocking catchwords twisted into legalistic defenses of special interests. The swift concentration of vast economic power in a period of mergers, and the inability of the government to regulate or control these combinations, or in many cases to resist their corrupting influences, are not encouraging in their sinister implications; the organized labor movement seems declining in numbers and vigor. The difficulty of providing a steady stream of high competence in political leadership and administration has contributed to the difficulty of our problem, while the expensive control of masses of people through the arts of organized publicity and propaganda presents its dubious aspects to the observer of democratic trends. Many have been led to conclude reluctantly that the emergence of some recognized and avowed form of plutocratic dictatorship is not far away.

But in considering the movement of American democracy and its collective competence, it is important not to lose sight of specific and basic
tendencies revealed in this report and bearing directly on the future of our institutions.

One of these is the habituation of the American people to large scale organization and planning in industry, keenly appreciated by the Soviets; another is the American tendency to make relatively prompt use of the latest fashions in science and technology; the lack of sharply defined and permanent classes or castes obstructing either economic or governmental change, and finally, the wide prevalence of democratic attitudes and practices in social life.

Our experts show in great detail the wholly unparalleled democratization of education in recent years; the unexampled democratization of forms of transportation, long an index of aristocracy; the democratization of recreation through the moving pictures, the radio, the park systems; the democratization and standardization of dress and fashion, often obliterating long standing marks of class. If we care to look upon democracy as a way of life, these fundamental facts are to be considered along with the corruption and ineffectiveness of much of our governmental machinery.

An interpretation which seems to have a margin of advantage is that of the prospect of a continuance of the democratic regime, with higher standards of achievement, with a more highly unified and stronger government, with sounder types of civic training, with a broader social program and a sharper edged purpose to diffuse more promptly and widely the gains of our civilization, with control over social and economic forces better adapted to the special social tensions of the time, with less lag between social change and governmental adaptation and with more pre-vision and contriving spirit.

Relations with Other Nations.—Recent trends show the United States alternating between isolation and independence, between sharply marked economic nationalism and notable international initiative in cooperation, moving in a highly unstable and zigzag course. Immigration restrictions and high tariffs on the one hand, and a World Court, a League of Nations, and outlawry of war on the other. Some signs point in the direction of independence and imperialism of a new Roman type, reaching out aggressively for more land or wider markets under political auspices; others toward amiable cooperation in the most highly developed forms of world order. It is not unreasonable to anticipate that these opposing trends will continue to alternate sharply in their control over American policy. In any case there can be little doubt that the trend will be in the future as in recent years in the direction of more intimate relations through developing modes of intercommunication and through economic interchange and on the whole toward an increasing number of international contacts; and this, whether the future pattern of action is predominantly imperialistic or cooperative in form and spirit.
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Whether the United States is growing more or less militaristic must also be judged in the dubious light of conflicting theories and conduct. Traditionally insisting upon the supremacy of the civil over the military power, we have held to that doctrine and have played an important part in all movements for the curbing or abolition of war, including participation in a "war to end war." On the other hand, our interest in foreign markets and loans has greatly increased, and the need of a strong hand in economic diplomacy has been emphasized. Our military and naval establishments have grown, and systems of military training have been expanded. Our soldiers have fought in Asia, Europe and Latin America. Powerful propagandas both for militarism and pacifism have been set in motion, and their clashes have been frequent but inconclusive. The outlawry of war and the strong war establishment have doubtless been accommodated by many minds as a practical version of Theodore Roosevelt's dictum to "speak softly and carry a big stick." The trends in short are conflicting and confusing, with the problems of war remaining as imminent and as grave as in the past.

Part 4.—Policy and Problems

A Formal Summary of Principles.—What we conceive to be the major problems revealed by our studies of social trends have now been passed in review. By way of summary, a list of these problems in the order of their social importance may be expected. But to draw up such a list requires agreement upon some criterion of social importance, as well as sharp definitions of problems which assume varying forms and meanings as they are viewed from different angles. A summary perhaps more serviceable to future thinking, although less directive of immediate action, can be provided by pointing out in abstract form the general characteristics which social problems have in common.

The fundamental principles are that social problems are products of change, and that social changes are interrelated. Hence, a change in one part of the social structure will affect other parts connected with it. But the effects do not always follow immediately—an induced change may lag years behind the original precipitating change. These varying delays among correlated changes often mean maladjustment. They may arise from vested interests resisting change in self-defense, from the difficulty with which men readjust familiar ideas or ideals, or from various obstacles which obstruct the transmission of impulses from man to man. These interrelated changes which are going forward in such bewildering variety and at such varying speeds threaten grave dangers with one hand, while with the other hand they hold out the promise of further betterment to mankind. The objective of any conscious control over the process is to secure a better adjustment between inherited nature and culture. The
means of social control is social discovery and the wider adoption of new knowledge.

The Need for Social Thinking.—On the principles just stated in bald form it is inevitable that the descriptions of social trends in the following chapters run forward to the series of questions raised but not answered in this summary review of results. If that were not the case, the descriptions would fall lamentably short of thoroughness. The Committee is in the same position as its collaborators. In formulating this general sketch of the complicated social trends which are remoulding American life, it finds its analytic description leading ever and again to a statement of problems which can be solved only by further scientific discoveries and practical inventions.

To make the discoveries which are called for, to design, perfect and apply the inventions is a task which would be far beyond the powers of the Committee and its collaborators, even if we had not been excused in advance from making such an effort. If one considers the enormous mass of detailed work required to achieve the recent decline in American death rates, or to make aviation possible, or to increase per capita production in farming, one realizes that the job of solving the social problems here outlined is a job for cumulative thinking by many minds over years to come. Discovery and invention are themselves social processes made up of countless individual achievements. Nothing short of the combined intelligence of the nation can cope with the predicaments here mentioned. Nor would a magnificent effort which successfully solved all the problems pending today suffice—if such an effort can be imagined. For, if we are right in our conception of the character of cultural trends, the successful solutions would take the form of inventions which would alter our ways of doing things, and thereby produce new difficulties of endless variety. Then a fresh series of efforts to invent solutions for social problems would be needed.

Implementing Public Policy.—In beginning this report, the Committee stated that the major emerging problem is that of closer coordination and more effective integration of the swiftly changing elements in American social life. What are the prerequisites of a successful, long time constructive integration of social effort?

Indispensable among these are the following:

Willingness and determination to undertake important integral changes in the reorganization of social life, including the economic and the political orders, rather than the pursuance of a policy of drift.

Recognition of the role which science must play in such a reorganization of life.

Continuing recognition of the intimate interrelationship between changing scientific techniques, varying social interests and institutions, modes of social education and action and broad social purposes.
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Specific ways and means of procedure for continuing research and for the formulation of concrete policies as well as for the successful administration of the lines of action indicated.

If we look at the ways in which the continuing integration of social intelligence may advance, there are many roads leading forward.

1. We may reasonably anticipate a considerable body of constructive social thinking in the near future developing in the minds of individual students of social problems, pioneers in social discovery or statesmen in social science. More widely in the future than in the immediate past we may expect the growth of thinking about the meaning of the great masses of social data which we have become so expert and generous in assembling. Is it possible that there is radical inconsistency between the industrious and precise collection of material and the effort to interpret and utilize what has been found out? Or the contrary, is there a compelling urgency that they be brought together both for the sake of science and of society? We may look for important contributions from individual thinkers with a point of view from which the focusing of social problems and their constructive integration is not excluded, but emphasized. Some of these efforts may be widely divergent in conclusions from others, but they should have in common the interrelation of social problems in closer meshed patterns than heretofore. It is also to be anticipated that the initiative in a wide variety of emerging problems will be assumed by research centers, groups, bureaus, institutes and foundations, devoted in some instances to more specialized and in other to more general treatment of social data. A considerable amount of such work is now being done in universities and independent research institutes, and the results are seen in the increasing penetration of social technology into public welfare work, public health, education, social work and the courts. While some of these inquiries may be fragmentary and often unrelated or inadequately related, there should nevertheless be important findings and inventions of great value to society. It might be said, indeed, that while the most recent phase of American development in the social field has been the recognition of the necessity of fact finding agencies and equipment, and their actual establishment, the next phase of advance may find more emphasis upon interpretation and synthesis than the last.

2. Nor can we fail to observe the interest of government itself, national, state and local alike, in the technical problems of social research and of prevision and planning. A very large amount of planning has already been undertaken, notably by cities and by the federal government, and to a less extent by states and counties. There is reason to anticipate that this form of organization of social intelligence and policy will develop in the future with the increasing complexity of social life

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and the realization of the significance of social interrelationship. The monumental work of the census alone is an adequate indication of the interest of the organized government in the collection of social data, and there are many other illustrations of the deep concern of the government with the data upon which national policies should rest. The fact-finding work of the executive branch of the government has often been more systematically directed than that of the legislators and the courts, but there are striking examples of the utility of inquiries in all divisions and on all levels of government, in legislative inquiries (especially the interim inquiries) and in judicial proceedings as well as in the undertakings of the more recently developed judicial councils. It is not beyond the bounds of possibility that in dealing with some forms of problems, joint inquiry instituted under the auspices of two or more departments of government might prove to be an effective procedure, in that partisanship and proprietorship in findings would to some extent be minimized.

3. The Social Science Research Council, representative of seven scientific societies, and devoted to the consideration of research in the social field, may prove an instrumentality of great value in the broader view of the complex social problems, in the integration of social knowledge, in the initiative toward social planning on a high level. Important advances have already been made in agricultural research, in industrial and international relations, and striking possibilities lie ahead in the direction of linking together social problems likely otherwise to be left unrelated.

It is within the bounds of possibility that this Council might care to take the initiative in setting up other machinery for the consideration of ad hoc problems, and for more and continuous generalized consideration of broader aspects of social integration and planning. It would further be possible for this Council to organize sponsoring groups in which there might be brought together the technical fact finding, the interpretation of data in a broader sense, and the practical judgment of those holding the reins of authority in government, industry and society.

4. Out of these methods of approach it is not impossible that there might in time emerge a National Advisory Council, including scientific, educational, governmental, economic (industrial, agricultural and labor) points of contact, or other appropriate elements, able to contribute to the consideration of the basic social problems of the nation. Such an agency might consider some fundamental questions of the social order, economic, governmental, educational, technical, cultural, always in their inter-relation, and in the light of the trends and possibilities of modern science.

In any case, and whatever the approach, it is clear that the type of planning now most urgently required is neither economic planning alone, nor governmental planning alone. The new synthesis must include the
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scientific, the educational, as well as the economic (including here the industrial and the agricultural) and also the governmental. All these factors are inextricably intertwined in modern life, and it is impossible to make rapid progress under present conditions without drawing them all together.

The Committee does not wish to exaggerate the role of intelligence in social direction, or to underestimate the important parts played by tradition, habit, unintelligence, inertia, indifference, emotions or the raw will to power in various forms. These obvious factors cannot escape observation, and at times they leave only a hopeless resignation to drift with fate. Social action, however, is the resultant of many forces among which in an age of science and education, conscious intelligence may certainly be reckoned as one.

Furthermore, it is important not to overstate the aspect either of integration or concentration in control, or of governmentalism. The unity here presented as essential to rounded social development may be achieved partly within and through the government and partly within other institutions and through other than governmental agencies. In some phases of behavior there are very intimate relationships between science, education, government, industry and culture; and in others the connection may be farther in the background. Some of the centers of integration may be local, others may be national, and still others international in their point of reference. What is here outlined is a way of approach to social problems, with the emphasis on a method rather than on a set of mechanisms. More important than any special type of institution is the attainment of a situation in which economic, governmental, moral and cultural arrangements should not lag too far behind the advance of basic changes.

The alternative to constructive social initiative may conceivably be a prolongation of a policy of drift and some readjustment as time goes on. More definite alternatives, however, are urged by dictatorial systems in which the factors of force and violence may loom large. In such cases the basic decisions are frankly imposed by power groups, and violence may subordinate technical intelligence in social guidance.

Unless there can be a more impressive integration of social skills and fusing of social purposes than is revealed by recent trends, there can be no assurance that these alternatives with their accompaniments of violent revolution, dark periods of serious repression of libertarian and democratic forms, the proscription and loss of many useful elements in the present productive system, can be averted.

Fully realizing its mission, the Committee does not wish to assume an attitude of alarmist irresponsibility, but on the other hand it would be highly negligent to gloss over the stark and bitter realities of the social situation, and to ignore the imminent perils in further advance of our
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heavy technical machinery over crumbling roads and shaking bridges. There are times when silence is not neutrality, but assent.

Finally, the Committee is not unmindful of the fact that there are important elements in human life not easily stated in terms of efficiency, mechanization, institutions, rates of change or adaptations to change. The immense structure of human culture exists to serve human needs and values not always readily measurable, to promote and expand human happiness, to enable men to live more richly and abundantly. It is a means, not an end in itself. Men cling to ideas, ideals, institutions, blindly perhaps even when outworn, waiting until they are modified and given a new meaning and a new mode of expression more adequate to the realization of the cherished human values. The new tools and the new technique are not readily accepted; they are indeed suspected and resisted until they are reset in a framework of ideas, of emotional and personality values as attractive as those which they replace. So the family, religion, the economic order, the political system, resist the process of change, holding to the older and more familiar symbols, vibrant with the intimacy of life's experience and tenaciously interwoven with the innermost impulses of human action.

The clarification of human values and their reformulation in order to give expression to them in terms of today's life and opportunities is a major task of social thinking. The progressive confusion created in men's minds by the bewildering sweep of events revealed in our recent social trends must find its counterpart in the progressive clarification of men's thinking and feeling, in their reorientation to the meaning of the new trends.

In the formulation of these new and emergent values, in the construction of the new symbols to thrill men's souls, in the contrivance of the new institutions and adaptations useful in the fulfillment of the new aspirations, we trust that this review of recent social trends may prove of value to the American public. We were not commissioned to lead the people into some new land of promise, but to retrace our recent wanderings, to indicate and interpret our ways and rates of change, to provide maps of progress, make observations of danger zones, point out hopeful roads of advance, helpful in finding a more intelligent course in the next phase of our progress. Our information has been laboriously gathered, our interpretations made with every effort toward accuracy and impartiality, our forecasts tentative and alternative rather than dogmatic in form and spirit, and we trust that our endeavors may contribute to the readier growth of the new ideals, ideas and emotional values of the next period, as well as the mechanisms, institutions, skills, techniques and ways of life through which these values will be expressed and fulfilled in the years that are to come.

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VOLUME I
PREFATORY NOTE

As the basis for its report of findings the President's Research Committee on Social Trends presents in the following summary chapters prepared by its collaborators and in a series of monographs separately published the scientific results of its researches.

The chapters and monographs are prepared with the primary purpose of revealing major social questions. They present records, not opinions; such substantial stuff as may serve as a basis for social action, rather than recommendations as to the form which action should take.

As a scientific undertaking the researches in general have been limited to fields where records are available. In preparing certain of the chapters, notably that on the arts, continuous records proved very scarce; for some of the chapters, such as that on social attitudes and interests, it was necessary to make extensive collections of data not previously recorded; for others, especially those on population and the utilization of natural wealth, the abundance of data in one or more parts of the field led rather to problems of exclusion and selection.

The scope of the researches was made as broad as feasible not only in order to yield a picture of changing society in the United States, but also to provide a framework within which emerging problems might be seen in their due relations. Other studies, such as those of the presidential Committee on Recent Economic Changes and the various White House conferences have been drawn upon, not duplicated, and the schedule of investigation and publications was so arranged as to enable the collaborators to use the results of the decennial census of 1930 and of various other surveys, governmental and private which were in progress during the life of the work.

The investigators were recruited with the advice of officers of the Social Science Research Council, of universities and other scientific institutions. Frequent progress reports were made by them and staff conferences were held from time to time as the researches progressed. Preliminary drafts of chapters were submitted for criticism as to accuracy and freedom from bias. In published form the chapters represent not only a treatment of the factors of social change, but an attempt to coordinate and integrate the evidence into a useful whole.

Certain topics are excluded because for one reason or another they could not be fitted into the Committee's scheme. The current business depression is not explained. Much of the basic materials upon economic
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changes have been treated in recent publications. Little is said about the fateful issue of war and peace, although the financial costs of past wars are set out in the chapters on the functions of government and on taxation. Though foreign developments—intellectual, political, economic and social—have exercised a many sided influence upon American trends since 1900, they are mentioned only here and there. There is no chapter on the growth of scientific knowledge in general, or of social science and social research in particular.

Quite apart from these major omissions every subject to which a chapter is devoted has necessarily been treated summarily. In thirteen cases the chapters are supplemented by the publication of monographs, to which those who wish a fuller treatment of that subject may turn.

This emphasis upon changing culture points to another limitation so general in character that it may be overlooked. The primary concern of these studies has been with social trends. The changes going on in a culture are the matters which require attention, because they present novel situations to which the people of a nation must adjust themselves. Yet a work dealing primarily with social trends may give an exaggerated impression of topsy-turviness in current life. Here and there chapters redress the balance by calling attention to features of culture which maintain themselves with little modification among the welter of new phenomena.

Another pervasive limitation of the following chapters is that the authors and collaborators, in their researches, have not been free, as is the everyday citizen, to pronounce upon social ills and to prescribe remedies. The committee’s terms of appointment by the President contemplated a division of labor in the task of adapting social organization more closely to the nation’s changing needs. To the committee and its co-workers falls the technical task of finding as accurately as possible what significant changes have taken place in American life since the beginning of the century.

To refrain from expressions of approval and disapproval, not to make propaganda for any cause, is difficult for the student of social changes, for as private citizens, the Committee’s collaborators have their individual scales of value, and some are eager advocates of certain reforms. But, as sharers in this enterprise, one and all have striven faithfully to discover what is, and to report their findings uncolored by their personal likes and dislikes, or by their hopes and fears of what may be. In so far as this effort has succeeded—and no human being can be quite impartial, or is equally alert to all values—the findings can be used by men and women of widely divergent opinions. Knowledge of social trends, such as the Committee has aimed to present, is no substitute for social action; but such knowledge is an indispensable basis for intelligent
action. Hence the Committee hopes that its work will prove useful to many groups engaged in practical efforts to promote the general welfare of the nation. Objective research of this type will be justified in the long run only as this division of labor heightens a community’s efficiency in making social readjustments.

The contributors who have made the researches set forth in these chapters and the monographs to follow have been bound rather strictly by the limitations of scientific methods. If they have departed from this procedure, in presenting problems or trying to look into the future, it will be clear to the reader that they are giving their own opinions regarding the significance of their findings.
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CHAPTER I

THE POPULATION OF THE NATION

BY WARREN S. THOMPSON AND P. K. WHELPTON

HUMAN beings are the primary agency of social change. The rates at which the population grows, its geographic distribution and the proportions in which it is divided between farms and cities, the racial and national stocks from which it comes, its age trends, sex ratios and marital condition—all of these help to determine the rapidity and the direction of past and future changes. In surveying recent social changes in the United States it is appropriate to begin with these basic factors of births, deaths and numbers living. With this definite knowledge in mind, we can better understand the changes in the ways that Americans make their livings, the values which appeal to them, their criticisms of themselves, the fears and hopes they entertain about the future.

I. POPULATION GROWTH

The growth of population in the United States has been one of the outstanding phenomena of world history for more than one hundred and fifty years. From about 2,500,000 in 1776, the population has increased to 122,775,046 in 1930, almost fifty-fold in little more than a century and a half. This chapter is concerned primarily with the period since 1900, during which the population gained about 47,000,000 or nearly two-thirds as much as it did in the century and a quarter preceding 1900.

The 1930 census showed a growth of 17,064,426 since 1920, which exceeded by more than a million the largest increase during any preceding decade and which was equal to the total population in 1840. It should be noted, however, that the decennial rate of increase since 1910 has been considerably lower than that from 1900 to 1910 or from 1890 to 1900, which last was, in turn, below that of any previous decade. Indeed the rate of increase of 15.7 percent from 1920 to 1930 barely exceeded that of 15.4 percent from 1910 to 1920.\(^2\) (See Figure 1.)

1 The monograph in this series entitled Population Trends in the United States deals in greater detail with a longer period.

2 These rates have been adjusted to equalize the intercensal interval of 123 months in 1920–1930 and the interval of 116\(\frac{1}{2}\) months in 1910–1920.
Although the largest increase in population in any decade occurred between 1920 and 1930, the trend in annual growth was downward. (See Figure 2 which is based on section V.) Before the World War, the year of largest increase was 1913 when about 2,111,000 persons were added to the population. An abrupt decline then took place until the lowest point was reached in 1918, when the influenza pandemic and war time conditions restricted population growth to about 572,000. During the first few post-war years there was an equally rapid rise which reached a peak in 1923 with an increase of about 2,119,000, slightly more than

![Population Chart](image)

Fig. 1.—Population of the United States, and amount and rate of increase by decades, 1790–1980.\textsuperscript{a}

\textsuperscript{a} Estimated for 1940 and 1950 according to assumptions in section V.

*in the highest pre-war year. Since 1923 there has been another marked decline, each year showing a smaller gain than the one preceding, until 1931 when the increase was only about 875,000 persons. Barring the abnormal year 1918, this is well below the gain during any other year since 1910 and during almost every year since 1870.

It seems likely that the growth of population will be small in the future. Continuation of recent trends would mean that the population probably will be between 132,500,000 and 134,000,000 in 1940, between 140,500,000 and 145,000,000 in 1950 and between 145,000,000 and 170,000,000 in 1980. (Figure 1 and pp. 48–49.) This will mean an increase of 9,725,000 to 11,225,000 in the decade from 1930–1940 and between
8,000,000 and 11,000,000 from 1940 to 1950 compared with an actual increase of 17,064,426 from 1920 to 1930.

Growth by Race and Nativity.—What has been said regarding the rate of growth of the total population describes that of the white race, though slightly understating it since the percentage increase of whites has for many decades been larger than that of the total population. From 1900 to 1920 the rate of growth of the white population was more than twice as rapid as that of the Negro (an unusually large differential), but from 1920 to 1930 the Negroes nearly kept pace with the whites. (Figure 3.) Comparisons of recent decennial rates for whites and Negroes are somewhat affected by the apparently less accurate count of Negroes in 1920 than in 1910 or 1930. But even after a liberal allowance for such a discrepancy, the Negro rate of growth during 1920–1930 is higher than during the two preceding decades, while that of the whites is the lowest on record. In the decades prior to 1910, the relative increase of native whites was sometimes well above that of foreign born whites and sometimes well below. Since 1910, however, the differential in favor of native

\[ \text{Fig. 2.—Population of the United States—amount and rate of annual increase, } 1910-1931. \]

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whites has remained large, a situation which is likely to continue. (Figure 3.)

As far as actual numbers are concerned, the white gain of 14,743,833 during 1920–1930 was second only to that during 1900–1910, while the Negro gain of 1,428,012 was the largest on record. Both whites and Negroes, however, had a downward trend in annual growth during the last decade, that of whites falling the more rapidly. (Figure 4.) The largest addition to the white population amounted to about 1,958,000

![Diagram](image-url)

**Fig. 3.**—Decennial rate of population increase by race and nativity, 1900–1950.

- Estimated for 1940 and 1950 according to assumptions in section V.

in 1923. Since then there has been an unbroken decline in annual increase to about 785,000 in 1931. The largest Negro growth was about 156,000 in 1921, with a steady decrease during the following years to about 86,000 in 1931. These declines amount to 60 percent in eight years for whites and 45 percent in ten years for Negroes.

Foreign born whites increased from 10,116,068 in 1900 to 13,135,845 in 1910, but have since shown almost no gain. In the years since 1913 there have been only two, 1920 and 1923, when net immigration was

4 For further discussion, see Chap. XI.

5 In the Fifteenth Census most Mexicans were classed in the Mexican race, hence in this chapter the figures for the decennial growth of whites (both native and foreign born) exclude most Mexicans. In "Birth Statistics" and "Mortality Statistics" the census bureau does not separate Mexican births and deaths from white, hence the figures for annual growth of whites include Mexicans.
sufficiently large to offset the deaths of foreign born whites and leave much of a surplus for increase. During the other years from the close of the World War up to 1926, this group about broke even. In 1927 an excess of deaths over net immigrants was recorded and the figure rose to more than 360,000 in 1931. If this condition continues it will rapidly reduce the number of foreign born whites in the population.

The growth in the total white population has thus come increasingly from the native whites which include the native born children of white immigrants. The years of largest growth for the native whites were 1921 and 1924, over 1,600,000 persons being added in each year. Although there has been a downward trend since 1924, it has been less rapid than that of Negroes. The native white increase in 1931 was about 1,140,000, which is more than 30 percent under the peak year of 1921, compared with a drop of 45 percent for Negroes.

Mexicans, Indians, Japanese and other colored peoples increased at a more rapid rate than either whites or Negroes from 1920 to 1930. The numbers involved were small, however, except the increase of the Mexicans from about 700,000 to more than 1,400,000. It is the Mexican group which is mainly responsible for the fact that the rate of growth of the colored races as a whole has been slightly higher than that of the

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Fig. 4.—Amount of annual population increase, by race and nativity, 1920–1931.\(^a\)

\(^a\) Mexicans are included with whites because births to white women and to Mexican women are not separated in birth statistics.
white race during 1920–1930. This is the first decade since 1800–1810 in which the differential was not in favor of the white race.

In spite of these differing trends in rate of growth during recent decades, the changes in the relative importance of each group have been small. The proportion of native whites in the population increased from 74.2 percent in 1910 to 77.8 percent in 1930, a little more than offsetting the decrease from 14.3 percent to 10.9 percent in the proportion of foreign born whites. Negroes constituted 9.7 percent of the population in 1930 compared with 10.7 percent in 1910, continuing the downward trend which has lasted over a century. The proportion of "other colored" rose from 0.8 percent to 1.7 percent during the two decades or nearly as much as the proportion of Negroes declined.

In the future it seems probable that native whites will increase in numbers more rapidly than Negroes and that foreign born whites will decrease. (Figure 3.) According to the assumptions in section V, a population of 143,000,000 in 1950 is likely to contain about 116,000,000 native whites, 10,500,000 foreign whites, and 14,000,000 Negroes. This represents about the same proportion of whites as in 1930, but a considerably higher proportion of native whites.

Growth of Population by Regions.—From 1920 to 1930, as in previous periods, population increase varied greatly between the different states. (Figure 5.) California and Florida grew considerably faster than other states, the 1920–1930 increase being 66 percent in California and 52 percent in Florida. At the other extreme, Montana lost in population during the decade and Georgia was practically stationary.

Of the nine states which gained over 20 percent in population between 1920 and 1930, two were states where climate was an outstanding causal factor (California and Florida) and two were states where it was important (Arizona and Oregon); four were states which had a large industrial or commercial development (Michigan, New Jersey, North Carolina and New York); and the remaining one was Texas where there was a marked expansion of cotton farming in former ranch country and a rapid development in the oil industry. The eighteen states in which the rate of growth was less than 10 percent were Delaware, three New England states (Maine, New Hampshire and Vermont), and fourteen states in which agriculture was the important occupation (Virginia, South Carolina, Georgia, Kentucky, Arkansas, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas, Montana and Idaho). Delaware was the only semi-industrial state outside of New England which failed to increase by as much as 10 percent.

The slow upward trend of population in most agricultural states since 1920 is quite different from the rapid growth which occurred in many of them from 1900 to 1920. In the earlier period land settlement was
Fig. 5.—Rate of increase by states of the total population, 1920-1930.
perhaps the most important cause of a high rate of increase, North Dakota, South Dakota, Oklahoma, Texas, the mountain and the Pacific states all gaining at a very rapid rate. In the rest of the country, only Florida with its warm winters, Michigan with its growing automobile industry, New Jersey and Connecticut with their New York City overflow and West Virginia with its coal mining, gained with anything like the same rapidity as the newer agricultural states. On the other hand, older agricultural states and those lacking a rapid industrial development have had little increase since 1900. In this group are Maine, New Hampshire, Vermont, Indiana, Iowa, Missouri, Nebraska, Kansas, Delaware, Virginia, South Carolina, Georgia, Kentucky and Tennessee.

Rural and Urban Growth.⁶—Not only has the increase of population been concentrated in a few states during recent years but it has also been concentrated largely in the urban centers of these states rather than in their rural areas. The urban population was larger by more than 14,600,000 in 1930 than in 1920, as Figure 6 indicates, while the rural non-farm population was larger by only 3,600,000 and the rural-farm population was smaller by at least 1,200,000.⁷ A similar differential existed from 1910 to 1920 but additions to the rural population were relatively larger before 1910. The farm population was not enumerated separately before 1920 but it probably was larger in 1910 than now, since the entire rural population increased only a little over 4,000,000 from 1910 to 1930,

⁶ Urban includes all incorporated places of 2,500 and over and certain unincorporated “towns” in New England and New Jersey. See also Chap. IX.
⁷ These comparisons are based on census figures and are only approximate. The census definition of farm population was more inclusive theoretically in 1920 than in 1930, which would exaggerate the decline in farm population. The change in date of enumeration from January 1 in 1920 to April 1 in 1930 would have a contrary effect.
whereas the rural non-farm group alone increased about 3,600,000 from 1920 to 1930. As a result of this large urban concentration, the rural population made up less than 44 percent of the total population in 1930 compared with 60 percent in 1900.

That the farm population decreased from 1920 to 1930 while the urban population increased is due primarily to the migration from farm to city. Farm birth rates have long been higher than city birth rates and farm death rates lower than city death rates, making the rate of natural increase of population correspondingly larger. But the net movement of persons from farms to cities was larger than the excess of births over deaths from 1920 to 1930; hence the farm population decreased in spite of its high birth rates and low death rates.

The chief reason for the large migration from farm to city during the last decade was the improvement of farm implements and practices. This brought about technological unemployment on farms analogous to that in the cities. The resulting maladjustment of the labor force has been more difficult to overcome on the farms. In the first place, it is easier to increase the per capita consumption of factory products than to increase the consumption of the foods which make up the bulk of farm products. Relatively more of the technologically unemployed can be given work in the former case when production increases. Secondly, the workers released by one city industry frequently find employment in a new and rapidly growing industry (radio being an excellent example), a process which has almost no counterpart on farms.

With little opportunity for an increased demand for farm products to result in agricultural expansion, or for alternative occupations in the country to absorb labor, most of the farm workers set free by improved machinery and technique migrated to the city. If this trend of the years preceding 1930 continues, machinery may in the future exert an even greater pressure in forcing workers off farms. A satisfactory cotton picker is said to be ready for the market and the corn husker is being further perfected. Moreover, any considerable increase in farm profits is certain to result in the more general use of tractors, small combines, and the new and more efficient tillage implements already on the market.

During 1930 and 1931, however, the trend has been changing. The number of persons leaving farms in 1930 was the smallest in several years and the number moving to farms by far the largest. The result was that the farm population not only kept all of its excess of births over deaths (amounting to 399,000) but also gained 39,000 from the farm-city interchange, making the total increase in farm population 438,000. This situation was further accentuated in 1931, the excess of births over deaths being 441,000 and the excess of arrivals on farms over departures for

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8 See Chaps. II and X.
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cities rising rapidly to 207,000, making the increase in farm population 648,000.

The explanation of the changing trend no doubt is the difficulty of finding employment in cities during 1930 and 1931, and the fact that in cities food must be bought at the store, while in the country it is possible to raise much of the family produce. Usually those going to the country accept a lower standard of living than they previously enjoyed in the city, partly because prices of the products which farmers sell have been depressed more than the prices of most other classes of products and partly because so many of the migrants are moving to submarginal land. Nevertheless, the farm has been and still is the proverbial place for having enough to eat in hard times. If prosperity again permits a resumption of the movement of the surplus farm population to city jobs, the present urban exodus may do little permanent harm. But should this not occur, there is danger of developing a large peasant population on the millions of acres of land which are submarginal for business farming, but which will permit self-sustaining farming on a low standard of living.

**Rural-farm Population by States.**—Increases in the rural-farm population during the last decade occurred in sixteen states, according to the 1930 census. The numerical gains were fairly large in eight states (North Carolina, Mississippi, California, Texas, Louisiana, South Dakota, Washington and Colorado) but small in the other eight. In North Carolina and California the increase in rural-farm population was more apparent than real, since persons not actually employed in agriculture have sought homes in the country and holding a plot of a few acres they reported it as a "farm." In South Dakota, Texas and the western states, there was some of this development, no doubt, but in addition there was a real growth of rural-farm population due to the expansion of the farming area into regions previously idle or devoted to ranching. This expansion arose largely from improvements in farming methods and the introduction of newer types of implements especially applicable to large scale, dry land farming, which increased human efficiency and lowered production costs. In parts of Texas the movement of cotton farming, with its higher labor requirements per acre, into former grain or grazing areas, was also responsible for considerable growth.

Although the rural-farm population increased in sixteen states, it declined in thirty-two, these being well distributed outside of the west and southwest. Declines of more than 50,000 occurred in New York, Pennsylvania, Ohio, Indiana, Illinois, Michigan, Missouri, Virginia, South Carolina, Georgia, Kentucky and Tennessee. Excepting Miss-

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9 These include Massachusetts and Rhode Island, in which increases of rural-farm population from 1920 to 1930 shown by the census were due to the change in the basis of rural-urban classification, described in vol. I, p. 7 of the 1930 census of population.

[ 10 ]
our, these are all states in the older agricultural region of the country east of the Mississippi River. Part of this region does not have the level land and large fields found in states to the west, while the more favored areas have lagged in the use of labor saving farm machinery. In these states not sufficiently level for the latest machinery, competition from the more efficient areas elsewhere is forcing out of use thousands of acres of land and is causing the consolidation into larger farms of the land in level regions adapted to such machinery. In both cases the result has been a decrease in the number of farms and in the farm population. The New England, middle Atlantic and east north central states were especially affected from 1920 to 1930, the number of farms decreasing 13.0 percent and the rural-farm population decreasing 9.2 percent. In the south Atlantic and east south central states, the decrease of 5.3 percent in the rural-farm population was slightly larger than that of 4.1 percent in the number of farms. It is in this section that the greatest increase in human efficiency, resulting in an increased size of the farms and a large decrease in rural-farm population, may occur in the near future if the mechanical cotton picker comes up to expectations. It will have a similar effect on cotton farming to that which the binder and combine harvester had on wheat farming.

The increase of 2,400,000 in the rural population compared with a gain of over 14,600,000 in the urban population, has interesting political implications. Considering only the population eligible to vote, there were 100 persons in rural areas to 86 in urban areas in 1910, 100 to 114 in 1920 and 100 to 142 in 1930. Even this marked change in the relative voting strength of cities and rural areas understates the situation. The rural population now contains some millions of non-farm people whose interests and outlook are distinctly urban and it probably will contain a larger proportion of such persons in the future. Thus the cities are likely to exercise an increasing political influence.

Urban Growth by Size of City.—Considering the urban population, there are interesting differences in the trends of cities of various sizes. With 14,600,000 more dwellers in all urban places in 1930 than in 1920 cities over a million had nearly 5,000,000 more inhabitants; while cities of the half- to one-million class had nearly 500,000 fewer inhabitants. Both of these changes are confused by the passing of Los Angeles and Detroit into the larger group, but the two groups together contained about 4,500,000 more persons in 1930 than in 1920. The next largest change occurred in cities of the quarter- to half-million class, which had nearly 3,500,000 more dwellers in 1930; but much of this was due to the

10 In calculating this percentage, the total farm population for Massachusetts and Rhode Island was used because of changes in rural-urban classification mentioned previously.

11 See Chap. XXIX.
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fact that there were twenty-four cities in this class in 1930 compared with thirteen in 1920. These three groups of cities taken together account for 8,000,000 of the 14,600,000 additional urban people, the remainder being distributed fairly evenly among smaller cities, an exception being places of 2,500 to 5,000 showed little change on the whole.

The concentration of population in large cities was thus considerably greater in 1930 than it was earlier. (Figure 7.) In the thirty years from 1900 to 1930 the proportion of persons living in cities over 500,000 rose by almost three-fifths, from 10.7 percent to 17.0 percent. The proportion in cities of 100,000 to 500,000 rose by about one-half, from 8.1 percent to 12.6 percent; while in cities of 10,000 to 100,000 the rise was about two-fifths, from 13.0 percent to 17.9 percent. The proportion in cities of less than 10,000 changed only from 8.3 percent to 8.6 percent, while that in rural areas decreased from 60.0 percent to 43.8 percent, as mentioned earlier.

Although the 1930 census shows a greater concentration of population in large cities than any preceding census, the rate of population growth during the decade was higher in the smaller than in the larger cities. This may be seen by considering what happened to cities in certain size groups as of 1920, not allowing for changes from one group to another as was done in the preceding discussion on the concentration of population. Defining growth in these stricter terms, the higher rates of growth since 1920 are found in groups of cities with less than 50,000 persons, as is shown in Figure 8. Not one of these groups increased less than 24 percent; while among the larger cities only one group gained as much as this.

Although the growth of small cities since 1920 was, as a group, more rapid than that of larger cities, it was also more spotty. No city over 250,000 failed to gain in population during the decade, whereas over one-tenth of those between 10,000 and 250,000 and over one-fifth of
those smaller than 10,000 lost in population. (Figure 8.) Furthermore, among cities gaining in population, there was a greater variation in the rate of gain for the smaller cities than for the larger. An important part of this variation is explainable on the basis of location. Most of the smaller cities having an unusually rapid rate of growth were within a comparatively short distance of large cities and may properly be called satellites.\textsuperscript{12} Probably the development of automobiles, buses, good roads and high tension electrical transmission lines which has taken place in recent years has diverted much of the growth in population, which

\begin{center}
\begin{tabular}{cccccc}
 & \textbf{Percentage Increase} & & & & \\
\textbf{PER CENT} & & & & & \\
\hline
2,500-9,999 & 24 & & & & \\
10,000-24,999 & 20 & & & & \\
25,000-49,999 & 16 & & & & \\
50,000-99,999 & 12 & & & & \\
100,000-249,999 & 8 & & & & \\
250,000-499,999 & 4 & & & & \\
500,000-999,999 & 0 & & & & \\
OVER 1,000,000 & \text{-} & & & & \\
\hline
\end{tabular}
\end{center}

\textbf{Fig. 8.—Population increase by size of city, 1920–1930.}

would otherwise have accrued to the large central city, to nearby smaller places, giving them large relative increases. 

Taken as a group, the satellite cities of 2,500 to 100,000 in 1920 increased 40.2 percent in the decade, while other cities of similar size increased 20.8 percent, or about half as much. Subdividing the satellite and non-satellite cities the rate of increase of satellite cities is over 87 percent for the 2,500 to 5,000 group, each larger group having a smaller rate down to 16.9 percent for the cities of 50,000 to 100,000. (Figure 9.) The situation was reversed for the non-satellite cities, the

\textsuperscript{12} Satellite cities are here defined as those within the metropolitan district of central cities over 200,000, and the adjacent territory (as defined by the census) of cities of 100,000 to 200,000. For fuller discussion, see Chap. IX.
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smallest rate of increase being 17 percent in the 5,000 to 10,000 group (the rate for the 2,500 to 5,000 group being 17.9 percent—nearly as low) and the largest rate being 25.2 percent for cities of 50,000 to 100,000.

Just as the increase in the population of satellite cities was much more rapid than that of non-satellite cities, so the population increase of communities which were rural in 1920 was much greater in the regions adjacent to large cities than it was in outlying areas. The satellite rural areas of 1920 had a population growth of 1,485,070, or 57 percent during the decade, compared with 2,958,835, or 6 percent for all other rural areas. Most of this latter increase also took place near cities, though in

![Diagram](image)

Fig. 9.—Rate of increase of metropolitan districts (central cities and adjacent territory) and of other cities within and outside of metropolitan districts by size groups, 1920–1930.

* Each city is classified in 1920 and 1930 according to its population in 1920.
* The 1920 area is used in both 1920 and 1930.

a few regions there was some growth of rural population which was not due to urban attraction. In parts of the southwest there was a sufficient expansion or intensification of agriculture to stimulate the growth of villages or small towns; while the opening of mines had the same effect in parts of West Virginia and Kentucky.

The basic reason for the very uneven rates of growth of population in small cities seems to lie in changing economic and social functions. Those supported in large part by agriculture are increasing little if any, except where agriculture is still developing rapidly. Others fortunate in location or climate (as in the case of Florida and California) or favored in securing new industries owing to inherent advantages in
access to labor, raw materials, power and markets (as in the Piedmont of North Carolina) are growing rapidly. But as just indicated, the most rapid growth of small cities took place within the zones of influence of the larger centers where the economic and social life is closely integrated with that of the larger community.

How the growth of satellite areas compares with that of the central cities is also shown in Figure 9. All but the largest satellites increased more rapidly than the central cities. In this sense, then, it may be said that there is a tendency toward decentralization within the metropolitan areas, even though central cities contain an increasing proportion of the total population.

Considering central cities of different sizes, population growth is found to be about the same in those of 100,000 to 250,000 as in adjacent territory, but much larger in territory adjacent to cities over 250,000 than in the central cities themselves. This is natural, as the centrifugal movement of population from a large city is greater than that from a small city.

Places of Most Rapid Growth.—Although the foregoing analysis of the distribution of the growth of population shows the large differences between certain states and size groups of cities, it does not give a wholly adequate picture of the concentration of growth from 1920 to 1930. It is important to emphasize the fact that almost three-fifths of the total population increase occurred in five well defined groups of cities which had but 26.2 percent of the nation's population in 1920. These five groups may be described rather roughly as follows: Group I.—The metropolitan districts of the middle Atlantic seaboard from New York City to Baltimore by way of Philadelphia; Group II.—The metropolitan districts of the Great Lakes region from Buffalo to Milwaukee. This includes the Akron, Canton and Youngstown metropolitan districts in Ohio, the Flint district in Michigan, and the Fort Wayne and South Bend districts in Indiana, as well as those directly on the lakes; Group III.—The metropolitan districts in Tennessee, Florida, Alabama and northern Georgia, together with the cities of 25,000 to 100,000 in North Carolina and Florida; Group IV.—The metropolitan districts from Kansas City to Houston, and cities in Texas of 25,000 to 100,000; Group V.—The metropolitan districts in the Pacific coast states, except Spokane.

The cities in these five groups increased 36.1 percent between 1920 and 1930 compared with a 9.0 percent increase for the remainder of the United States and 16.9 percent for the metropolitan districts not included in these five groups.\(^{13}\) They added a total of 10,010,063 to their popula-
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tions, which is 58.6 percent of the increase of population in the entire United States during the decade. Furthermore, over three-fifths of the increase in these five groups of cities is found in the first two which are composed entirely of metropolitan districts and which now have about 27,500,000 people concentrated in 11,962 square miles.

Since it is not possible to go into detail here regarding the causes of this increasing concentration of population within these groups, only one or two of the more important factors in each region will be mentioned. In Group I the coast location and a growing seaborne commerce are of substantial importance. If to these is added the centripetal pull which New York City (its metropolitan district alone accounts for about four-fifths of the total increase in this group) is exercising upon all large scale national and international business organizations, the most potent of the factors making for growth in the region are accounted for. Its future growth, therefore, would seem to be tied up very closely with the development of foreign commerce and with the trend in the organization of business.

In Group II the relatively cheap transportation afforded by the lakes, together with the location of iron and coal deposits, are probably of prime importance. It should also be noted that the central location of these cities favors the relatively cheap and expeditious delivery of the finished products of heavy industry to a very large part of the total population. Future growth here would seem to be bound up more closely with the increased use of iron and steel products than any other single factor.

In Group III the combination of cheap power, cheap labor and nearness to certain natural resources is resulting in increased industry. Although these metropolitan districts and many of the smaller cities, particularly those of the Piedmont, are growing very rapidly, only a beginning has been made as yet; hence this group has absorbed a small part of the total national growth (5.1 percent). In Florida, climate is undoubtedly the most important factor.

In Group IV manufacturing plays but a small role. The cities are largely commercial centers having only a small proportion of their populations engaged in manufacturing. The expansion of the markets they serve is, therefore, the chief factor in their growth. Two important factors in this expansion are the development of the cotton area in western Texas and Oklahoma and the increased oil production in these states. In the future it appears unlikely that these cities will continue to grow at the recent rapid rate. Cotton and oil are already overproduced. There is no reason to anticipate the rapid development of factory industries such as textiles, since they are already overbuilt elsewhere.

14 See Chap. V.
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In Group V the factor of greatest importance is that much of this region has a comfortable climate which favors the citrus fruit, winter vegetable and motion picture industries. The growing trade with the Far East has no doubt played a part, as have also the distance from the industrial centers of the east and the discovery of large oil fields. However, the predominating influence of climate seems to be shown by the population growth of 120 percent in southern California from 1920 to 1930 as compared with 29 percent in central California (San Francisco and Oakland) and the northern Pacific port districts (Portland and Seattle). The future growth of population in this area would seem to depend in large measure upon the extent to which the lure of climate can be made effective through greater agricultural and industrial opportunities, through the development of a leisure or semi-leisure class and the growth of touring. In this connection it may be of interest to call attention to the fact that the absolute increase in population in these five groups of cities during 1920–1930 was just about the same as the total estimated increase in numbers in the United States during 1930–1940. (See page 2.)

II. NATIONAL ORIGINS OF THE POPULATION

Foreign White Stock.—Foreign white stock, which consists of immigrants and natives of foreign or mixed parentage, increased less rapidly than the total population during the last decade and now composes barely one-third of all whites. An exact idea of the importance of the different European nationalities can be obtained for this group, as the census classified them by the country of birth of the father, or of the mother in case of a native father. In 1930 the largest group among the foreign stock consisted of immigrants from Germany and their children born in this country. (Figure 10.) Italy held second place; England, Scotland, Wales and Northern Ireland together were third; followed by Poland, Canada, the Irish Free State, Russia, Sweden, Czechoslovakia, Norway, Austria and Hungary in the order named.15

Foreign white stock from Germany has outnumbered that from other countries for several decades. It has declined in numbers since 1910, however, and now constitutes only a little more than one-half as much of all foreign stock as thirty years ago. This decline has been greater among the German born than among native children of German immigrants, because German immigration has not been heavy since the 1880’s. Now the natives of German parentage outnumber the German born by a considerable margin. Stock from what is now the Irish Free State has been declining in numbers since 1900, ranking sixth in 1930 compared with second in 1900, even if it is assumed that as many as one-

15 For other data and aspects of foreign white stocks see Chap. XI.
fourth of the "Irish" of 1900 came from Northern Ireland. Since the heavy immigration from Ireland, like that from Germany, took place many years ago, the Irish born are now outnumbered over three to one by the natives of Irish parents.

The number of persons of foreign stock from England, Scotland, Wales, Northern Ireland and Canada, which was almost stationary from 1900 to 1920, increased considerably from 1920 to 1930. (Figure 10.) This is the natural consequence of the facts that since the war the quota system has favored British immigration and that immigration from Canada has not been restricted at all. Under these conditions, the proportion of foreign born to natives of foreign or mixed parentage in these
nationalities rose appreciably during this decade, although the natives are still numerically superior. Since about two-thirds of the Canadians in the United States are of British descent, the total foreign stock of British origin is almost equal to that of German origin.

From about 1900 to the outbreak of the World War, immigration was particularly large from Italy, Russia and Austria-Hungary. Italian stock increased from 727,844 in 1900 to 3,336,941 in 1920, and stocks of Russian and Austro-Hungarian origin from 2,069,865 to 8,408,088 with foreign born predominating. This “new” immigration was stopped almost completely by the World War and has since been severely restricted by the quota system. As a result, the rate of increase in “new” stocks from 1920 to 1930\(^\text{16}\) was less than one-half that of 1910–1920 and one-sixth that of 1900–1910. Furthermore, a decline in numbers will soon begin since the quotas for these countries are small and the second generation born in the United States is classed as native stock.

**White Population.**—Native whites of native parentage have been increasing considerably faster than the total population and now outnumber all other persons by nearly three to two and other whites by two to one. They consist chiefly of descendants of immigrants from Great Britain, Ireland, Germany and the Scandinavian countries who came to the United States before 1870. The exact importance of the national stock from each of these countries can only be estimated, however, and the difficulty becomes greater as the number of generations increases between the original immigrants and their present descendants. The number of immigrants from each country has been recorded since 1820, but the number of children per family has varied, intermarriage has mixed the strains and the number of immigrants returning to their homes prior to 1907 is not known. Census enumerations show the country of birth of the parents of each person but not of the grandparents, so that there is no direct way of telling what national stock is represented in the second and later generations of native born.

Notwithstanding the difficulty of determining national origin, the Immigration Act of 1924 provided that “the annual quota of any nationality for the fiscal year beginning July 1, 1927, and for each fiscal year thereafter, shall be a number which bears the same ratio to 150,000 as the number of inhabitants in continental United States in 1920 having that national origin bears . . . to the number of inhabitants in continental United States in 1920, but the minimum quota of any nationality shall be 100.” This made it necessary to estimate the national origins of the 1920 population, a task that was conducted under the

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\(^{16}\) Foreign stock of Italy, Poland, Czechoslovakia, Austria, Hungary, Yugoslavia, Russia, Latvia, Estonia, Lithuania and Finland in 1930 is compared with that of Russia, Finland, Italy and Austria-Hungary in 1920 and earlier.
supervision of Joseph A. Hill of the Bureau of the Census. The results indicate that over 41 percent of the 1920 white population was of British and North Irish origin, over 16 percent of German origin, and over 11 percent of Irish Free State origin. (Figure 11.) Canada, Poland, Italy, Sweden, Netherlands, France, Czechoslovakia, Russia, Norway, Mexico and Switzerland follow in the order named. This includes all countries which were the place of origin of as much as 1 percent of the 1920 white population (all Mexicans being counted as white in that census) and accounts for the origin of 95 percent of the total.

There is probably no appreciable change in the national origins of the population since 1920 in spite of higher birth rates among the "new" immigrants and unrestricted immigration from Canada and Mexico up to the middle of 1930. Changes during coming years will depend to a large extent on population policies. If immigration is severely restricted, as in 1931, the origin of the white population will vary from 1920 only

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**Fig. 11.—White population by country of origin, 1920.**

* Mexicans are included with whites in accordance with the classification of the 1930 census. Their number here appears large in comparison with the estimated number of persons of the Mexican race in 1920 published in the 1930 census since this latter estimate does not include such persons born in the United States of native born parents of whom there were large numbers in the southwest.

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17 Message from the President of the United States to Congress transmitting a communication relative to the provisions of the Immigration Act of 1924. (70th Congress, 2d Session, Senate Document no. 259.)
as differential rates of increase exist between national stocks. But if the allotted number of quota immigrants, 153,714 a year under the present law, and an equal number from non-quota countries (chiefly Canada) are allowed to enter the United States and remain here, the proportion of the population of northern and western European ancestry probably will increase slowly.

An interesting implication of the decline in the proportion of foreign born whites is the decrease in their influence in the field of politics. In spite of an increase in the proportion of foreign born whites over 21 who are naturalized, from 51.7 percent in 1910 and 52.8 percent in 1920 to 62.6 in 1930, the proportion which they constituted of all persons eligible to vote declined from 14.5 percent in 1910 to 12.0 percent in 1920 and 11.6 percent in 1930. Obviously national blocks of foreign voters cannot continue much longer to play an important part in politics.

III. GEOGRAPHIC DISTRIBUTION

Foreign Born Whites.—As long as fertile land could be easily secured during the nineteenth century many immigrants settled on farms. During this period the movement from Germany and the Scandinavian countries was large, which explains why much of the foreign stock from these countries is still found in farming areas. Industrial and commercial development has been of increasing importance in recent years. The resulting demand for labor caused the new immigration from Italy and eastern Europe to settle chiefly in the cities. Regardless of whether they were attracted to this country by agricultural or industrial opportunities, most of the white immigrants since colonial days have settled in the north and west rather than in the south. While there are several reasons for this, perhaps the most important has been the presence of the Negro in the south. The population of the south has thus been made up since early days chiefly of native whites of native parentage and of Negroes and that of the north and west of native whites of native parentage and foreign stock.

In 1930 the foreign born whites were concentrated in Massachusetts, Rhode Island, Connecticut, New York and New Jersey, making up over 20 percent of the population in the New England and the middle Atlantic states as against 10.9 percent for the entire United States.18 (Figure 12.) This concentration has been going on for several decades and these five states contain 42.2 percent of the foreign born whites in 1950 compared with 34.6 percent in 1900. On the other hand, the west north central states contained only 7.9 percent of all foreign born whites in 1930 instead of 15.0 percent as in 1900. This nativity group is almost

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18 Using the 1930 census classification for 1930 and 1920, which excludes most Mexicans from white groups. For figures, see Chap. XI.
Fig. 12.—Percentage distribution of the population of certain sections, by race, nativity, and parentage, 1920–1930.

Fig. 13.—Percentage distribution by size of city of native whites of native parentage, native whites of foreign or mixed parentage, foreign born whites and Negroes, 1920–1930.
negligible in the southern states, making up less than 2 percent of the population.

Not only was the concentration of the foreign born in the northeast increasing during the decade, but it was centering in large cities to a greater extent than formerly. In 1920, 33.9 percent of the foreign born lived in cities over 500,000 compared with 15.5 percent of the total population, but in 1930 such cities contained 38.9 percent of the foreign born against 17.0 percent of the total. (Figure 13.) This concentration in large cities was particularly marked in the middle Atlantic states. The smaller cities of the country had about the same proportion of the foreign born in 1930 as in 1920, but the proportion declined in rural communities from 24.5 percent to 19.7 percent, most of the decrease occurring in the middle Atlantic, north central and mountain states.

In spite of this increased concentration of foreign born whites in the large cities of certain areas, the group even here constitutes a smaller proportion of the total population in 1930 than in 1920. Indeed, immigration has been so curtailed during recent years that there were fewer foreign born whites in 1930 than in 1920 in most states. Only in New York, New Jersey, Michigan and California were there numerical increases of any importance; and even in these states the increases were much less than for other groups. In the remainder of the country, the foreign born whites are passing into the older groups where the death rate is high and the losses in numbers are large.

Native Whites of Foreign or Mixed Parentage.—In 1930 this group was concentrated in the same general area as the foreign born whites, but not to the same extent. Although constituting 20.7 percent of the population of the United States, it was more than 30 percent of the population in the northeastern states and between 20 and 30 percent in the north central and western states. (Figure 12.) Since 1900 the trend has been toward greater concentration in the northeastern and Pacific states at the expense of the north central states.

This group is also concentrating in large cities, chiefly at the expense of rural communities, though to a lesser extent than the foreign born. Cities of more than 500,000 contained 29.5 percent of the group in 1930 against 27.1 percent in 1920, while the proportion in rural communities declined from 30.8 percent to 26.6 percent. (Figure 13.) As with the foreign born, the concentration in large cities occurred chiefly in the middle Atlantic states, and the rural losses took place in the middle Atlantic and north central states.

In these areas of increased concentration of native whites of foreign or mixed parentage, this group made up a larger proportion of the total population in 1930 than in 1920. In other areas they declined in relative importance, the net result for the nation as a whole being almost no
change. Continuation of the present immigration restrictions will check the growth of this group and within a decade or two it will begin to decline in numbers.

National Groups.—The geographic distribution of the foreign stocks\(^{19}\) varies greatly. British stock is spread more widely than that of any other country, one-third being in the middle Atlantic, one-fourth in the east north central, one-seventh in New England, and one-tenth in the Pacific states. (Figure 14.) About two-thirds is in urban communities. About five-sixths of the Irish stock is concentrated in the urban areas of the middle Atlantic and New England states, chiefly in the larger cities. Scandinavian immigrants were less attracted to the northeast than any other group, preferring the good land available in the north central states. This stock still centers in this area, about one-half of it in rural communities. The native born portion, however, shows a

\(\) Foreign stock consists of foreign born and native born of foreign or mixed parentage.
tendency to move to the larger cities. German stock, like the British, is fairly widely distributed, though concentrated somewhat in the east north central states. About two-thirds is in cities.

Foreign stock from the eastern and southern European countries, which furnished most of the immigrants from 1900 to the World War, is heavily concentrated in the middle Atlantic states. Over half of the Italian, Austrian and Russian stock is in this area; and nearly half of the Polish and Hungarian; the remainder is mostly in the east north central states. (Figure 14.) These stocks are especially concentrated in large cities, over five-sixths of the Italian and Russian stock being urban and over two-thirds of the other groups. Canadian stock is concentrated in the New England states and Michigan—French Canadian predominating in New England and other Canadian in Michigan. Over three-fourths of the French Canadian stock and about two-thirds of the other Canadian is in urban areas.

Native White Stock.—A high proportion of native whites of native parentage is found in states which have not received much immigration in recent decades or which contain few Negroes. States in which native whites of native parentage constitute more than 70 percent of the population are Indiana, Missouri and Kansas in the north; West Virginia, Kentucky, Tennessee, Arkansas and Oklahoma in the south; and Idaho and New Mexico in the west. During recent decades the proportion of native whites of native parentage in the total population has been increasing especially rapidly in Wisconsin, Minnesota, Iowa, North Dakota, South Dakota and Nebraska in the north; South Carolina and Georgia in the south; and Utah and Nevada in the west. In the northern and western states this trend is due chiefly to the small number of immigrants in recent years and the gradual dying off of many persons who came during the heavy immigration from Germany and the Scandinavian countries in the nineteenth century. In South Carolina and Georgia the immediate cause of the increase in the proportion of native whites of native parentage is the large exodus of Negroes. South Carolina contained 71,038 fewer Negroes in 1930 than in 1920 and Georgia 135,240 fewer. At the same time, the native white population increased considerably, the excess of births over deaths being well above the migration to other states.

With the native white stock concentrated in the agricultural states of the north central and southern divisions, it would be expected that its distribution by size of community would be quite different from that of the foreign stock. The facts are that 6.2 percent of the native white stock was in cities over 1,000,000 in 1930 compared with 24.8 percent for the foreign white stock, while 52.2 percent was in rural communities compared with 24.2 percent for the foreign stock. The proportion of the
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native white stock in rural communities, however, showed a somewhat greater decline during the decade than the foreign white stock.

Although native white stock constitutes a smaller proportion of the total population in cities over 500,000 than in smaller cities, it gained in this group from 29.3 percent in 1920 to 31.6 percent in 1930. Not all of this gain was due to migration of old native stock to these cities; for grandchildren of immigrants who settled there a few decades ago are classified as natives, and they account for an important part of the increase. If recent trends continue, almost all rural whites, at least half of all whites in cities over half a million and three-fourths in smaller cities will be of native stock within three or four decades.

Negroes.—It is among Negroes, however, that the greatest shift in distribution has occurred in recent years. This is a consequence of the large movement off southern farms and plantations which began about 1914, stimulated first by cheap cotton and the boll weevil, and later by a demand for Negro labor in northern cities. The movement of Negroes into the northern states tended to counterbalance the decline in immigrant arrivals caused by the war and the post-war quota restrictions. (Figures 12 and 13.) This matter is summarized in Chapter XI, as is also the distribution of the “other colored.”

IV. AGE AND SEX DISTRIBUTION

As the nation has become older, the median age of the population has risen from 16.7 years in 1820 to 26.4 years in 1930. This has come about because the number of persons in the older groups has increased faster than the total population and the number in the younger groups has increased more slowly. The 20–44 group has increased at about the same rate as the total, so the relative importance of this group is much the same now as formerly.

This aging of the population is not a new process but one that has gone on for more than a century. What is new is the greater speed in recent years and the extent of the changes which have resulted, particularly in certain parts of the population. To illustrate, the first decrease in the number of persons in an important age group occurred during the decade 1920–1930. According to the census enumeration, there were 11,573,230 children under 5 years of age in 1920 but only 11,444,390 in 1930. The decline of 128,840 almost equals the number of children under 5 in Los Angeles, San Francisco and Seattle, or in the entire state of Connecticut. Furthermore, at no census prior to 1930 was the population in any five-year age group smaller than that in an older five-year group. But in 1930 there were slightly fewer children in the group under five

20 The various elements of the population and their distribution since 1790 are treated in detail in the monograph, Population Trends in the United States.
Fig. 15.—Distribution by five year age periods of the total population, native whites, foreign born whites and Negroes, 1920-1930.
years of age than in the five to nine year group, even after allowing for the under-enumeration that usually occurs in the former group.

While the population under 5 decreased from 1920 to 1930, the increase in the number of elders was larger than for many decades. Persons 45–64 increased over one-fourth and those 65–74 over one-third. It might almost be said that the older the group, the more rapid the gain in population.

This decrease of youngsters and large increase of elders had a marked effect on the age composition of the population. (Figure 15.) The white pyramid for the 1920 population is broadest at the base and tapers rather rapidly to the peak. But the pyramid for the 1930 population (outlined in black) is narrower at the base than higher and tapers more slowly. The 1930 pyramid, much more than the 1920 pyramid, is like the beehive shape which represents the age distribution of a population stationary in numbers. Moreover, the narrowed base for 1930 is a step toward the Egyptian mummy case shape which represents a population declining in numbers.

Age Trends of Race and Nativity Groups.—The age trend from 1920 to 1930 for each race and nativity group of the population differed in various ways from that for the total population just described. The decline in the number of children under 5 was larger in the native white group than in the total population while Negroes and "other colored" under 5 increased in numbers. Furthermore, the increase in the older groups was higher among native whites than Negroes. The result is that the age pyramid of native whites in Figure 15 is narrowed at the base and broadened at the top to a greater degree than the pyramid of the total population. This means that the aging of the native white population and increase in the ratio of elders to youths (persons under 20) was correspondingly more rapid. On the other hand, the age pyramid for Negroes in Figure 15 has about the same shape in 1930 as in 1920, showing that the Negro population is aging but little and the proportion of elders to youths is almost unchanged.

The age distribution of the foreign born whites is quite different from that of the native whites and the Negroes. (Figure 15.) Here there is no pyramid but something like a spinning top. Age trends from 1920 to 1930 were quite different from those for the groups just mentioned, for the number of foreign born whites decreased not only in the age period 0–4, but also in each period up to and including 35–39. As the total number of foreign born whites was almost unchanged from 1920 to 1930, this decrease in numbers under 40 resulted in a much greater concentration in older age periods than occurred among native whites or Negroes. The aging of the foreign born white population was thus more rapid than that of the other groups and the increase in the ratio of elders to youths was correspondingly larger.
Causes of Age Trends.—A brief consideration of the causes of these age trends will indicate whether they are likely to be temporary or to continue. Among native whites, the smaller number of children under 5 years of age in 1930 than in 1920 was due to a smaller number of births from 1925 to 1929 than from 1915 to 1919. In section V on birth rate trends, it will be shown why the number of births during 1935–1939 is not likely to be much, if any, larger than during 1925–1929. In 1940, therefore, the proportion of native whites under 5 will be lower than in 1930; indeed there may be a decrease in the number. The marked increase in the number of native white persons 65 or older is largely the result of the rapid rise in the number of births that took place from 1830 to 1865. The number of births continued to increase with sufficient rapidity from 1865 to 1900 so that the number of elders will keep on rising at approximately the recent high rate for two or three decades more. Native white elders will certainly be more numerous in 1940 and 1950 than now; and, owing to the declining birth rate in recent decades, they will constitute a still larger proportion of the total population. The probable situation in 1950\footnote{See pp. 46–49 for basis of 1950 estimates.} in comparison with that of 1910 or 1930 is shown in Figure 16.

The proportion of native whites under 20 is likely to decline over one-fifth, with increases of one-tenth at ages 20–44, one-fourth at ages 45–64, and nearly one-half at older ages.

The trend for Negroes should be like that for native whites. Section V shows that the number of Negro births has been decreasing recently, which presages a decline in the number and proportion of children in the Negro population. But before 1880 the number of Negro births was rising rapidly and the Negro expectation of life probably has lengthened considerably since 1850, so that the recent rise in the number of Negroes over 65 will be maintained for at least two decades. The Negro population will thus become older, with the ratio of elders to youths rising rapidly. Between 1930 and 1950 the proportion of Negroes under 20 is likely to decline over one-sixth, with increases of one-fourth at ages 45–64 and over three-fourths at older ages. The age period 20–44 is not likely to change appreciably in relative importance. (Figure 16.)

The foreign born white group, unlike the native white and Negro groups, is maintained by immigration rather than births. At present, immigration policy and economic conditions together are holding the number of immigrants at a very low level. Since about two-thirds of those entering are under 30 years of age, the practical cessation of the movement shuts off the supply of young persons and if continued will cause them to decrease rapidly in numbers. Only about 10 percent of the immigrants are older than 45, so variations in the number entering affects older age groups but little. The population in these groups can continue
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to show gains in numbers for some time as a result of the large immigration which occurred in the years before the outbreak of the World

War and of any lengthening in expectation of life at age of immigration to the United States. The increase in the proportion in older groups and

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Fig. 16.—Percentage distribution by age periods of native whites, foreign born whites and Negroes, 1910, 1930 and 1950.a

a See pp. 46-49 for basis of 1950 estimates.

There has probably been no significant lengthening of the expectation of life of persons 20 years of age or over for some decades, although the expectation of life of newborn infants has lengthened considerably. This is discussed in Chap. XII.
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decrease in the proportion in younger groups will thus be greater than the numerical changes. Estimates of the age composition of foreign born whites in 1950 are not likely to be as accurate as those of native whites and Negroes, for reasons pointed out in section V. It is probable, however, that the proportion 20–44 will be considerably lower in 1950 than in 1930 with a large increase at ages over 65. (Figure 16.)

Age Trends in Urban and Rural Communities.—In general, cities have relatively fewer children and older people but more persons in the highly productive ages than rural communities, differences which are more pronounced as the size of cities increases. (Figure 17.) Thus 10.8 percent of the rural population was under 5 years of age in 1930 compared with only 7.7 percent in cities over 500,000. For all persons under 20 the percentages are 44.2 and 32.7. At the other extreme, people 65 and over comprise 5.8 percent of the population in the rural communities but only 4.3 percent in the large cities. The central group, aged 20–64, amounted to 50 percent of the rural population against 63.0 percent in the large cities. Although it is not a new situation for rural areas to have a high proportion of children and elders and for large cities to have a high proportion of young to middle-aged adults, the differentials were larger in 1930 than in 1920.

Four factors seem in large measure to explain this situation. In the first place, there is a difference in the age makeup of the foreign born in the cities and in the country. In recent years most of the foreign born have gone to cities, especially large cities, thereby increasing the young adult group. During earlier decades, however, more immigrants went to the farms. The survivors of this group now swell the number of elders in the rural population.
A second factor is the rural-urban migration, which contains a high proportion of young adults seeking jobs in the cities. This pulls down the numbers in these age groups in the rural population at the same time that it adds to them in the urban population. On the other hand, there has been some migration of older people, particularly from large cities, to rural areas and small towns. In the past elders seem to have found it easier to care for themselves in small communities, but there are indications that this may not be the case in the future. Apartment houses, restaurants and the recreational and cultural opportunities of urban centers may come to appeal so strongly to elders that they will tend to concentrate in cities rather than in rural areas or small towns.

A third factor is the birth rate, which is higher in rural than in urban areas and higher in small cities than in large cities. Finally the fact that the expectation of life is lower in the city than in the country tends to raise the proportion of elders in the country above that in cities.

Differences in the age composition of various states are marked and arise to a considerable extent from the relation between size of community and age composition just discussed. The west north central, mountain and southern states have a much higher proportion of their population in rural areas and a much lower proportion in large cities than do the other divisions. It is not surprising, therefore, to find that the proportion of children is higher in these divisions than in other states. Regional differences are not due entirely to the rural-urban influence, for the proportion of children is lowest in the Pacific states, although the concentration in large cities is not as marked there as in the middle Atlantic states.

As persons 20–44 are relatively most numerous in large cities, they are more numerous in states having a greater concentration of population in cities. Thus the more urban New England, middle Atlantic, east north central and Pacific states have a higher proportion of persons 20–44 than do the more rural west north central, mountain and southern states. The differences are not large, but they are significant.

Persons 65 or older constitute a high proportion of the total population in the Pacific states and a low proportion of the total population in the southern and mountain states, whereas the relative urban development of these areas would lead one to expect the opposite. Special factors are at work in each case. A large migration of elders to the Pacific states accounts in part for their being so numerous there. The lower proportion of elders in the south is partly due to the presence of Negroes, since the expectation of life is considerably shorter for Negroes than for whites. In the mountain states the proportion of elders is kept down by the comparatively recent date of settlement and the fact that migration to these states has not been made up of older persons to the same extent as the migration to the Pacific states. The effect of large cities and rural
areas on the proportion of elders is most apparent in comparing the middle Atlantic, east north central and west north central states. To summarize the distribution of elders: They constitute the highest proportion of the population in older, rural states having a low rate of increase and the lowest proportion in newer states and in those growing rapidly in urban population, California excepted.

Consequences of Age Trends.—The consequences of recent trends in age composition are already noticeable and will become more pronounced in the future, since they are almost certain to continue.

Fewer Children.—There were fewer children under 5 years of age in 1930 than in 1920, hence there will be a smaller number to enter the first grade during 1930–1935 than during 1920–1925. By 1940 or 1945 there will be a smaller number for each grade up to senior high school, for most of the children who will be in these grades in 1940 were born during 1924–1931, just as most children in these grades in 1930 were born during 1914–1921. The number of births in the later period was nearly 1,200,000 less than the number in the earlier period (see section V), so that there will be about 1,000,000 fewer children aged 9–16 in 1940 than in 1930, making a liberal allowance for falling death rates. The number of youths of senior high school, college and university age has not yet reached a maximum, since the number of births was rising up to 1921.

Although the slowing up of population growth will decrease the number of children of school age, this seems likely to be offset by an increase in the proportion attending school. If the highest attendance standards prevailing in 1930 in any geographic section had been universal, there would have been about 2,300,000 more children 7–16 years of age in school. This is about double the decline in the population of this age which may be expected during the next decade.

There are several reasons for believing that attendance standards will be raised in this manner. The southern states, which for some time have had the lowest rates of attendance, improved rapidly during 1920–1930. Another such decade will bring them almost to the level of the rest of the country. Secondly, most communities in the United States already have the system and the plant to care for some increase in younger pupils; hence the additional expense of such an increase will be relatively small. Finally, child labor laws and school attendance laws are steadily becoming more stringent. It is probable, therefore, that within twenty years the highest legal requirements now prevailing in any state will become general.

With regard to probable increases in the proportion of persons 17 and over attending school, the outlook is quite different. For one thing,
there is room for a relatively large increase, since only about one-fourth
of those from 17 to 20 are now attending school. But of far greater signifi-
cance is the fact that any substantial increase in attendance in this group
will involve great changes, not only in the educational system, but in
society as a whole. High schools and colleges are far more expensive
to maintain than elementary schools; hence a large increase in attendance
can only be cared for by a largely increased expenditure of public money.
Furthermore, since many of the students, particularly above high school,
must live away from home, the family expenditures for attendance mount
rapidly. But even if the community and the parents could meet these
costs, there is the more difficult matter of directing this added schooling
in such a way that the young people will be better fitted to find satisfac-
tory work when they leave school than is now the case. What kind
of jobs are going to be open to two or three times the present number of
high school and college graduates? Is the present economic structure
prepared to absorb such an increase of persons with a relatively good
school training? Is it true that white collar jobs, for example, are already
too few for those who feel that their education entitles them to such work?
It is not within the province of this chapter to discuss these matters, but
it is proper to suggest that the trends in the growth of the school popula-
tion and in school attendance call for careful study if a nice adjustment
is to be maintained between the educational system on the one hand
and the general social and economic structure on the other.

While the foregoing discussion applies to the United States in
general, it must be remembered that population will increase rapidly
in some localities, will be nearly stationary in other localities and will
decrease in still others, with a corresponding influence on the number of
children.

More Elders.—When the social and economic significance of the
increase of elders is considered, many points of interest emerge. For
example, the problem of old age pensions was one thing in 1930 with
5.4 percent of the population 65 or older, but may be a different thing
in 1950 when the proportion over 65 will be about half again as large.
Furthermore, employment policies which were practicable and worked
little hardship when only 22.8 percent of the population was over 45, as in
1930, may not be equally satisfactory when nearly 30 percent is over 45, as
will be the case in 1950. For some time there has been talk of the discrimi-
nation in many industries against men over 40 or 45 years of age. As
this group becomes relatively more numerous, such employment policies
will work increasing hardship.

The rising proportion of people over 45 may demand considerable
revisions in the educational system, particularly if industrial processes
continue to change as in the past. There would seem to be need for some
type of adult education which would re-train middle-aged people to work efficiently under the new conditions. This would make up for the decreasing number of young persons entering the working period of life. As yet, the school system has done comparatively little in this field. Additional adult education not strictly vocational may also be demanded if there is a general rise in income levels, for a growing proportion of adults would then have leisure to devote to matters not directly concerned with earning a living. This might mean a great increase in the opportunities for study offered to mature people through the public school system. The effect on school activities might easily offset the shrinkage in enrollment arising from the decline in the child population. It seems probable that the general economic condition of the country will be the decisive factor, both in creating the demand for broader adult education and in providing the means for its satisfaction.

The increase of the aged will certainly result in an increase of the dependent aged, unless there is an expansion of employment opportunities for older persons, or unless accumulations during the working period greatly increase. It should be remembered, however, that the decline in the number of children will decrease the group of young dependents. The net result should be no change in the total amount of dependency if savings and employment opportunities continue as in the past, or else a decrease in dependency if older people can remain longer at suitable work or can accumulate reserves while younger.\[^{24}\]

It is interesting to speculate regarding some general consequences of the aging of our population. Since more of the voters will be older people, will the political parties be more completely under their control and hence be more conservative? And will the same tendency toward conservatism be reflected in the conduct of business? In the past the nation has been noted for the readiness with which its business men have adopted new methods and scrapped valuable machines because of improvements which offered a chance to cut costs. Many other factors have also contributed to the efficiency of industry and commerce but there is some reason to think that a part of this progressiveness has been due to the youth of the management and control.

With the slowing up of population growth and the increase in the proportion of elders, there may also be a greater concern with the personal aspects of cultural life. Youth is more concerned with doing things, forging ahead and making a place in the world. Age is apt to be more reflective, perhaps because the spur of poverty is less sharp, the inner driving force is weaker, or time and thought have brought about a change of ideas as to the goal of life. The mere shift in age distribution, therefore, may lead to more interest in cultural activities and increased support

\[^{24}\text{For discussion of old age assistance, see Chap. XXIV.}\]
for the arts. Such developments in turn may influence the outlook and taste of the whole population.

Young Adults.—In the proportion which it bears to the total population the age group 20–64 shows little change. During the next twenty years there will probably be an increase of about 1 percent in the proportion 20–44 and about 4 percent in the proportion 45–64. This indicates that the productive power of the nation will not be affected to any marked extent if persons 45–64 can be given suitable work; but it is more difficult to judge the effects of age changes on consuming capacity. Perhaps a little light can be shed on both questions by estimating the number of producing and consuming units represented by a population with the age distribution of 1910 and 1930 and then with the age distribution that will probably come about by 1950.

As a result of such calculations,26 it is found that in 1910 and 1930 there was 1 producing unit to 1.67 consuming units. It is reasonably certain, therefore, that in recent years the problem of finding employment has not been aggravated appreciably by the fact of a change in age composition, nor has there been any increase in the proportion of dependents. Applying the same units to the estimated white and Negro populations in 1950, it is found that the producing units will have increased about 5.5 percent faster than the consuming units and that there will be 1 producing unit to 1.59 consuming units. The employment problem may, therefore, be slightly aggravated in the future by the fact of age changes. But if the employment problem is solved, the burden of dependency should grow lighter in consequence of the relatively larger proportion of the population in the productive ages.

Sex Ratios and Marital Conditions.28—The sex ratio in the United States reached a high point for recent years in 1910 when there were 106 males to 100 females. It has been falling since then and in 1930 was only 102.5. This ratio is determined by three factors, the excess of males among immigrants, the excess of male births and the higher male death rates at most ages.

Within a country the sex ratio in any particular locality is also affected by the nature and amount of internal migration. Thus the west has always had a large excess of males while some of the older parts of the country have long had an excess of females. Perhaps a more significant difference is that existing between city and country. In general, cities have an excess of females, while rural districts have an excess of males. There are some exceptions to this rule in the cities having heavy industries, but it holds for most cities, even for those having large numbers of

28 These topics will be treated in detail in the monograph, Population Trends in the United States. On account of space limitations only a few observations on sex ratios are included here.
foreign born. Agriculture is primarily a man’s job, while occupations suited to women abound in cities. Furthermore, male death rates are higher relative to female death rates in cities than in rural districts.

V. FUTURE POPULATION TRENDS

In section I the downward trend in annual population growth for the last few years was pointed out, but little was said as to whether this came about through a decreasing number of births, an increasing number of deaths, or the decline in immigration. Although the federal government has compiled statistics on immigration for many years, primary responsibility for the registration of births and deaths has rested with the states. Most states neglected this matter before 1910, but subsequently the number of states requiring birth and death registration increased rapidly up to 1929, when it included all but South Dakota and Texas. By supplementing registration figures with estimates of the births and deaths in non-registration states, it is possible to secure fairly accurate figures for the total population from 1910 to date, and for native whites, foreign born whites, and Negroes from 1920 to date.

Deaths.—Since 1910 the number of deaths each year has been close to 1,450,000, except in 1918 when 83,000 war fatalities and 477,000 influenza deaths raised the total to 2,030,000. (Figure 18.) From 1927 to 1931 the average number of deaths was 1,450,000, which is only slightly above the average of 1,439,000 during 1910–1914, in spite of the large growth in population from 1910 to 1931.27

Immigration.—The volume of immigration has varied from year to year much more than the number of deaths. (Figure 18.) The excess of persons entering the United States over those departing amounted to as many as 945,000 in 1913 and 754,000 in 1923, while net departures reached the extremes of 214,000 in 1918 and 130,000 in 1931.28 Before the outbreak of the World War, immigration was relatively unrestricted (except from Asia), the movement depending largely upon the economic advantages which aliens could secure by coming here instead of remaining at home. During the war there was little immigration; but within a few years after the armistice, immigration probably would have reached its old levels, had it not been restricted by the quota laws. During the fiscal years 1922–1924 the maximum number of quota immigrants admissible varied between 356,995 and 357,803 per year, but this was reduced to 164,667 on July 1, 1924 and to 153,714 on July 1, 1929. Beginning in the autumn of 1930, immigration was still further restricted by the refusal

27 For a more detailed discussion see Chap. XII, and the monograph, Population Trends in the United States.
28 These figures include both aliens and citizens entering continental United States from, or leaving it for, foreign countries 1910–1931, and also entering from, or leaving for, insular possessions 1919–1931.
of visas to aliens deemed likely to become public charges. Since the Contract Labor Law of 1885 prohibits the entrance of immigrants with jobs, about the only persons who can enter are those with independent means or with relatives able to support them. In 1930 there were about 180,000 immigrant aliens admitted and in 1931 only about 43,000. Offsetting these arrivals were emigrant aliens leaving the United States, numbering about 53,000 in 1930 and 89,000 in 1931. This outward movement has always existed in a greater or lesser degree but it was probably accelerated in these two years by the growing unemployment.

![Diagram](image-url)

**Fig. 18.**—Annual births, deaths and net immigration for the total population, 1910-1931.

- Contains allowance for estimated number of births and deaths not registered.
- The excess of aliens and citizens arriving in, over those departing from, continental United States.
- Preliminary estimates.

Considering the future trend in immigration, it is likely that with an improvement of business conditions, arrivals will again exceed departures. If the improvement goes far enough, this net increase may reach the quota limits for the European countries, and the levels of 1925-1929 for Canada and Mexico, the main sources of non-quota immigration. There is, however, the possibility that Congress may make further changes in quota restrictions and may extend the system to countries not now affected. The amount of immigration in the future, therefore, depends so largely on the course of economic recovery and on congressional action, that it is difficult to forecast with much assurance. The
temper of the nation appears to favor the severe restriction of immigration, and even the return of good times may not lead to a marked relaxation of such restrictions.

Births.—Fluctuations in births from year to year (Figure 18), while not as violent as those in immigration, have had important effects on population growth. From 1910 to 1918, there was a steady increase in births from 2,542,000 to 2,834,000. They declined by 200,000 in 1919 and then rose to a maximum of 2,950,000 in 1921, the mobilization and demobilization of a large army being chiefly responsible for the changes. This high level was maintained to 1924 but since then there has been a rapid and almost uninterrupted decline. Preliminary reports for 1931 indicate 2,445,000 births,\(^{29}\) which is 500,000 below the 1921 figure, and even below that of 1910 when the population was smaller by 31,000,000 people. It is this drop in births, together with the restricted immigration under the quota laws and public charge regulation, which have made the population increase in 1931 less than half of what it was in 1913, 1920, 1921 and 1923, and only three-fifths of the average for 1910–1930, which includes the abnormal year of 1918.

Is the decline in births, which has gone on since 1924, to be checked, or is it likely to continue? The fact that there were about 125,000 fewer births in 1931 than in 1930 is thought by some persons to be a result of the business depression which began in the fall of 1929. Studies by Hexter\(^{30}\) and others have indicated that the birth rate is affected by the business situation. If this is true, conceptions should be less numerous in 1931 than in 1930, and hence births fewer in 1932 than in 1931. It seems probable, however, that the decline in 1931 is not due wholly to the depression, but is in part a continuation of the previous downward trend.

But even if the depression has exerted some downward pressure on the number of births, it does not follow that the return of prosperity will cause births to rise; for births were declining during the years 1925–1928 when business conditions were generally thought to be improving. Probably it is more correct to think that the return of good times may gradually check the decline and cause relative stabilization somewhere below the present level.

Births and Deaths by Race and Nativity.—Births and deaths may be considered separately for native whites, foreign born whites and Negroes after 1920. (Figure 19.) In this period there has been a slight upward trend in the number of deaths, largest among Negroes and

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\(^{29}\) The 1931 figures are preliminary estimates based on data from the vital statistics offices of forty-one states, and are subject to change when complete reports on births by race are issued by the Division of Vital Statistics, Bureau of the Census.

\(^{30}\) Hexter, Maurice Beck, *Social Consequences of Business Cycles*, Boston and New York, 1925, Chap. II.
smallest among native whites. Immigration of Negroes is small,\textsuperscript{31} so what has previously been said regarding total immigration applies almost entirely to the foreign born white group. Considering births, the highest point for native whites \textsuperscript{32} was 2,583,000 in 1921, with a decline to about 2,130,000 in 1931. Negro births reached a maximum of 363,000 in 1926 (five years later than whites), and then declined to about 305,000 in 1931. This is a decline of more than one-seventh for both groups, but it has been spread over ten years in the case of whites against five years for Negroes.

\begin{figure}
\centering
\includegraphics[width=\textwidth]{births_and_deaths}
\caption{Births and deaths by race and nativity, 1920–1931. (Mexicans included with whites.)}
\end{figure}

\textbf{Birth Rates.}—A better idea of why the number of births has fluctuated in the past and of what the future course may be can be obtained by considering birth rates. The simplest type of birth rate, called the crude birth rate, is obtained by dividing total births by total population. The crude birth rate increased from 26.6 in 1910 to a peak of 28.1 in 1914 and then declined until 1919, when the low point of 25.1 was reached largely as a result of army mobilization. With demobilization, the rate again rose, reaching 27.1 in 1921, since which year there has been a decline

\textsuperscript{31} The excess of Negroes entering the United States over those departing averaged less than 1,100 annually from 1925 to 1931.

\textsuperscript{32} Births to foreign born mothers count as native births, the foreign born population being kept up by immigration only.
of over one-fourth to 19.7 in 1931. Because of the growth of population, years of increasing births have shown smaller increases in crude birth rates, while years of decreasing births have shown larger declines in crude birth rates. Thus, the decline of about one-fourth in the birth rate from 1921 to 1931 resulted from a decrease of less than one-sixth in the number of births.

Crude birth rates are often misleading because they depend upon the age and sex composition of the population. Most births occur to women from 15–44 years of age, so that if one population differs from another only in having a higher proportion of women in these ages, it will have a correspondingly higher birth rate. Such difficulties may be avoided by classifying births according to the age of the mother, for example by dividing the number of births to women aged 20–24 by the number of women of that age. The results give births by age of women and are known as specific rates. They may be calculated only for years near the census date, when the number of women of each age is known, and for states which register births by age of mother. To ascertain the recent trend, the period 1918–1921, with the census of January 1, 1920, in the center, can be taken as a starting point. It includes 1919, a year of low birth rates due to the mobilization of 1918 and earlier, and also 1921, a year of high birth rates following demobilization, so the average should be fair. The most recent period that can be used is 1928–1929, as the tabulation of 1930 births by age of mother has not yet been published by the Bureau of the Census (September, 1932). These births are divided by the number of women in each age period on January 1, 1929, estimated by interpolation between the 1920 and 1930 censuses.

Specific Birth Rates by Race and Nativity.—Comparing the specific birth rates for 1928–1929 with those for 1918–1921, a marked downward trend is found, as is shown in Figure 20. Native white, foreign born white, and Negro women showed large declines in specific birth rates and in each group the drop was greatest in the latter part of the childbearing period. Among native white women the birth rate in the 15–19 age group was almost unchanged, but at greater ages the decreases varied from 11 percent at age 20–24 to 22 percent at ages 40–44. If the native white birth rates at each age are weighted according to the total number of women of that age in the 1930 census, and then averaged, the standardized birth rate is obtained. This rate fell 13 percent during the period. Among foreign born white women, the specific birth rate at age 15–19 fell over one-fourth, while at greater ages the drop was about one-third. These declines average more than twice as large as those of native whites. Negro women maintained their standardized birth rate at a level nearer that of 1918–1921 than foreign born white women and native white women. There was an increase in the Negro rate at age 15–19, the only
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increase shown in Figure 20. At age 20–24 the decline was smaller than that of native white women but at greater ages it was larger.

That declines in specific birth rates were so much larger among foreign born white women than among native whites or Negroes is probably due chiefly to the Americanizing of the foreign born, a process that had little counterpart among natives. Due to the smaller additions to the foreign group in 1920–1930 because of the immigration restrictions, the immigrant women in the 1930 population had spent more years in the United States than those of the 1920 population. There had thus been

more opportunity for them to shed the ideals and standards of the old country, and to adopt those of American women.

Although the trend of specific birth rates can only be determined accurately since about 1920, there is evidence that the decreases in this period continue a decline which began much earlier. The ratio of children 0–4 to women 15–44, which may be obtained for each census since 1800, is similar to an average of specific birth rates. This ratio has declined in almost every decade since 1810 and in 1930 was less than 60 percent of the 1850 level. (Figure 22.)

Substantiating this is a study made by the Milbank Memorial Fund of the size of several thousand families in northern and western states.

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The results indicate that from 1890 to 1910 the proportion of childless and one child families increased from 28.0 percent to 39.4 percent in the professional group, from 23.6 percent to 39.4 percent in the business group, from 22.1 percent to 34.4 percent in the skilled labor group, from 16.8 percent to 31.2 percent in the unskilled labor group, and from 17.8 percent to 20.7 percent in the farm owner group. It is probable that the proportion of small families has increased still more since 1910 and that the tendency for small families to gain most rapidly in groups where they were least numerous earlier has finally reached the farm owner group. The omission from the last two census enumerations of the questions bearing on this matter makes it impossible to bring the Milbank study up to date.

It is the opinion of the authors that the increasing practice of contraception is the outstanding factor in the decline in birth rates. The larger decreases in the rates in the older groups are just what one would expect if the decline is due to voluntary control. In the great masses of the laboring population older married couples who already have all the children they can care for will almost certainly be at greater pains to prevent additional conceptions than younger couples who are still childless or have only one or two children. But it would certainly be a mistake for us to ignore other factors in reducing the birth rate which are considered of importance by those who are well informed about them. Thus there are many competent physicians who believe that abortion is responsible for much of the decline of the birth rate. Another factor is the increasing failure of the reproductive system to function normally either because of disease or because of modern modes of life. Much sterility, both complete and partial, is thought to arise from disease (particularly venereal disease), from the nervous strain of city life, from the sedentary habits of many city dwellers, or from faults in diet attributable to the increasing distance between the producer and consumer of food and more refined modes of preparing it; in a word, from the general derangement of bodily functions arising out of the changes incident to passing from an agricultural to an industrial economy. Unfortunately, practically nothing is known of the relative importance of these various factors; hence it is inevitable that the social scientist, the physician and the biologist, approaching the problem from different angles, should hold opinions which are widely at variance.

**Regional Variations in Birth Rates.**—So far, the trends in specific birth rates have been considered for the entire registration area of 1919. The degree of change has varied considerably among the different states, as may be seen from Figure 21, which presents the standardized birth

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34 See data on size of family, Chap. XIII.
rate (the weighted average of the specific birth rates) for groups of states having similar specific rates. In each group there was a decline in the standardized rate for whites during the last decade and in two of the four groups the Negro rate decreased. The native white standardized rate declined least in New Hampshire and Vermont (4.7 percent), and most in Utah (19.3 percent) and five southern states (19.5 percent). There was

![Table](image)

Fig. 21.—Standardized birth rates by race and nativity for groups of states, 1918-1921 and 1928-1929.  

- Includes Mexicans, their births having been registered as white.  
- Negro rates not shown for states having small Negro population.  
- Calculated for the 1919 birth registration area (excluding Maine) according to method discussed in text.

a tendency for the decreases to be larger in states having higher rates in 1918-1921 and smaller in states having lower rates. The Pacific states were the outstanding exception to this tendency, for their birth rate was barely half that of Utah or five southern states, yet it decreased nearly as rapidly.

Declines in the standardized birth rates of foreign born white women were much larger than those of native white women in every group of states. New Hampshire and Vermont again showed the smallest decline,
while the largest occurred in the Pacific states where the 1918–1921 rates were lowest. With foreign born white birth rates there was little if any tendency for the states with higher standardized rates in 1918–1921 to show large decreases.

The largest decline in the standardized birth rate of Negro women took place in the five southern states where the rate was highest in 1918–1921. (Figure 21.) This is typical of the bulk of the Negro population, since southern Negroes still outnumber northern Negroes by nearly three to one. Not too much weight should be given to the increase in the two northern areas because the makeup of their Negro population in 1918–1921 probably was unusual because of the large northward migration.

The relation of rural life to the trend of specific birth rates should be noted. On the whole, the agricultural states had higher rates in 1918–1921 and larger declines since. This is what might be expected from the study of the Milbank Memorial Fund, previously cited. It showed that the four groups primarily urban (professional, business, and skilled and unskilled labor) had somewhat lower birth rates than the rural group (farm owners) in 1890 and suffered declines nearly twice as large from 1890 to 1910. The rural rate was thus considerably above the urban in 1910, consequently it would be expected to have the largest subsequent decrease. Assuming that contraception is the chief means by which the decline of the birth rate has been effected, the inference is inevitable that it was practiced first among the professional and business classes, spread to the skilled labor and unskilled labor groups and reached farmers and country dwellers last. But after reaching them, the drop in rural birth rates was the largest, rates of other groups having fallen previously.

The more rapid downward movement of native white specific birth rates than of Negro rates during the past decade has cut heavily into the differential in favor of native whites which formerly existed in most parts of the United States. In 1918–1921 the standardized birth rate of native white women was 8 percent higher than that of Negroes in the five southern states (Figure 21), nearly 30 percent higher in the six north central states, 21 percent higher in Pennsylvania and 4 percent lower in Massachusetts, Connecticut and New York. By 1928–1929, however, the white rate was 1 percent lower than the Negro rate in Pennsylvania and the five southern states, 10 percent lower in Massachusetts, Connecticut, and New York, and 11 percent higher in the six north central states.35

35 This discussion is based on the specific rates in Figure 21, which include registered births only. Since it is possible that non-registered births amount to as much as 5 to 10 percent of white births and 10 to 20 percent of Negro births, the Negro birth rates in 1918–1921 may have been nearer the native white rates than Figure 21 indicates, and even above them in 1928–1929.
Here again, the more rapid downward trends of native white than of Negro specific birth rates is what would be anticipated if the practice of contraception is the main immediate cause of fewer births. Regulation of the size of families would be expected to start in the more educated urban groups and to reach the less educated rural groups last of all. In 1930, 40 percent of the Negroes lived on farms compared with 25 percent of the native whites and this relatively larger group of Negroes had much poorer educational facilities. For these reasons they would be slower in learning about birth control and in practicing it. But during some future period, perhaps not far distant, the drop in the birth rate of rural Negroes should be greater than that of native whites.

**Estimating Future Population Growth.**—At various places in this chapter references have been made to the probable size and makeup of the population in future years. Figures on annual births, deaths and immigration furnish a base for estimating the immediate future, but if the probable trend over a longer interval is desired a more complicated method must be followed; though of course no mathematical formula can forecast population growth with absolute accuracy, no matter how well it may describe growth in past years.36

But even if the course of population growth cannot be foretold exactly, it will be worth while to know what the population will be according to certain assumptions as to immigration and specific birth and death rates, assumptions that may seem reasonable judging from trends during recent years. Estimates on several different assumptions have been worked out by the Scripps Foundation for Research in Population Problems, two of which will be discussed here. These indicate up to 1980 the limits between which the actual population probably will lie.

**Minimum and Maximum Assumptions.**—For the probable minimum it is assumed that immigration of whites (excluding Mexicans) and Negroes will be offset by emigration during 1930–1934 but that net immigration will average 50,000 per year for whites and 800 for Negroes during 1935–1939 and 100,000 per year for whites and 800 for Negroes thereafter. For the probable maximum an average annual net immigration of 20,000 for whites and 800 for Negroes during 1930–1934, 100,000 for whites and 1,600 for Negroes during 1935–1939, and 200,000 for whites and 1,600 for Negroes thereafter is assumed.

For the probable minimum it is assumed that white births (excluding Mexicans) will average 2,100,000 and Negro births 300,000 annually.

36 An J-shaped curve has been fitted to the past population of the United States by Pearl and Reed, and prolonged to indicate the future population. To the authors, it seems probable that these estimates will prove too high due to restricted immigration and lowered birth rates. In fact, Pearl and Reed have shown that it may be necessary to join together two J-shaped curves to fit the past where conditions of growth have changed sufficiently in a country. There is no way now of telling whether or how soon a second curve may need to be joined to the present curve for the United States in order to fit future growth.
during 1930–1934, which continues the decline of recent years. (Figure 19.) This will mean that the average specific birth rates in 1930–1934 will have declined from the 1925–1929 level by 9.6 percent for native whites, 16.2 percent for foreign born whites and 8.0 percent for Negroes. During subsequent years the decrease in birth rates is assumed to continue at a declining rate until a stationary condition is reached in 1970 at 67 percent of the 1930 level for native whites, 65 percent for foreign born whites, and 64 percent for Negroes. (See Figure 20 for 1930 rates.)

![Graph showing past and possible future trends by race of ratio of children to women and death rates, 1850–1980.](image)

*Based on expectation of life shown by selected Life Tables. Estimated for 1940 to 1980 according to probable minimum assumptions.*

The probable maximum assumes 2,150,000 white births and 305,000 Negro births annually during 1930–1934, with specific birth rates decreasing less rapidly than minimum rates. In 1945 these rates would become stationary at 88 percent of the 1930 level for native whites, 82 percent for foreign born whites, and 86 percent for Negroes. An idea of how the trend of the probable minimum compares with that of the last several decades may be had by examining Figure 22, which is based on the ratio of children 0–4 to women 15–44. The decline of this ratio has been less than that of the birth rate, because of the lowering of infant deaths.
mortality. Nevertheless, it is the only measure available for decades before 1910, since few states then had birth registration.

The infant mortality rate for whites declined from 82.1 in 1920 to 60.2 in 1930 and for Negroes from 135.6 to 95.1. The probable minimum assumes a further decline for whites (excluding Mexicans) to 55 in 1940 and to 52 in 1950 and for Negroes to 85 and 80, with small decreases subsequently. The probable maximum assumes a decline for whites to 50 in 1940 and 45 in 1950, and for Negroes to 75 and 65, with small decreases subsequently. The expectation of life of whites was 56.4 years in 1919 according to the Foudray Life Tables and appears to have been lengthened to almost 60 years in 1930. The probable minimum assumes the expectation of life for whites (excluding Mexicans) will gradually rise to 66 years in 1970 and then remain at that figure. For Negroes, a weighted average of the expectation of life in southern and northern states, as given in the Foudray Life Tables for 1919–1920, was 45.3 years. An expectation of life of 47.6 years in 1930 is assumed, rising to 54 years in 1970 and then remaining stationary. The probable maximum assumes the expectation of life for whites will gradually rise to 73 years in 1980 and for Negroes to 62 years. How the probable minimum assumption continues past trends is approximately indicated by Figure 22.

The probable minimum assumes that "other colored" (including Mexicans) will continue to amount to 1.67 percent of the white and Negro races as they did in 1930. The probable maximum assumes that "other colored" will rise to 2 percent of the white and Negro races in 1940, 2.5 percent in 1950, and finally to 4 percent in 1980.

Taking as a starting point the 1930 census population by age periods, the deaths by age may be calculated by means of the estimated specific death rates and the births to women at each age by means of the estimated specific birth rates. Subtracting the estimates of deaths and adding those of births and net immigration gives the population by age periods one year later. By repeating the process it is possible to calculate by age periods the population which will result in any future year if the trends assumed for birth rates, death rates and immigration are actually realized. (See Figure 16 for age composition in 1950.)

**Probable Population after 1930.**—The maximum and minimum assumptions above described indicate a population between 132,500,000 and 134,500,000 in 1940, between 140,500,000 and 148,500,000 in 1950 and between 145,000,000 and 190,000,000 in 1980. According to the minimum estimate, the population will reach its greatest size (approximately 146,000,000) between 1965 and 1970 and will subsequently decline, while the maximum estimate indicates increases up to the end of the century. It is believed by the authors, however, that the actual population will be considerably nearer the minimum than the maximum.
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figure, especially by 1980. The birth rate has been declining in the United States since 1810, hence it seems more likely that it will continue to decline until 1970 rather than become stationary in 1945, as the maximum assumes. Even according to the minimum assumption for birth rates in 1980, there will be about 195 births per hundred women who marry as compared with 280 in 1930. This would make families average nearly two children, which is far different from having all families childless, the absolute extreme to which the birth rate can decline. For this reason, references to future population in preceding sections\(^{37}\) are based on weighted average of the maximum and minimum. Equal weights are used in 1940 but the minimum is given increasing weight up to 75 percent in 1980.

Considering the probability that the 1950 population will be between 140,500,000 and 148,500,000, it should be remembered that there is little chance of error in saying that there will be about 96,000,000 survivors from the 1930 population in 1950. This number is obtained by applying death rates to the 1930 population and allowing for emigration. Death rates at ages over one year have changed but little in recent years,\(^ {38}\) while emigration has averaged about 100,000 a year since 1920. The remainder of the 1950 population will be made up of persons born here or immigrating after 1930. These two movements cannot be foretold with as much accuracy as the number of deaths, but together they will account for only about one-third of the total.

Consequences of Slower Population Growth.—The consequences upon our social and economic life of the slower population growth which seems assured for the future are likely to be many. In the past there has been a widespread belief that a rapidly growing population was one of the essential conditions of general progress. While rapid growth of population undoubtedly has contributed to past progress, the slowing up of growth in the future need not be accompanied by gradual stagnation.

As a slower growth in population affects a larger and larger part of the nation, one of the most important consequences is likely to be a revaluation of the importance of growth. Changes should come to be appraised in other than quantitative terms. It is impossible to foretell the direction or the extent of the changes in mental outlook which will ensue; but it may be hazarded that purely quantitative measurement will bulk less large in a judgment of what constitutes progress and that the quality of living will secure greater attention.

An immediate and practical influence of slower population growth will probably manifest itself in efforts to adjust economic activity to such growth. In all likelihood this adjustment will not be particularly

\(^{37}\) See Figures 1, 3, 16 and accompanying discussion.

\(^{38}\) See Chap. XII.
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difficult in most lines, once business men are fully convinced that population growth will slacken and are able to estimate with fair accuracy the population for five or ten years in advance. That this change in attitude may not be easily effected is indicated by the fact that a population of from 200,000,000 to 300,000,000 by the year 2000 is frequently assumed by sales managers and executives. Just because the population in 1860 was eight times as large as in 1790, and in 1930 was four times as large as in 1860, one is not justified in saying that in 2000 it will be twice as large as in 1930.

Certain industries will face difficult and extensive problems in adjusting to a slower population growth; these will be the ones most affected by the probable future trends in population. They include industries in which technical improvements are rapidly increasing human efficiency, those in which consumption per capita is relatively inelastic, those in which productive capacity is already largely in excess of effective demand and those in which capital (including land) is relatively durable, non-transferable and has a high value per unit of product.

Some industries, of which agriculture is an example, will be handicapped by a combination of several of these unfavorable factors. Farm production has been over-expanded since the World War, efficiency has increased rapidly, foods in general face an inelastic demand, and the proportion of capital in land is high, as is also land value per unit of product. Any policies for the utilization of farm land in the future must give careful consideration to the probable growth of population if they are to prevent the farm population from sinking to a low economic level.

There are other industries which seem directly dependent upon population increase for their growth. These industries will feel the effects of an approaching stationary population in proportion to the degree they have a stable product or have already reached the saturation point. The present radio may be replaced by an improved model at any time, but the kitchen stove is usually kept until worn out. The point is that some industries can expect to expand only as population grows, even if purchasing power grows considerably.

On the other hand, there are many industries, probably producing the majority of all industrial goods, whose growth is largely independent of population increase. They could sell their product in much greater quantity if the public had the money to buy it. To such industries raising the per capita purchasing power of the public will be a vastly greater concern as population growth is retarded. Making better customers of the population at large may require raising wages and salaries, which may temporarily reduce profits to some extent. But there will be less need to use profits for increasing plant capacity until the increased purchasing power of the bulk of the consumers has offset slower population growth. In
the future plant expansion should be based upon probable increase in the purchasing power of the population rather than upon the belief that population growth will soon overtake any expansion which available capital makes possible.

It may be argued that even though the population of the United States is growing slowly and may soon become practically stationary, industry can continue to expand by increasing foreign trade. In the long run it seems debatable if much relief can be found in this direction. In the first place, population growth is slowing up in practically all of the countries with which the United States trades on a large scale, and will soon be stationary in many of them. Secondly, all other industrial nations are competing more and more strenuously for such trade. Finally, the tendency to raise tariff barriers, which still shows no sign of abatement, handicaps international trade. The slower growth of population is not the sole or even the chief factor in rendering more serious the economic difficulties into which the country has drifted. But it does seem to merit careful consideration in future planning for the rationalization of social and economic life.

VI. POPULATION POLICY

Early Encouragement of Growth.—It is not difficult to show that, consciously or unconsciously, the United States has had a population policy from a relatively early date. From the time when settlement first took place most communities wanted people, partly to increase the safety of life and property and partly because of the effect on land values. Most of the individuals and companies who received large grants of land, or were able to purchase it cheaply from public authorities, made efforts to have their lands occupied. It is well known, for example, that William Penn made strenuous efforts to get settlers on his grant and that at times his success was sufficient to incur the dislike of men in other communities who felt that he was using unfair means to attract people to his domains.

Because of such interest the settlement of the land was encouraged in a variety of ways. The land policy provided free or cheap land in farm units to foreigners as well as natives if they would settle and work it. Immigration policies permitted easy entry, offered political asylum and allowed the importation of slaves for a time. Political leaders spread the idea that here the common man had opportunities never before open to him. Immigrants came in great numbers and the surplus youth in the east moved westward in a steady stream. By about 1890 the actual settlement of the land was almost completed; but since the industrial development of the country was also well under way by that time, there was still need for immigrants. The steamship companies and other
interests which profited by immigration saw to it that the advantages of coming to the United States were well advertised. The policy of the "open door" was a huge success in peopling the land.

Gradual Restriction of Immigration.—Although public encouragement of immigration was generally accepted, there have always been those who felt that the "new" immigrants were inferior and that something should be done to preserve the economic advantages of the country for the descendants of early arrivals. Nevertheless, it was not until about fifty years ago that active steps were taken to close the door to "undesirable" groups other than criminals or those afflicted with certain diseases. In 1882, partly as a consequence of racial troubles in the west, the first Chinese Exclusion Act was passed. In 1885, under pressure of organized labor, the Alien Contract Labor Law was passed. This forbade the entrance of foreigners under contract to individuals or firms and was intended to prevent employers from breaking strikes and undercutting wages by using cheap labor recruited by agents in foreign countries. These early acts clearly indicate that, under certain circumstances, an increase of numbers was not considered the highest good by all groups.

Step by step federal policy has thus gone from the one extreme of stimulating immigration to the opposite extreme. The exhaustion of desirable free land put an end to the public encouragement of agricultural immigrants. More drastic is the present policy, which assigns to each country in the Eastern Hemisphere an annual immigration quota. The various quota laws in effect since June 3, 1921, also represent an effort to influence the makeup of the population to preserve the composition attained before the arrival of the millions of eastern and southern Europeans who came during the present century. The quotas in effect since July 1, 1929, are based upon the proportions of the population springing from the different national stocks, and definitely favor northern and western Europeans. Quotas have not yet been applied to Canada and Latin America but may be applied in the future. The open door policy of the past is completely abandoned; not only are numbers restricted but there is definite selection as to kind.

Supplementing the quota laws are various administrative regulations. Those providing for the deportation of aliens who have entered illegally have been vigorously enforced in recent years, resulting in thousands of expulsions plus a large but unknown number of departures caused by fear of deportation. A more drastic influence in restricting immigration has been the regulation in force since the latter part of 1930 under which a visa is denied to a prospective immigrant if it is believed that he may become a public charge. This practically excludes aliens without jobs (unless wealthy), while the Alien Contract Labor Law excludes aliens.

30 No immigration of Orientals ineligible for citizenship is allowed.
with jobs. As a result, the stream of immigration has been reversed, and since November, 1930, more aliens have been leaving the United States than have been entering.

Changing Attitude Toward Large Families.—The same attitudes of mind which counted unrestricted immigration as a good also encouraged the raising of large families. Furthermore, large families were of direct advantage to much of the population. Farmers with several sons were assured of a steady labor supply with little or no wage payment, while other workingmen had augmented family incomes if several minor children were at work. Besides, having numerous children was probably the most certain form of insuring old age security in a pioneering community.

The general attitude toward birth control and large families which prevailed prior to 1870 may be illustrated by an incident which occurred in 1832. At that time Charles Knowlton wrote a little pamphlet (published in New York City) entitled Fruits of Philosophy; or the Private Companion of Young Married People in which he advocated contraception and described some of the methods by which it might be accomplished. This was considered an offense against public morality, and Knowlton was punished by fine and imprisonment.

There is little to record regarding the birth control movement between Knowlton’s time and 1873 when Congress passed the so-called Comstock Laws “for the suppression of trade in, and circulation of obscene literature and articles of immoral use,” which in effect outlawed information about practices and devices for preventing conceptions. The passage of these laws would seem to be evidence that birth control was becoming sufficiently common to attract the attention of those who were opposed to it, on whatever grounds. In more recent years, particularly since Margaret Sanger attempted to open a birth control clinic in 1916, there has been considerable legal conflict between those who believe that man has the right to control his family numbers and those who believe that such control is harmful from a moral, national or personal point of view. However, there is increasing opposition to measures which interfere with the individual control of the size of the family. Between the mild enforcement of restrictive laws by public authorities and the general disregard of them by individuals, these laws are of little consequence at present.

In this connection it should be noted that birth control legislation undoubtedly has had some effect upon the sources of growth in the population. Had no restrictions been placed on the spread of birth control information and had clinics been permitted to function freely, it is probable that birth control would have spread more evenly through social classes and that the decline in the birth rate among poorer and less educated people would have been more closely comparable with the decline among the better educated and the well to do. (See pages 42 and 43.)
RECENT SOCIAL TRENDS

Laws against the wilful inducing of abortion have long been on the statute books and have been fairly successful in keeping down the number of abortions. Nevertheless, it is the opinion of many persons in a position to know that countless thousands of abortions are brought about in the United States each year, with a restricting effect on population growth.

There are certain other laws which also exert some influence upon population growth, although they were not passed with any thought of doing so. Thus the laws governing child labor and compulsory school attendance have little by little reduced the economic value of children to their parents. Working in the opposite direction, but of far less potency, are free child health clinics, free lunches in schools and income tax exemptions according to the number of dependent children.

Need of a Well Thought Out Policy.—The net result of these conflicting tendencies is a large measure of restriction of population growth based upon the belief that life will be more desirable if numbers are limited in accordance with means of support. But since this restriction is more or less haphazard in operation, it would seem desirable that more thought should be given to a conscious and deliberate population policy for the future. Otherwise the present methods of restriction may result in neither the most desirable quantity nor the best possible quality.

Regulation of Numbers.—The optimum size of population is a highly controversial topic. Militarists have always believed that a large and rapidly growing population is desirable, while many religious groups and ethical teachers have held the same view, though from quite different motives. On the other hand, there have always been individuals who believe that personal development and the service of God and man are better performed by those having few or no children; and today there is a rapidly growing body of persons who are convinced that the population should be adjusted to the economic resources available for its support. There is no immediate prospect of reconciling these divergent views; but assuming that this can be done, attention will be turned for a moment to the means by which a given population might be achieved.

It seems probable that numbers can be kept as low as the community may deem expedient, since immigration is proving to be susceptible of exact regulation and since it will require but little improvement in present methods of contraception to enable man to exercise almost complete control over births. It is true, however, that many people have political, religious or personal scruples against limiting their families and that there are individuals mentally inferior and diseased who do not practice birth control because they have no interest either in their ability to provide for their children or in the quality of their descendants.

For discussion of child labor, see Chap. XV.

[ 54 ]
Hence, violent propagating. There can be no agreement there. The addition of four attitudes are desirable, but the parents do not. There is an agreement in the labor, the large families to the exclusion of persons with children from many desirable apartments and houses, and many other factors which discriminate against the man and woman who devote any considerable time and energy to their children; the growing concentration of population in cities and the increasing apartment house and restaurant existence of city populations; the pity lavished by their more “emancipated sisters” upon women who rear families rather than devote themselves to business, lectures, travel, and bridge; and the desperate struggle of many of the white collar workers to “keep up with the Joneses”—all these encourage the restriction of births.

If a larger and a more native population is wanted, the most helpful measures probably would be to continue present immigration restrictions and, at the same time, to make it economically easier to rear more children. Maternity allowances and tax exemptions graduated to the size of the family, not too stringent regulation of school attendance and child labor, preference in employment for fathers of families of the size deemed desirable, are the types of economic benefits which might be set up. The experience of France with similar measures has not been encouraging, but her efforts appear only half-hearted, since the economic burden upon parents of large families has not been greatly reduced.

In addition, social attitudes toward the bearing and rearing of children are of great importance. Little is known as yet of methods by which these attitudes can be controlled; but if it could be made fashionable to have four to five children per family, the effect on the birth rate would probably be greater than that which could be secured in almost any other way.

Improvement of Quality.—A good many students of population, as well as the eugenists, are convinced that the differential birth rate, in addition to causing undesirable social effects, has already resulted in some deterioration in the biological soundness of the national stock. There is reason to believe that they exaggerate the biological consequences; nevertheless, it seems clear that no population policy can be considered comprehensive which does not take into account the fact that there are native differences between individuals and that as soon as any agreement can be reached about the methods by which “undesirables” can be selected from the population, they should be prevented from propagating. In the present state of knowledge there is bound to be violent disagreement as to those who are biologically “undesirable”; hence, progress in their elimination will be slow. But eugenic sterilization
RECENT SOCIAL TRENDS

laws and the segregation of certain groups of the mentally incompetent are making headway; and a national population policy would be inadequate which did not include plans for increasing the effectiveness of sound efforts to prevent births among the unfit.41

Those interested in improving the quality of the population are by no means satisfied with eliminating the unfit. They hold that it is also essential to encourage the increase of the "desirable." Important as this may be, it appears that little can be done about it at present. There is now the widest possible divergence of views regarding those who are desirable, how they are to be mated and how encouraged to raise families larger than the average. Suffice it to say that any general population policy should make provision for sufficient biological education to insure appreciation of the problems involved in mating and sufficient civic education to make people appreciate the importance of participating in the continuing life of the community through their children. Any positive encouragement of good stock beyond such education and the equalization of economic conditions between those who do and those who do not raise families, seems inadvisable until more is known about the inheritance of human traits.

The population policy of the future will have to be woven out of these factors and others now unforeseen and will have to be determined in the give and take of everyday life, as is the case with other important national policies. It is not likely that the best possible policy will be hit upon at once, but this should not deter the nation from making a conscious and determined effort to control population growth, both quantitative and qualitative. The quantitative goal may well be to adjust numbers to national means so that a high standard of living can be maintained and the qualitative goal to forestall the increase of undesirable stock and stimulate that of desirable stock within the quantitative limits.

VII. SUMMARY

The growth of population in the United States has been great and continuous. The decennial rate of increase, however, has been declining since about 1860 and the annual increase in numbers has fallen steadily and rapidly since 1923.

For more than a century prior to 1930 the white race was growing faster than the Negro and until 1920 constituted a steadily increasing proportion of the nation's population. From 1920 to 1930, however, the colored races as a whole (including the Mexican) increased somewhat faster than the white race. The foreign born white population, which had remained a fairly constant proportion of the total for several decades,

41 On sterilization laws in the several states, see Chap. XXIV.
has shown almost no numerical growth since 1910 and constitutes a declining proportion of the total.

In recent decades a large part of the increase in population has gone to the cities or their suburbs. There has been a total increase of only about four millions in the rural population since 1910 and nearly all of this is found in the non-farm rural group. The farm population actually decreased by about one and one-fourth millions between 1920 and 1930.

The places of most rapid growth in the United States from 1920 to 1930 are those metropolitan districts where commerce and industry have grown rapidly, and Florida and California where the mild climate has proved a strong attraction.

Until the World War our white population was becoming increasingly diversified in national origins, the proportions from Italy, Russia, Poland, Czechoslovakia and Mexico increasing rapidly between 1900 and 1915. Since 1921 the quota laws have not only diminished immigration in amount but have so altered its character that the white population bids fair to remain relatively unchanged in national origins in the future or to consist of a slowly increasing proportion from northern and western Europe.

One of the most important trends in our growth is toward an older population with a decline in the proportion of persons under 20. This arises in part from the restriction of immigration and in part from the fact that the total number of births has declined in recent years while the number of persons in the older groups is rising rapidly due to the large increases in the number of births in the nineteenth century. As a consequence there will be almost a 50 percent increase in the proportion of persons over 65 during the next twenty years and about a 25 percent increase in the proportion 45–64. The proportion in the most productive ages will increase slightly. Such age changes are likely to produce significant consequences in our schools, in our business, in our politics and in our social structure.

The growth of population in the future is certain to be much slower than in the past. Although death rates have fallen somewhat, particularly at younger ages, these savings have been much more than offset by decreases in birth rates. Decreases have been much larger in the later part of the childbearing period than the earlier part, among foreign born white women than among native white or Negro women and in rural than in urban areas. The continuation of these trends together with the restriction of immigration will result in a net addition to the population from 1930 to 1950 of about the same size as that from 1920 to 1930. After 1950 growth will be slower. It is even possible that the population will begin to decline after reaching approximately 146,000,000 in 1970.
An increasing number of persons believe that the time has come to consider carefully a policy for the future. They believe that population growth should be consciously controlled in the interests of all the people. This will mean an effort to adjust numbers to the means available for their support so that a high standard of living can be maintained. It will also involve more careful selection of immigrants, the development of means of preventing the propagation of "the unfit" and in time, perhaps, methods for encouraging the propagation of "the fit" to the end that the quality of the stock may be improved.
CHAPTER II
UTILIZATION OF NATURAL WEALTH

Part 1.—MINERAL AND POWER RESOURCES

By F. G. Tryon and Margaret H. Schoenfeld

From problems of population the study of social trends turns to those of the utilization of natural wealth—the ways in which we exploit our minerals, power resources and agricultural and forest lands, with their effect upon American standards of life. Here we shall note that population changes have already affected the condition and outlook of agriculture, and that technological improvements have made profound alterations in the efficiency with which we use land, minerals and power.

The abundance and richness of natural resources have helped to shape the pattern of American culture since colonial times. Their social effects have been most immediately registered in the economic life of the country and through it, in the national standard of living. Foreign observers from de Tocqueville to André Siegfried have remarked upon the rich resources of the American continent and it is generally agreed that the high productivity of our population and the high per capita consumption which it makes possible have been facilitated by an exceptionally generous natural endowment.

In an effort to state more clearly the place of natural resources in the American economic system the authors have compared the physical heritage of the United States with that of other countries, particularly those in western Europe, and have shown how often the high productivity of the American worker is correlated with some natural advantage. Sometimes the advantage is one of quality, as in the coal and copper mines. Sometimes it is one of quantity, as in the more opulent ratio of agricultural land to population which prevails in the United States. This study of resources and productivity, however, has proved too long to be included here.

In the present chapter, therefore, it will be assumed that wealth of resources is a national advantage with no attempt to evaluate that advantage. Our concern will rather be with the trends of utilization and with the adequacy of the resources to meet the needs of the present and the calculable future. Men are prone to think of resources as some-
thing fixed. In point of fact they change, though slowly. The minerals are gradually exhausted; the fisheries may decline; the virgin stand of timber disappears in time; the soils are being depleted, or perhaps more significant, the ratio of population to the land available may change. How far, then, is our original endowment dissipated, and what are the prospects for the future? Can the limited resources of fuel and metal continue to meet the burden of an increasing demand? Will there be land enough to feed our people, or is population destined to press harder on the means of subsistence? The nation is passing out of the pioneer stage of exploitation. Does the transition cast a shadow on the future? And how is American society adjusting itself to the change?

I. THE INCREASING DRAFTS UPON THE MINERALS

American economic life has been characterized by a rapid increase in the consumption of the earth materials until the United States has come to use metal and power on a scale attained by no other country. From 1860 to 1913 the population increased threefold while production of pig iron increased 38 fold; of coal 39 fold; of the total mineral fuels 44 fold; and of copper 76 fold. In fact, consumption in the twenty years ending 1929 was greater by far than in the entire three hundred from the landing of Captain John Smith in 1607 to the Jamestown Exposition. The rate of increase has slowed down since the war and there is reason to think that it will be less rapid in the future, but discussion of this point can best be postponed to a later section. Here it is enough to note that in the mineral fuels, in iron and in the non-ferrous metals, our per capita consumption is far higher than that of the highly industrialized United Kingdom. It is twice or thrice that of France and Germany and five or ten times that of Italy and Spain.

Growth of Mining Compared to Agriculture, Manufactures and Transport.—While all branches of business have tended to grow rapidly in the United States, the mineral industries have developed faster than any other major division, far outstripping agriculture and exceeding even the growth of manufactures and rail transport. The broad changes are summarized in Table 1. From 1899 to 1929 population increased 62 percent. Agricultural production expanded in slightly less degree, the increase amounting to about 48 percent. (See Table 1, footnote a.) The physical volume of manufactures, on the other hand, increased 210 percent. The volume of railroad freight handled advanced still more. But the volume of mineral production nearly quadrupled, the increase in the 30 year period amounting to 286 percent.

The growth of mining furnished the sinews of power and metal necessary for the expansion of other forms of industry. The contribution of the mines is shown by the expanding use of power. The consumption of
raw energy increased 230 percent during the period. This figure, however, does not give the full measure of the expansion of power, because it takes no account of the great improvements in efficiency of fuel utilization which marked the period. Thus the increase in the power equipment of the country—installed horse power of all types except passenger automobiles—was 536 percent. If passenger automobiles are included, the growth of power equipment is found to be 2,510 percent. The figures of horse power have to be discounted with some regard to the low use factor characteristic of many types of prime movers, especially of automobiles. The increase in the amount of power actually generated cannot be measured precisely, but it evidently lies somewhere between the 230 percent shown by the consumption of energy materials and the 2,510 percent shown by the installed horse power. In either case, it is clear that the use of power and of heat energy in the United States has expanded in the last generation in greater ratio than the production of goods.\(^1\) This simple fact throws a flood of light on the increase in output per worker so characteristic of the period.

Table 1.—How the Growth of Mineral Production from 1899 to 1929 Compares With That of Population, Agriculture, Manufactures and Rail Transport

<table>
<thead>
<tr>
<th>Item</th>
<th>Index in 1899</th>
<th>Index in 1929</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>100</td>
<td>162</td>
</tr>
<tr>
<td>Physical volume of production:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agriculture(^a)</td>
<td>100</td>
<td>148</td>
</tr>
<tr>
<td>Manufactures(^b)</td>
<td>100</td>
<td>310</td>
</tr>
<tr>
<td>Transportation, railroad ton miles</td>
<td>100</td>
<td>338</td>
</tr>
<tr>
<td>Mining(^c)</td>
<td>100</td>
<td>386</td>
</tr>
<tr>
<td>Energy consumption (mineral fuels and water power)(^d)</td>
<td>100</td>
<td>330</td>
</tr>
<tr>
<td>Horse power equipment:*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excluding all automobiles</td>
<td>100</td>
<td>385</td>
</tr>
<tr>
<td>Excluding only passenger automobiles</td>
<td>100</td>
<td>636</td>
</tr>
<tr>
<td>Including all automobiles</td>
<td>100</td>
<td>2,610</td>
</tr>
</tbody>
</table>

\(^a\) Index of O. E. Baker, Bureau of Agricultural Economics. Includes animal products, plant foodstuffs, and industrial crops. Base equals the average for the five years 1897 to 1901, centering on 1899. Value shown for 1929 represents the average for the five years 1927 to 1931. The base period, 1897–1901, was one of exceptional opulence. In these years the ratio of agricultural production to population was the highest in the nation’s history; exports of farm products were also the largest.

\(^b\) Index of Edmund E. Day and Woodlief Thomas extended through 1929 by reference to Federal Reserve Board Index.

\(^c\) Index of Harvard Committee on Economic Research extended through 1929 by reference to Federal Reserve Board index.


\(^\ast\) U. S. Geological Survey, C. R. Daugherty, *The Development of Horsepower Equipment in the United States*, Water Supply Paper 579, pp. 11, 45. Dr. Daugherty has computed the values for 1929 for the use of the President’s Committee and permits them to be included here in advance of other publication.

\(^1\) Compare with Chap. V.
As a group, production of the minerals has been increasing very rapidly, far outstripping the growth of population. There are, however, signs of retardation in the rate of growth of some of the most important minerals, such as bituminous coal and pig iron and an actual decline in production of anthracite, gold, and silver.

For the group as a whole, the outlook is for continued increase, but at a gradually diminishing rate.

Based on data in annual reports in Mineral Resources of the United States except for natural gas, water power, and total energy, which are based on original studies by F. G. Tryon.
NATURAL WEALTH

Signs of Slackening Growth.—It is inconceivable that the geometric increase which characterized the consumption of minerals up to the World War could continue indefinitely, and to the careful observer there are already signs of diminution in the rate of growth. Production of some of the minerals, however, continues to increase rapidly. (Figure 1.) Conspicuous among this group are oil, gas and sulphur. A few others, such as gold, silver and anthracite, show an actual decline.2 Still others, though not past the stage of growth, show very definite retardation. Thus the growth of bituminous coal has been checked by the competition of other sources of power and by advances in fuel efficiency, while the growth of virgin pig iron is slowed down by economies in use and by the increasing employment of scrap.

That the tendencies thus noted in coal and iron will later appear in the other minerals seems only a matter of time. For the group as a whole, the prospect is one of increase, but at a diminishing rate. The tendencies are strengthened by the impending changes in population growth discussed in the preceding chapter. While per capita consumption has greatly expanded and will doubtless expand still further, no small part of the aggregate increase has been due to the simple fact of population growth, and the change from increasing to stationary or declining numbers, which statisticians now forecast, will modify the demand for the minerals.

Such a slowing down of the former growth of demand accentuates the troublesome problem of production control, which is so clearly illustrated by the present position of coal mining. From the long time viewpoint of conservation, however, it is a hopeful sign, for the greatest of all social problems in the use of the minerals is how to reconcile an insistent demand with the obvious limitations of reserves.

II. OVERCOMING THE GROWING DIFFICULTIES OF MINING

Up to the present the necessary increments of metal and of power have been supplied to American industry at decreasing cost. This result has been attained in spite of the growing difficulties of mining caused by depletion of the richer deposits.

When the nation began to be conscious, about the turn of the century, that the minerals were not inexhaustible, public apprehension took the form of imagining what it would be like to have no coal or no metal. Then, when no shortage developed and there came instead a period of overproduction, a reaction set in, expressed in the idea that the cry of conservation had been a cry of "Wolf!". It is now clear that the problem of conservation of the minerals is not absolute exhaustion at some distant

2 The sharp decline of gold production after 1915 was, of course, due in large measure to the inflation accompanying the World War and the resulting advance in commodity prices and wages. Similarly, the decline of silver production is largely due to changes in currency systems.
date but rather increasing cost in the near future through the growing
difficulties of mining. We need not fear that mineral species may become
extinct as the passenger pigeon did. The danger that confronts us is
rather a handicap resulting from exhaustion of the more accessible de-
posits and the consequent tendency toward diminishing returns and
higher prices.

The Struggle against Increasing Costs.—The history of mineral
exploitation is a record of a struggle against increasing natural diffi-
culties. It is a commonplace that the richer and more accessible of the
known deposits are attacked first. As these are exhausted, operations
proceed to poorer and less accessible deposits, and the physical conditions
become progressively more difficult. For a while these may be offset by
more efficient management, but there comes a time when with the best
of management the old mine cannot compete. What happens to a single
mine happens also in time to an entire district. For a while operators
move on to new locations in the same field, little, if any, inferior to the
first. But at length the easier locations have been used up and subsequent
operations must be in leaner ores and thinner beds at greater depth.
Discovery of new bodies of rich ore may interrupt the process, but other-
wise the natural obstacles increase year by year, and in time the whole
district finds itself in the stage of increasing costs. That is the ultimate
fate of mining enterprise.

The anthracite district of Pennsylvania is an excellent example of
this tendency. Mining has been going on there for 125 years and the
reserves are sufficient to last for another 125 at the present rate of pro-
duction. The district has therefore entered the stage of maturity in the
production cycle and natural conditions have been growing steadily
more difficult for the last half century. The average thickness of the
beds has fallen, the depth has greatly increased and, what is even more
serious, many of the collieries have passed from first mining to second or
even third mining of pillars and stumps. These increasing difficulties have
swallowed up all of the economies due to advances in mining methods and
equipment (which have been notable in the anthracite mines), and the
output per man per day is actually less than it was a generation ago.3
Production costs are increasing and this handicaps the industry in com-
peting with other fuels.

This ominous record of steadily growing difficulties reflected in in-
creasing costs can be matched in thousands of individual mines and
scores of districts around the world. In England the condition is general
and no small part of the present economic troubles of the British is due
to the unequal competition between a land in the stage of increasing

3 D. C. Ashmead, series of eight articles on the increasing difficulty of mining anthracite,
[ 64 ]
costs of mining and newer lands where costs are still being reduced. The
tendency of natural conditions to grow more difficult is universal, but it
is often counterbalanced by other tendencies in the opposite direction—
the discovery of new deposits, the expansion of transport which opens up
deposits hitherto inaccessible, and the improvement of technology.
Mineral economics is the record of a battle, a battle between the growing
difficulties of nature on the one hand and discovery, transport and tech-
nology on the other. How does the battle fare? Taking the country as a
whole, which side is winning, the natural conditions tending to increase
costs or the man directed forces tending to reduce them?

Discovery of New Deposits.—First among the factors offsetting the
tendency toward diminishing returns is the discovery of new deposits.
In the United States the factor of discovery was exceedingly influential
during the nineteenth century, and to it the increasing supply of minerals
was largely due. As in other countries, the period of maximum activity
in exploration followed on the heels of settlement. The wave of discovery
reached its crest in the thirty years following the California gold rush
and by the end of the century the great finds possible through surface
prospecting had largely been made.

Among the metals, no prizes comparable with Butte or the Comstock
Lode have been found in the continental United States in the last quarter
century. In almost every district, applied geology has developed large
additions to the reserves, but the original discovery was made by a
bearded prospector equipped with pick and burro. Of the 33 leading dis-
tricts producing gold, silver, copper, lead, zinc and even iron, only 5 have
been found since 1900 and none at all since 1907. In Europe and Austral-
asia, also, the day of brilliant success in surface prospecting seems over.
In just two regions of the world is anything like the wave of discoveries
which followed the California gold rush now going on—in Africa, espe-
cially Rhodesia and the Congo, and in northern Canada.

Discovery, however, continues to make large contributions to the
supply of those minerals which the old time prospector could not see or
whose value he did not know. Economic geology has developed elaborate
techniques in the search for oil and gas and discoveries of new pools have
followed one another with embarrassing frequency. Most of the bauxite
of the south has been blocked out since 1900. New beds of sulphur have
been found in the salt domes of the Gulf Coast. The world’s richest borax
deposits were discovered largely by accident in 1913 and 1927. Supplies
of helium gas were first located in volume after the war and the last
three years have witnessed the discovery of potash deposits in the south-
west which may prove among the great mineral prizes of the world.

The character of the recent finds illustrates both the possibilities
and the limitations of discovery in the future. The things of obvious
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value which outcrop on the surface have probably been found. The chance of stumbling on more Buttes and Cripple Creeks is small. The search for minerals must now be organized on a large and costly scale. Even applied geology is fast exhausting the easy possibilities of surface prospecting and future rewards of organized search depend largely on the development of new methods for locating supplies which give no surface expression of their presence. A new science of geophysical or subsurface prospecting, relying on delicate electrical and physical instruments, offers possibilities. In the search for oil, gas and sulphur on the Gulf Coast the new methods have yielded striking successes. Elsewhere they have hardly passed the experimental stage. It seems likely that the cost of exploration will increase and that future discoveries will consist more in the extension of the boundaries of known deposits than in the location of new ones. The nineteenth century was the age of dazzling discovery; in the twentieth the battle against increasing costs must fall more heavily upon the factors of transport and technology.

Expansion of Transport Facilities.—The second offsetting factor in the battle against increasing costs is transportation which frequently brings into use deposits already known but hitherto inaccessible. The classic example is the opening of the transcontinental railroads. Many of the western mining districts, first worked for placer gold, were known to contain the baser metals, but not until rail transport was provided could large scale exploitation of them begin. With rail connections established after 1870, a stream of non-ferrous metal poured upon the markets of the world, the effects of which are clearly apparent in contemporary records of increasing production and declining price. Many low grade deposits exist today, awaiting the coming of the railway to give them value. As late as 1914 when roads like the Louisville and Nashville and Chesapeake and Ohio pushed their way through the southern mountains they opened up coal fields known to exist but previously inaccessible. Canal and river transport on the other hand have had little effect on availability of minerals in the United States, with the notable exception of the Panama Canal, the completion of which made accessible to the east the great supplies of petroleum in California; indeed, the unforeseen development of the traffic in oil has provided the canal's largest source of revenue. Electric transmission is not ordinarily thought of as a form of transport but the rise of high tension transmission lines is in fact a means of utilizing remote resources of water power and in some instances of fuel as well.

In our own time the growth of automotive transport is acting to increase available supplies of minerals although on a much smaller scale than was characteristic of the railroads. Better roads and cheaper trucks make available scattered deposits too small to justify rail construction.
Even low value materials, such as coal, now move distances as great as 100 miles by truck.

One of the most striking examples of expansion of transport in recent years is the growth of long distance pipe lines. Reductions in the cost of manufacturing and laying pipe are the immediate cause of the spectacular growth. Trunk pipe lines originating in the southwest now extend more than a thousand miles to the industrial centers of the upper Mississippi Valley. This development makes available enormous amounts of natural gas, the existence of which was known but for which no adequate outlet was at hand.

**Advance of Mining Technology.**—As the earth’s surface is prospected and the network of primary transport facilities is pushed nearer to completion, the potential help of discovery and transportation in cost reduction become less and the burden of overcoming the increasing difficulties of mining falls more and more upon technology. Both discovery and transport have been less active in the twentieth century while technologic advance has proceeded at a pace which was never more rapid than at the present time. Technology has affected the supply of minerals both by advances in the art of mining and by increasing the efficiency of utilization which sometimes comes through economies in the recovery and use of by-products and sometimes through the development of substitutes.

**Mechanization of the Mines.**—Running through all branches of mining is the tendency to replace hand by machine labor. It can be most clearly illustrated by reference to the coal mines. Steam and compressed air have given way to electric power. Haulage underground is largely electrified and even in the gathering of single cars in rooms the mine mule is rapidly yielding to the faster and more powerful electric locomotive. Use of the cutting machine has almost entirely displaced the old time hand methods by which the miner undercut the seam, and even the cheap though wasteful and dangerous method of “shooting off the solid” is giving way, so that 80 percent of the underground tonnage is now cut mechanically. In another major task of the miner, the drilling of shot holes, portable electric drills are being used. Until recently the back breaking labor of shoveling the coal from the floor to the mine car resisted all efforts at mechanization. This last stand of heavy labor is now yielding. Machines in great variety—loading machines, power shovels, scrapers, “duckbills” and moving conveyors—are available for this task, and from 1,880,000 tons in 1923 the tonnage mechanically loaded has risen to 47,000,000 in 1930, with further rapid increase assured. The progress of mechanization underground is paralleled by the advances in open pit mining on the surface, where huge power shovels with a capacity of 15 yards to the bite now handle an overburden of 60 feet of dirt and rock to win a 6 foot seam of coal.
Mass Mining of Low Grade Ores.—Parallel to mechanization have been advances in the art of handling ground, the peculiar province of the mining engineer. These are best illustrated in metal mining, particularly the outstanding change from the carefully selective mining of the early days to the mass methods now applied to the large low grade deposits of the west. Julihn⁴ shows that until recently an essential part of the skilled miner's task was to select the valuable ore from the waste, carefully picking out the pieces of high value and discarding the refuse. A good miner was "conscientious." His skill lay largely in his ability to discriminate between the high grade, valuable material and the inferior. The transition from this older selective mining to the mass methods whereby all the material in the mineralized area is removed, waste as well as ore, and the sorting and cleaning are done on the surface, constitutes a major change in the art of mining. Giant open cuts have come into use; below ground, methods of caving and handling large blocks of ground have been developed and the economies thus effected in mining itself far offset the extra work of eliminating waste matter in cleaning plants on the surface.

Beneficiation of Crude Mineral.—These advances in underground technology, especially mass mining of metallic ores and mechanical loading of coal, were made possible by parallel advances on the surface which facilitated the separation of valuable minerals from waste. At the coal mines systems of mechanical cleaning have developed, such as the shaker screen, new methods of washing out the impurities with water, and pneumatic cleaning.

In metal mining the advances have been revolutionary. Shaking tables of the Wilfley type permit the sorting of fine material by gravity. The ingenious process of flotation has made possible the separation of valuable material from refuse with uncanny precision and completeness. By these methods great amounts of metal, particularly lead and zinc, are now recovered which were formerly lost simply through inability to separate them. The waste of metal in the refuse is reduced to insignificance. So efficient are these processes that they permit the treating of ores formerly considered far too lean for profitable operation, and in this way they have encouraged the mass methods of mining already discussed. The development of the famous porphyry coppers is due quite as much to flotation as to the steam shovel and underground caving systems. Parallel advances have occurred in the technology of other minerals, especially of oil and gas.

Increasing Output per Mine Worker.—The average output per man registers the net result of this battle of natural difficulties and man directed forces. As long as each man's labor obtains increasing amounts of


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mineral, technology and its allies are winning over the handicaps of nature, and costs are declining. On the other hand, if the output per worker is falling, the natural difficulties are winning and costs are tending to increase. Figure 2 sums up the record in nine typical branches of the mineral industry for the years since 1860, a period great enough to disclose the long time trend. In the anthracite mines, as already noted, the natural difficulties appear to have the best of it. The advances of technology—suggested by the increasing horsepower per worker—have been offset by growing physical handicaps, and the output per man has shown no increase since the turn of the century. The mercury mines, which have reached an advanced stage of depletion, show the same condition. Up to 1909 the output per man was apparently rising, but over the last twenty years it has consistently declined. Mercury mining is a tiny industry, and its diminished productivity has a negligible effect on the national standard of living. Anthracite mining, on the other hand, is a major industry. It employs 150,000 men and in value of product it equals all our gold, silver, lead, zinc and aluminum, with half of our copper thrown in for good measure.5

Fortunately the productivity in other minerals shows a very large gain. In all of the instances selected, the advance of technology is proved by an increase in the horsepower used per man. But it must be remembered that the period since 1860 was also one in which the factors of exploration and of transport were exceptionally active. Thus it is that productivity in iron mining reveals a sudden increase through the discovery of the Mesabi range in 1890. Productivity in copper leaps upward soon after 1870 when the completion of the transcontinental railroads opened the metal camps of the west to active exploitation. The rise in productivity of sulphur mining reflects the invention in 1903 of the Frasch process, supplemented by discoveries of additional deposits on the Gulf Coast.

In general, all of the mineral industries where the pinch of increasing natural handicaps is not yet serious show particularly rapid increases in productivity in the last decade. In copper, iron ore, phosphate rock and gypsum productivity has nearly doubled since the World War. In bituminous coal, the largest of the mineral industries, the record is one of steady increase. Output per man per year was rising from 1840 to 1890. In 1890 begins the more accurate record of output per man per day; from 2.56 net tons in that year it has climbed to 5.06 in 1930, an increase of practically 100 percent in the 40 years.

The data on output per worker in the oil and gas industry require a word of explanation. It is difficult to get accurate statistics of the number of men engaged in producing oil and gas and the record given here has

5 Average for 1927–1930.
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been pieced together after consideration of data from a number of scattered sources. The result is far from precise but it will serve to indicate the trend. It shows that in this second largest of all mineral industries the production per man is still increasing. The conclusion is especially significant in view of the fears often expressed of a pending exhaustion of petroleum supplies. It is clear that up to the present, technology and discovery of new pools have more than offset exhaustion and that one man's labor captures more liquid fuel than it did thirty years ago.

![Graphs showing trends in coal, oil, copper, iron ore, mercury, sulfur, phosphate rock, and gypsum production per man-year from 1870 to 1929.](image)

**Fig. 2.**—Trend of output per worker in the mines of the United States.

In the mining of anthracite and mercury, the increasing difficulties of mining have in recent years caused a decline in the output per worker. In the case of the other minerals shown, discovery of new deposits, expansion of transport, and advances in technology have more than offset the handicaps of nature, and the output per worker is increasing.

**Technical Advances in Consumption.**—At the same time that engineering advances have taken place in production, technology has been at work in the industries utilizing the raw material and economies in consumption have helped to offset the steady depletion of the richer deposits. The lines of attack have included the development of substitutes, illustrated by the use of aluminum instead of tin in collapsible tubes, and by replacement of mineral nitrate from Chile with synthetic products derived
from atmospheric nitrogen. Notable progress has been made in recovery of by-products, best seen perhaps in the rise of the by-product coke oven and the virtual elimination of the wasteful beehive oven. Most significant of all from the point of view of conservation and ultimate cost to the consumer are improvements which reduce the consumption of mineral per unit of product. Here the outstanding example is the increasing efficiency in the use of the mineral fuels. The idea of fuel economy is not new but in our time it has become an organized movement with far reaching results. In the United States, the movement dates from about 1909 and it was stimulated by the high prices of fuel associated with the World War. The most spectacular savings were made by the central electric stations. Caught between the rising price of coal and the fixed prices of their product, fuel economy became their salvation: the route to promotion was seen to lead through the boiler room and the best brains of the electrical industry were devoted to squeezing more and more kilowatt hours out of the ton of coal. Parallel if less striking advances were made in other industries. For the twenty years from 1909 to 1929 the percentage of reduction in the average consumption of energy per unit of product was as follows:

<table>
<thead>
<tr>
<th>Product Description</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric public utility power plants (pounds fuel per kilowatt hour)</td>
<td>-66</td>
</tr>
<tr>
<td>Steam railroads (pounds per transportation unit)</td>
<td>-47</td>
</tr>
<tr>
<td>Petroleum refining (energy consumed, excluding by-product refinery gas, per barrel of crude)</td>
<td>-36</td>
</tr>
<tr>
<td>Iron furnaces, steel works, and rolling mills (coal, oil, and purchased power—excluding natural gas—per ton of product)</td>
<td>-25</td>
</tr>
<tr>
<td>Cement mills (fuel and purchased power per barrel of product)</td>
<td>-21</td>
</tr>
<tr>
<td>All other manufacturing (energy consumed per unit of product)</td>
<td>-21</td>
</tr>
<tr>
<td>All industries and railroads combined, approximately</td>
<td>-33</td>
</tr>
</tbody>
</table>

The savings are due not so much to revolutionary inventions like those of Watt and Neilson as to the cumulative effect of many small advances. In large part they represent a process of education, a general application of methods already in use in the most efficient plants. Taking all of the economies together, it seems clear that fuel efficiency has advanced faster during the last twenty years than in any equal period of the world’s history, with the single exception of the years immediately following Watt’s improvement of the steam engine.

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6 In 1930 over 94 percent of the coke produced came from by-product ovens.
7 Corresponding economies have been effected in consumption of the metals such as the development of alloys with superior resistance to corrosion, or possessing qualities that permit the use of smaller quantities of metal to perform the same work.
9 Ibid., pp. 360–363.
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In the meantime corresponding developments have occurred in the field of motor fuels, the most important of which are the synthesis of alcohols and gasoline-like oil from coal. Recent discoveries of French and German chemists have made it clear that given sufficiently high prices and plenty of raw coal, the technical men can produce the world’s motor fuel and lubricants.

To indicate the steps by which these advances in utilization were effected is beyond the limits of a thumbnail sketch. The economies in use have effected conservation of a very practical kind. They have lengthened by centuries the prospective life of our mineral reserves. Reinforcing advances in the technique of mining and metallurgy, they help in the battle against the increasing difficulties of nature.

Rise of Water Power.—The brilliant achievements of the European chemists in devising ways of making oil from coal do not solve the problem of how to get along without mineral fuel. They merely indicate that when supplies of oil begin to fail the burden now carried by petroleum will fall back upon coal. Some day when men have used up the bonus of fossil fuel, they will have to learn to balance their energy budgets by collecting each year from the inexhaustible sources of water, wind and sun as much power as they expend.

Notable progress in the harnessing of these resources has been made in recent years. High prices of fuel during the war stimulated interest in water power all over the world. In the United States the tendency was facilitated by the passage in 1920 of the federal Water Power Act, ending a deadlock of long standing and opening water power sites on navigable streams to development under federal license. It is true that the progress of fuel economy tends to cheapen the cost of steam power, and this acts to limit the development of water power, but this influence has been more than offset by the expanding market for water power afforded by the “superpower” movement. Formerly the market for hydro was limited to the requirements in the vicinity of the site unless the promoters constructed their own transmission lines to distant markets. Even then, the property often had to pass through a long period of waiting before demand caught up with the installed capacity. The rise of interconnected electrical systems provided a much larger and more diversified market; it brought the market nearer to the water power, thereby cutting down investments in new transmission lines; and it reduced or eliminated the need of auxiliary steam plants. The combination of these factors has thus far more than offset the competition of fuel power made cheaper by declining prices of fuel and by fuel efficiency. The result is a rapid increase in the installed capacity of water power. (Table 2.) The completion of Hoover Dam will add another 1,200,000 horse power to the total developed.
The 14,885,000 horse power utilized up to the end of 1930 may be compared with the total potential of 38,000,000 horse power, as estimated by the United States Geological Survey. Thus less than 40 percent of the potential water power resources have been developed. The Survey’s estimates are conservative and systematic construction of storage dams would greatly increase the potential power, perhaps multiplying it several fold. Encouraging as is the increase in developed power from the viewpoint of conservation, it goes only a little way toward meeting the total energy requirements of the United States. Water power does furnish 40 percent of the electricity generated by the public utilities but only 7 percent of the total energy consumption of the country, including that used in the form of heat.

Other Inexhaustible Energy Sources.—There is little recent progress to record in the utilization of the other inexhaustible sources of power. A decade of speculation on the fascinating idea of atomic energy finds physicists skeptical of proposals to harness it and leaves the impression that the power of the future must be obtained directly or indirectly from the sun. The use of windmills is declining. Power from the tides lies still in the future although an 80,000 horsepower project at Passamaquoddy Bay is now before the Federal Power Commission. Solar motors and Claude’s experiments with the warm waters of the tropics have served chiefly to emphasize the low grade character of these resources. Like the low grade iron and aluminum which together make up 10 percent of the crust of the earth, the low grade energy resources exist in stupen-

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**TABLE 2.—GROWTH OF DEVELOPED WATER POWER IN THE UNITED STATES, 1869-1930**

<table>
<thead>
<tr>
<th>Year</th>
<th>Capacity of water-wheels, horse power, end of year</th>
<th>Average annual increase over preceding date</th>
<th>Year</th>
<th>Capacity of water-wheels, horse power, end of year</th>
<th>Average annual increase over preceding date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1869</td>
<td>1,150,000</td>
<td></td>
<td>1915</td>
<td>6,140,000</td>
<td>384,000</td>
</tr>
<tr>
<td>1879</td>
<td>1,250,000</td>
<td>10,000</td>
<td>1920</td>
<td>7,800,000</td>
<td>332,000</td>
</tr>
<tr>
<td>1889</td>
<td>1,300,000</td>
<td>5,000</td>
<td>1925</td>
<td>11,180,000</td>
<td>676,000</td>
</tr>
<tr>
<td>1902</td>
<td>2,030,000</td>
<td>58,000</td>
<td>1930</td>
<td>14,885,000</td>
<td>742,000</td>
</tr>
<tr>
<td>1910</td>
<td>4,920,000</td>
<td>271,000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


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10 Millikan, Robert A., “Available Energy”: “The energy available . . . through the disintegration of radioactive, or any other, atoms may perhaps be sufficient to keep the corner peanut and pop-corn man going, on a few street corners in our larger towns for a long time yet to come, but that is all . . . The energy supply to man in the past has been obtained wholly from the sun, and a billion years hence he will, I think, be supplying all his needs for light, and warmth, and power entirely from the sun.” Science, September 28, 1928, vol. 68, no. 1761, p. 279.
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dous amounts, but by any techniques now known are available only at prices far above what we are accustomed to pay.

Accumulation of Metal Stocks.—The technical advances in utilization of the minerals thus far referred to have dealt chiefly with the fuels. In the field of the metals an outstanding development is the accumulation of a working capital of metal which passes first into finished goods and then comes back in the form of scrap.

The growth of this revolving fund of metal is one of the curious and outstanding phenomena of the mineral industries. Numerous raw materials of vegetable and animal origin are salvaged and used again, but the life span between original use and ultimate destruction of such materials as paper and rubber is characteristically short, whereas that of the more durable metals is characteristically long. As Bain points out, it is probable that some of the gold now in the vaults of the Treasury was mined in the days of the Caesars.11

With the rapid increase in the volume of virgin metal flowing into the channels of trade, the world’s stock is built up at a surprising rate. As the stock increases, the tonnage of secondary or scrap metal which is reclaimed and returned to industry increases also. The accumulation has given rise to a large industry built up around the collection, classification and resmelting of scrap metal. The annual value of the secondary non-ferrous metals is $330,000,000.12 The annual value of the scrap iron and steel is not known but it very possibly equals that of the non-ferrous material. The stock of secondary material modifies the demand for the primary metal, it adds to the bargaining power of the large consumers who are also the largest producers of scrap, and thereby helps to stabilize prices.

Our records of the quantity of secondary metal recovered are based on the work of J. P. Dunlop and date from about 1911. In the years since then, the recoveries of scrap have increased much more rapidly than the production of virgin metal. So far has the process gone that in 1926 the secondary material furnished 38 percent of the supply of aluminum, 35 percent of the copper, 31 percent of the antimony, 28 percent of the tin, 23 percent of the lead and 19 percent of the zinc.13

The same tendency is apparent in the iron and steel industry, where there has been a pronounced slackening of the growth of consumption of virgin pig iron. This does not mean that the American people are using less iron, for the consumption of steel and of finished rolled products, including iron as well as steel, is increasing much as before. The retarda-

13 Based on calculations by A. B. Parsons; see Mineral Economics, op. cit., p. 169.
tion of the growth of virgin metal production is made possible by the rapid expansion of scrap. Thus it is that the consumption of virgin pig iron increased 135 percent from 1900–1904 to 1925–1929 while the consumption of finished rolled iron and steel (including the contributions of scrap) increased during the same period by 196 percent.

The ultimate result of these tendencies seems clearly indicated. We are moving toward a position where the great bulk of the world’s annual requirements of metal will be met from scrap. The demand for virgin metal will consist chiefly in replacing the annual loss through dissipating uses, wastage and corrosion. Obviously such a condition is far in the future, but the tendency is unmistakable and it suggests one of the ways by which modern society is adjusting itself to the increasing natural difficulties of mining.

Resultant Decline in Mineral Prices.—Having reviewed the forces tending to offset depletion, we are now in a position to sum up the net results of the battle against increasing costs. A practical test is the long time trend of prices. Price is the resultant of all of the factors and if mineral prices are falling in relation to the general commodity index, it is clear that the factors of discovery, transport and technology must be winning over the increasing difficulties of nature.

Relative Prices of Metals and Fuels.—Figure 3 traces the recent price history of some of the major minerals. To facilitate comparison all the prices are reduced to index numbers, the average for the decade preceding the World War being taken as 100. In 1930 and 1931 there has been a sharp decline in which the prices of minerals have fallen precipitately along with those of other commodities, but because of the difficulty of interpreting these abnormal years, no attempt is made to carry the data beyond 1929. In a few cases, such as Pennsylvanian anthracite, prices of the minerals have been rising in relation to other commodities. Most of them, however, have been moving downward in relation to the general price level over the last century, and are continuing to do so. As a group the minerals have been growing cheaper through the years.

Relative Prices of Power and Heat.—Much the same tendency is shown by the trend of prices of power. Electricity in particular has been falling in price with respect to other commodities. In fact, the average price for lighting and domestic use has declined absolutely as well as relatively even since 1913. Prices of electricity for power increased during the war, but not as much as general commodity prices, and since then have been falling.

Our review of price trends indicates clearly that on balance technology and its allies have been winning over the growing natural difficulties of mining. Up to the present the increasing supplies of minerals demanded by American industry have been delivered at decreasing cost.

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To facilitate comparison, the unit prices of each mineral were first reduced to index numbers, the average for the years 1900–1909 being taken at 100.0. (Note that all the curves come together at that point.) The resulting index for each mineral was then compared with the Bureau of Labor Statistics index of wholesale prices, recomputed to the same base. The diagram shows the percentage deviations above or below the all-commodity index.

It is clear that except for anthracite, all the minerals shown have been moving downward in relation to the general price level.

Calculated from price quotations assembled from various sources, partly from unpublished studies of John Alden Grimes.
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III. SIGNS OF ADVANCING DEPLETION AND SHIFTS IN SOURCES OF SUPPLY

The fact that prices of minerals have been declining in relation to other commodities might seem to warrant dismissing all concern over future supplies in the United States, but if we search more closely we shall find tell tale symptoms of advancing age in some of the most vigorous of our mining industries, indicating that they, too, are traveling the road, already taken by anthracite and mercury, which ultimately leads to increasing costs.

There are four major signs of age to be looked for: (1) an increase in the physical difficulties of mining; (2) the transition from exploitation of the precious metals to those of lower unit value; (3) a decline in exportable surplus or, conversely, an increasing dependence upon imports; and (4) a characteristic migration away from older fields nearing the stage of exhaustion to new fields, at first in the same country and later abroad. The first of these signs—increasing difficulties of mining—has already been pointed out in connection with the principle of increasing costs. Let us now apply the three remaining tests of advancing age.

Transition from the Precious to the Base Metals.—It is a commonplace of mining history that gold is the first mineral to be sought in a new country. It remained for de Launay to observe that other minerals are attacked successively in descending order of unit price. First to follow the wave of settlement is a period of exploitation of gold and silver, followed successively by periods of exploitation of copper, of lead and zinc, and of iron.\(^\text{14}\) The successive periods overlap, for more than one metal, of course, may be worked at a given time but the relative order of emphasis tends to follow the value per pound.

Advanced Stage of Exploitation in Europe.—Judged by de Launay’s scale, western Europe has long since passed the gold and silver stage and in all probability the copper and lead stage as well. In England, where the record is clear, the stage of gold and silver was passed long ago, the peak of copper was passed in 1861, of lead in 1870, of zinc about the same time and of tin in 1871.\(^\text{15}\) Even the peak of high grade iron ore was passed in 1883, although immense reserves of very low grade ore remain. Thus by the de Launay scale, England is in the late iron stage of maturity. Indeed, western Europe as a whole may be assigned to the zinc and iron stages.

Stage Reached in the United States.—In spite of our abundance of minerals, it is clear that the United States is traveling the same road. America has passed its peak of gold production although it is still a large

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contributor to the world’s supply. The trend of gold recoveries has been downward since the outbreak of the World War and although the present decline in commodity prices acts to stimulate gold production, geologists see small chance of restoring the industry to its former level. Apparently America has also passed the silver peak. Copper production, on the other hand, is still climbing, or was, at least, through 1929. The country is still a heavy producer of the lower priced metals and can greatly expand its output of them whenever the market warrants. On de Launay’s scale the United States is in the copper stage of mineral exploitation.

Decline in Exportable Surplus.—De Launay’s test deals with the order in which the metals are attacked. Hewett carried the idea further by noting that the exploitation of any given metal tends to follow a typical life cycle. The cycle begins with a stage of early youth in which the number of mines, and consequently the production of the mineral, increases rapidly. There is a large exportable surplus of crude ore which moves beyond the district for smelting and refining. The surplus of crude ore leads, in turn, to the establishment of local reduction plants, and in the industry’s prime, smelting capacity and mining capacity are in balance. With advancing age the output declines, the exportable surplus is gone and the metallurgical plants, if they survive at all, depend upon imported ore. Hewett’s five stages are shown by successive peaks or culminations of:

1. The quantity of exports of crude ore.
2. The number of mines in operation.
3. The number of smelters or refining units in operation.
4. The production of metal from domestic ore.
5. The quantity of imports of crude ore from abroad.

The description applies specifically to metal mining but corresponding stages may be found in the winning of the fuels and the non-metallics. Space does not permit tracing each one of the five stages, but we may apply Hewett’s central idea, the transition from a condition of exportable surplus to a condition of dependence upon imports, as one of the tests of advancing age. Judged by this standard, how old are the mineral industries of the United States?

Exportable Surplus Still Large.—At first sight a review of the long time trends in American foreign trade in the minerals for the last fifty years shows less change than might have been expected. Measured in dollars, we still have a large exportable surplus. Broadly speaking, our major exports and imports today consist of the same minerals as forty years ago. In absolute quantity both the import and the export items have greatly increased, but so has the internal consumption of the country.

17 Hewett, op. cit., pp. 88–90.
NATURAL WEALTH

Minerals Showing Little Change.—For a number of the minerals, including some of the most important, closer examination confirms this first impression of no significant change in the balance of imports and exports. Among the larger items, bituminous coal, iron, lead and zinc show little change. There is no change of course in the position with respect to minerals of which the United States lacks resources of commercial grade, such as tin, nickel, high grade asbestos, antimony, platinum and chromite. In all of the last group imports continue to mount with domestic consumption and our dependence on foreign supplies is still virtually complete.

Minerals Showing Increasing Exports or Diminishing Imports.—There is a group of minerals in which time has increased our relative surplus—or diminished our dependency, which amounts to the same thing. Of these by far the most striking illustration is sulphur. Thirty years ago domestic production of native sulphur was insignificant and the supply was almost wholly imported. Discovery of new deposits on the Gulf Coast and the development of the Frasch process of hot water wells have transformed the United States from overwhelming dependence to unquestioned dominance of the world supply. Less spectacular but real advances have occurred in other fields, such as magnesite, nitrates, potash, salt, asphalt and molybdenum.

Minerals Showing Declining Exports or Increasing Imports.—It will be seen that the group of minerals just discussed—those in which domestic supplies are becoming relatively more abundant—consists of materials of secondary importance, very useful indeed, but of distinctly second rank in point of labor and capital employed. On the other hand, the group showing a decline in ratio of exports to imports includes some of our largest mineral industries, notably anthracite, copper and petroleum. All three of these have been upon the free list and have enjoyed a profitable export trade.

Before considering them, it is well to get clearly in mind that a decline in relative exports of a mineral may be due to other factors than depletion. It may, as in the case of our radium and vanadium industries, be due to unexpected discovery of incomparably rich deposits abroad. It may be due to the tapping by a new railroad of a foreign deposit known but previously inaccessible. It may often be hastened by rapid growth of the internal consumption of the country. Or it may be due to temporary causes, such as depreciated foreign currencies. But where the mineral is on the free list, a declining export balance which has continued for some years is a line of evidence that our search for criteria of advancing age cannot afford to ignore.

For Pennsylvania anthracite the record is clear. The exports, which go to Canada and have run as high as $45,000,000 a year in value, are shrinking. In the New England market, until recently considered one of
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the great strongholds of the Pennsylvania product, first Welsh and then Russian anthracite obtained a foothold. The change is due to several factors, but among them is clearly the increasing cost of mining anthracite, in which advances in wage rates have reinforced the growing difficulties of nature. The evidence of the physical conditions has already been pointed out, and to find the evidence of foreign trade pointing in the same direction indicates that Hewett’s test of shifting foreign balances is one criterion of age.

Applied to copper mining, the test again suggests advancing age. The United States continues to be the largest exporter of copper in the world. In 1929, more than 900,000,000 pounds of the red metal were sent abroad. It is not generally realized, however, that while exports of the metal have been growing, imports of ore and crude material have been growing faster still. In 1891–1895 the metal in the imports was equivalent to only 8 percent of that in exports. Year by year the ratio of imports has grown until in 1929 the imports were 98 percent as great as the exports. In fact, under the disturbed conditions of 1930 the imports exceeded the exports. It is true that the imports consist chiefly of crude metal brought to this country for refining, and that they come from mines in Latin America controlled by United States capital. Recently also, competition of very rich deposits in Africa has become a factor. Even allowing for these other causes, the forty-year change in the export balance indicates that increasing depth and declining grade of ore now handicap many of our copper mines in competing with those of newer lands in the Southern Hemisphere.

Table 3.—The Changing Ratio of Imports of Copper to Exports, 1891–1930

<table>
<thead>
<tr>
<th>Period</th>
<th>Ratio of imports to exports (percent)</th>
<th>Period</th>
<th>Ratio of imports to exports (percent)</th>
<th>Period</th>
<th>Ratio of imports to exports (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1891–1895 average</td>
<td>8</td>
<td>1916–1920 average</td>
<td>65</td>
<td>1927 average</td>
<td>67</td>
</tr>
<tr>
<td>1896–1900 average</td>
<td>18</td>
<td>1921–1925 average</td>
<td>68</td>
<td>1928 average</td>
<td>70</td>
</tr>
<tr>
<td>1901–1905 average</td>
<td>44</td>
<td>1926–1930 average</td>
<td>85</td>
<td>1929 average</td>
<td>98</td>
</tr>
<tr>
<td>1906–1910 average</td>
<td>45</td>
<td>1920 average</td>
<td>81</td>
<td>1930 average</td>
<td>109</td>
</tr>
<tr>
<td>1911–1915 average</td>
<td>42</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Calculated from records of the Bureau of Foreign and Domestic Commerce.

The trend of petroleum is closely parallel to that of copper. The United States continues to produce 68 percent of the world’s output of crude oil and remains the largest exporter, its shipments abroad increasing steadily. But here again the rise of imports tells the tale. A generation ago imports of oil were negligible. The past thirty years have seen a great increase, and in 1929 the imports of crude and refined products amounted to about 70 percent of the exports. In 1921–1925 they even
exceeded the exports. At the turn of the century a third of the total supply (production plus imports) was available for shipment abroad; in 1929 the proportion had fallen to 14 percent. Among the several factors involved in this thirty-year change is the depletion of the older fields and the increasing depth of drilling in many of the new. As in the case of copper the imports come chiefly from properties owned by United States capital in Latin America and they consist largely of crude oil brought to this country for refining. This fact does not alter the difficult position of the marginal producers in the United States. Other minerals of lesser rank show like signs of advancing depletion and lessened ability to compete.

The verdict of the test of exports and imports is clear. Although prices to the American consumer are still declining in relation to other commodities, our mineral industries have started on the path of the older districts of Europe, a path which ultimately leads to severe physical handicaps and unavoidable increases in cost.

**Migration from Old to New Fields.**—Another sign of mineral depletion is the shift in the centers of production brought about by the decline and abandonment of old fields and forced migration to new ones. Such a shift in sources of supply may be at work even in an industry where the trends of output per worker and of price give no hint of increased costs of mining. Mining, say the Germans, is the robber industry. It leaves behind abandoned dumps and workings filled with stagnant water and the migration to new fields is quite as much a sign of increasing costs in the old areas as it is of abundant resources in the new. Measured by this test most of our minerals (except the omnipresent materials of construction) show signs of depletion. Many once famous districts have already been exhausted and production of the mineral is sustained by turning quickly to new fields or to sources of lower grade.\(^{18}\)

A few examples drawn from the history of many fields will suffice for illustration. In gold mining the record is cruelly apparent. The glories of Cripple Creek have departed; the camp which employed 6,000 men in its boom days now has hardly 500. Several others of the famous gold districts are dead or dying and perhaps the majority of the larger ones are on the decline, or maintain their output by means of by-product gold from copper, lead and zinc. Among the conspicuous exceptions are the Black Hills district, which is still in its prime, and Alaska, which promises a large increase.\(^{19}\) Silver mining tells somewhat the same story. The fabulous Comstock Lode which yielded $300,000,000 in the first twenty years of its life is gutted. Several other famous silver camps are following the same path and production of the white metal is maintained today chiefly as a by-product of the working of the base metals.

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\(^{18}\) Hewett, *op. cit.*, p. 92.

\(^{19}\) Loughlin, G. F. *op. cit.*, pp. 260, 263.
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In copper, as already mentioned, the United States is still rapidly expanding its output, increasing its average production per worker and diminishing its costs. The industry as a whole is plainly in its prime, yet there are districts in which exhaustion is a serious problem. It is most conspicuous in the Upper Peninsula of Michigan, the first of the great American copper camps, which has produced in its time more than $1,300,000,000 worth of the red metal. In this famous old field, increasing depth and declining grade of ore limit the output per man, and the district is losing in the competitive struggle as the center of the production shifts more and more to the southwest.

In the other non-ferrous metal industries, one can find parallel illustrations of individual mining camps which have fallen sadly to decay.

In mining iron ore, production has shifted from the eastern districts to Lake Superior and from the older ranges of Lake Superior to the Mesabi. The shift reflects the unrivalled richness of the Mesabi quite as much as the depletion of the older districts, yet it is important to note that the grade of ore produced in the Mesabi is declining and that the standard of the commercial shipments from the region is kept up by beneficiation of increasing tonnages of material below present commercial grade.\(^{20}\)

Sulphur has already been mentioned as one of the relatively few examples of increasing abundance, but even in this industry the early seats of production in Louisiana have been worked out and abandoned and the supply is maintained by shifting quickly to newly discovered domes in Texas.

Bituminous coal illustrates a mining industry in early youth, almost in infancy as far as depletion of aggregate reserves is concerned, yet in spite of the seemingly inexhaustible tonnage underground, many districts show clear signs of depletion. The glories of the Moshannon bed of Clearfield are a memory, the best of the Brazil Block seam is gone and only a few acres of virgin coal remain in the famous Big Vein of Georges Creek. In the anthracite industry there is small sign of migration, for absence of considerable deposits outside of Pennsylvania leaves no place to which the anthracite industry can shift. As already noted, however, the anthracite region as a whole has entered the stage of increasing costs of mining, and the loss of tonnage to competitive fuels is in a sense a migration of production centers to other fields.

Natural gas shows the characteristic migration in high degree. Its record is punctuated with spectacular discoveries and subsequent decline. In the Appalachian region as a whole, production shows no increase and is maintained by moving south from the declining supplies of Pennsylvania and Ohio into West Virginia, where lie most of the undrilled reserves.

\(^{20}\) In 1930, 18.5 percent of the iron ore shipped from Minnesota mines was beneficiated.
NATURAL WEALTH

The little McKeesport field, discovered in 1919, was exploited so rapaciously that it was practically exhausted within a year. Now attention shifts to northern Pennsylvania where recent discoveries in the Tioga region offer some hopes of prolonging the Appalachian supply, and while the east is thus at best holding its own, the center of production shifts to the southwest and thousand-mile pipe lines are relied on to bring in gas to communities where ten years ago a shortage seemed inevitable.

But the greatest example of exhaustion and migration to new fields is petroleum. Everyone in the oil country knows the characteristic decline of an oil well, so regular that it permits forecast of the well's ultimate yield. At best a given pool reaches its peak in a few years, and often in a few months after the discovery of the well. Thereafter comes a rapid decline. The interval between discovery and the tell tale appearance of salt water in the marginal wells is characteristically from eighteen months to three years.

Were it not for discovery of new pools the supply of petroleum would collapse, for the bulk of the output at any time comes from the flush production of new fields. Thus the history of the American industry is one of successive movement from old to new areas. In the Appalachians where the industry began, the older districts have long since ceased to yield, except by the pump, and some of the operators even resort to secondary recovery by forcing down water to wash out the old sands. From Pennsylvania the centers of production moved westward to Ohio and Indiana and thence to Oklahoma, the Gulf Coast, California and Texas. The record of some of the famous pools of recent years shows how quickly their glories fade. Cushing, which glutted the world market in 1914-1915 and caused one of the most serious periods of overproduction in the history of the industry, is now an insignificant producer under the pump, contributing less than 1 percent of the national supply. Seminole, which flooded the market in 1927-1928, is on the wane and the fickle goddess of luck who rules the oil pools has turned her face to Oklahoma City and east Texas.

It is a consolation to the deserted mining districts that time may bring a reversal of the migration. Many of the old camps still contain large deposits of mineral too low in grade to work under present conditions. A revolutionary change in methods or a great increase in price might restore their former glory. Such a change might again make the Lake Superior copper district one of the world's greatest centers of production, when other districts, now producing high grade ore, have faded simply because they lack reserves of lower grade material.

Increasing Demand for Tariff Protection.—Confirmation of the underlying evidence pointing to depletion of the older mining districts is found in the changing attitude toward the tariff. Our concern here is not
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with the wisdom of the protective policy. The motive of self-interest is as clear in the position of mine owners regarding the tariff as in that of other business groups. Space permits no statement of the familiar arguments for protection, or of the less familiar free trade argument that tariffs on exhaustible resources tend to accelerate depletion and bring nearer a time of ultimate dependence on foreign supplies. Our concern is rather with the fact that great industries formerly content to remain upon the free list now demand protection. To students of mineral economics this is one of the symptoms of increasing age.

Some of our mineral industries have been protected since early times. Pig iron has long been the recipient of tariff favors. Lead and zinc obtained protection many years ago, not because the deposits were poor but because they lay so far inland that European metal could compete on the Atlantic Coast. A tariff was laid on mercury as early as 1883 and has been raised several times since. Aluminum, though later in rising to commercial importance, has been protected from the start. Cement, clay products, glass manufactures and other derivatives of the mines have asked for and obtained substantial protection.

The war brought another crop of protected mineral industries, a crop planted by the artificially high prices caused by stoppage of normal imports during hostilities. Chief among them were the ferro-alloy minerals—especially manganese and tungsten—and magnesite for refractories. The wisdom of extending protection to certain of these minerals has been challenged, and as far as the criticisms are just, the cost to the consumer, will have to be set down as one of the expenses of war.

Until recently, however, the great bulk of American mineral production remained passively on the free list, because the owners, enjoying a large export trade, saw nothing to gain by asking for protection. Now oil, copper and anthracite are demanding a tariff. In part the change of attitude is due to discovery of exceptionally rich deposits in new lands, such as the copper of Rhodesia and the Congo, in part to depreciation of foreign currencies and to state promoted exports from Soviet Russia, but also it reflects the plight of increasingly influential groups of marginal producers who cannot meet the pressure of foreign competition. Some producers with large holdings abroad, on the other hand, continue to be more interested in providing outlets for their foreign output than in protecting the domestic price.

The transfer of these three minerals to the dutiable list would be a turning point in the utilization of natural resources in North America. In 1929 only 18 percent of the minerals actually imported were dutiable. In the same year only 27 percent of the total value of our domestic mineral production consisted of commodities enjoying protection. Shifting copper, petroleum, and anthracite from the free list would raise the percentage
dutiable to 67 percent of the imports\textsuperscript{21} and to 63 percent of the domestic production.

Whether or not protection is obtained, the demand for it is testimony of the advancing age of the mineral industries of the United States. Just as a century ago the centers of mineral production began to shift from Europe to the United States, so today they show signs of migrating to still newer lands in South America, Northern Canada and Africa.

IV. THE ECONOMIC ORGANIZATION OF MINING AND ITS EFFECTS ON WASTE OF RESOURCES

While these slow moving and long time tendencies have been at work modifying the physical and economic environment, the men engaged in the mineral industries have been absorbed in their daily tasks of buying and selling, hiring and firing, and earning a living. Their day to day problems involve a thousand economic and social adjustments and it would doubtless be possible to list a large number of clearly apparent trends, which to the people engaged seem of engrossing interest. Such a list would include tendencies in methods of management, technical supervision, labor relations, collective bargaining and company unions, civil liberties in mining communities, housing, sanitation, public health, unemployment—particularly technological unemployment—accident prevention, distribution and marketing, changes in freight rates, competitive wage levels, taxation of mineral reserves, wage rates and profits. To the employers and workmen in the mineral industries these immediate problems seem more real and important than the remoter factors discussed in this chapter, and as social problems many of them are of first rank.\textsuperscript{22}

Overdevelopment and Destructive Competition.—For our present purposes we must select from this mass of phenomena only those which react conspicuously upon the resource endowment and which tend to enhance or impair its adequacy for future national requirements. Among these one stands out above all others—the highly competitive organization of the business of mining and the tendency to overdevelopment and overproduction, with its concomitant wastes. Existence of surplus capacity is a familiar matter in American business. It is present in many lines of manufacturing.\textsuperscript{23} It always involves waste of capital and labor with resulting pressure on prices, profits and wage rates. These characteristic economic losses are present in mining on a very large scale, but in the case of resource industries, excessive competition may also involve waste of the natural endowment upon which the high American standard

\textsuperscript{21} Assuming, that is, no diminution in the volume of imports. The percentages are based upon the dollar values in 1929.

\textsuperscript{22} On labor problems, see Chap. XVI.

\textsuperscript{23} Compare with Chap. V.
of life so largely depends. It is this needless sacrifice of the resources which our discussion of the economic organization of mining must keep in view.

The condition of overdevelopment with the consequent tendency to overproduction seems especially prevalent in the extractive industries. Agriculture and lumbering, as well as mining, exhibit it. The tendency is world wide, for the extractive products are staple commodities competing in world markets, but the effects are especially serious in the United States because of the great extent of our extractive industries and the highly competitive character of their organization.

**Resulting Waste of the Resources.**—The results are most clearly seen in mining bituminous coal where the hardships endured by the persons engaged are all too familiar. Much of the industry is bankrupt. From 1923 to 1929 a total of 3,300 mines were forced to close, and 250,000 men lost their jobs; the wages of the remainder have been cut again and again, and with the fall in labor standards has come near collapse of the machinery of collective bargaining.

The economic losses are by this time a familiar story. Here we must stress the waste of resources that such destructive competition compels. After field examination of hundreds of mines in all the major eastern districts, the engineers of the United States Coal Commission placed the average loss in mining bituminous coal at 35 percent, of which 15 percent is classed as unavoidable and 20 percent as avoidable under present known practice. In the agricultural states of the middle west, the loss averages from 37 to 53 percent, nearly half the coal being left underground in pillars and stumps without attempt at recovery. The engineers of the Coal Commission were careful to refer to the tonnage sacrificed as a “loss” and not a “waste,” and in justice to the coal operators it must be made plain that they had no choice in the matter. Sheer abundance of resources and competition in an overdeveloped industry forced them to adopt such practices or go out of business. But from the social viewpoint the fact remains that 150,000,000 tons of minable coal is left underground every year under circumstances which render its recovery highly improbable. The avoidable loss is as great as the entire bituminous production of post-war Germany.

Similar conditions are found in a number of other industries. The most conspicuous example is oil, in which producers themselves admit the need of conservation. In spite of brilliant engineering progress in the technique of drilling, recovery, refining and use, destructive competition perpetuates serious waste of the resources. The losses referred to are quite apart from the waste of labor and capital through duplication of

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facilities and effort. Our concern is rather with the premature encroachment of salt water through competitive drilling, the premature dissipation of the pressure of gas dissolved in the oil, which is now known to be the chief expulsive agent in driving the oil out of the sands; the continued loss of natural gas through production in excess of any possible market; the loss of the volatile constituents through storing surplus crude in open reservoirs; and the flooding of such quantities of oil upon the market as to force its utilization under boilers in localities where coal is cheaply available, thereby sacrificing the potential gasoline content which is capable of much higher uses. These losses again are not the fault of the individual oil operator. They are the consequence of the present competitive organization and are in sharp contrast to the brilliant technical advances which have been made by the industry where competitive conditions permit. There is not the slightest doubt that the engineers of both the oil and coal industries can effect great savings in the resources if and when economic conditions make it profitable to do so, merely by applying engineering methods which are already understood.

Complicating Factors.—The roots of the problem are embedded in legal conceptions of mineral property transplanted from Tudor England into the very different conditions of the New World. The common law doctrine that whoso owns the surface owns the mineral below caused the original title to most of the coal and other stratified mineral deposits to pass into the ownership of some millions of farmers without regard to future problems of mineral exploitation. Wherever this occurred the law of mining started out of step with the economics and engineering of mining, the discordance being most serious in the case of the migratory oil and gas. The scattering of ownership and the conflict of local interest thus created have hitherto proved insurmountable obstacles to unification of policy among producers either of oil and gas or bituminous coal.

On the other hand, those who despair of control by voluntary efforts of the producers and turn to the alternative of legislation, meet another obstacle quite as serious—the confusion between state and federal authority. The Constitution, as interpreted by the courts, assumes that “interstate commerce” is something distinct from “production,” and assigns exclusive jurisdiction over the one to the federal government and over the other to 48 separate states. In the actual business of mining, “production” and “interstate commerce” do not thus dissociate themselves, and in practice neither the federal government nor the individual states, acting alone, are in position to stabilize the mineral industries by legislative enactment. A good illustration is the ineffectiveness of the attempts of either the federal government or the states to ration coal supplies during the great strike of 1922.25 Add to these obstacles the

consumers' fear of combination among competitors, expressed in the anti-trust laws, and the producers' dislike of regulation by external authority, and the problem of controlling destructive competition becomes difficult indeed.

Attempts at Production Control.—That change in the economic organization of production is needed is the conclusion reached by leaders in many of the mineral industries. Space permits only the briefest reference to the trends in this direction. The emergence of "production control" as an industry problem is evidenced by widespread discussion and by the appointment of trade committees to deal with the subject. Such committees have been organized by the American Institute of Mining Engineers, the Chamber of Commerce of the United States, the American Petroleum Institute, the National Coal Association, and by associations in the metal trades. The devices suggested or attempted include stabilization through export associations organized under the Webb Act, in which foreign producers are invited to participate; organization of international cartels; mergers and consolidations; coordination by federal agencies such as the Oil Conservation Board; government regulation and control (generally opposed by industry); modification of the anti-trust laws to permit price agreements and the fixing of production quotas; district selling agencies; unit operation of oil pools; proration of output by voluntary agreement or by compulsory order of state commissions under authority of the state's police power; interstate compacts; and even constitutional amendment. The most interesting and significant of these experiments are probably those attempted in the oil industry where the wastes of competition are especially heavy and where opinion among producers has crystallized in support of legislation passed under the police powers of the state. California, Oklahoma, Texas, New Mexico and some of the other oil states have enacted such legislation, but the results, while encouraging, serve to emphasize the interstate character of competition in this as in other mineral industries and suggest that until means are found to coordinate policies among the principal producing states the problem of waste prevention will remain unsolved.

V. THE OUTLOOK FOR THE FUTURE

It is proverbially hazardous to prophesy in human affairs and when to the uncertainties of social action are added the chance character of mineral discovery and the dynamic possibilities of invention, the task is doubly difficult. Anyone tempted to read the future of the minerals should remember not only the troubles of business forecasters, but the shortcomings of geologic estimates of reserves. When Boston was building King's Chapel in 1745, men feared that the supply of granite boulders
would prove insufficient to finish the structure, and as late as 1920 the U. S. Geological Survey sponsored a very careful estimate of the country’s oil reserves which eleven years’ experience has already proved much too low. In the circumstances, a forecast is inappropriate, but something may be said as to the outlook, assuming the trends before indicated to continue.

The Ten-year Outlook.—Considering the minerals as a whole and the country as a whole, the immediate outlook is for ample supplies available at declining cost. As far as the mineral and power resources are concerned, there is nothing to indicate the emergence of a serious limiting factor in the next ten years. At the same time, shifts in sources of supply will undoubtedly continue, individual minerals may rise in relative price and there may be increased pressure for tariffs.

In fact, the immediate social problems growing out of the minerals seem less those of scarcity than of superabundance. Men are thinking of the coal question, the oil question and even the metal question in terms of controlling the economic wastes of overdevelopment and destructive competition. The urge for change in economic organization is strong, and it comes primarily not from consumers complaining of a shortage, but from owners unable to dispose of a troublesome surplus and from mine workers who want protection against low wages and unemployment.

The Long Time Outlook.—In the long time outlook the outstanding facts are the growing difficulties of mining and the prospect of an ultimate increase in cost. The tendencies are unmistakable, and the experience of England shows how early in the exploitation of a mineral resource the stage of increasing cost may arrive. England’s original endowment of non-ferrous metal was considerable (though not great), yet it lasted only about a hundred and fifty years at the accelerated pace of production which followed the Industrial Revolution. In that period England has exhausted all of the best of her copper, her lead, her tin and most of her high grade iron ores, in all of which she led the world during the early nineteenth century. England’s endowment of coal was among the richest in the world, and according to the British geologists, only 6 percent of the original reserve has thus far been removed. But in the course of winning the first 6 percent, the British have been driven to use seams as thin as 14 inches and to seek thicker coal at depths as great as 3,500 feet. Because of this, it costs Britain more labor to mine a ton of coal today than it did fifty years ago, and the increased burden is a drag on her entire industrial life. The problem of conservation is not to prepare for a day centuries hence when all the coal and metal shall be gone, but to minimize the readjustment to a stage of increasing cost which in some of the older lands has already arrived and in the United States is only a matter of time. The prospect is clear enough to make the prevention of needless waste a major social responsibility.
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As far as the mineral and power resources are concerned, the long time problem of conservation merges with the immediate social problem of overdevelopment and overproduction. Both are concerned with controlling the wastes of destructive competition. The task of protecting the remaining public domain against looting by private interests—the great objective of the Rooseveltian conservationists—was largely accomplished by the passage of the Mineral Leasing Act and the Federal Water Power Act, although the administration of these laws will require perpetual vigilance. The task of devising the technical means for increasing efficiency is making encouraging progress, and the advance of the arts of mining, metallurgy and utilization was never more rapid than now. It remains to organize the economics of production so as to effect the full saving of resources which technology has already shown to be possible. The task of the present day conservationist is to see that any change in economic organization for the control of production which is undertaken to insure steadier profits and wages should also operate to prevent needless waste of the underlying resources.

Part 2.—AGRICULTURAL AND FOREST LAND

BY O. E. BAKER

I. THE PROBLEM

Two developments of the past decade have greatly reduced the prospective need for farm land, made former land policies obsolete, and raised grave economic and social problems. These two developments, not new, but of greatly increased importance, are the rapid progress in agricultural technique and the rapid decline in number of births. Supplementing the decline in births have been congressional acts and executive orders which have gradually reduced immigration, until in 1931 emigrants exceeded immigrants. The progress in agricultural technique tends to increase production of farm products, while the decline in number of births tends to decrease consumption. The problem is how to control the use of the land so that production will be continuously adjusted to consumption.

Associated with this problem is another which is no less important but which will be merely noted. Since most cities, in the absence of immigration from abroad, are dependent upon the rural people, particularly the farm people, for the prevention of a rapid decline in population after two or three decades (in a few cities deaths already exceed births), it is clear that, although advances in agricultural technique are economically

26 Because of the large proportion of young and middle aged people in the nation, population and consumption of farm products probably will continue to increase for several decades, but less rapidly than in the past. See Chap. I.

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desirable, the social consequences of a decreasing farm population will be serious.

The following discussion offers no solution of these problems, but merely summarizes some of the conditions and trends that must be taken into consideration by those whose task it is to develop a national agricultural and forest policy.

**Contraction of the Crop Area.**—Adjustments in the use of the land to the demand for farm products are being made, but the process is wasteful of wealth and human effort. As a consequence of the developments noted above and other factors, contraction of the crop area, previously confined almost entirely to the hill lands of the northeastern states, to the hilly, eroded or depleted soils of the southeastern states, and to the Sierra and northern coast counties of California, extended during the decade 1919–1929 into three-fifths of the counties of the nation. This contraction was general in the states east of the Mississippi River, in Missouri, and in the Pacific coast states; while an equivalent expansion in crop area occurred in the Great Plains and Rocky Mountain states, attributable largely to the use of the tractor and combine. Despite an increase in population of more than 20,000,000 since the World War, the nation's crop acreage has remained about stationary. In 1931 it was smaller than in any year since 1917, with the possible exception of 1924.

The pioneer age is past. There is less opportunity now than in former times for the man with strong arms and a stout heart, but no money, to hew a farm from the forest or plow it out of the prairie sod. This is not primarily because nearly all except the poorest land is in private ownership, for many farms can be bought for less than the cost of the buildings—the land is given away—but rather because there is a persistent surplus of farm products and prices are so low that even the best farmers on the best land can scarcely make a modest living.\(^{28}\)

Despite an increase in consumption of farm products of about 18 percent in the decade 1920–1930, the value of farm land suffered a heavy,\(^{27}\)

The principal other factors are changes in domestic consumption of farm products, decline in exports, and decline in the general price level. Perhaps these should be called facts rather than factors, for each is the result of numerous underlying factors. It is the author's opinion that the advances in agricultural technique constituted the major factor affecting changes in land utilization during the past decade, and that the approach toward a stationary population will tend to increase the influence of this factor upon land utilization in the future. Already the annual increase of population is a million less than a decade ago. If the population increase of 1921–1923 had continued there would be about five million more people in the United States today. This means that at the present ratio of 2.7 acres per person, 13,500,000 additional acres of crops would be required, no allowance being made for the lesser consumption by children.

In the past agriculture has provided security in old age and against adversity for a large proportion of the people. But both the security (as indicated by the great increase in foreclosures) and the proportion of the population affected have declined rapidly, and the cities have provided no adequate substitute. This is probably an important factor affecting the birth rate.
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continuous, and almost universal decline. There has been a large increase in ratio of mortgage debt to value of farm real estate and many foreclosures have occurred. This trend has been accompanied by an increase in taxes (over 100 percent, 1919 to 1929), which also has tended to depress land values. Vast areas of both farm and forest land have become tax delinquent in many of the less fertile areas. As a consequence, it is often necessary to raise the tax rate on the land that remains in private ownership, and this tends to accelerate delinquency and the reversion of the land to the county or state. Frequently the county has not the means to develop the land for forests or other purposes, and in some cases even the states cannot do so. Through tax delinquency rather than as a result of definite policy, a new public domain is in process of development. Which government agency, if any, should take over this land, how it should be managed, and what should be done about the community burdens it formerly bore will soon become urgent problems.

Some Consequences of Agricultural Contraction.—The situation has social as well as economic aspects and these are even more serious. Farm population in the United States decreased 2,000,000 between 1920 and 1925 according to the census, but it is probable that the enumeration of farm population in 1925 was incomplete, and that the decline was not much, if any, greater than this between 1920 and 1930. 29 In areas where crop acreage is contracting persistently a large proportion of the young people have left the farms. 30 After the children have gone and as the strength of the farmer declines with age, field after field reverts to pasture or to brush until only the house and garden remain. Upon the death of the farmer these may be rented or sold to summer visitors or to a less desirable class of people who tend to drift into such areas. Schools decline for lack of pupils as well as of funds, churches close, social life becomes more primitive and sometimes the precarious agricultural income of the inhabitants is supplemented by returns from illicit enterprises.

These local developments, however, are not so serious as the national consequences of a declining rural population. In 1930 the number of children under five years of age in cities of 100,000 population and over, considered in relation to women 15 to 45 years of age, lacked fully 20 percent of being sufficient to maintain a stationary population. 31 In the smaller cities down to 2,500 population the deficit averaged seven percent,

29 The population inquiries in the 1925 census were incidental to the agricultural inquiries and, apparently, were answered in many cases only for the farm family, contrary to instructions. Moreover, owing to the change in the date of census enumeration from January 1 in 1920 and in 1925 to April 1 in 1930 it is impossible to estimate with any precision the change in number of people on farms during the five or ten years preceding 1930.

30 See Chap. X.

31 Based on the 1927 “expectation of life” tables of the Metropolitan Life Insurance Company. The mortality rate was unusually low in 1927, the expectation of life at birth exceeding 60 years. See also Chap. I.
while in the rural non-farm (mostly village) population there was a surplus of nearly 30 percent, and in the farm population a surplus of 50 percent.

Continued decrease in the proportion of the nation’s population that is rural, which is almost certain to accompany progress in agricultural technique unless part time farming increases rapidly, will therefore tend to diminish the number of births in the nation. A further decline in births as great as that from 1925 to 1930, unless counterbalanced by immigrants, will involve a declining national population a few decades hence. This in turn will involve a declining demand for farm products unless exports or consumption per capita increase, which, entirely aside from advances in agricultural technique, will result in another decline in farm population. Thus a downward spiral will be set in motion, and its reversal will be difficult to effect. That the process of rural depletion may be accelerated in the future is indicated by a decline of 660,000, or 16 percent in the number of children under five years of age on farms between 1920 and 1930, while persons over 55 years old increased 300,000 or nearly nine percent.

The question may be raised, however, whether a stationary or declining population is not essential to the maintenance of the standard of living in view of the progressive depletion of natural resources. Let us consider, therefore, the extent of depletion of the soil resources and the outlook for the future.

II. DEPLETION OF SOIL RESOURCES

In general, American agriculture has been of an exploitative character. The conquest of a virgin continent by a fecund people governed by democratic institutions and inspired by the spirit of laissez faire could not have resulted in any other kind of agriculture. Fertilizers other than animal manure have been little used, except within the last half century, and then only in the Atlantic coast states and a few other localities. As a consequence the nitrogen, phosphorus, potassium, sulphur and other elements of fertility removed from the soil in the crops and animals or animal products sold from farms have not been restored except in limited areas. Leaching of the elements of soil fertility by the rain and their removal in the drainage waters has continued and has in some areas perhaps even been accelerated by the destruction of the original forest or

32 At present the progress of mechanization in agriculture has practically stopped; but, doubtless, advances in animal husbandry are continuing. If the unemployment persists, or wages remain as low as the income to be derived from self-sufficing farming, mechanization will be retarded, and migration from the farms to the cities will be lessened. But unless there be a vast reversion toward primitive forms of agricultural production, a net migration from farm to city will persist so long as there is a material increase in the farm population.
grass cover. More serious, the large acreage of row crops, notably cotton and corn (in the cultivation of which the soil is exposed to the rains during the entire period of growth), has led to widespread soil erosion.

Depletion by Crop Removal and Leaching.—In the north, particularly in the northeastern and Great Lakes states, where climatic and soil conditions, as well as the system of farming (much of the land is in hay and pasture) have permitted little erosion as compared with the south, most of the losses in soil resources are due to removal of the crops and leaching by the rains. In the humid northern states the losses from the surface soil since settlement average possibly a third of the original sulphur, a fourth of the nitrogen, a fifth of the phosphorous and a tenth of the potassium.\(^ {33}\) Calcium and magnesium losses have been notable in many soils. The losses by crop removal and leaching can be restored and maintained almost indefinitely, however, if it is found profitable to do so, for the known deposits of minerals containing these elements seem sufficient for centuries to come.

The deposits of sulphur in Texas and Louisiana are apparently adequate to meet the needs of agriculture for several decades in addition to meeting an industrial demand much larger than at present.\(^ {34}\) When these richer deposits are exhausted it may be necessary to fall back on the deposits of gypsum and iron pyrite which are practically inexhaustible. As to nitrogen, the fears of a quarter century ago that the supply would soon be deficient have proved groundless. The rapid advance in manufacture of synthetic nitrogen fertilizers, the nitrogen being furnished by the air, assures a practically inexhaustible supply of such fertilizers at a price which is likely to become lower and lower. Moreover, certain bacteria living on the roots of leguminous plants, and in many soils nonsymbiotic bacteria also, are constantly adding to the supply of nitrogen in the soil. As to phosphorus, the deposits of calcium phosphate which extend under hundreds of thousands of acres in Wyoming, Utah, and Idaho are estimated to contain at least six billion tons, and probably do

\(^ {33}\) This is an audacious generalization. It is based, for sulphur, in part on a paper entitled "Agricultural Aspects of Sulphur and Sulphur Compounds," by J. G. Lipman and H. G. McLean, *Chemical and Metallurgical Engineering*, vol. 38, no. 7, July, 1931; for nitrogen, phosphorous and potassium on analyses of cropped and adjacent virgin soils of the same type, supplemented by data in a paper by Dr. Lipman entitled "The Nitrogen Outlook," *Journal of the American Society of Agronomy*, vol. 24, no. 3, pp. 227–237, 1932; and for potassium by lysimeter (leaching) measurements at Cornell University.

The most complete series of soil analyses were supplied by Robert M. Salter of the Ohio Agricultural Experiment Station, and less extensive data by F. L. Duley (Kansas), Hans Jenny (Missouri), M. F. Morgan (Connecticut), D. A. Shutt (Dominion Experimental Farms, Ottawa), A. R. Whitson (Wisconsin), F. A. Wyatt (Alberta). It is necessary to add that some soil scientists believe the margin of error in taking soil samples and in chemical analysis is so great that conclusions based on analyses of virgin and cropped soils are likely to be invalid.

contain twice this amount. These are sufficient, when the Florida, South Carolina and Tennessee sources are depleted, to provide for several hundred years an adequate quantity of phosphate fertilizer for 500,000-000 acres of crop and pasture land—an area greater than that in crops and plowable pasture at present. As to potassium, the reserves in Germany, France, Poland and Spain are estimated to contain enough potash salts to meet the world’s need for 5,000 years. Should these supplies be cut off, recent discoveries in New Mexico and western Texas indicate a deposit perhaps even greater than that in the Stassfurt district and almost as easily worked. The supplies of limestone, much of which contains magnesium as well as calcium, are, as is well known, unlimited.

These are the only elements of fertility whose application to the soil seems likely to be needed over extensive areas. Certain soils need manganese, others copper, others iron, but such soils are, apparently, of small extent and the supplies of these elements are ample. Depletion of soil fertility by crop removal, grazing and leaching, although it may somewhat increase cost of production, need cause no anxiety as to the nation’s food supply for several hundred years to come, and then only with reference to phosphorus.

Depletion by Erosion.—In the south and southwest, and also in a number of areas in the north, erosion has been the principal source of soil depletion. This is a much more serious loss, for the humus of the surface soil, the crumb-like structure of this top layer, its water-holding capacity, bacterial content and all the other features which make it normally more fertile than the subsoil, can be replaced very slowly and practically never can be restored in most soils. It is estimated by the United States Bureau of Chemistry and Soils that “something like 17,500,000 acres of land which were formerly cultivated in this country have been destroyed by gullying, or so severely washed that farmers cannot afford to attempt their cultivation or reclamation.” In addition, three or four million acres of river bottom land have been covered with sand and gravel and greatly reduced in fertility or rendered untillable.

In the Piedmont of Georgia, the Carolinas and Virginia “probably not less than 60 percent of all the upland . . . has lost from 4 to 18 inches

37 But it may be recalled that the soils of China have supported for hundreds, if not thousands, of years a larger population than that of the United States on a smaller area of cultivated land, and without recourse to mineral fertilizers.
38 U. S. State Department, H. H. Bennett of the United States Bureau of Chemistry and Soils, Documentary Material for the Inter-American Conference in Agriculture, Forestry and Animal Husbandry, October, 1930, p. 61. It is interesting to note that this is a greater acreage than the total area of arable land in Japan.

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of its soil and subsoil . . . [and] many of the gullies have cut down to bed rock.”

In Illinois there are at least 9,000,000 acres of low value land subject to serious erosion, more than one-half of which is hardly suitable for cultivated crops, and there are more than 14,000,000 acres of high value land in which erosion is gradually approaching a stage where gullies are being formed.

At the Missouri Agricultural Experiment Station measurements on a gently sloping field, typical of the soil and slope of much of the northern portion of the state, show a loss of over 245 tons of soil per acre continuously in corn during the twelve years the experiment has been in progress, 111 tons from land continuously in wheat, but of only 35 tons from land in a rotation of corn, wheat and clover, indicating that the surface soil, averaging seven inches deep, will last for 50 to 350 years, depending upon the cropping system. If put into blue-grass pasture it would require 2,800 years to remove the top seven inches of soil, which may be no more rapid than the process of soil development. It is estimated that “about one-fourth of the surface area of Missouri is subject to severe erosion, that one-fourth is subject to moderate erosion, and about one-half to light or negligible erosion.”

In Oklahoma, a recent reconnaissance erosion survey of the state indicated that more than 13,000,000 of the nearly 16,000,000 acres in crops were suffering from the effects of severe soil washing. Of this eroding area, nearly 6,000,000 acres had reached the stage of gullying. Of 1,700,000 acres of crop land abandoned, it is estimated that 1,360,000 acres were abandoned largely because of erosion. In the opinion of the Experiment Station workers two-thirds to three-fourths of the erosion losses in the state have occurred in the last ten years. It is the consensus among those in charge of the erosion survey of the Department of Agriculture, now in progress, that probably a third of the surface soil has been removed from one-fourth of the cultivated land of the United States, and that a sixth or more of the surface soil has been lost from another fourth of the farm land.

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39 Ibid., p. 81. However, Piedmont soils, unlike most soils, permit the profitable cultivation of the subsoil.

40 Mumford, H. W., Director of Illinois Agricultural Experiment Station, in a letter to the Secretary of Agriculture.

41 Miller, M. F., Professor of Soils, in a letter to the writer. See also Missouri Agricultural Experiment Station, Research Bulletin no. 63, p. 31, and Progress Reports of “Soil Erosion and Run Off Experiments in Piedmont, North Carolina,” by F. O. Bartel, mimeographed by U. S. Bureau of Agricultural Engineering.

42 Soil Erosion Survey of Oklahoma, Extension Service, Agricultural and Mechanical Arts College, Stillwater, 1929, p. 2. The survey was made by the Experiment Station.

43 Blackwell, C. F., Director of Oklahoma Agricultural Experiment Station, in a letter to the writer. Data supplied by H. V. Gelb, of the U. S. Bureau of Chemistry and Soils, indicate that erosion in parts of Texas is progressing almost as rapidly.

With regard to losses by erosion in the future the situation is rendered more serious by the fact that as the organic material in the soil is depleted by tillage and resultant oxidation, and as removal of the surface soil exposes the more compact subsoil, gully ing generally increases rapidly. Unless cropping practices are changed and terraces constructed and maintained on much of the sloping land of the south, southwest and central west, and locally elsewhere, possibly 100 million acres of crop land may become gullied and more or less unfit for cultivation within 50 or 75 years. This is a fourth of the present crop area and a fifth of the improved land of the nation.

But the land resources of the United States are so vast that the loss of many millions of acres of crop land by erosion probably would not seriously affect the national production. There are about 300,000,000 acres of land now used mostly for pasture which need only plowing to be put into crops. (Figure 1.) Most of this land is less fertile than that at

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**Fig. 1.—Land capable of use for crops, 1929.**

Somewhat over a third of the land physically capable of crop production was in crops in 1929, roughly another third needed only plowing to be put into crops (shaded with differing designs in the pictogram), while the remaining third required irrigation, drainage, or clearing of forest growth.

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present in crops, but it constitutes a vast reserve. Even in the cotton-growing states where erosion is most severe, there are approximately 100 million acres of level to gently rolling land on the South Atlantic and Gulf Coastal Plain which could be cleared of forest or brush and cultivated profitably with the aid of fertilizer should economic conditions become favorable.

Thus erosion need cause no anxiety as to the supply of food or even of fibers for the nation as a whole in the near future; but in the areas where erosion is severe its control is a matter of the utmost importance. In many places it already has brought about abject poverty. Not only is the fertility of the soil being depleted in these eroding areas, and the cultivation of many fields becoming difficult, but the further mechanization of agriculture, particularly in the west, and the more extensive use of fertilizers on the better lands of the north and east seem likely to make competition in crop production increasingly difficult. Although terracing will retard erosion where it is practiced, it appears that the hilly and rolling lands of the south and southwest and in parts of the north central states also, are going the way of similar lands in southern China.45

III. THE ADVANCE IN AGRICULTURAL TECHNIQUE

Despite the depletion of the land resources of the nation, agricultural production has been greater during the past decade than ever before, not only in the aggregate but also in production per acre and per person employed. As in coal mining, although the resources are less abundant, methods and machinery have improved so rapidly that a surplus has developed, both of people and of products.

Production per Worker.—Ninety years ago about 60 or 70 percent of all men having an occupation were employed in agriculture.46 The percentages are now almost reversed, as 75 percent were engaged in other occupations than agriculture on April 1, 1930. The average American farmer, after allowing for the services of the hired laborer, in addition to feeding three other persons in his family, now provides food and fibers for twelve people living in American cities or elsewhere than on farms and two more persons living in foreign countries, a total of 18 in all. The shift

45 F. L. Duley of the Kansas State College of Agriculture notes: "Terracing alone is not a cure for erosion. It should be combined with other well recognized practices, such as good crop rotation to keep the land protected with a growing crop as much as possible, and also with contour cropping of row crops to further enhance water absorption."

S. H. McCrory, Chief of the U. S. Bureau of Agricultural Engineering, comments: "Recent developments in theory and technique of terracing and recently renewed interest in the construction of terraces indicate the feasibility of a rather complete control of erosion in many cultivated areas."

46 It should be noted that prior to the modern era of division of labor many farmers spent a portion of their time in work not essentially agricultural, which work is now performed by persons in specialized occupations in the cities.
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from a predominantly rural to an urban civilization has been made possible by the advance in agricultural technique, particularly in the application of power.

Nevertheless, production per person engaged in several types of farming has not increased as rapidly as is commonly assumed and there is a wide margin available for further advance. The increase in efficiency has been notable principally in the production of the small grain and hay crops. Cotton today is picked by hand, as it was a century ago, most of the corn is still husked or snapped by hand and practically all the fruit is picked by hand, while much of the fruit has to be sprayed also, which was not done a century ago.\(^\text{47}\) Furthermore, the machinery used today represents urban labor and capital and a cost which was not involved when the farmer made his own tools. This cost probably amounts to $50 or less annually per male farm worker, or about 4 percent of his production.\(^\text{48}\)

Crop production per male worker in agriculture has increased nearly two and a half times during the past 90 years and agricultural production per worker has apparently increased about three-fold\(^\text{49}\). The increase in crop production per worker may have been as much as 25 percent from 1850 to 1860, was roughly 50 percent from 1850 to 1900, and approximately 30 percent during the last 30 years. During the last ten years crop production per worker has increased less than 10 percent but agricultural production per worker has increased about 25 percent.

The five years from 1922 to 1926 are in several ways the most remarkable in the history of American agriculture. (Figure 2.) Agricultural

\(^\text{47}\) C. P. Blackwell, Director of the Oklahoma Agricultural Experiment Station, notes: "In 1926 more than 1,000,000 bales of cotton were harvested by the sled . . . In large areas the method of hand picking has changed to snapping. A worker can pick in this way two to three times as much per day as by the old method. Successful cotton pickers are not far in the future."

\(^\text{48}\) This estimate is based on two sources: (a) The U. S. Census Bureau, Census of Agriculture data for 1925 and 1930 on value of machinery on farms, to which figures on depreciation were applied, checked against the census figures on expenditure for implements and machinery in 1929. This method indicates an annual expenditure of $50 to $70 per worker. The calculations were made by the writer. (b) The U. S. Census Bureau, Census of Manufactures on value of farm machinery produced each year 1920–1930, from which was subtracted value of net exports. The resultant figure was increased 25 percent to allow for dealers' margins and transportation costs. This method indicates an annual expenditure of $50 per worker. The calculations were made by W. M. Hurst, of the Bureau of Agricultural Engineering.

If the tractors are subtracted, because they are primarily a substitute for horses, the annual cost of machinery per male worker is reduced to about $35.

\(^\text{49}\) The estimates of production are preliminary; they are supplied by the U. S. Bureau of Agricultural Economics. Agricultural production consists of crop production, plus animal products, less crop feed consumed by livestock, the various products being combined on the basis of the average farm price during the period 1917–1926. Price is the only common denominator. The index includes the contribution of pasturage and accounts for the economies resulting from the substitution of gasoline for horse feed and from other factors.
production increased about 27 percent, while crop acreage remained practically stationary and labor engaged in agriculture declined. Comparing this five-year period with the preceding five-year period, agricultural production per year of labor employed in agriculture increased about 16 percent. Since 1926 agricultural production has not increased but this is owing largely to adversities of the weather. In the decade 1922–1931 agricultural production per worker was about 22 percent greater than in the decade 1912–1921.

An important factor in the rapid rise in agricultural production during the past decade and the doubling of the rate of increase of production per worker has been the decline in number of horses and mules brought about by the introduction of the tractor and automobile and the consequent release of a large amount of feed for meat and milk animals. In view of

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**Fig. 2.**—Agricultural production, national population, crop land, and farm labor. Percentage change, 1906–1931.

Although agricultural production is now a third greater than twenty years ago, crop acreage is only an eighth greater, and quantity of labor employed in agriculture is somewhat less than in 1906. Production per acre has, therefore, increased nearly 30 percent, and production per man nearly 40 percent. Most of this increase has occurred since the World War. The increase in production per acre between 1919 and 1929, two fairly normal years, was about 16 percent, practically none of which is owing to increase in acre-yields of the crops, while the increase in production per man was about 28 percent. It will be noted that agricultural production has just about kept pace with population growth during the past 25 years. (Courtesy, U. S. Bureau of Agricultural Economics.)

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50 Scientific research, particularly the work of the experiment stations, and the dissemination of this knowledge among farmers, has been accused of promoting excessive agricultural production, and as one of the causes, therefore, of the present very low prices for farm products. It should be noted, however, that probably two-thirds of the increase in
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This substitution of gasoline for horse feed, the increasing production of meat and milk per unit of feed consumed and the shifts from the less productive toward the more productive crops and classes of livestock, it is clear that not all, indeed probably not over half of the increased production per worker during recent years, can be attributed directly to the use of more power per worker.

![Graph](image)

**Fig. 3.—Estimated total horse power available on farms of the United States.**

The rapid increase in mechanical power on farms since 1900 is clearly shown in this graph; indeed, is exaggerated, perhaps, since full rated horse power is used for gas and electric motors; and, in general, these are not used so many days or hours in the year as are horses and mules. For example, the average belt horse power of gas tractors in 1930 was nearly 24, whereas the number of horses replaced by a tractor probably would not average over six. On the other hand, automobiles, which have replaced many horses, are excluded. It is significant that animal power on farms began to decline about 1918 and by 1930 was smaller than in 1890. Meanwhile, mechanical power increased at an accelerating rate, until by 1930 the power available in various engines and motors on farms (excluding automobiles but including trucks) was nearly three times that available in the horses and mules. Nevertheless, horses and mules are still supplying probably half of the power actually used on farms, and if prices of farm products continue low and money scarce, animal power may increase in the future rather than diminish. Graph from “Power and Machinery; their Part in Agriculture,” by W. M. Hurst and L. M. Church, U. S. Department of Agriculture, Technical Bulletin, 1932.

**Production and Power.**—It is interesting to compare the increasing amount of power available on farms with the increase in agricultural production per farm worker. Animal power per male worker on farms has varied between 1.4 and 2.1 horse power during the past 80 years. (Figure production during the decade 1919–1929 is owing directly or indirectly to mechanization, and that this has been promoted principally by commercial agencies. Moreover, there has been no increase in production since 1926. Since there are many people who need more milk, more meat, more fruit and vegetables, as well as more non-agricultural goods and services, and are willing to work to secure these, it is clear that it is not the natural sciences that have failed to serve the people.
3.) Mechanical power per male worker increased from 0.1 horse power in 1880 to about 5.6 horse power in 1930. Total power per worker increased from about 1.5 horse power in 1850 to 2.5 in 1900 and 7.4 in 1930.51

Crop production per male worker increased about 80 percent between 1849 and 1899 (average 1897–1901), which was more rapid than the increase in power per worker; remained almost stationary (3 percent increase) between 1899 (average 1897–1901) and 1909 (average 1907–1911), as compared with an increase of about 9 percent in total power per worker; and advanced 16 percent between 1909 (average 1907–1911) and 1919 (average 1917–1921), as compared with a 35 percent increase in power per worker, the increase being almost wholly in mechanical power. During the decade 1919–1929 crop production per worker increased nearly 12 percent and agricultural production per worker about 28 percent, while total power available per worker increased about 100 percent. Power on farms during the past decade, as in the two preceding decades, has increased much more rapidly than production per worker. This is owing in part to assignment of full rated horse power to tractors, gas engines and other mechanical sources of power on farms, which generally are idle a larger proportion of the year than are horses and mules; but undoubtedly the advance of crop cultivation onto less productive lands per unit of power applied has been another factor.

Possibilities of Increase in Production per Worker.—Corn and cotton constitute about 40 percent of the total acreage of all crops in the United States and their production requires about half of the aggregate labor on crops. The corn harvester is here and apparently the mechanical cotton picker is not far away. Should the production of cotton become as thoroughly mechanized as the production of the small grains, the average area of cotton per family farm would probably be over 100 acres, as compared with 20 acres in the eastern cotton belt and 40 acres in the Texas portion of the belt today. Similarly the average area of corn per farm in the corn belt might well exceed 100 acres as compared with 17 acres per farm reporting corn in Ohio today, 27 acres in Indiana and 44 acres in Illinois.52 But there are great difficulties in the way of such mechanization in the corn and cotton belts, and if the change should come it will be a slow development.

However, there is much labor in farming other than that on crops and a better way of estimating the increase in production per worker in agriculture when the corn harvester and cotton picker become commonly used, is to assume that production per worker, or, preferably per year of labor, will be as high in the eastern corn belt and the cotton belt as it is

51 Data on mechanical power from W. M. Hurst, U. S. Bureau of Agricultural Engineering, Tractors given belt power and trucks rated horse power, but automobiles excluded.
52 The average area in wheat per farm reporting exceeded 100 acres in the Dakotas, Kansas and Oklahoma in 1929.
now in the western corn belt and wheat regions. In Figure 4b, it will be noted that during the period 1924–1928 agricultural production per year of labor averaged about $2,900 in Iowa, $2,800 in Nebraska, $2,200 in Kansas and $2,300 to $2,500 in the Dakotas and Montana. In the eastern corn belt states production per year of labor decreased from $2,100 in Illinois to $1,400 in Ohio. In the cotton belt states the decrease was from $1,600 in Oklahoma to $900 in South Carolina.

In the Great Lakes and middle Atlantic states average production per year of labor is similar to that in the eastern corn belt, $2,200 in Minnesota, $1,900 in Wisconsin, $1,700 in New Jersey, $1,500 in New York, $1,300 in Pennsylvania and a range of from $1,400 to $1,000 in New England. If expenditure for feed were subtracted, the figures would be reduced by about $300 in New England and New York. These figures for the northeastern states are as low as those for the cotton belt but in southern New England and to a lesser extent in New York, the average is undoubtedly lowered by the many “part time” farmers who work in urban factories, offices or stores; and in many localities in this northeastern region income from farming is supplemented greatly by entertainment of summer boarders and tourists. Rather than a notable increase in mechanization and in agricultural production per worker, it seems likely that there will be a further development of the tourist industry and of part time employment in manufacturing and commerce in New England and the hill lands of New York.

For the United States as a whole agricultural production per year of labor employed averaged about $1,500 during this five-year period (1924–1928, with products at 1917–1926 prices). The average for the western corn belt and the wheat states is $2,500. Since these states possess the most fertile soil in the United States and the farms are already fairly large, it cannot be expected that the universal mechanization of agriculture would raise average production per labor year to as high a point as in the central west; but it does seem wholly possible that an increase of 33 percent may be achieved for the nation as a whole. This is about the same percentage increase as has occurred during the past 30 years.

Production per Acre.—Prior to the World War the increase in agricultural production took place principally in two ways: (1) by expansion of the area in crops, generally at the expense of pasture or forest, which are less intensive uses of the land than crop production, and the expansion of pasture at the expense of forest or unused land; and (2) by securing greater acre-yields of the crops or higher carrying capacity of the pas-

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53 Quantity of each crop sold or consumed in farm household, and quantity of animal products produced, multiplied by average farm price in the United States as a whole during the decade 1917–1926, as a common denominator. Data used were from “Farm Value, Gross Income and Cash Income from Farm Production,” (Mimeographed), Bureau of Agricultural Economics, Washington, March, 1930.
Almost universally in the United States increased power per worker is accompanied by increased production. The smallest quantity of power available per farm worker is in Alabama and Mississippi. Here an average of one horse or mule per worker is associated with a production of $1,000. In the Dakotas, 14 horse power per worker is associated with a production of $2,400. In general, each additional horse power per worker increases production $100 to $200. The value of feed may be nearly $100 per horse, but in most states nearly all the feed is produced on the farm. Livestock provide an income supplementary to crop production without involving the use of much power. This larger income is notable in the arid grazing states of the far west. Agricultural production data compiled from "Farm Value, Gross Income and Cash Income from Farm Production," Bureau of Agricultural Economics, Washington, March, 1930. Horse power from "An Appraisal of Power on Farms," by C. D. Kinsman, U. S. Department of Agriculture, Department Bulletin no. 1348, 1925.
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ures. These two means of increasing production, particularly the expansion of agriculture across the continent, were so obvious that the existence of other means was scarcely recognized. Expansion of the crop area horizontally and the piling up of production perpendicularly seemed to exhaust the possibilities. That agriculture possessed a fourth, a fifth and even a sixth dimension was seldom surmised.

After 1919 crop acreage declined until 1924 and was only about as large in 1929 as in 1919, while pasture acreage increased little if any. Moreover, acre-yields of the crops taken as a whole remained practically stationary and the productiveness of the pastures probably has declined. Nevertheless, agricultural production increased nearly 13 percent between the five-year period centered on 1919 and that centered on 1924, which was a greater increase than that between any adjacent five-year periods since the beginning of the century. It increased 5 percent more between the five-year periods centered on 1924 and 1929. This recent slackening in the rate of increase is assignable largely to exceptional weather conditions.

Four groups of factors account for the increase in agricultural production since the World War:

1. Substitution of Gasoline for Horse and Mule Feed.—The loss of about 9,000,000 horses and mules (of all ages) on farms between 1918 (the year of maximum) and 1932, and of probably over a million more in cities, has released about 30,000,000 acres of crop land, besides much pasturage. This land has been used not only to feed meat and milk animals, but also to produce cotton and wheat. Some of it lies idle. (Figure 5.)

The use of larger units of power has also had indirect effects. It has permitted the production of wheat at a low price on many million acres of semi-arid land in the region of the Great Plains, causing corresponding reduction of wheat acreage east of the Missouri River. Some of this former wheat acreage went into corn, some into oats, hay or other crops, and some lay idle. The corn acreage expanded in the west, particularly in the northern and western corn belt; and this expansion, in conjunction with the corn released by the decline in horses and mules, helped to make the production of corn unprofitable in parts of the south and east with a resultant rapid decline in acreage. Part of this former corn acreage went into cotton and other crops and some lay idle. The increased production of corn and other feed crops in the northwest, and decreased consumption by horses, were important factors in the notable increase in the production of pork and milk. In the south, where the swine are, in general, less efficient in transforming feed into food, and where feed is more expensive, the number of animals declined nearly 40 percent during the decade January 1, 1920—January 1, 1930.

2. Improvements in Animal Husbandry.—Almost as important as the mechanization of crop production has been the increasing production of
meat and milk per unit of feed consumed. The increase in all animal products (other than power) since the World War has been about 23 percent, whereas crop feed available for meat and milk animals has increased not more than 13 percent, while the feed from pasturage probably has declined slightly. This increased production is assignable to the culling of cows, the slaughter of cattle, sheep and swine at an earlier age (young animals make greater gains on the same amount of feed than older animals), reduction in death losses by better sanitation, particularly among hogs, a vast shift in pork production from the south to the northwest, where the stock is better and more efficient in transforming feed into pork and lard, the use of minerals in feeding, and many other causes. These improvements in animal husbandry have probably added the equivalent of 25,000,000 acres to the crop area.\(^{54}\)

\(^{54}\)There were about 15 percent more dairy cows in the United States in 1931 than at the close of the World War (average 1918–1920). Nevertheless, production of milk was 35 or 40 percent greater. The cows eat more, but the increase in feed consumed has probably not been over 25 percent. Similarly, there are 9 percent fewer hogs on farms than at the close of the war, but the production of pork and lard, as estimated, is 18 percent greater (average of 1918–1920 compared with 1928–1930).

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Looking to the future, this factor undoubtedly will continue to be of great importance in the economizing of farm land, for culling of dairy cows and reduction of losses of pigs through sanitation and better feeding can and probably will continue for many years. Gains through slaughter at an earlier age and through shifts in production from south to north will undoubtedly be less important than during the past decade, because such shifts probably are nearly completed.

3. Shifts from Less Productive toward More Productive Crops per Acre.—Less important, yet a significant factor, particularly from the standpoint of the crop land requirements of the nation, has been the shift from corn to cotton in the south, from wheat to corn in the west north central states, and from grain and hay to fruit and vegetables in several areas, notably California. There is no assurance that these shifts will continue in the future.

4. Shifts from Less Productive toward More Productive Animals per Unit of Feed Consumed.—Likewise, there has been a shift from beef cattle to dairy cattle, hogs and chickens, which produce much more food per unit of feed consumed. During the next few years this factor may sink into insignificance or disappear, owing to the probable upward trend of the beef cattle cycle; but later, when the number of beef cattle declines, this factor is again likely to become of some importance.

Practically all of the increase in agricultural production per acre since the World War may be assigned to these four factors, and most of it to the decline in horses and mules and improvements in animal husbandry. These two factors alone have added to the effective crop area the equivalent of about 55,000,000 acres, an increase of about 18 percent. Should these factors be only half as effective in increasing production per acre during the next decade there will be little need to increase the arable area in order to provide for the expected population, assuming no increase in immigration.

Outlook for Crop Yields.—In the future, it seems probable that a greater use of fertilizers will supplement the four factors just noted. Fertilizers have become very cheap, and the price of nitrogen, the most expensive of the ingredients in mixed fertilizers, seems likely to fall still further with improvements in the new processes of production. Moreover,

55 The progress of diversification in the south prompted by the colleges of agriculture and other agencies, together with recent price factors have slowed down this tendency. See also discussion of shifts in crops and their consequences in Chap. X.

56 To produce 1,400,000 calories (the average annual disappearance of foodstuffs per person in the United States) of the following foods requires the acreage indicated (at average United States yields per acre):

- Beef and veal, 11.0 acres of crops and 2.5 acres of pasture.
- Milk, 2.35 acres of crops and 1.6 acres of pasture.
- Pork and lard, 3.1 acres of crops and 0.1 acre of pasture.

57 For population estimates, see Chap. 1.
the trend toward fertilizers of greater concentration has already resulted in a notable saving in freight charges and in the cost of application to the soil. Also important has been the research work of experiment stations and the National Fertilizer Association in method and time of application. The use of mineral fertilizers is spreading from the eastern states, in several of which acre-yields have been increased 50 to 75 percent during the past 30 years, into the central states; and the evidence is conclusive as to the advantage of using fertilizers on some of the fertile soils in Iowa at a normal level of prices for farm products.

IV. THE TREND IN LAND UTILIZATION

The depletion of soil fertility and the advance in agricultural technique have greatly affected the utilization of the land in large areas.

![Land in harvested crops. Increase in acreage, 1919-1929.](image)

The increase in crop area between 1919 and 1929 occurred mostly in the semi-arid portion of the Great Plains Region, where the tractor, combine and other labor saving machinery made it possible to grow grain profitably at the prices then prevailing. The building of good roads and the coming of the auto truck may have facilitated this development. A notable increase occurred also in southwestern Minnesota and north central Iowa and in the Mississippi River bottoms of Mississippi and northeastern Arkansas. In these areas much land had been drained during the decade but most of the Minnesota and Iowa gain was owing to a severe drought in 1919 which greatly reduced the acreage harvested. The increase in the 1,130 counties in the United States reporting an increase exceeded 33,000,000 acres. (Courtesy, U. S. Bureau of Agricultural Economics.)

The Trend in Agricultural Land Utilization.—In many parts of the United States rapidly increasing agricultural production per worker and per acre, occurring concurrently with the diminishing growth of population and declining exports of farm products, while domestic per capita consumption remained almost stationary, has forced vast geographic shifts in production both of crops and of live stock products and has accelerated the migration from the farms to the cities and villages.
Some Causes of the Regional Shift in Crop Area.—The increase in crop acreage since the World War has occurred mostly in the Great Plains region, a grassland in which the fertility of the soil has been increased through centuries by the decaying grass roots, and in which the leaching of the soil has been greatly reduced by the moderate to low precipitation, particularly in winter. (Figure 6.) The decline in crop area has occurred mostly in that portion of the United States which was forested originally—i.e., eastern Texas and Oklahoma, much of Missouri, southern Illinois, practically all of Indiana and Michigan and eastward to the Atlantic.

![Land in harvested crops](image)

**Fig. 7.—Land in harvested crops. Decrease in acreage, 1919-1929.**

A decrease in crop area of over 32,000,000 acres occurred between 1919 and 1929 in 1,940 counties located mostly in the originally forested portion of the United States. The outstanding decrease was in the Piedmont of Georgia and South Carolina and in a belt extending from southern New England across New York, southern Michigan, Ohio, southern Indiana and Illinois and most of Kentucky and Missouri, to eastern Oklahoma and central Texas. Part of this land is used for pasture, part lies idle, and part is growing up to brush. The soils in these areas are, in general, poor or fair, but some are good. Much of the land is hilly or steeply rolling, while many of the farms are small and poorly adapted to large scale machinery. (Courtesy, U. S. Bureau of Agricultural Economics.)

(Figure 7.) In this region, the soils are, in general, less fertile than in the prairie and plains regions; and there is also much hilly and steeply rolling land, some of which has been badly eroded. Other soils have been depleted of fertility by crop removal or destruction of the humus. Yet it is probable that this shift in crop acreage has been induced, for the most part, by the mechanization of agriculture, which has lowered the cost of...
production, particularly of the cereals, below the level that the less favored areas can bear. Mechanization has been promoted in the west by the more level as well as more fertile land and by the fact that in the settlement of the prairies and plains most of the land needed only plowing to be ready for crops, hence farms were occupied in much larger units than in the east where forests had to be removed and stumps grubbed out. It required the good part of a life time in the east to clear 100 acres of land and prepare it for crops. All along the prairie margin the average acreage of improved land per farm usually doubles within a few miles from the former margin of the forest. In the east it is likely that the smaller size of farms and the large loss of investment in buildings (often 50 percent of the farm value) involved in consolidating farms into the larger units essential to the economic use of large machinery, have been as important factors in retarding mechanization as the unfavorable topography. Moreover, the development of dairying and other intensive forms of livestock husbandry has increased the labor requirements on small farms, and counterbalanced in part the tendency toward mechanization and larger farms. Furthermore, dairymen and poultrymen in the east can generally buy grain from the west more cheaply than they can raise it with the most modern machinery. Progress in mechanization of agriculture in the east will doubtless continue to be slow. The progress will be still slower if urban unemployment persists or wages remain low.

In the cotton belt mechanization may be more rapid, particularly wherever the plantation system of farm ownership and operation is extensively developed, and provided a successful cotton picker is placed on the market. The price of cotton or wages may need to rise also to near the pre-depression level. The large units of land are already in existence, and relief from the responsibility of furnishing a livelihood to tens and sometimes hundreds of tenants and croppers will be a powerful motive with many land owners, particularly if the times are prosperous and the labor can find employment elsewhere. These large plantations are usually located on the more level and more fertile land. Should the use of the cotton picker become common, the reaction upon cotton producers in the steeply rolling or hilly districts will undoubtedly be severe. The cotton picker may compel a migration of a magnitude unparalleled in our history from the hill lands as well as from the level lands of the cotton belt to the cities.

Rural Migration.—Since the World War most of the migration from the farms to the cities has come from the south and the eastern corn belt. (Figure 8.) The future migration is likely to be principally a continuation and possibly an accentuation of present trends. The industrial revolution which has required a century in the north may occur in a much shorter period in the south. When it is accomplished, this region, the principal
source of migrants to the cities, will be depleted of a large proportion of its young people.

It is inevitable that serious social as well as economic problems will arise during the process of consolidation and abandonment of farms. Cost

Fig. 8.—Approximate net migration of rural farm population, January 1, 1920—April 1, 1930.

About 80 percent of the net migration from the farms during the decade 1920–1930 was from the south (states south of the Potomac and Ohio rivers, and including Arkansas, Louisiana, Oklahoma and Texas). Negroes constituted one-third of this migration from southern farms. A majority of these migrants were between 15 and 30 years of age. The birth rate is high among southern rural people, both white and negro and economic opportunity is less than in the north. But if it costs only $4,000 to rear and educate a child to the age of fifteen ($135 a year and no allowance for interest), these 8,500,000 migrants from farms in the southern states represent a contribution of roughly $7,000,000,000 made during the decade by the farm population of the south to other parts of the nation, mostly to the cities in both the north and the south. Hundreds of millions more dollars have been transferred from the rural to the urban population in the settlement of estates, or in the payment of interest on mortgages that have resulted from such settlement of estates. The flow from farms was heavy also in the eastern and southern corn belt (Ohio, Indiana, Illinois and Missouri). In California, Massachusetts and Rhode Island, on the other hand, more people moved to farms than from farms.

The migration is estimated by comparing the number of persons in each 5 year age group in the rural farm population in 1920 with the number in each age group 10 years younger in 1940 that would be expected to survive, using expectation of life figures based on comparison 1920 with 1930 of the native whites in such age groups in the United States as a whole and of negroes for the negro population in the southern states. Migration of children born on farms during the decade is not included.

per capita of providing schools and other social services will tend to increase. In some cases the county or town can aid the individual in making readjustments, as for example, by moving isolated farm families to better locations near other farmers, in order to avoid the expense of

In Kansas, for example, consolidation of farms, the decline in births and other factors resulted in almost complete elimination of children of school age from certain districts. There were six schools for which a teacher had been employed by the state but for which there were no pupils in 1927–1928, and there were 363 schools with fewer than six pupils each. (Report of the State School Code Commission of Kansas, June, 1928, vol. 1, p. 10.) For other effects of these factors, see Chap. X.
Recent Social Trends

maintaining a road and school for the sole use of one or two families. In other cases, the state must step in because the undertaking becomes too large for the county to finance, as, for example, the establishment of state forests. But the extensive regional shifts in land utilization which appear imminent in parts of the south will in all probability involve problems too vast for the state to solve. It seems likely that the cooperation of the federal government must be obtained if serious losses of soil resources as well as development of undesirable social conditions are to be avoided. After the 1930 drought temporary aid was extended in the form of federal loans for seed and supplies. It is being extended again in 1932 because of the distress occasioned by the low prices for farm products. The need of a more permanent form of relief may be realized as the low producing power of much of the land in the areas receiving loans becomes apparent.

The agricultural occupation of new lands may be left to individual initiative in a period of rapidly increasing population and expanding demand for farm products; but agricultural recession raises new problems, many of which are beyond the power of the individual to solve. We must realize that the situation with reference to low grade land is not transitory but seems likely to persist for many years to come.

Clearly there is need to plan for the future and develop a program of land utilization—national, state and local—to mitigate the suffering incident to the slow abandonment of thousands of low producing farms; to provide the operators of these farms and their families with better social services and to utilize more effectively not only their land but also their labor and intelligence. Doubtless most of these farms are of the

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60 In 1930 Congress appropriated $47,000,000 for drought relief, plus $20,000,000 for agricultural rehabilitation, of which over $47,000,000 was loaned to 385,192 persons by the Secretary of Agriculture. Nearly $22,000,000 had been repaid by February 1, 1932. In 1932, the appropriation was $30,000,000.

61 The magnitude of the so-called submarginal land problem is suggested by census data recently issued, which show that in 1929 there were about 400,000 farms, or 6.6 percent of all farms, which produced less than $250 worth of products; 518,000, or 8.6 percent of all farms, produced $250 to $399 worth of products; 766,000, or 12.7 percent, produced $400 to $599; 1,246,000, or 21.8 percent, produced $600 to $999; 938,000, or 15.6 percent, produced $1,000 to $1,499. Where to draw the line of submarginality is uncertain, but it is worthy of note that 28 percent of the farms produced less than $600 worth of products in 1929, and 49 percent produced less than $1,000. These figures include not only products sold, but those consumed on the farm as well; the values may be somewhat depressed by the fact that the census was taken on April 1, 1930, and some farmers may have based their estimates on prices of that date rather than on amounts actually received. The aggregate value for all farms, however, is only about 4 percent below the estimate of the U. S. Bureau of Agricultural Economics.

62 The Secretary of the United States Department of Agriculture, realizing the need of developing a national policy and local programs of land utilization, joined with the Association of Land Grant Colleges in calling a conference at Chicago in November, 1931, out of which have grown two committees, the National Land Use Planning Committee, and the National Advisory and Legislative Committee on Land Use. The former committee has appointed eleven sub-committees of specialists to report on various phases of the subject.
self-sufficing type and yield only a small surplus for sale in the nation's markets, but this surplus tends to depress the prices of agricultural products in general.

Urban Migration.—During the present economic depression some of these farms have provided a haven for numbers of unemployed from the cities. The sudden reversal of the direction of migration has raised doubts as to whether the nation may not be entering a new era wherein the cities will decrease and the open country will increase in population through the establishment of thousands, if not millions, of new farms by these urban migrants—or at least that the flow from farm to city will cease. Any comprehensive program of land utilization will be subject to modification when the future direction of this rural-urban migration becomes clear.

Although in a time of rapid transition it is unsafe to rely upon forecasts, it may be helpful to consider some facts bearing upon the question as to whether the present farmward migration of the unemployed will prove transitory. More farmers are not needed to provide food or fibers for the nation. For a decade, during much of which the city populations were extraordinarily prosperous and were able to consume an unprecedented quantity of the more expensive foods, such as meat and milk, fruit and vegetables, there has been, nevertheless, a distressing surplus of farm products. Moreover, most of the migrants from the cities are poorly provided with capital and many lack farm experience. It can scarcely be expected that more than a few exceptional individuals will be successful in developing a commercial type of farming in competition with the experienced farmers in the field at present. Instead, it is probable that these urban migrants will engage in a self-sufficing type of farming.  

The magnitude of the "back to the land" movement, up to the present at least, appears to have been exaggerated in the popular press. The best estimates for New York State indicate that migrants to the farms in 1931 (February 1, 1931—February 1, 1932) merely balanced migrants from the farms, the farm population increasing by the excess of births over deaths. In Pennsylvania, 85 percent of the houses on farms were occupied by families engaged in agriculture on June 1, 1928 and 85.7 percent on June 1, 1932. Farm houses occupied by persons not engaged in agriculture increased from 8.8 to 10.3 percent, and vacant houses decreased from 6.2 to 4.0 percent. However, in Arkansas a survey indicates that farm families increased about 8,000 during 1931, and in Kentucky the increase was similar. For the entire United States the U. S. Bureau of Agricultural Economics estimates the movement to farms in 1931 at 1,679,000 and from farms at 1,472,000. The surplus of births over deaths on farms was about 441,000. The net increase in farm population, therefore, was roughly 648,000. In 1930 there was a small net increase in population, but prior to 1930 farm population had been decreasing in nearly every year for a decade, and probably longer.

The 1930 census of agriculture included, for the first time, inquiries on the value of various groups of farm products sold or traded and of the contribution of the farm to the family living (garden produce, milk, meat, etc.). On the basis of these answers all farms were classified into 16 types and an "unclassified" group. One of these types was called the "self-sufficing." It included those farms in which the contribution of the farm to the family living exceeded half the value of all farm products and only those farms producing
RECENT SOCIAL TRENDS

This is the type of farming which has been slowly diminishing during the past century, at least in relative importance, under the competition of commercial agriculture, and for this trend to be reversed would appear to require either a persistent unemployment or a much lower level of urban wages than in recent decades. Otherwise the migrant farmer, or his children, will be attracted back to the city.

There may develop, however, an accelerated migration of urban industry into rural territory, with many of the employes of the factories having an acre or two of land and cultivating their own gardens, besides keeping chickens, and sometimes a cow. Such a development would be greatly facilitated by a shorter work day. The utilization of spare time would probably prove profitable in most cases because of disposal of surplus products to neighbors at almost the equivalent of retail prices, whereas full time farming on a small acreage with sale at wholesale prices might prove unprofitable. Greater economic stability would also result. This might provide an incentive, in addition to that of greater freedom from labor troubles, sufficient to induce the owners of industries to locate their plants in rural communities.

The possibility of such a development will need to be taken into account in working out plans or programs for the better use of the land, particularly in the northeastern states, the Great Lakes states, the southern Appalachian and Piedmont regions and in other areas where industry is likely to develop because of peculiar advantages of transportation, proximity to large markets, water power, cheap fuel or low labor costs. But such industrial developments are likely to be local in their influence; in most of the agricultural communities of the nation—notably those in the central and western corn belt, in the wheat regions, in much of the cotton belt and in most of the irrigated areas of the western states—there seems to be little reason to anticipate that the trend toward greater production per agricultural worker, involving in many cases larger farms and more machinery, will not be resumed soon.

The Trend in Forest Land Utilization.—The area of forest and cut over land in the United States is about the same as that of improved farm land (or of crop land plus plowable pasture), or approximately 500,000,000 acres. About one-half of this forest and cut over land is in the south (including Kentucky and southern Missouri), one-eighth is in the northeastern states (including eastern Ohio), nearly one-eighth is in the Great Lakes states, mostly in the northern portions, and over one-quarter is in the west, mostly in the Rocky Mountain and Pacific Coast regions. However, 80 percent of the nation’s saw timber stumpage is in the west, and

less than $750 worth of products. The average value per farm of all products produced on these “self-sufficing” farms ranged from $251 in South Dakota to $445 in Delaware. Part time farms were excluded from the tabulation of self-sufficing farms.
two-fifths of this is in the national forests. In the east, about five percent of the forest land is publicly owned, one-third in national forests and two-thirds in state and municipal forests.

Forest Resources.—Of the 500,000,000 acres of forest and cut over land about 100,000,000 acres bear virgin saw timber (the remnant of possibly 800,000,000 acres that existed two centuries ago), 120,000,000 acres are contributing at present only material of cordwood size, another 90,000,000 acres are growing saw timber, and the balance of 190,000,000 acres consists of land bearing growth below cordwood size, nearly half of which is restocking poorly or not at all. In the virgin forest decay is probably balancing growth, and on the devastated areas there is practically no growth. Consequently, on only about 300,000,000 acres is the forest stand increasing appreciably, and growth of saw timber (in excess of decay) is taking place on only about 90,000,000 acres. The annual growth on the 300,000,000 acres is estimated at about 25 cubic feet per acre, which is about half that which prevails in well cared for forests in Europe.

Trends in Consumption of Forest Products.—Twelve years ago it was estimated that the annual cut, including waste and destruction by insects and fires, was four times the annual growth, and a severe shortage of lumber was anticipated in a few decades. Recent estimates indicate a somewhat lower ratio of consumption to growth, yet the drain on saw timber particularly is suggestive of future scarcity. It is still too early to predict the effect of the declining birth rate and the gradual but apparently permanent decline in consumption per capita on future timber requirements. At present the surplus of lumber is as great as of agricultural products and distress in the lumbering industry is, perhaps, even greater than in agriculture.

It appears that the annual lumber consumption per capita has declined from about 500 board feet at the beginning of the century to about 300 board feet in the years immediately preceding the current depression. Should lumber rise above its present price relationship to other building materials (and the present price is unprofitable for many, if not

67 It should be recognized, however, that the surplus is of lumber production, and not of timber growth. R. Y. Stuart, in U. S. Forest Service, Report of the Forester to the Secretary of Agriculture for 1931, p. 4, notes: "While industrial disorganization, market demoralization, and business instability are widespread throughout the industry, the Pacific Northwest is the main seat of the disorder. Its cause is the attempt to liquidate in a short period a resource which is undoubtedly capable of producing forever an annual output equal to the normal production of such years as 1926 to 1929. The wastage in this liquidation policy, both from the standpoint of the depletion charges involved and from the standpoint of current overproduction for the market, is proving too great a strain on the financial resources of the industry."
The conclusion seems inescapable that much . . . of this [private forest] land will eventually revert to the States or to the counties. Cut over lands are already becoming tax delinquent on an alarming scale in several states. Timber is one of the principal sources of western tax revenues. As the timber is cut off the value of the land is greatly lowered. A good deal of the uncut timber cannot be converted into lumber with recovery of the cost involved, at the level of lumber prices that prevailed during the five years prior to the 1929 slump. There is no reason to anticipate a rise in lumber prices that will ever enable the private owners to recover their carrying charges from now to the time of cutting, on the lands of lowest value. From this source as well as through the abandonment of cut over lands, a compulsory enlargement of public ownership is probable . . .

For the State to take abandoned cut over lands and timberlands that no private owner is willing to continue to hold, block these lands up into practicable administrative units, protect them against fire, meet the other costs of administration and reforestation, and provide some equivalent to the local communities for their loss of the taxes formerly paid, will mean the assumption of very heavy burdens. In short, the problem of forest-land stabilization in the Western States is much greater than the States are prepared to cope with unaided.68

Low Grade Forest Land.—The reversion of low grade agricultural land to brush and eventually to forest appears likely to increase indirectly the acreage of low grade forest land, and may aggravate the situation for owners of such land. In 1929 there were 25,000,000 acres of "crop land lying idle or fallow" in the sections of the United States which were forested originally. If all this land should revert to forest, and much, if not most, of it is headed that way, it would materially increase the area growing saw timber. The outlook for private forestry on the poorer grades of forest land is not bright.

Happily there are other functions of low grade forest land than the production of wood, particularly of forest land in public ownership:

1. Forests protect watersheds, retarding erosion, lessening the severity of floods and the silting of navigable rivers. In the west forests regulate the flow of water for irrigation purposes; and in the east large areas of forest are required to provide a pure water supply for the many cities. Both in the east and in the west forests aid greatly in equalizing the flow of streams which is so important in waterpower development.

2. Forests provide recreation and aesthetic satisfactions and contribute to the advancement of public health. In 1930, for example, it is estimated that nearly 32,000,000 persons visited the national forests. Three-fourths of these, however, were merely transient motorists.69

3. Forests preserve wild life, particularly fur bearing animals and wild fowl. It is estimated by the United States Biological Survey that the normal value to the trapper of furs produced in the United States, nearly all from forest or marsh land, is $75,000,000.

The trend appears to be toward the use of the poorer grades of forest land for these purposes rather than for the production of wood, and it is probable that much of the forest and cut over land which is reverting to the county or state through tax delinquency will be developed primarily for such uses. Recently Michigan has set aside over 600,000 acres of tax delinquent land as state forest, while New York has appropriated $19,000,000 for the purchase of submarginal farm land and the further development of state forests and parks. Massachusetts has recently purchased over 100,000 acres and Connecticut over 50,000 acres. Idaho, South Dakota and Washington in 1931 authorized counties to make over lands to the government for additions to the national forests.70

Forest Policy.—It is evident that in the originally forested portions of the United States agricultural and forest land policies are intimately related. In many cases low grade agricultural land may become high grade

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69 Report of the Forester, 1931, op. cit., p. 49; see also Chap. XVIII. R. Zon says, "In each of the Lake states—Michigan, Wisconsin, and Minnesota—the tourists leave annually from $80,000,000 to $100,000,000." (U. S. Department of Agriculture, Proceedings of the National Conference on Land Utilization, Chicago, Ill., Nov. 19-21, 1931, Washington, 1932, p. 80.)

70 Zon’s opinion as to what should be done is of interest: “In the three Lake States of Michigan, Wisconsin, and Minnesota alone, there must be close to 25,000,000 acres of tax delinquent land in different stages of abandonment. The State or county, as a general rule, does not want this land and resists by every means taking over title to it . . .

“If the Federal government, in cooperation with States and counties, could work out for each State a definite plan of acquiring these tax delinquent lands, much of it could be returned into public ownership, from which it should never have been allowed to pass. In blocking out such areas for forest and conservation purposes, a selective process must be used. We may as well admit that there are submarginal forest lands just as there are submarginal agricultural lands. It may be several generations before this submarginal forest land can be economically developed even by public efforts. Such land should be given protection against fires, but beyond that it should be allowed, for the time being, to drift as idle land, leaving it to nature to restore it to some form of usefulness.” (Zon, op. cit., pp. 81-82).
forest land. Both probably will remain to a large extent in private ownership. Fair and poor forest land, on the other hand, are tending toward public ownership, where it is possible to find uses in addition to that of wood production. But owing to the long time required to grow saw timber and the disinclination of individuals to assume the risks involved, some of the better quality forest land is also likely to become publicly owned. This appears desirable from the long time national viewpoint, since public agencies can assure that continuity of policy which is so important in the development of forest land. Such development, by providing supplementary employment in the forests and by the maintenance of local woodworking industries, will prevent the abandonment of much agricultural land in regions of hilly surface or poor soils. The development of public forests in many areas appears to be the only adequate solution of the problem of agricultural recession.

V. THE OUTLOOK FOR LAND UTILIZATION

The advance in agricultural technique, in association with the decline in population growth and other factors, has already reversed the trend of agricultural development over a large part of the country. Moreover, there is every likelihood that both the advance in technique and the decline in population growth will continue for some years. Only yesterday a buoyant spirit pervaded the American nation. The free land in the west beckoned the young man with the promise of a home and the accumulation of a competence. Europe afforded a remunerative market for the agricultural surplus. The rapidly growing cities also offered opportunities to acquire wealth. Immigrants were welcome to share in the political equality, in the economic opportunity afforded by the cities, and in the joy of exploiting the greatest contiguous area of arable land in the world, with the possible exception of the Russian steppes and woodlands. Yet now, when the agricultural conquest of the continent is scarcely more than half complete, and when the trend of per capita income and wealth is upward (prior to 1930), the situation has become so altered that the former land policies are clearly obsolete. These were based, perhaps unconsciously, on the assumption of a rapidly increasing population and need for farm products in Europe as well as in the United States and on a stationary agricultural technique; whereas the prospect at present is for an advancing technique and a stationary population. A new land policy evidently is needed.

71 Crops occupy less than 40 percent of the land physically capable of crop production, and only about half of such land has been "improved." See U. S. Department of Agriculture, 1923 Yearbook, pp. 427-431.

NATURAL WEALTH

Concentration of Crop Production on the Good Land.—The outlook for land utilization in the United States is, briefly, toward an increase of crop acreage, mostly at the expense of pasture, in the more level or fertile areas, where tractors and associated machinery and the increasing use of fertilizer are likely to lower still further the cost of crop production relative to the cost in the less level or less fertile areas. In many of these fertile or level areas most of the crops are sold rather than fed (the cotton belt, wheat regions, central Illinois section of the corn belt and other areas). Here the trend doubtless will continue to be toward larger farms. Continued progress in animal husbandry and use of fertilizer on pastures will tend, likewise, to concentrate production of animal products on the better land. Livestock farms, however, may not increase in area, but will tend to increase in productive capital. Near the large cities, and elsewhere in localities having exceptional transportation or marketing facilities for perishable products or possessing peculiar advantages of climate, agricultural production is likely to become still more intense and lead to the establishment of many small farms. It3 In other words, production will tend to concentrate on the more level, more fertile or more favorably located lands, and these will be cultivated more intensively, not necessarily by more labor but mostly by the use of more capital.

Reversion of Poorer Land to Pasture, Forest or Waste.—For a few years the total crop acreage may remain stationary or even increase slightly. It is then likely to decrease as the rate of population growth declines (assuming no great increase in agricultural exports). Pasture lands will increase probably in the less desirable areas as crop land decreases, but since much pasture in hilly, eroded or infertile areas in the humid portions of the nation will revert to brush and eventually to forest, this increase in pasture acreage may be transitory. Such a reversion to forest has been in progress for several decades in parts of the Appalachian region; and during the past decade, for the first time in our history, the area of forest and brush land increased materially in the United States as a whole. The reversion of crop land to pasture and forest will

72 The census of 1930 shows a large increase in small farms during the decade, those of under 8 acres increasing 111.3 percent, of 8 to 9 acres 17.5 percent, and of 10 to 19 acres 10.2 percent. Many of these small farms are "part time" farms, located near cities. It is not unlikely that the further development of good roads and the increasing desire of many urban families to reduce the cost of living, as well as to obtain greater economic security, will result in a rapid increase in these semi-suburban "farms," as well as in the number of the rural non-farm population. The tendency to locate factories in small cities and villages will greatly aid this movement.

73 If agricultural production per acre in crops increases during the next ten years as it has during the last ten years and domestic consumption per capita and exports of farm products remain constant, while population increases 9,000,000, about 5 percent smaller crop area, or 18,000,000 acres less than at present would be sufficient. But if production per acre remains constant during the next decade, as it has during the last five years, about 7 percent larger crop area, or 25,000,000 acres more than at present will be needed.
not be a new development but it seems likely to become more extensive and general.

Expansion in Non-agricultural Uses of Land.—The ramifying network of good roads, use of the automobile and auto bus, together with the construction of electric power lines and the almost universal availability of the telephone, is resulting in an increasing number of urban workers living in the open country or in suburban villages. Such residential use may, during the next decade or two, require several million acres of land. The multiplication of golf courses and the establishment of new national and state parks will take a few million more acres. Many factories have already moved from cities to rural villages, and there are indications that such a movement may increase. Some experiments suggest the possibility of combining work in winter in the factory with work in summer on the farm.\(^76\) The recent census revealed a surprisingly large number of farmers who were supplementing their income from agriculture by part time work in other occupations.\(^76\) All of these movements, strengthened by a desire on the part of the people for greater economic stability, may result in the development of a village life in the near future which will combine many advantages of the city with most of the satisfactions of the farm.

Such a development would contribute to the solution of one of the most serious agricultural problems. Progress in agricultural technique has involved continued drain of rural wealth to the cities, not only the investment represented in the rearing and education of young people who leave the farms, but also the wealth that passes in the distribution of estates to the children.\(^77\) This is a vast amount, difficult to estimate, but probably of the magnitude of a quarter, a third, or, possibly, a half of the total value of farm property in each generation. There has been no counterflow of wealth from the cities of comparable magnitude. The development of the villages would greatly diminish this drain. If full time or part time employment could be found in a nearby village for the son or daughter whose labor is not needed on the farm, not only would this wealth represented by an educated individual and that transmitted through inheritance be retained in the community, but also such wealth as the son or daughter might accumulate.

Such accumulation of wealth would provide the means to improve living conditions in the community—houses provided with modern conveniences and more beautiful grounds, better roads, schools and

\(^76\) Notably Ford's experiment at Dearborn, Michigan.

\(^76\) Nearly a third of the farmers in 1929 worked for pay at jobs not connected with the farms they operated, and a ninth worked more than 100 days in the year on such jobs.

churches. This would tend to attract city people who might wish to spend their vacations or their declining years in the country. More and more people are living where they want to live. The development of the village may not only diminish the flow of wealth from rural to urban areas, but even induce a counterflow consisting largely of expenditures for recreation by the young and middle aged and for enjoyment by those who have retired from active life. The prosperity of New England and of California (prior to the recent universal depression), to cite examples, was maintained in no small measure by such a flow of wealth from other areas.

Summary.—This is the outlook, but it is not a prophecy. The uncertainties in the situation—changes in our immigration policy, changes in tariff policy both in the United States and abroad, the possibility of rapid industrialization in the Orient, with development of an effective demand for farm products—are too great to permit a definite conclusion. Moreover, if urban unemployment becomes chronic the present trend in land utilization in many localities may be materially altered.

Of these things we may be sure: that the soil resources are being depleted and often wasted; that there will be further progress in agricultural technique; that there will be notable regional and local shifts in production; that a decreasing proportion of the population engaged in full time farming will be able to produce plenty for everyone in the nation to eat; that both public and private action will be necessary to solve the vast problems of land utilization; and that the family farm and individual initiative will remain characteristic features of American agriculture.
CHAPTER III

THE INFLUENCE OF INVENTION AND DISCOVERY

BY W. F. OGBURN, WITH THE ASSISTANCE OF S. C. GILFILLAN

IN the preceding chapter stress is laid upon technological developments in agriculture, in mining and in the production of power. Science and technology are the most dynamic elements of our material culture. Through technology men transform the physical environment, so that men, natural resources and inventions and discoveries are the primary factors which determine the wealth, standards of living and well being of a people.

This chapter surveys inventions and discoveries in applied science, describing as an example the social effects of a single invention, discussing the action and reaction between inventions and society as a whole and concluding with a discussion of the problems created.

I. INVENTION AND SOCIAL CHANGE

Mechanical inventions and scientific discoveries are included in a study of social trends because they are associated with so many changes which are purely social. Thus the invention of the automobile and its wide diffusion have aided the growth of suburbs, affected the size of villages, reduced railroad traffic, changed the nature of much hotel business, modified manners and morals, increased crime, diminished the employment of domestic servants, changed marketing areas and caused international difficulties over oil resources. And these are only a few of its manifold influences. There are many other inventions of revolutionary social significance such as the airplane, the sound picture, the radio and the tractor. Social changes of today are connected with inventions of the past and inventions of today will no doubt foreshadow the social changes of the future.

Inventions have been rapidly growing in numbers in the modern age but this has not always been the case. In the stone ages there were few mechanical contrivances, some chipped stones, a few tools for trapping, some cooking utensils and the like. Invention was so rare that it required thousands of years to bring about a new method for cutting flint. But as time passed, inventions began to accumulate, since relatively few were lost to the world, and new inventions became more frequent, in part because the heritage of previous centuries meant that there was more
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with which to work. An invention cannot be made unless the elements which form its base are in existence. The Greeks with all their intellectual powers could not invent the airplane, because they did not have the gas engine and other supporting devices. The larger the number of elements in a culture, the more numerous the inventions. Their growth appears to be somewhat like compound interest: the bigger the principal, the larger the interest.

It is not surprising then that our mechanical heritage has become so large and is increasing so rapidly. More than 400,000 patents were granted in the United States alone within the decade 1920–1930.1 Inventions like the coal tar products, cellulose acetate, nitrogen fixation and the electron tube all have their roots in the past and furnish the basis for future inventions.

An attempt is made in the first section of this chapter to show in some detail how the inventing process is going forward in different fields. A broad resume is here presented of inventions and discoveries in applied science in the fields of electricity, chemistry, physics, metals, power, transportation, construction, machinery and mechanical objects, and biology. The social influences of these inventions are indicated or suggested. Not much can be told in the limited space available but at least a bird’s eye view can be presented of vast achievements, far more marvellous than the utopias or mythologies conceived by the imaginative writers of the past.

This slow accumulation of mechanical inventions through most of the last half million years and its rapid acceleration during the period of modern history have led to a new environment to which modern man must adjust, quite different from the fauna and flora of nature. On first thought, it would seem to be an environment to which man would easily adjust himself. Houses furnish him with shelter, the adaptation to which seems easy, but there are difficulties in the way of obtaining the proper amount of outdoor exercise and sunshine for good health. The automobile enables him to move with less effort than it takes to walk, but it has brought its problems of traffic congestion and automobile thefts. The modern city has created the most artificial environment yet known. It brings comforts and conveniences, but likewise innumerable problems of adjustment. For instance, it forced a reorganization of family life by taking production from the household and placing it in the factory; it created a city proletariat; it changed manners and morals and brought problems of health which are not yet solved. Man is far from having achieved a satisfactory

1 Patents and inventions are not identical. Many inventions are not patented. Many patents concern such small improvements that they may not be called inventions. It is difficult to draw the line between inventions and technical improvements or adaptations. A single major invention, such as the automobile, may combine hundreds of patents, while the invention itself may not be patented.
RECENT SOCIAL TRENDS

adjustment to the modern factory which is closely associated with modern urban development.

In the summary view of recent inventions presented in the first part of the chapter, there are a few brief descriptions of some of the social effects of these inventions on habits, customs, institutions, organizations and philosophies. In order to suggest the many possible ramifications of many inventions, a single great invention, the radio, was studied more thoroughly and a more extended account of its social effects is presented in the second section of the chapter. It is shown what an extraordinary and varied influence this invention has had on our lives. If the effects of other inventions were similarly shown, some idea might be gained of the social influence of inventions in general.

It is not to be implied that mechanical invention is the source of all change. There are social inventions like the city manager form of government, the chain store, esperanto and basketball which have had great effects upon social customs. While many social inventions are only remotely connected with mechanical inventions, others appear to be precipitated by mechanical inventions. Such is the case with workmen’s compensation laws, the trade union and the tourist camp. But just as mechanical inventions furnish an incentive for certain social inventions, so social inventions sometimes stimulate the making of mechanical inventions as in the “safety first” campaigns of a few years ago.

The close relationship between social and mechanical invention is characteristic of the nature of the influence of inventions on society. Derivative effects of invention follow one another like ripples after a pebble is thrown in water. The description of this and other processes, of which there are many, serves to build up the picture of invntional influence. The relationship is often much more remote than that of the automobile and the consolidation of rural schools. Thus, the invention of the tin can is said to have influenced the movement for woman suffrage. It first led to canning factories, then it reduced the time in preparing meals in the home; it thus gave women more time for activities outside the home, including participation in the movement for woman’s rights and the suffrage. In turn, woman suffrage has had a series of derivative effects. If the effects of a single factor are spread out very far, the force of the particular influence may be quite weak. Certainly the canning industry has had a very little influence on woman suffrage but its influence on the work of women in the home has been great.

Furthermore, a social change is seldom the result of a single invention. Thus woman suffrage was the outcome of a great number of forces and converging influences. Mass production, urbanization, birth control, the typewriter, education, the theory of natural rights and many other factors contributed. The cumulative effects of many small inventions are also
associated with social changes. This piling up process is analyzed in the third section of the chapter.

Finally it is important to note which comes first, the mechanical invention or the social invention. In some cases the social invention is first, as was the case with building code legislation and the subsequent development of the set back type of skyscraper architecture. But in other cases the mechanical development comes first as in the development of welfare work systems for employees in factories and stores.

There are many instances where the mechanical invention comes first and the particular adaptive social device follows. Advertising adapts itself to the radio. It is the factory which changed the family. Industry changes first and the school curricula later. There is often a delay or lag in the adaptive culture after the material culture has changed, and sometimes these lags are very costly, as was the case with workmen’s compensation for industrial accidents. The fact that the different parts of a highly integrated society are changing at unequal rates of speed means that there is a lack of harmony, frequently a grievous maladjustment, and always a failure to make the most out of a possible development. The problems of social change are then, first, for man to adjust himself to a new environment consisting of a huge material culture and, second, for man to adapt himself to varying rates of change in the material and social culture.

The Number of Inventions.—Of the facts which emerge from this study, one is the immense numbers of inventions and discoveries in all fields; another is the extent of their influence on many manifestations of life, incalculable in their totality and profound in their significance. But in addition to these is the impressive fact of their phenomenal increase from year to year. In the decade ending in 1890 there were 208,000 patents granted in the United States. In successive decades the numbers were 221,000, 314,000, 384,000, and 421,000 for the decade ending in 1930. Table 1 shows at stated intervals the growth of patents, inventions and discoveries in certain fields of science in the United States and other countries.

The yearly increase in the number of patents since the World War has not been large, and it may be questioned whether this recent slow increase may not presage a decline in the near future. There have been several times in the past, however, when the number of inventions increased at no greater rate than in the last decade, and at some periods there has even been a decline; yet over a long period of time the curve of the growth of patents has been upward. These conditions are shown in the chart of patents granted by years since 1852 in the United States and in the United Kingdom. (Figure 1.) In the light of Figure 1 and of Table 1, a forecast of a decline in inventions based upon the post-war
## Recent Social Trends

### Table 1.—The Growth of Patents, Inventions and Scientific Discoveries in Recent Years in the United States and Other Countries

<table>
<thead>
<tr>
<th>Patents issued in the United States, 1840–1931, by five year periods&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Patents issued in Great Britain, 1741–1891, by ten year periods&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Inventions reported by Darmstädter, 1450–1899, by twenty-five year periods&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Discoveries in physics reported in France, England, and Germany, 1811–1906, by five year periods&lt;sup&gt;d&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5 years ending—</strong></td>
<td><strong>Number of patents</strong></td>
<td><strong>10 years ending—</strong></td>
<td><strong>Number of patents</strong></td>
</tr>
<tr>
<td>1845</td>
<td>2,455</td>
<td>1761</td>
<td>100</td>
</tr>
<tr>
<td>1850</td>
<td>5,517</td>
<td>1771</td>
<td>234</td>
</tr>
<tr>
<td>1855</td>
<td>6,148</td>
<td>1781</td>
<td>309</td>
</tr>
<tr>
<td>1860</td>
<td>10,997</td>
<td>1791</td>
<td>535</td>
</tr>
<tr>
<td>1865</td>
<td>20,779</td>
<td>1801</td>
<td>722</td>
</tr>
<tr>
<td>1870</td>
<td>59,883</td>
<td>1811</td>
<td>947</td>
</tr>
<tr>
<td>1875</td>
<td>61,024</td>
<td>1821</td>
<td>1,119</td>
</tr>
<tr>
<td>1880</td>
<td>64,946</td>
<td>1831</td>
<td>1,576</td>
</tr>
<tr>
<td>1885</td>
<td>97,357</td>
<td>1841</td>
<td>3,092</td>
</tr>
<tr>
<td>1890</td>
<td>110,403</td>
<td>1851</td>
<td>4,079</td>
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<tr>
<td>1895</td>
<td>108,465</td>
<td>1861</td>
<td>10,188</td>
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<tr>
<td>1900</td>
<td>112,325</td>
<td>1871</td>
<td>22,356</td>
</tr>
<tr>
<td>1905</td>
<td>143,701</td>
<td>1881</td>
<td>33,405</td>
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<tr>
<td>1910</td>
<td>171,560</td>
<td>1891</td>
<td>87,023</td>
</tr>
<tr>
<td>1915</td>
<td>186,241</td>
<td>1901</td>
<td>190,197</td>
</tr>
<tr>
<td>1920</td>
<td>197,644</td>
<td>1911</td>
<td>160,380</td>
</tr>
<tr>
<td>1925</td>
<td>203,977</td>
<td>1921</td>
<td>185,099</td>
</tr>
<tr>
<td>1930</td>
<td>219,384</td>
<td>1931</td>
<td>182,782</td>
</tr>
</tbody>
</table>

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<sup>c</sup> Darmstädter, L., *Handbuch zur Geschichte der Naturwissenschaften und der Technik*, Berlin, 1908.


period only would seem unsound. The indications seem to be quite the other way.

It is obvious that accumulating inventions are not without significance for education. The growth shown in Table 1 and Figure 1 indicates that the total body of knowledge available to mankind is also accumulating, though naturally some is being lost, as, for instance, the primitive arts of the hunting period or the lore of the Middle Ages. Such an increase in the body of knowledge makes problems not only for educational institutions but for the human race. Mankind now has to learn the great body of knowledge through its specialists, each of whom acquires parts of it, and through its non-specialists, who acquire more of it through a prolongation of the years of learning. Certainly the school curriculum has been enlarged, as is shown in the chapter on education, and the varieties of schools and courses have increased. The period of formal
INVENTIONS

learning has been extended for many into adulthood. The data in Table 1 may be causally correlated with these educational trends. It seems probable that this process will continue into the future, leading to further specialization and further lengthening of the years at school.²

Rapidity of Change.—Table 1 shows not only an increasing number of inventions, but, since there are more inventions per unit of time, it shows an increasing rapidity in their occurrence, and hence, in social change. Habits and ways of doing things are thus changing more rapidly. More customs are being broken, appeals to the authority of long usage tend to be less widely convincing and principles of conduct are being reformulated in new terms to meet the changing conditions, and as conditions further change still more reformulations will be needed. From Table 1, it may be inferred that inventions are not without effect on codes of morals, and trends in ethical rules appear to be correlated with accumulating inventions.

Acceleration.—There are other trends but they are not easy to show numerically. Certain movements, however, seem clear even though unmeasured statistically. Such is the trend in the direction of the greater

² See Chap. VII.
speed of life. This is an effect characteristic of so many inventions that it may be thought of as a general trend. Such, for instance, is the effect of most inventions in the fields of communication, transportation, production, power and light, and of many of the improvements in the various inventions. The increased speed of life has itself much social significance and leads to a greater rapidity of social change.  

**Dependence on Machines.**—Still other effects are common to many inventions. One is the increasing use of machines, which is to be inferred from the growing number of inventions noted in the preceding table. These developments give man more power and bring more conveniences, but they also mean that he is more dependent on machines. This is true not only for the larger and more significant inventions presented in the following sections, but also, no doubt, for the smaller tools and objects which man holds as individual property for personal use.

**Effect on Standard of Living.**—Another general effect is on the standard of living. Many tools and machines serve in the transformation of the products of the earth into usable objects, and this tends to raise the general standard of living. Such a tendency may be counteracted by several forces: by a too rapidly increasing population, by an exhaustion of certain natural resources, by a more unequal distribution of wealth, or finally by a disorganized social life, which, for instance, wars sometimes bring. But unless counteracted by such forces as these, technological progress will probably mean a rising standard of living, with consequent effects upon health, education, recreation and many other aspects of life, not to omit the possible effect on the ability to meet certain crises and emergencies, such as illness, unemployment and old age. Changes in the standard of living, however, tend to be somewhat slow and irregular when judged by the records of the past.

**Rural Life.**—A special phase of the effect of the inventions that aid in the spreading of culture is the changing nature of agriculture and rural life. The machine-power complex is being diffused outward from the cities into the villages and farming areas with almost dramatic effect. This movement is also furthered by inventions especially adapted to these regions and to the occupations and type of life found therein. This trend in rural and village life is not a general effect of all inventions, and is mentioned as a special trend.

**Technological Unemployment.**—One is also impressed by the frequency with which new machines displace laborers, making their services at former tasks no longer necessary, as is the case with milking and car-loading machines. This tendency is as true of recent inventions the effects of which lie largely in the future, such as the cotton picker and the

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3 For additional material on the increased tempo of life, see Chap. IV.
4 On standards of living, see Chap. XVI.
5 See material on agricultural life, Chap. II, and on rural life, Chap. X.
INVENTIONS

teleprinter, to mention only two of an impressive number. With the growth of technology in transit unemployment grows. There seems to be no way of measuring the future of this displacement. But there are so many new inventions indicating displacement of labor that technological unemployment may be an even more serious problem of the near future than it is now. In the past, expanding industries and population shifts have in time accomplished the readjustments. It is difficult to say whether these numerous new labor saving inventions may not augment the problem of technological unemployment in the future, but such is a strong possibility, despite a diminishing rate of increase in population.

The Principle of Remote Control.—The correlative of technological unemployment is the growth of the automatic processes of production, as illustrated by traffic regulation, the marvelous things which the photoelectric cell does, and the automatic power plant. When the automatic devices are correlated with the new communication inventions, remote control becomes an important factor. Technically, airplane flights without a pilot have been directed by remote control; and, socially, industries have left large cities, with only management remaining there to exercise direction at a long distance. This significant principle is being applied in transportation, production, business, and in many other varieties of social affairs.

Communication.—So important are the trends in the communication inventions that a separate chapter is devoted to them. But there ought to be noted here two effects of consequence. The first is that communication and transportation development often mean change and variety to human beings. These are in marked contrast to the repetition and monotony which were brought by factories, whose great development preceded somewhat that of the agencies of communication. The other effect of the communication inventions is on the uniformity and diversity of social life. It is obvious that the communication inventions are bringing the world closer together, but perhaps it is not appreciated how much they operate to bring uniformity and standardization. They may also intensify diversity because they may multiply local contacts more rapidly than those at a distance, as is shown in Chapter IV. Diversification and specialization are also increased by the growing accumulation of material culture mentioned in a preceding paragraph. The communication inventions then have somewhat opposite effects. The two processes may go on at the same time, producing both a specialist’s language and a common tongue.

Problems of Adjustment.—These social trends may be further summarized. They are all trends showing the adjustment of society to invention and science. For science and invention are creating a new type of material environment different from the natural environment of cold

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and heat, rain and drought, flora and fauna, to which early man had to make an adaptation. His was an environment relatively stationary over centuries, while that of modern man changes by decades. The new material conditions are seldom foreseen. Rather, man’s social institutions and social philosophies have been constantly upset by rapid technological advance, and it is only later that better adjustments have been made. Delays are sometimes costly. Thus the changing material culture has meant more deaths by accidents as well as the conquering of some diseases. It has meant loss of jobs and the giving up of old and cherished habits. But of course it has brought more conveniences and a higher standard of living.

The foregoing trends have been observed in the researches described in the following pages. These social changes are caused by inventions as a whole or as a class and are set forth in this section in a manner to show some of their broad implications for society in general, and perhaps to provide suggestions for interpretation in the reading of the accounts of inventions in the next section. These accounts present in detail the significance of particular inventions, in contrast to the summaries just presented. The purpose of the survey of major inventions in section II is to give a brief history of what has been happening during recent years across the whole range of material civilization, for the following chapters which make up these volumes cover many different phases of our changing culture.

II. RECENT INFLUENCES OF INVENTIONS

The following survey of inventions shows the extraordinary range and variety of the effects of inventions and discoveries occurring along the whole front of technological progress and scientific advance. These seem to touch life in all its diverse phases and appear in unpredicted ramifications through the many customs and institutions of society.

Modern civilization is so immense that to record all of the new inventions and scientific discoveries which are changing it is impossible. There must be a selection of the most important. This selection, moreover, should not be narrow but should be representative of the many different aspects of civilization.

Interest centers, however, on the effects and changes precipitated, and there are as many of these listed, suggested or implied as space.

The basis of selection is, in general, the significance for social change and not, as is the case in many lists of inventions, the importance for the welfare of human beings or the ingenuity represented in their mechanical properties and arrangements. Yet inventions important from the standpoint of human welfare generally occasion changes in habits and institutional activities. The list may give evidence of some serious omissions due to the obvious difficulty of covering such a wide field, to the unsettled criterion of the important inventions and to the arbitrary nature of any line cutting off the upper end of a frequency distribution, drawn on a scale indicating significance.
permits. Furthermore, the subject of inquiry is the changes of today, that is, of approximately the last decade, and therefore only recent inventions are studied. But it is to be remembered that the inventions which are basic to the changes of this decade appeared, in the main, a decade or more previously, few being noted, however, which were invented before 1850. Thus the tractor is an old invention, but its effect on social change, particularly in rural life, has never been so great as today. On the other hand, the inventions of the present, with some exceptions, will not produce their most extensive influences until future decades and, while it is desirable to look into the future, it is realized that the far off effects of many inventions are difficult to foresee. It is by no means easy to know which of the embryonic inventions will mature and become widely used.

It is also important to consider whether the use of an invention is increasing or decreasing, for this gives some indication of whether the changes resulting therefrom are increasing or decreasing.\footnote{Such is not always the case, for the derivative effects may increase even after the increase in use ceases.} For instance, it is desirable to know whether an invention like the telephone, a relatively old one, is now producing many social changes. In the following pages the annual percentage rates of increase or decrease are given for many of the cases cited,\footnote{The rate of increase was determined by plotting the data of use or production during recent years, from 5 to 9 years, up to 1929 generally, on semi-logarithmic paper, drawing by sight a straight line to represent the trend and then reading off the percent increase, usually rounding off the figures to the nearest 0 or 5, particularly in the larger percentages. If it had been possible to carry the trend lines through the business depression beginning in 1929, the increases in most cases would have been less.} as indices of the rates of growth of the changes over the country. Thus in the case of certain telephone improvements, long distance calls in recent years are increasing at the rate of about 15 percent annually. This statement is shown in the text by the symbol 15u, which means that the annual percent increase in use is 15. If the percent increase in production had been used, the citation would have been 15p. An annual increase of 10 percent means doubling in about seven years. The first of the divisions\footnote{The classifications employed are selected because of their convenience; but in general the groupings are on the basis of properties rather than functions. They might also have been classified according to the stage in the productive process at which they are used. Those at the end of the process are consumers' goods as, for instance, the phonograph, while the blow torch is a producer's good, and like other producers' goods, has its social influence largely through the consumers' goods it helps to create. To exclude inventions that are producers' goods is not wise, however. Since they often suggest the consumers' goods they create, and even the social consequences that follow, they are very useful headings in a report where brevity is a necessity.} surveyed will be that of the electrical inventions.

\textbf{Electrical Inventions.---}Of the few electrical inventions on which it is possible to comment, those for lighting may be mentioned first. These inventions recover the night for work, play, education, etc. They lead
to the all-round use of the twenty-four hour cycle, counteracting the influence in northern latitudes of clouds and long winter nights. Lighting is said to be in its infancy, with many new forms in prospect—windowless buildings easier to heat and light, outdoor sports at night, floodlighted exteriors, new lighting effects for the stage and interior decoration, and ultra-violet light indoors from mercury vapor lamps. Of the many lighting inventions the very efficient gas filled bulb, 1913, should be especially noted, 15p (15p meaning a 15 percent annual increase in production), as also the inside frosted bulb, 1925 (the date at which the invention became commercially successful).

Of the communication inventions the telephone may be mentioned first. Though an old invention, 1876–1880 (1854), the telephone is being developed with many new devices such as repeaters, carrier currents, 1918, and permalloy, 16 1924, and plans for a transatlantic telephone cable

11 Other light inventions are acetylene, 1892, natural gas (not electrical, of course), arc light, 1872, incandescent filament light, 1879, Nernst light, 1897, searchlight, 1876–1886. See footnote 12 for explanation of dates.
12 The date represents the time when the invention became commercially successful, which is later in the evolution of an invention than its date of conception or patent. In the development of an invention, first comes the idea, usually vague, the date of which in history is indeterminable. This idea is some day worked up into a trial device, model, or plan, and the earliest date found at which this step was taken is called the conception date. Perhaps later would come the date of first demonstration of an experimental mechanical, but not commercial, success. Still later comes the day here called the success date, when the device is made fully practical in one of the forms used later, and is put to regular use. Later still come the dates when the curve of adoption soars. These dates cannot always be determined exactly. While exactness of date is important in giving recognition in patent litigation, it is perhaps sufficient here to place the invention approximately. This study is not much concerned with who "the inventor" was and few names are given since the interest focuses on social consequences. In the case of most important inventions, many inventors made important contributions at some stage of their evolution; but the one who contributed the stroke from which historically the development in common utilization began is usually called the inventor, although technically he may have contributed no more or even less than many others who worked on it.
13 It is not planned, however, to deal with inventions by functional groups or processes, and other discussions of communication will be found elsewhere in the report. Rather, it is individual invention complexes that are presented; and the transition from one invention to another is necessarily brief and abrupt.
14 The titles used are designations sometimes of clusters of smaller inventions. Thus the vacuum tube was in the first instance a single invention, but there have been so many different smaller inventions improving it or adding to it that the vacuum tube has become in reality a cluster of inventions around a central idea. At other times the titles imply a complexity of inventions. Thus by the telephone is meant the whole organization including receivers, wires, switchboards, cables, poles, telephone numbers and directories, and all that goes to make up the system.
15 The dates occurring in parentheses are the dates of conception as defined in footnote 12, and should not be confused with the "success" date.
16 Since brevity is a necessary characteristic of the report, citations for each date used will not be given. In general they come from the biennial United States Census of Manufactures, the Statistical Abstract of the United States, the Commerce Yearbook, from special reports and from direct inquiries. For the data on inventions and their uses, the various histories of inventions were consulted as well as special literature on the inventions.
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have now been made. Because of its rapidly increasing use (calls 5u), the telephone is causing many social changes, touching the farm, the medical profession, police, fire control, store deliveries, household purchasing and broadcasting. Affairs are speeded up and contacts become less formal. The recent rapid increase of long distance calls, 15u, if continued may encourage office and factory decentralization.\(^\text{17}\)

The vacuum tube, 55u, one of the great inventions of our times—the two-electrode valve, 1904 (1889), and the three-element tube, 1906—is essential to radio telephony, loud speakers, electrical phonograph recording, picture telegraphy, television and all uses of the photoelectric cell, and is employed in all manner of detection and control devices such as elevator leveling, train control and continuous process control.

The photoelectric cell is old but became practically useful only when vacuum tube amplifiers were made available. Its use with the amplifier is so recent that its social effects will be largely in the future, although even today an unusual variety of uses has been found for this mechanical eye, which never knows fatigue, is marvellously swift and accurate, can see with invisible light, and coordinates with all the resources of electricity. It sorts beans, fruit and eggs, measures illumination in studios and theaters, appraises color better than the human eye, classifies minerals, counts bills and throws out counterfeits, times horse races, counts people and vehicles, determines thickness and transparency of cloth, detects and measures strains in glass, sees through fog, records smoke in tunnels and chimneys, and is indispensable in facsimile telegraphy, television, and sound-on-film pictures. Other of its uses are to direct traffic automatically at less frequented crossings, to open a door at the approach of a waitress and to serve as an automatic train control. It has been used in the phonopticon to read print in sound, embodying a principle of significance but with an uncertain future due to inherent difficulties and to competition from other inventions.

There are numerous electrical inventions which hold promise for many useful future developments, particularly in the field of communication.\(^\text{18}\) One possible extension of electrical invention is the use of wires and radio for picture and facsimile transmission, 1923. Trial newspapers have been thus sent from New York to San Francisco, and from land to ships. Such service has many difficulties, technological and otherwise, and there are substitutes, but if some such service should be extended to cities and particularly to small towns it would have far reaching social consequences. Other uses of the same mechanism are for sending news pictures, identifications of criminals, X-ray photographs, weather maps, signed docu-

\(^{17}\) For additional material on the use of telephones, see Chap. IV.

\(^{18}\) It is not intended here to anticipate the future trend of electrical research any more than there is an attempt to survey the growth of electricity.
RECENT SOCIAL TRENDS

ments, chemical formulae, graphs, and messages in other alphabets and in symbols.

Another prospective development is the solution of the problem of the frequency standardization of radio wave lengths. Synchronous broadcasting, begun in 1931, if successful should lead to an increase in the number of stations and also to greater development of the chain system. The use of very short wave lengths, reported in 1931, tends likewise to relieve channel crowding and makes room for television. The organization of a radio broadcasting service for news transmission to newspapers seems almost certain to develop.

The future of television, 1927, is usually looked upon with optimism, despite the very great technical difficulties in scanning large fields, as an athletic contest or a theatrical performance. Perhaps a less distant prospect is the scanning of motion pictures and their transmission to homes by “wired” wireless, with serious consequences to the motion picture theaters. A developed television indeed will affect in many ways the home, travel, education, politics, advertising and recreation.

In the field of health and medicine, there have been a number of important electrical inventions, such as electro-surgery and electric hearing. The electro-cardiograph, particularly through amplified records, opens new possibilities in the study of the diseases of the heart. The electric induction of fevers by short radio waves, a very recent invention, raises the body temperature to a point where certain germs, possibly in paresis, cannot live, and is suggestive for the future.

Among other recent electrical inventions may be mentioned electric precipitation, 1908, (1824) which removes valuable or noxious dusts, especially sulphur, from discharged gases, (gas plant, 60u) and reduces smoke appreciably. Still another invention with recent applications is the electro-magnet for separating and grasping. It is now used for sorting ore and blast furnace dust, for handling iron scrap and for taking stray iron from mills, roads and eyes.

The rather simple invention of the hot electric coil, 10p, 1892, provides a convenient and portable heat, and is used in flatirons, curling irons, hair waving apparatus, sterilizers, heaters, fireless cookers, table stoves, warming pads, aviators’ clothing, infra-red lamps, driers in lieu of towels. By their convenience these coils have helped to retain certain activities in the home, at the same time helping to turn soda fountains into restaurants. They are also especially useful on ships, airplanes, cars, and in many fixed industries.

The electric furnace, of arc and incandescent types, 1886 (1810), and the induction type, 1890, is finding a growing number of uses, particularly

19 On the number of radio stations, see Chap. IV.
20 The X-ray and ultra-violet lamp are discussed below.
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in making increasingly useful high grade alloy steels, ductile tungsten, calcium carbide, artificial graphite, low expansion glass; in melting platinum, purifying metals, making low expansion enameling, etc. It is one of the most useful of the production inventions.

Chemical Inventions.—Among the chemical inventions the development of cellulose nitrates first gave guncotton, 1847; then smokeless powder, 1863–1886; celluloid, 1869; blasting gelatin, 1875; artificial leather, 1882; and rayon, 1885. The related cellulose xanthate and acetate produce other types of rayon, and these various forms of dissolved cellulose yield plastics and quick drying, colorful varnishes, 1924. Rayon, 25u,\(^2\) has, because of its cheapness and wide use, lessened distinctions between the social classes, influenced dress styles and interior decorating, encouraged the use of color, home laundering, soaking soaps, the dry cleaner and the like.

There are various new types of plastics and varnishes other than those from cellulose. Plastics are used in camera films, drawing instruments, toys, phonograph records, buttons, electrical apparatus for insulation, billiard balls, fountain pens, eyeglass frames, hardwood substitutes, noiseless gears, shatterproof glass, and as cellophane (transparent thin sheets) for the preservation and display of merchandise. In other combinations, they make artificial leather, automobile tops and airplane dope; spread as varnishes, they are used on automobiles, typewriters, machinery and furniture. There are possibilities of developing a rich sculptural art of molded forms in high colors by the use of these new types of plastics. Butanol (process of 1919) is a principal solvent for laying on cellulose lacquers and airplane dope. (Pyroxylin, 11u; phenolic, etc., 55u; pyroxylin varnishes, 40u.)

Basic to much of the chemical industry is nitrogen fixation, 1900–1903 (1785), since nitrogen furnishes ammonia and nitric acid, used for dissolving cellulose and in many other ways. The several processes of nitrogen fixation are freeing the United States from dependence upon Chilean nitrates.\(^2\)

The chemical utilization of coal is found now largely in the by-products of the coke oven, 1881 ff.,\(^2\) (1856). These by-products are illuminating gas, coal tar, ammonia, benzol, toluol, naphthalene and others. They have influenced the development of mechanical refrigeration, the nitrogen industries, dyes and the use of color, perfumes, a variety of drugs, and chemicals generally. With the recent development of pipe lines, the prospect of breaking down coal at the mines is nearer. Piping of powdered coal by air blast is now practicable for short distances.

\(^2\) For an index number on the manufacture of rayon, see Chap. XVII.
\(^2\) See discussion of nitrates in Chap. II.
\(^2\) The expression, 1881 ff., means that the date of commercial success was in 1881 and the years immediately following.

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Chemistry has done much with drugs, as aspirin, 1899, the barbitol group of sedatives, 1903 ff., anaesthetics, disinfectants, as hexylresorcinol, c. 1925, specific, as salvarsan, 1910, and synthetic substitutes for glandular extracts such as adrenalin.

Other recent 24 chemical discoveries and inventions are numerous and important. Poison gas (and the gas mask) may greatly influence future wars, since with the use of gas the ratio of killed and permanently disabled to temporarily disabled is small, and since gas may be used on non-combatants. The use of poison gas gives an advantage to nations with highly developed chemical industries. Other types of gas masks are used in fighting city and mine fires and in chemical industries.

The depth charge is a naval weapon which explodes at a predetermined depth. It is especially effective against submarines, and was perhaps a factor in limiting the building of battleships.

The development of insecticides and fungicides has had many successes, the use of calcium arsenate for dusting cotton for boll weevil being one.

Calcium carbide, 1895 (1862), gives acetylene gas for miners’ lamps, lanterns, rural cooking and light, and the blow torch. It is also used to fix nitrogen by the cyanamid process. The blow torch particularly, using oxygen, 1901 (1889), and cutting ferrous metals like a knife, is used in wrecking, on armor plate, in building pipe lines and for cutting under water.

Rubber anti-oxidants, c. 1925 (c. 1910), greatly prolong the life of rubber, especially thin articles exposed to light, and also accelerate vulcanization. Again, the hydrogenation of oils, 1902, makes cheap oils like cottonseed, 10u, into solid fats available for cooking, soaps, candles. Three hundred thousand tons are used yearly.

Of future chemical developments not yet mentioned, the utilization of farm by-products is expected to increase, such as the making from cornstalks, corn cobs, wheat stalks and oat hulls, of paper (c. 1928), boards (c. 1929), insulation material (c. 1928), and furfural, 1921. (Cottonseed oil and cake were developed much earlier.) There are also possibilities of producing methane gas from ordinary sewage and corn stalks. With electric and gas power, small factories may be located on or near farms, thus giving impetus to corporation farming.

The transformation of cellulose and wood waste into edible foods has been accomplished and may be of use in emergencies or for special foods.

24 Among the older inventions are dynamite and its mercuric detonator, 1867; smokeless powder, 1863–1886; trinitrotoluol, 1891; liquid oxygen, 1892–1897; electrolytic chlorine and soda process, c. 1890; Solvay soda process, 1861; paper by sulfite process, 1867; coal tar dyes, 1856 ff.; cocaine, 1855, 1889; water gas process, 1875; gas illumination of trains, 1867, 1886; photographic dry plate, 1862; photographic film, 1887; and color photography, 1891.
Much attention has been given to the artificial ripening of fruits by gases and by other methods, and these may find a limited use.

Other Inventions in Physics and Natural Science.—Liquid air, 1895–1898 (1877), finds use in science and in industry, the constituent gases are easily distilled off, and cheap oxygen, 10u, is thus produced. Liquid oxygen with lampblack is a safety explosive. Oxygen is indispensable for torch cutting and welding, and useful in medicine, metallurgy and chemistry. If oxygen could be distributed by pipes, many uses would develop. Blast and other furnaces requiring great heat might profit by the use of oxygen rather than air since four-fifths of air is nitrogen which is useless in burning (though it transmits heat to other parts of the process).

In a machine age, welding is important to join metal to metal solidly. Three new methods far superior to the old hammering process were brought into use between 1886 and 1901; these melt the metal locally by electricity, by the oxyacetylene torch or by thermit. Their greatest uses are in making pipe lines, both seams and joints, thus leading to the extension of the natural gas lines. Steel ships and skyscrapers are also now welded noiselessly. Broken machinery is repaired in situ; worn gears are rebuilt; and car rails are conjoined. Other uses are in wire fences, metal furniture, airplanes, tanks, pressure vessels, submarines, kitchenware, mechanical refrigerators25 and automobile bodies. (Electric welding sets, 25p.)

Some of the nitrogen used for fixation is distilled from liquid air. Nitrogen is also used in electric bulbs, for fire protection and for preserving foods. Argon, another gas derived from air, goes into lamp bulbs. Neon is transforming electric signs, and is used in fog Beacons, television, picture telegraphy and sound films. Helium is now secured only in very limited quantities from air but if oxygen is produced from liquid air on a large scale the supply of helium for airships might increase and it might be used as a preservative of foods.

The X-ray, 1895, is well known for its many uses in medicine and dentistry. In industry its largest use is in detecting flaws in castings and weldings, but there is a great variety of uses for the X-ray, from fitting shoes and detecting smuggled goods to testing the authenticity of old paintings. Many important uses for it are found in physics, where it has contributed much to our knowledge of the nature of light, of the electron, and of each unit of matter from electron to crystal, especially in solids and colloids. There are also some uses in biology, and in medicine it has been another weighty item in the capital equipment of physicians, and has thus encouraged organized medicine. X-rays in crystal diffraction date from 1912.

Ultra-violet mercury vapor lamps, 1904–1906, improved by clear fused quartz, 1924, are expected to have a great variety of uses in the

25 For index numbers on electrical household equipment, see Chap. XVII.
future. Of the many physiological and hygienic effects claimed, the anti-rachitic and germicidal are best established. Ultra-violet light is supposed to ward off some forms of common cold, and to influence various glands of internal secretion, the blood, and calcium metabolism, aiding particularly the bones and teeth. It is also used in sterilizing, in putting vitamin D in foods (1924), in testing dyes and paints, in drying patent leather, in making hens lay and in many scientific experiments in chemistry, physiology and biology. If cheap lamps become available for use on ordinary current the reduced supply of ultra-violet light in smoky cities, particularly in winter, will be counteracted. Cheap permanent ultra-violet passing glass, experimented on a great deal recently, would also aid in getting more ultra-violet from the sun.

Another development in the field of physics is geophysical prospecting for ore and oil by means of magnetic, gravitational, seismic, natural or created electric currents, by radio and by thermic methods. The airplane is used in some forms of prospecting, and in connection therewith there has also developed phototopography, used in war for military map making and profoundly modifying army intelligence and stimulating camouflage. Civil cartography, sometimes stereoscopic, far cheaper and quicker than ground surveying, is used in coastal measurements, timber cruising, planning pipelines or railways, discovering archaeological sites and general map making. Integral photography, 1928, showing depth without viewing apparatus, should be of value in moving pictures and in many other ways.

The ultra-microscope, 1903 (1837), has lately been used with ultra-violet light with much finer definition, thereby suggesting possibilities in physics, chemistry and bacteriology.

The cathode ray tube seems to be a type of invention from which many future uses are expected, but it is difficult to say what they will be. Mass production of clear fused quartz, previously mentioned in connection with the mercury lamp, should prove to be very useful in astronomy, optics, motion pictures, homes, laboratories, and any place where heat must be withstood or radiation transmitted.

Reports on the study of long distance weather forecasting on the basis of solar activity are encouraging, and if successful would be of great use in planning production in manufacture and in agriculture, as well as of service to man in travel and on vacations.

Inventions and Discoveries Relating to Metals.—Much recent work on metals deals with the alloy steels. In a metal age hard cutting tools are necessarily important. It has been demonstrated that tools may be

26 See material on discovery of new deposits, Chap. II.
27 Tungsten steel dates from 1868 and manganese, nickel and silicon steels from 1884, 1889 and 1906. Cheap steel by the Bessemer process goes back to 1856, open hearth to 1866, and the basic process to 1879.
still harder without iron, as in the case of tungsten carbide in cobalt. Such tools can cut concrete and porcelain neatly and have many possible uses. Stainless and rustless alloys of steel are finding varied uses, as in tools, household utensils, screens, on automobiles and airships, and in architecture. Ductile tungsten, 1909 (1892), is also invaluable in lamps, 15u, thermionic valves, X-ray and other electrical apparatus. Metals today are often ground down instead of cut (1886) by wheels of carborundum, 1891, 3u, and alundum.28

Of the various processes of dealing with metal, there should be noted metal spray plating, 1913, by which molten metal is blown on almost any substance, thereby giving greater durability and other properties. There are also many art possibilities with this process. Metal is finding a use on buildings for both decorativeness and durability.

The search for light metals becomes more avid with the growth of transportation, especially air transportation. Aluminum, by electrolysis, 1886, is being increasingly used (10u) but much appears to be expected of the lighter beryllium in alloys, particularly as the new metal is being cheapened. Its use in airplanes might be very significant.

Perhaps it should also be stated that metallurgists are still working at the problem of producing cheap steel directly from the ore by other methods than the electric furnace, or the coke blast furnaces.

Power Inventions.—Although the basic power inventions are old29 the growth in use of power has been very great in recent years. The annual supply of energy from fuels and water power produced in the United States increased about 20 percent30 from the World War up to 1929, while the installed capacity of prime movers in factories, mines and electric plants increased much faster, nearly 50 percent between 1917 and 1927,31 due to more efficient combustion. The use of this great power capacity,32 often represented as the equivalent of about 100 slaves per person, is indicated in the account of the various inventions of machines.

The subject of power is treated in another chapter, and only the social influence of a few recent developments will be noted here. Oil burning, while dating from 1863, has greatly increased in homes, 40u, and

28 Among the earlier inventions regarding metals should be mentioned electrolytic refining, 1889; microscopic metallurgy, 1860; cyanide process for gold and silver, 1888, flotation process for non-ferrous metals, c. 1903; and the method of drawing seamless tubes, 1890, 29u.

29 Among these are the electric power inventions centering around the dynamo, 1866–1890; the lead storage battery, 1865; the gas engine, 1860, 1878; producer gas, 1856; natural gas wells, c. 1872; petroleum wells, 1859; reciprocating triple expansion steam engines, 1881; Giffard injectors, 1858; and the Pelton wheel, 1880.

30 U. S. Bureau of Foreign and Domestic Commerce, Statistical Abstract of the United States, 1930, p. 367. On the rise of water power, see Chap. II.


32 Much of this capacity is in automobiles which are used only a fragment of the time.

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on ships, 5u, where it is not only a great convenience but diminishes the terrible labor of marine stoking. Sailing ships are disappearing from use. International relations have been greatly affected by struggle for oil fields.

The Diesel engine, 120u, 1897 (1888), burning cheap, heavy oil, has made great progress in motorships, 25u, locomotives and power plants, and has recently been adapted to automobiles, airplanes and airships, lessening fire risks and saving fuel weight and cost. Petroleum cracking, 1908–1914 (1860), 15u, yields increasing proportions of gasoline with anti-knock qualities, even 100 percent, or whatever distillates be desired, by the hydrogenation process, 1930. From natural gas is extracted natural gasoline, 1904 (1880), and the gases propane and butane. These are easily liquified and thus transported, to furnish gas in rural homes and for industrial uses.

In connection with gas and gasoline, there should be mentioned the development of pipe lines, 1875, greatly stimulated since about 1915 by the new welding processes (natural gas, 10u, and consumers, 7u). This movement has reduced railroad and water transport revenues and affected coal mining. It has also meant the conservation of gas and oil, less dust, noise and smells, assistance to helium production, and a saving of domestic toil at the cookstove and furnace. Piping gasoline along the highways is expected.

The steam turbine, 1866, invaluable for electric generation, 10u, has recently, 1910, been geared to the low speed propellers of slow ships, and an exhaust turbine, 1928, has been geared to a reciprocating high pressure marine engine.

Mechanical firing of boilers, 1845 (1800), and the use of pulverized fuel, 1895, 13u, have spread rapidly since 1920, especially in central power places, 35u, and has raised the thermal efficiency of boilers up to 90 percent. Mechanical stoking has increased the size of locomotives, hitherto limited by human stoking power, has lightened the hard labor of the locomotive fireman, enabling him to watch the engine and track, and it affords a new market for slack coal. Not the least of its social effects is the aid it gives in eliminating smoke in cities, removing carbon and thus allowing more ultra-violet light to pass. Mechanical stoking moreover is being adapted to the smaller apartment houses, and even to single family dwellings, thereby competing with the oil burner.

The light alkaline storage battery, 1905–1915, has found convenient uses in short distance transportation in city streets, terminals and factories, thus lessening the toil of common labor.

Power has been such a help to mankind that it is usually at the forefront in imagination, and there has been much speculation about future
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sources. Electrical power from tide and waves are old dreams, and there are experimental stations off the coast of France. The sun as a source of power is another idea that will not down, and there are certain regions that could benefit greatly if this idea should be realized. The heating of water or oil by mirrored rays has not led to much optimism, but several methods for deriving electrical energy directed from sandwich cells activated by sunlight are now reported, the most recent and successful using silver selenide.

More realistic perhaps are the experiments now being made in substituting for water in boilers other liquids such as mercury with a high boiling point, or sulphur dioxide with a low boiling point, all to increase efficiency. Claude's spectacular success in 1930, after two very costly wrecks, in producing power from the wide temperature differences between surface and deep sea water in the Caribbean may perhaps help in possible future upbuilding of that zone, where there is little coal or available water power.

Transportation Inventions.—The social effects of the various transportation inventions are changing, owing to the revolutionary inventions in electric and internal combustion engines, and in road and air vehicles. The automobile is treated more fully in the following chapter, but some account should be given here of certain of its social influences.

The automobile, 10u, 1880–1887, came into general use following the invention of the multiple disk clutch, c. 1907, and that of the self-starter. To think of the automobile as a more speedy substitute for the horse is to underestimate its influence. It has greatly increased and dispersed transportation, cut down railroad traffic, especially on short hauls, lessened the isolation of the farmer, aided the consolidation of small schools and churches, has helped, along with electricity, to disperse factories, and has developed a new type of vacation.

The automobile has also increased accidents, increased the activities of the police courts, and affected a great variety of businesses from the rubber industry to hotels and restaurants. There have been many lesser effects, such as influence on family recreation on Sunday, and many derivative effects, such as the lessening of the significance of boundary lines between states.

As to the future changes in the automobile, it appears uncertain whether the oil engine, now adapted to the automobile, will be used extensively. The electric truck has been fitted with various lifting devices,

34 For further discussion of inexhaustible energy sources, see Chap. II.
35 As a heading for a group of inventions transportation, like power, is not on quite the same plane as the other headings used since it is a function rather than a physical property or a process; but perhaps it will serve since there are certain similarities in the physical properties of transportation inventions. Compare this section with material in Chap. IV.
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the lift truck dating from 1913, 80u. Freight containers transferable between truck and freight car are a novelty with perhaps a great future.

As to rail transportation, the electric locomotives on Class I railways have doubled in number in fifteen years. Like electric coaches they save coal, lessen noise and smoke and stimulate suburban traffic. Regenerative braking has been used on inclines with appreciable saving of electricity. The multiple unit system of controlling electric trains, 1891–1897 (c.1880), has been extended, bringing safety and speed, while automatic train control, 1899, making signals conclusive, has saved life, time and tracks. The Diesel electric locomotive and rail motor car (1897) are useful in local service and switching, giving free time to firemen and saving smoke.36 (Val. 25p.)

The use of refrigeration in transportation, while employing an early principle, is developing along many lines. The glass lined tank car has been used for transporting milk from Wisconsin to Florida in summer. Refrigerator cars creating cold from the turn of the car wheels were reported in 1930. The quick freezing of vegetables and meats also aids in their transportation and distribution, possibly affecting the future of the butcher shop. Frozen carbon dioxide, or dry ice, though somewhat expensive, is being used in local transportation.

Transportation across water has been affected by the general progress in machinery, in construction and in engines. The hydroplane embodies an interesting principle for light transportation, in supporting the vessel, through a novel hull form, by the dynamic rather than the flotation method. Its use is on airplanes and motor boats, a novelty being a boat which at full speed touches the water only by very small submerged hydrofoils, the hull rising above the water.37 Hydro-airplanes, 15u, are useful for transportation in certain regions where the landing places on land are less convenient or numerous than those on water. Streamlined rudders, 1920, 1925, are now being used increasingly as an aid to power and speed.

Still another idea is that of the creation and perception of underwater sounds, 1904, (1826) used for communication by submarines and ships, chiefly for locating underwater bell guiding stations, and the ocean bottom. This idea may have other scientific uses, as, for instance, the prediction of earthquakes by soundings of the ocean floor. The social significance of the submarine, 1900, in affecting the balance of power of nations, in limiting the construction of battleships, in bringing merchantmen into war, etc., should not be forgotten.

36 Other developments are the booster and auxiliary locomotive, the articulated locomotive (to U. S. in 1904), and the single phase high tension A. C. motor, 1902.

37 Another novel invention of perhaps limited use is the rotor, a revolving cylinder, replacing an inclined plane. About 1923, a rotor ship without sails crossed the Atlantic, using wind (with a little other power) on the rotor.
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A singular device used in water and air transportation is the gyrostat. It was first utilized in 1886 to take observations despite the rolling of the ship. The gyro compass, 1908, 29p, excels the magnetic, and makes mechanical steering possible. It guides the torpedo and is most promising as an airplane stabilizer for automatic flying in fog. As a ship stabilizer, 1904, 1914, 5p, a wheel 13 feet in diameter will steady a 17,000 ton ship. The gyrostat has also been tried in connection with a mono-railroad.

There are various devices for seeing through fogs. Thus a television apparatus, 1929, transforms long infra-red wave lengths into shorter visible ones, thereby extending vision from a few hundred yards to a mile or so. The infra-red searchlight is a complement. Perhaps there may be many applications of this idea, as the demands for the extension of the field of sight by airplanes, ships, armies and in television are great.

The spectacular growth of transportation by air is well known (gasoline 85u).38 The airplane as an instrument of war, 1903–1908, tends to add to the might of the advanced land powers, to weaken the sea powers, and to threaten the interior of belligerent countries. In peace times besides being a method of fast transport, especially in desert or semi-populated regions, carrying passengers, express, news, mail and medicine, the airplane is used in exploration, in timber cruising, for photography, in archaeology, in projecting railroads and pipelines, for fighting forest fires, for finding schools of fish or seal, for sight seeing, for vicarious sport, for scattering seeds or insecticides, for advertising, for locating shipwrecks and lost persons, for carrying provisions to the marooned and for tracking criminals. If the mail snatching devices be found practical, air mail services to villages and rural regions will offer another quick means of communication with the outside world. The airship, 1895, has somewhat similar effects in war and in peace. It is used for long touring and for cruising over regions where an airplane would have difficulty in landing. The wind tunnel is an interesting invention that aids in testing designs of aircraft, though also used for testing winds on buildings, towers and sails.

The future development of the airplane appears to be involved in part with the problem of flying safely through fog. Inventions which help to solve this problem are the gyrostatic stabilizer, 1926, the radio beam, 1920, the earth inductor compass, 1926, the echo altimeter, 1924–1931, the modulated beacon light, neon light and the radio telephone. Other important developments are those permitting taking off and landing at low speed in small or rough places. Among inventions of this type are the autogyro, 1924, the helicopter, 1921, wing slots and flaps, 1914–1921, and the low wing. These inventions, to the degree to which they prove successful, permit the use of small landing places near or in

38 For figures on air transportation, see Chap. IV.

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cities where people live and where room is scarce, but most important are their benefits in securing greater safety.

**Inventions Used in Building.**—One of the most socially significant inventions is that of skeletal construction, 1884, which together with elevators, 1855, central heating, fire protection and improved plumbing and lighting inventions, has led to the tall apartment house, hotel, and loft building, and the skyscraper office structure. (Ferro-concrete buildings, 10 stories up, 10p.) They in turn have added to business district congestion, with such derivative effects as smaller families, loss of family functions, stimulation of public parks and playgrounds and of manual training in schools, the encouragement to congregate living by common nurseries, cooperative laundries and apartments, fireproof construction, new architectural forms and zoning laws.

A new development in this field is air control for coolness and moisture content. Beginning in the interest of manufactured products, air control has been extended to theaters, restaurants, hotels, offices and railroad trains. Besides meaning much for comfort, health and efficiency, it may be a step in the further development of cultures in southern climates.

The treatment of water and sewage, though based on chemical principles, involves constructional problems. To the methods of improving water have been added those of chlorination, 1908–1912, and the elimination of hardness, permitting the better exploitation of various sources of supply. The obtaining of fresh water from the sea seems to be near economic realization, and would benefit certain sections of the coast of South America and Africa as well as certain larger seaports where the extension of metropolitan regions menaces the sources of their water supply.

The air flights to Europe have elicited many models of floating islands, which may be developed for other uses as well. For Claude's power project such islands may be found very desirable. Once developed they would permit the extension of the urban coastal population a short distance seaward for various purposes.

**Inventions of Larger Production Machines.**—The inventions and improvements in the various machines of production are, of course, very numerous, and it is impossible to cover even in brief all the chief developments of recent years. Some forms of this machinery have been dealt with under other categories, and others are of no interest here since their social effects are noted in the description of consumers’ goods which they help to produce. Even so it has been thought best to treat the smaller machines under the next grouping.

In agriculture machines are being adopted widely at present, and are having a great social influence, particularly through saving labor, adding to the equipment costs of farms, requiring new knowledge and

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[For additional material, see Chap. IX.]
INVENTIONS

skills, increasing production, introducing marketing problems, causing further migration from farms, and increasing the size of farms and thus perhaps taking agriculture a step nearer to the corporate organization.

The tractor, 1901, has varied uses on the farm (tractor farms, 15u), saving labor, reducing the number of farm animals and fodder crops, and increasing the crops for human consumption. With a belt the tractor provides motive power for machines which cut ensilage, shell corn, saw wood, etc. It is not confined to the farm but is used widely in construction, in industry and around terminals. The caterpillar tread, c. 1904 (1770), is used on soft ground for towing and for self-mobile engineering equipment. Its effect in war in changing army practice through the tank is well known (round wheel type, 10p). The combined harvester and thresher, 1886 (1828), was not made in small sizes until about 1905, and the period of rapid advance has been since the war. It has saved much hard farm labor, and has reduced labor migration and the task of feeding large numbers of harvest hands. The milking machine, 1905 (1819, 1849), had led to specialization in large dairies. It lowers costs, reducing the milking staff by a half to a third in the case of larger herds.

In regard to cotton, there are cotton pickers and pullers on the market, but their use has not yet become widespread. The cotton sled, which crudely strips off all the bolls at once, has been widely employed in northwest Texas where conditions are peculiarly fit for its use. The development and adoption of a cotton picker in the south might be a serious blow to the small marginal farmer, who has been back of some interesting political and social movements, and would encourage large scale farming. The migration of Negroes to the cities would also be stimulated and this would affect race relations and the future of the Negro race. The sugar cane cutter might have very serious consequences for other crop lands, particularly Cuba.

Machinery has been invented which is completing the tardy mechanization of the flax industry: the flax puller, 1921, and the automatic breaking and scutching machine, 1926. An ensilage chopping harvester was reported in 1929. And a demonstration has been reported of a corn combine which pulls and shells the corn. There are, of course, a great number of other agricultural machines, some of which were developed at an early date, while others are of much less social significance than those above mentioned.

In the coal mining industry, coal cutting machinery, 1893 (1887), 2u, has been installed increasingly but not so fast of late as coal loading

40 See also Chap. II.
41 For additional discussions see Chap. II.
42 Among these may be listed various improvements in harvesting machinery, 1858–1879, the linter, the check-row corn planter, the centrifugal creamer, 1881, the plow sulky, 1868; and here might be mentioned the flour milling machinery of 1875–1879.

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machinery, 1905–1922, 70u. Other mining machinery in its social aspects is mentioned in the chapter on natural resources. All result in a reduction in the toil of labor.

Textile machinery had an early development with, of course, profound social effects. Power loom silk weaving came at a much later date than the cotton loom. The endless belt conveyor has been an important factor in mass production methods. The development of trench digging machinery has greatly reduced the cost of laying pipe and digging drainage and irrigation ditches. Invention in connection with printing and paper making had a particularly brilliant but early development, with a rather rapid extension of the rotary presses since the war. Recently the speed press has been adapted to color and picture printing with important effects upon advertising and decoration. High grade color work is beginning in the daily newspapers. Inventions likely to affect typesetting are facsimile transmission and the teletypesetter, 1930. This latter invention is an adaptation of the teletype machine, 1926, a new form of the printing telegraph, 1855. The teletype, 66u, permits a typist to print messages simultaneously in distant stations, and is used for telegrams, news, weather reports and stock market reports, and is utilized increasingly by factories, commercial houses and police authorities for interdepartmental communication. An extension of the service to include various houses or subscribers with a central exchange like that of the telephone is planned. The teletype machine, when typing a perforated band in code which is used in setting type, becomes a teletypesetter. It has possibilities for increased speed and for a great reduction in labor if it can be adapted to the complexity of the newspaper office and would tend to make provincial newspapers part of the metropolitan chain. A photo-composing machine, without metal type, is being improved.

Other inventions concerned with communication are the moving picture camera and projector and the talking picture equipment. The effects of the moving picture, 1892 (1859, 1864), are to a great extent unassessable, yet it is generally assumed that they affect manners and morals, and the standards of conduct of the young, particularly by introducing the folkways of cities into isolated places. Their educational force is great in the sense of spreading information about customs and lands. The moving picture affected the theater, athletics, study habits of the young, play and novel writing. In science there are X-ray moving pictures, historical records, studies of wild life and of microscopic creatures, slow motion pictures of quick action, etc. The results of the moving picture development were little foreseen.

43 Chap. II.
44 See above, p. 133.
45 Additional discussion may be found in Chaps. IV and XVIII.
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The sound picture, 1922, 1926, was dependent for its extremely rapid final success on the loud speaker. Electric amplification without distortion has been attained, but there is still distortion in reproduction. Some striking consequences have been the mechanical theater, and revalorization of the speaking actor. Also language problems have been raised with grave threat to the hegemony of the American film. It gives little encouragement to the small languages, provides opportunities for studying foreign tongues and, where English is understood, spreads Americanisms. Ten thousand theater musicians suddenly lost their jobs; and the moving picture industry had to make radical readjustments. The educational and scientific uses of this invention are little utilized as yet, and it may have important effects upon schools and colleges.

Miscellaneous Inventions of Material Objects and Mechanical Devices.—In the category of miscellaneous inventions may be mentioned first the growing influences of the various computing and tabulating machines, particularly since they have been electrified. Their aid to speed and accuracy of large scale business recording is very great, with much saving of labor and provision of occupations for women, particularly in the case of the card punching and assorting machines, 5u. Their service to banks and government bureaus is great; and it is difficult to think of an accurate social science evolving without such aids.

Of a somewhat similar nature are the small machines for writing, of which the foremost are the typewriter, 1873 (1714), 10p, the mimeograph machine and the letter addressing devices. Nearly a million new typewriters were produced in the United States in 1929, almost double the number in 1921. The typewriter is a great stimulus to writing and record keeping. It has given writing and reading to the blind, and typing constitutes an important occupation of women. Adaptations of the typewriter have been made to telegraph instruments and to the numerical listing and computing machines. In 1913–1916, a machine was made which wrote in a legible alphabet when spoken to, but it has never been developed for commercial exploitation; such a novel fundamental invention usually requires long and expensive development before being made suitable for common use. Since it would appear to require a language new in many regards, it seems at least far distant. The service of such a machine to a people who spend much time in writing would be very important indeed.

Of aid to science and business has been the development of the card index principle, e. 1876, which is of great utility to libraries; and the invention of the cash register, 1879, should also be noted. These are both fairly old but the process of diffusion has by no means ceased. A very

Among the many miscellaneous older inventions of small material objects and mechanical devices may be mentioned ball and roller bearings, the air brake, 1869, 1872, portable percussion instruments, mechanical glass blower, c. 1880, the cigarette machine,
RECENT SOCIAL TRENDS

significant business invention, if it may be so classified, was that of motion study of human beings, 1879–1901; this is still finding wide application not only to the advantage of efficiency in production, but also to the advantage of labor in lessened fatigue and possibly in lessened monotony, with derivative effect on the relations of employer and employee.

A small but interesting device in the aid of business is the slot machine, 20p. Early uses appear to have been in telephone booths, on transportation vehicles, and for the sale of small articles, such as chewing gum and candy. Lately the principle has been used in restaurants, soda fountains, cigar stores, breweries, and even in homes. The slot machine is also employed in selling sandwiches, fruit, peanuts, handkerchiefs, stamps, pencils, nameplates, combs, towels and prophylactics. The principle has been applied to scales, musical instruments, mechanical shows, games, museums, shooting galleries, gambling devices, toilets, shoe shining machines and turnstiles. It facilitates speed and is a further step in the mechanization of life, saving labor and bringing a new kind of salesmanship into being. One gasps to think of the possible extensions in the future.

There are a number of smaller machines and mechanical devices affecting the household as well as business. Several of these have already been referred to. Certain others deserve mention, such as the very widely used domestic electric washing machine, c. 1905, which has probably slowed up the departure of the laundry industry from the home, and perhaps decreased the number of servants.47 It has also had effects on cleanliness, the life of clothing and the working time of women. Soft collars and rayon may have been encouraged by its use.

Another important home convenience is that of the domestic mechanical refrigerator, c. 1917, 95p, which with its lower temperatures has greater possibilities than the old type of refrigerator. It is an illustration of a home machine injuring a factory.

The tin can, 1811 (canning, 1778), did not become free from the danger of solder until 1903. Painting by a vegetable enamel, c. 1910, prevents discoloration and loss of flavor. Canning has simplified the preparation of food, the almost universal occupation of women in the past, and has given a better all year supply of vitamins. The value of goods canned in 1929 was nearly a billion dollars, 10u.48

Another significant process is packaging, which has been aided since the war by improvements in packing machines, by paper box machinery, 1876, wire glass, 1891, electric fan, 1886, carpet sweeper, 1876, linoleum, 1862, and certain gun inventions, 1860–1880, viz., breach loading, repeating, disappearing and machine guns.

47 For an index number on washing machines, see Chap. XVII.
48 For discussion of canned goods in relation to the family, see Chap. XIII.
by the reworking of second hand paper and by cellophane, 1908–1923. The packaging of candy, cigars, milk (experiments with fibre containers are reported), ice cream, drinks, prepared foods, cleaned garments, etc., aids sanitation, cleanliness (except for waste paper on the streets), salesmanship, advertising, and the preservation of original qualities. Eating habits are affected and the home is more dependent upon the store (packing machinery, 10u).

The phonograph, largely a household instrument, may be assigned a place among the musical machines. It was conceived in 1868, demonstrated in 1877, successful in 1888, used as a dictaphone in the 1890’s and became popularized with the disk record about 1894. Suffering in the 1920’s from radio competition, it has become adapted to some of the radio inventions. Originally a scientific toy, it became great as a musical instrument and not for purposes of dictation, recitations, or recording the words of dying persons, to cite three of the ten uses Edison foresaw. Together with the player piano, it was an effective factor in the development of modern dancing, and has perhaps promoted family life at home. It is also used in recording dialects and in teaching languages. Another likely development is the new dictaphone recording of both sides of a telephone conversation.

There seems to be also a concentration of effort to produce new types of musical instruments by taking advantage of the new electrical inventions; one of very probable success, c. 1928, is based on the photographing on plates of the various notes of any or all instruments and playing from a console adapted to fairly small space. There are experiments along other lines. The telharmonium, 1897, has been revived employing the new electrical inventions, producing variations in wave lengths by vacuum tubes, yielding any desired tones directly for broadcasting. Such an instrument would be too costly for private use, but it would appear that a development along these general lines might have great effect on music.

Biological Inventions and Discoveries.—Discoveries in the biological sciences regarding plants and the lower forms of animal life as well as human life, together with certain chemical and mechanical inventions closely related thereto, should be added to the groupings which have preceded.

First should be mentioned discoveries in regard to breeding and the science of eugenics. Knowledge of heredity has been increased greatly since Mendel’s researches became known, but this knowledge has been best worked out only with such animals as the fruit fly. Mutations have been produced by the X-ray, certainly a revolutionary suggestion. Thus far the knowledge in regard to the breeding of humans that seems most

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49 Additional material may be found in Chap. XVII.
50 An index number is given in Chap. XVII.
suitable to social application and control is concerned with the inheritance of certain defects. The sterilization of the feebleminded and insane is being undertaken in some states.\textsuperscript{51} The possibility of raising the racial average by propagation from the better stocks is attractive and has undoubtedly a future.

Cross breeding and selection among domestic animals and plants has been highly developed on the practical side, as, for instance, with the loganberry and the spineless cactus. New plants and animals have been imported and bred, as for instance, durum wheat, and new uses have been found for old plants, as the Jerusalem artichoke, which yields sweet levulose with a very large food quantity per acre. Entomological developments have the same general effect of improving plant and animal production.

The new discoveries regarding foods for humans, particularly in vitamins,\textsuperscript{52} improve the health of the people, although these improvements are not passed on to the next generation by heredity. Their significance for the growth of children is particularly great.\textsuperscript{53} Researches indicate that increased stature is largely a function of feeding in childhood and of the lessening of childhood diseases. Ultra-violet light has somewhat the effect of vitamin D, which also affects the absorption of calcium, thus influencing teeth and bones. These vitamins give better resistance to many different afflictions, one vitamin in particular, B\textsubscript{2}, preventing pellagra, which has affected large areas in the south. The irradiation of foods, 1921–1925, increases the vitamin content. Discoveries regarding minerals in foods, as for instance, copper and manganese (which affects the feeding of the young by the mother and is said to encourage mother love) have the same general trend.

It is true that medical practice has sometimes lagged behind medical knowledge,\textsuperscript{54} but nevertheless the environment of the race has been made more healthy and the stock itself has been improved during a lifetime, with the result of preserving many who otherwise would not have lived. What effect this increased survival may have on the race is not known, but there has been discussion as to its possible deteriorating influence, which would be a matter of social importance.\textsuperscript{55}

The story of medical progress is brilliant and well known, and includes such notable things as the anti-toxins and vaccines, the knowledge of the transmission of disease by insects and bacteria, the tests for specific diseases, the knowledge of sanitation, the treatment of specific diseases, the use of drugs, anaesthetics, surgical instruments and sterilization.

\textsuperscript{51} For a summary of the laws, see Chap. XXVIII.
\textsuperscript{52} Vitamin A, 1906–1918; B, 1889–1897; B\textsubscript{2}, 1915–1927; C, 1912; D, 1921, and E, 1922.
\textsuperscript{53} On child nutrition, see Chap. XV.
\textsuperscript{54} This question is discussed in Chap. XII.
\textsuperscript{55} See Chap. XXI.
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These discoveries have revolutionized medical practice and science, and have led to the development of hospitals and clinics, and to the beginning of a more highly organized medical practice. They have been accompanied by the extension of government further into the medical field, especially that of sanitation and public health nursing. Trades and industries have been regulated in the interests of health. The medical aspects of war have been changed.

Finally may be mentioned certain discoveries in physiology, as for instance, the treatment of the young during adolescence and of women during menopause, and the treatment of the aging as well as special illnesses and defects by glandular therapy. Better physiological knowledge has also been used with profit in some cases of goiter; and the feeding of thyroxin to cretins as also to the higher grades of mental defectives has been most spectacular. The success of endocrine researches on the lower animals leads to a certain amount of optimism for the future as regards humans. The prospects are as dazzling as those of eugenics, if means are discovered for the control of mentality, temperament, personality, growth and decay, the social consequences would be truly remarkable.

There is a growing knowledge of the control of ovulation in the body, and this leads to speculation as to the possibility in the future of regulating safely and usefully the feminine reproductive cycle. The spread of the use of contraceptives is not without biological implications. The differential birth rates among the social classes are supposed to have at present dysgenic effects, but as time has passed, it is claimed they have become eugenic in some localities. The differential use of contraceptives among nations is influential as a cause of war. Contraceptives have been effective in changing the age distribution of the population and heightening the problem of the care of the aged, particularly in cities where space is limited and the mobility of population is great. The reduction in the rate of population increase affects the ratio to food, natural resources and capital, and hence is of significance for the standard of living. The use of contraceptives may not be without influence on codes of morality. Resulting small or childless families mean effects on divorce and on the personality and material welfare of children.

The survey of recent influences of inventions, though an imposing picture of the many and varied changes in society which science and the machine are producing, is incomplete in several regards. These omissions, which it was impossible to avoid, will not be described here, but an attempt is made in the two following sections to compensate for them.

66 This is a rapidly evolving field of research, but the following significant discoveries may be mentioned: dessicated thyroid feeding and synthetic thyroxin, 1901-1926, adrenalin, 1902, pituitrin, 1906-1925, insulin, 1923, and products of the super-renal cortex, 1928.
67 Birth control in relation to population is discussed in Chap. I.
III. THE EXTENT OF INVENTIONAL INFLUENCE

A satisfactory conception of the far reaching effects of inventions still remains inadequately presented, for in the preceding section only a very few of the effects of the more significant inventions were mentioned. To remedy this omission, several inventions were studied intensively to see how widespread were the social changes occasioned. One hundred and fifty such social effects were noted for the radio, and one of these, merely as an illustration, was further expanded into fifteen. Before proceeding to the presentation of this list, it is desirable to make a few preliminary explanations of terms and methods.

Social Effects of the Radio.—The purpose of this study of the radio is to give some idea of the extent of its influence rather than to prove particular causal \(^5\) relationships. It hardly seems necessary to try to prove such statements about the effect of the radio as that "a new recreation has been provided for the home" or "music has been popularized." These statements are obvious, as are nearly all of those listed. In some cases, however, the influence is not quite obvious but appears probable although adequate proof has not been found. This is the case in regard to the effect of the radio on piano sales, about which the statement is made that "The market for the piano has declined. The radio may be a factor." The wording here cautions against a completely definite conclusion, but suggests that there is a probability of relationship.

In some cases the effects may not be easily apparent, because obscured by other more powerful forces operating in the opposite direction. As an illustration, the radio, through the broadcasting of educational matters and current events to adults at home, is said to lessen the differences that often appear between parents and their children because of the fact that their respective educations have differed greatly. This influence, a very small one, may possibly be quite obscured by opposite forces such as growing compulsory attendance for more school hours and more particularly by the increasing number of children who go to high school.

Many minor influences are mentioned because the purpose is to show the numerous varieties of effects rather than only the important ones. Thus mention of the minor influence of the radio on illiterates is made next to the statement of the vastly important result that isolated regions

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\(^5\) The word "causal" is used in the sense of concomitant variation, other factors being constant. Thus the radio is a cause of loss in piano sales, if an increase in radios is accompanied by a decrease in piano sales, other conditions being the same. It is a cause no matter how slight the reduction in sales, although in popular language in such a case it would be spoken of as a slight causal factor rather than as a cause. A factor may be a cause even though in its absence the phenomenon continues to exist. For instance, had there been no radio, piano sales might have fallen off anyway (though not so much) due to such other factors as diminishing home space, sales of phonographs, or the effective competition of automobile or moving pictures.
are brought through the radio in contact with world activity. The effects listed are, therefore, very uneven. So also, some of the minor influences might have been merged into some of the more general influences, if the purpose had been to generalize instead of to pursue the opposite course of breaking the effects down into detailed ones.

The effects listed are not necessarily permanent. They may change with time. Thus, apparently the radio was used more several years ago for setting up exercises in the morning than it is today. Nevertheless such exercises were an effect of the radio, and may be listed as such.

An invention may have effects in opposite directions. For example, the radio has caused a revival of old songs, but it has greatly popularized new songs also. It may improve diction and pronunciation yet at the same time encourage certain types of localisms in pronunciation.

These preliminary considerations will compensate somewhat for the paucity of explanation in the following lists. The effects are not confined to the United States. The statements of effects are collected under appropriate headings to facilitate reading. Some statements might equally well have been placed under different classifications. The numbering is largely for citation; some of the effects overlap; if those cited had been broken down into others, the list would have been longer.

**EFFECTS OF THE RADIO TELEGRAPH AND TELEPHONE AND OF RADIO BROADCASTING**

**I. ON UNIFORMITY AND DIFFUSION**

1. Homogeneity of peoples increased because of like stimuli.
2. Regional differences in cultures become less pronounced.
3. The penetration of the musical and artistic city culture into villages and country.
4. Ethical standards of the city made more familiar to the country.
5. Distinctions between social classes and economic groups lessened.
6. Isolated regions are brought in contact with world events.
7. Illiterates find a new world opened to them.
8. Restriction of variation through censorship resulting in less experiment and more uniformity.
9. Favoring of the widely spread languages.
10. Standardization of diction and discouragement of dialects.
11. Aids in correct pronunciation, especially of foreign words.
12. Cultural diffusion among nations, as of United States into Canada and vice versa.

**II. ON RECREATION AND ENTERTAINMENT**

13. Another agency for recreation and entertainment.
14. The enjoyment of music popularized greatly.
15. Much more frequent opportunity for good music in rural areas.
16. The manufacture of better phonograph music records encouraged.
17. The contralto favored over sopranos through better transmission.
18. Radio amplification lessens need for loud concert voices.
19. Establishment of the melodramatic playlet with few characters and contrasted voices.
20. Revival of old songs, at least for a time.
RECENT SOCIAL TRENDS

22. Entertainment for invalids, blind, partly deaf, frontiersmen, etc.
23. With growth of reformative idea, more prison installations.
24. Interest in sports increased, it is generally admitted.
25. Slight stimulation to dancing at small gatherings.
26. Entertainment on trains, ships and automobiles.

III. ON TRANSPORTATION

27. Radio beams, enabling aviators to remain on course.
28. Directional receivers guide to port with speed and safety.
29. Aid furnished to ships in distress at sea.
30. Greater safety to airplanes in landing. Radio system also devised now for blind landing.
31. Chronometers are checked by time signals.
32. Broadcast of special weather reports aids the aviator.
33. Brokerage offices on ships made possible.
34. Receipt of communications en route by air passengers.
35. Communication between airplanes and ships.
36. Ships directed for better handling of cargoes.

IV. ON EDUCATION

37. Colleges broadcast classroom lectures.
38. Broadcasting has aided adult education.
39. Used effectively in giving language instruction.
40. Purchasing of text books increased slightly, it is reported.
41. Grammar school instruction aided by broadcasting.
42. Health movement encouraged through broadcast of health talks.
43. Current events discussion broadcast.
44. International relations another important topic discussed, with some social effects, no doubt.
45. Broadcasting has been used to further some reform movements.
46. The government broadcasts frequently on work of departments.
47. Many talks to mothers on domestic science, child care, etc.
48. Discussion of books aids selection and stimulates readers.
49. The relationship of university and community made closer.
50. Lessens gap schooling may make between parents and children.
51. Provision of discussion topics for women's clubs.
52. New pedagogical methods, i.e., as to lectures and personality.
53. Greater knowledge of electricity spread.
54. The creation of a class of radio amateurs.

V. ON THE DISSEMINATION OF INFORMATION

55. Wider education of farmers on agricultural methods.
56. Prevention of loss in crops by broadcasting weather reports.
57. Education of farmers on the treatment of parasites.
58. Market reports of produce permitting better sales.
59. Important telephone messages between continents.
60. Small newspapers, an experiment yet, by facsimile transmission.
61. News to newspapers by radio broadcasting.
62. News dissemination in lieu of newspapers, as in British strike.
63. Transmission of photographic likenesses, letters, etc., especially overseas where wire is not yet applicable.
64. Quicker detection of crime and criminals, through police automobile patrols equipped with radio.

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VI. ON RELIGION

65. Discouragement, it is said, of preachers of lesser abilities.
66. The urban type of sermon disseminated to rural regions.
67. Services possible where minister cannot be supported.
68. Invalids and others unable to attend church enabled to hear religious service.
69. Churches that broadcast are said to have increased attendance.
70. Letter-writing to radio religious speakers gives new opportunity for confession and confidence.

VII. ON INDUSTRY AND BUSINESS

71. In industry, radio sales led to decline in phonograph business.
72. Better phonograph recording and reproducing now used.
73. Lowering of cable rates followed radio telegraph development.
74. Point to point communication in areas without wires.
75. The business of the lyceum bureaus, etc. suffered greatly.
76. Some artists who broadcast demanded for personal appearance in concerts.
77. The market for the piano declined. Radio may be a factor.
78. Equipment cost of hotel and restaurant increased.
79. A new form of advertising has been created.
80. New problems of advertising ethics, as to comments on competing products.
81. An important factor in creating a market for new commodities.
82. Newspaper advertising affected.
83. Led to creation of new magazines.
84. An increase in the consumption of electricity.
85. Provision of employment for 200,000 persons.
86. Some decreased employment in phonograph and other industries.
87. Aid to power and traction companies in discovering leaks, through the assistance of radio listeners.
88. Business of contributing industries increased.

VIII. ON OCCUPATIONS

89. Music sales and possibly song writing has declined. Studies indicate that broadcasting is a factor.
90. A new provision for dancing instruction.
91. A new employment for singers, vaudeville artists, etc.
92. New occupations: announcer, engineer, advertising salesman.
93. Dance orchestras perhaps not increased but given prominence.

IX. ON GOVERNMENT AND POLITICS

94. In government, a new regulatory function necessitated.
95. Censorship problem raised because of charges of swearing, etc.
96. Legal questions raised beginning with the right to the air.
97. New specialization in law; four air law journals existing.
98. New problem of copyright have arisen.
99. New associations created, some active in lobbying.
100. Executive pressure on legislatures, through radio appeals.
101. A democratizing agency, since political programs and speeches are designed to reach wide varieties of persons at one time.
102. Public sentiment aroused in cases of emergencies like drought.
103. International affairs affected because of multiplication of national contacts.
104. Rumors and propaganda on nationalism have been spread.
105. Limits in broadcasting bands foster international arrangements.
106. Communication facilitated among belligerents in warfare.
107. Procedures of the nominating conventions altered somewhat.
108. Constituencies are kept in touch with nominating conventions.
RECENT SOCIAL TRENDS

109. Political campaigners reach larger audiences.
110. The importance of the political mass meeting diminished.
111. Presidential "barn-storming" and front porch campaign changed.
112. Nature of campaign costs affected.
113. Appeal to prejudice of local group lessened.
114. Campaign speeches tend to be more logical and cogent.
115. An aid in raising campaign funds.
116. Campaign speaking by a number of party leaders lessened.
117. Campaign promises over radio said to be more binding.
118. High government officers who broadcast are said to appear to public less distant and more familiar.

X. ON OTHER INVENTIONS

119. Development stimulated in other fields, as in military aviation.
120. The vacuum tube, a radio invention, is used in many fields, as for leveling elevators, automobile train controls, converting electric currents, applying the photo-electric cell, as hereinafter noted. A new science is being developed on the vacuum tube.
121. Television was stimulated by the radio.
122. Developments in use of the phonograph stimulated by radio.
123. Amplifiers for radio and talking pictures improved.
124. The teletype is reported to have been adapted to radio.
125. Geophysical prospecting aided by the radio.
126. Sterilization of milk by short waves, milk keeping fresh a week.
127. Extermination of insects by short waves, on small scale, reported.
128. Body temperature raised to destroy local or general infections.
129. The condenser with radio tubes used variously in industry for controlling thickness of sheet material, warning of dangerous gas, etc.
130. Watches and clocks set automatically by radio.

XI. MISCELLANEOUS

131. Morning exercises encouraged a bit.
132. The noise problem of loud speakers has caused some regulation.
133. A new type of public appearance for amateurs.
134. Some women's clubs are said to find the radio a competitor.
135. Late hours have been ruled against in dormitories and homes.
136. Rumor as a mode of expression perhaps hampered in broadcasting.
137. Growth of suburbs perhaps encouraged a little.
138. Letter-writing to celebrities a widespread practice.
139. Irritation against possible excesses of advertising.
140. Development of fads of numerology and astrology encouraged.
141. Automobiles with sets have been prohibited for safety, in some places.
142. Additions to language, as "A baby broadcasting all night."
143. Aids in locating persons wanted.
144. Wider celebration of anniversaries aids nationalism.
145. Used in submarine detection.
146. Weather broadcasts used in planning family recreation.
147. Fuller enjoyment of gala events.
148. Home duties and isolation more pleasant.
149. Widens gap between the famous and the near-famous.
150. Creative outlet for youth in building sets.

The foregoing list is not summarized, as it is the detailed effects which should be noted. Even so, the items are not as detailed as they could be made. Each item might be broken down into other particular effects.
More Detailed Effects.—For instance, item number 24 of the foregoing list, "Interest in sports increased, it is generally admitted," when analyzed in further detail shows fifteen further social effects, which are as follows: The broadcasting of boxing matches and football games tends (1) to emphasize the big matches to the neglect of the smaller and local ones, (2) increasing even more the reputation of the star athletes. In the case of football (3) the big coaches are glorified and (4) their salaries become augmented. (5) The attendance at colleges specializing in football whose football games are broadcast is increased. (6) Football practice in the springtime is thus encouraged and (7) the recruiting of prospective star players for college enrollment is fostered. (8) The smaller colleges or the ones with higher scholastic requirements tend to be differentiated as a class by contrast. (9) Boxing matches with big gates have accentuated trends in boxing promotion, notably the competition for large sums of money to the neglect of smaller matches. (10) Broadcasting of sports has led to a greater advertising of the climate of Florida and California, and (11) no doubt has aided a little the promotion of these two regions. (12) Broadcasting of sports has led to the developing of a special skill in announcing the movements of athletes not at times easy to see, a skill rather highly appreciated. (13) Athletic and social clubs with loud speakers have become popularized somewhat on the afternoons and evenings of the matches. (14) The broadcasting of baseball games is said to have bolstered the attendance, particularly by recapturing the interest of former attendants. (15) Another effect it is said has been the reduction in some cases of the number of sporting extras of newspapers.

If the other items in the list were further analyzed, as in the case of sports, the great influence of the radio on social change would be more truly appreciated. Such an expansion of other items would show more of the later derivative influences, such as the further advertisement of the climate of southern California, a derivative influence of the broadcasting of football games. There must be a vast number of these ramifying influences which, though minor, no doubt affect a good deal the daily lives of people.

Not only could the list be broken down in greater detail but it could also be shown that the various influences are felt at different times and in different degrees. Thus, the radio may help to destroy rural isolation but the farmers have lagged behind the city dwellers in buying radios. In general political campaign speeches may be more logical since the advent of the radio but some political broadcasters have not caught up with the times and still try oratorical effects.

Social Effects of Other Inventions.—In addition to the radio, the effects of the automobile, of rayon, and of the X-ray were similarly studied.

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RECENT SOCIAL TRENDS

For rayon, a less significant invention, twenty-three different social effects were listed. In the case of the X-ray, sixty-one influences were noted, causing changes in industry, in medicine, in science, and in trade. One of these sixty-one items, viz., the use of the X-ray in dentistry, was analyzed into twenty different social effects, there being in addition sixty-three technical uses of this invention in dentistry alone. In a somewhat less extensive study of the automobile, one hundred and fifty such influences were noted.

If the selected inventions noted in section II were analyzed as was done in the case of the radio, rayon, and the X-ray, the result would be a very impressive picture of the tremendous force of inventions in producing social changes.

These selected inventions were only a few of the most important. The hundreds of thousands of smaller inventions all have their effects on social change, many of them slight, but immeasurable in their total influence.

IV. THE INTERACTION BETWEEN INVENTION AND SOCIETY

The descriptions in the two preceding sections give some idea of the magnitude of the influence of the mechanical and scientific arts, but there remain yet other influences to be noted. These do not lend themselves very well to measurement or to factual descriptions. They can be shown best by analysis of a variety of processes. The analyses set forth in this section then help to round out the picture partially drawn in the preceding sections. But in addition they throw much light on the nature of social change and on the many various ways in which it affects modern civilization. A paragraph is given to each type of interaction or process.

An invention often has many effects spreading out like a fan. This is the first point noted in the process, and has been observed in the preceding pages. Thus the automobile not only aids the growth of suburbs and redistributes marketing areas, but it cuts the revenue of railroads, and encourages the consolidating of rural schools, as was pointed out along with many other influences in a previous paragraph.

A social change often represents the combined contributions of many inventions. Thus the growth of suburbs is stimulated not only by the automobile but by the electric train, the street car, the moving picture, the telephone, the radio and the factory. A social change may thus be said to be caused by various different inventions.

Inventional causes and social effects are intertwined in a process. For instance, a particular effect of the automobile, the reduction in revenue of railroads, has other causes, as the increase in pipe lines, while the increase in pipe lines in addition decreases the consumption of coal. And any particular factor in the increase in suburbs, such as the tele-
INVENTIONS

phone, has other social effects, as on the marketing habits of housewives which in addition is not without some effect upon certain aspects of family life.

An invention has a series of effects following each other somewhat like the links of a chain. Thus the mechanical stoker for engines (a) increases the amount of coal going under a boiler, (b) which permits a more powerful locomotive, (c) which increases the length of trains, (d) which makes the distance a passenger carries his baggage greater, (e) which increases the number of porters, (f) which contributes its bit to the status of the Negro, and so on. Or, the automobile (a) replaces horses, (b) which diminishes stables, (c) which in turn reduces the number of flies, (d) which lessens somewhat the communicable diseases. Again, the can opener is said to have aided the woman suffrage movement, through an enchainment similar to that following the mechanical stoker and the automobile. Derivative effects of this nature must be numerous and their mere volume makes them an important part of the process. The type of effect studied in connection with the radio should be thought of as extending out in this derivative manner. But these derived effects become somewhat attenuated eventually, so that it appears to be absurd to attribute a causal force when the influence is so negligible. Though spending their force in a sort of diffusion they are nevertheless real, particularly when seen as the accumulated result of thousands of different inventions, in a society where social conditions are closely intertwined. Many of the great mass of social changes are thought to be of this indirect and diffused nature.

Groups of similar inventions have an appreciable social influence, where that of any particular one may be negligible. Thus the introduction of many new machines replacing human labor may be a factor in the restriction of immigration, yet one would hardly note that the rotary printing press in making much of the work of feeders unnecessary was a causal factor in the restriction of immigration.

The accumulation of the influences of the smaller inventions is a significant part of the process. If inventions were classified according to their complexity or to their importance, there would be only a very few that would be classed complex or important, such as those described in section II. An examination of the patents granted shows that the great majority are minor ones, or represent only small improvements upon existing inventions. The same is true also of the many inventions not patented. Thus the inventions discussed in the preceding pages are not representative of the great mass of inventions. The typical invention is more like one of the following group of six patents selected at random.59

59 They were the first items on the ninth pages of the Official Gazette, United States Patent Office, April–September, 1929, vols. 381–386.
Door Holder.—A base plate, lever, rod coil spring, and pin comprising a stop which will hold a door in an open or partially open position.

Typewriter.—A universal bar attachment to a typewriter facilitating its operation.

Compression Gage.—In a small cylinder a piston is operated against a spring and in conjunction with a rod which is sealed to permit reading.

Fuse Holder.—A fiber tube adaptable to fuses of different size yet designed to prevent longitudinal movement of the fuse.

Process for Utilizing Light Metal Scrap.—A process for forming solid bodies of metal by pressing a mixture of scrap metal and carbon into bales, and heating with a subsequent application of high pressure.

Grain Sprouter.—A cylindrical aerated tube with internal mechanism designed to receive and discharge grain before and after sprouting.

The majority of inventions are merely slight improvements on some existing device. Thus the plow sulky has had 549 patents on it.\(^{60}\) These improvements often collect around major inventions and add to the effectiveness of their influence. But there are many small inventions that stand alone, more or less independent of the larger ones, as for instance, the paper clip, the key ring, the rubber band, the picture hanger. The cumulative influence of these many thousands of small inventions and improvements must give impetus to the flow of the stream of culture. The story is incomplete without the account of the derivative influences previously noted, or without consideration of the influence of smaller inventions.

There are social factors as well as mechanical ones in social change. The data in the preceding sections give undue emphasis to the mechanical causes of social change since the social causes are not considered. That social factors, as truly as mechanical ones, cause social changes is seen from a study of the introduction and development of the parole system. The history of the parole system shows that it had its origin in lack of work for English prisoners in Australian colonies, in prison overcrowding, in the growth of sentiment against brutality, in the attitude that punishment should not be so much the reason for imprisonment as reformation, and by the discovery on the part of certain prison officials that early release often brought about reformation. Further precedents for parole were found in prisoners’ aid societies, in methods of handling juvenile delinquents through probation, and in the old practice of executive pardon or commutation. Such are the usual accounts of the development of parole. Parole, which thus had its legal beginning in 1847, and in its modern form first entered the United States in New York in 1876 at the Elmira reformatory, and which has spread widely in the twentieth century,\(^{61}\) appears from the general accounts to be an important change without mechanical invention as a cause. No doubt, many social changes are of this nature, particularly in such fields as art, religion, ethics and education. That


\(^{61}\) On the extent of parole systems, see Chap. XXII.
the usual history of parole omits reference to mechanical inventions does not mean, however, that there may not have been such factors. On the contrary, some part, however far removed, was probably played by mechanical changes. For instance, mechanical changes led to the growth of cities, with increase in crime, and the increasing cost of taking care of the criminal in turn very probably encouraged the development of the more economical parole system. And perhaps the inventions leading to changes in family life which promoted juvenile delinquency encouraged the reformatory idea back of the parole system. The transportation and communication inventions also aided in the supervision of paroled prisoners. Indeed, the whole humanitarian movement has very probably been encouraged in part by the increase of wealth, ease and tenure of life. This illustration of parole will serve as a possible corrective for any undue stressing of the mechanical factor in social change.

Social factors in social changes are often derivatives, in part, from mechanical inventions, and vice versa. Not all social changes are so relatively free from mechanical factors as the changes in the prison system. But even those changes that are very closely related to a mechanical invention have social factors. Thus the declining birth rate is said to be a result of contraceptive inventions, but it is clear that there are additional social factors. Certainly the attitude of the churches is one such factor. Another factor is the social conditions of life in cities, where the difficulties of rearing children successfully are great. So also the birth rate is affected by the competition of other appeals to the family budget, such as amusements, new conveniences and educational opportunities. Some of these social factors, however, are seen to be derivatives in part from mechanical causes. Thus the conditions of city life which make it difficult to rear children in cities are in part the product of invention, such as the apartment house. Inventional factors are likewise derivatives in part from social changes.

The effects of invention on society are of various degrees and kinds. Perhaps the first effect of inventions is the change in the habits of the persons using them, as in the case of peoples who use typewriters instead of pen and ink. When the persons whose habits are changed are numerous then a social class is affected. Thus, there grows up a class of women typists and stenographers, who have a place in society in relation to other groups and classes. Another effect is to change certain organizations. Thus the organization of various businesses is affected by the use of typewriters. Sometimes inventions have far removed effects on a social institution in the sociological sense of the word. Thus, such an institution as the family is affected by the employment of daughters,

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62 On the number of women in selected occupational groups and classes, see Figures 3 and 4 in Chap. XIV.
wives and single women in connection with machines in offices and factories. Further influences are those affecting ethics and codes of conduct which usually lag behind the material changes. For instance, at one time it was almost a moral precept that woman’s place was in the home. The appearance of women on the streets and in places of business for many years slowly affected manners and customs closely related to ethical codes. A final influence to be noted is that on systems of thought or social philosophies which also has a tendency to lag behind other influences. Thus the inventions attracting women away from the home may be an element in a social philosophy regarding the equality of men and women, feminism and social justice which is just beginning to be recognized by certain elements in the population. The effects of inventions are as various then as are the different types of social organization.

*It takes time for the social influences of inventions to become fully felt.* The quickest effect is on the habits of the persons who come in direct contact with the invention in its use. It takes longer to influence an organization or a social class and perhaps still longer to change social institutions, theories of ethics, or social philosophies.

*There are social inventions as well as mechanical ones, effective in social change.* An invention is a new form made up of existing elements which may be material or non-material. Thus the telegraph was a new form made up of a combination of existing material elements, wires, batteries, keys, electro-magnets, etc. But not all the elements are material, for

| Armistice day.          | Junior college.             |
| Auto tourist camp.      | Juvenile court.             |
| Australian ballot.      | Ku Klux Klan.               |
| Basket ball.            | League of Nations.          |
| Bonus to wage earners.  | Legal aid society.          |
| Boycott.                | Lock out.                   |
| Chain store.            | Matrimonial bureau.         |
| Charity organization society. | Minimum wage law.     |
| City manager plan.      | Mother’s pension.           |
| Civil service system.   | National economic council.  |
| Clearing house.         | One-step.                   |
| Community chest.        | Passport.                   |
| Company union.          | Patents.                    |
| Correspondence school.  | Psychological clinics.      |
| Day nursery             | Proportional representation.|
| Direct primary.         | Recall.                     |
| Esperanto.              | Research institute.         |
| Federal Reserve system. | Rochdale cooperative.       |
| Four-H clubs.           | Rotary club.                |
| Group insurance.        | Seminar.                    |
| Holding company.        | Social settlement.          |
| Indeterminate sentence. | Summer camp.                |
| Intelligence tests.     | Tag day.                    |
| Investment trust.       | Visiting teacher.           |
| Instalment selling.     | Universal suffrage.         |
there is the idea of the code, which is an element in the telegraph complex. Similarly a new social form is made up of existing elements usually of a non-mechanical nature. An example is the commission form of government for cities, made up of elements among which were the concepts of the mayor, city council, cabinet, a board of directors, and an executive committee. Since inventions are usually thought of as mechanical, it may be well to enumerate a few social forms that may be called social inventions. The list shown on page 162 of fifty inventions of this type may give a better idea of what is thought of as a social invention than would a definition in abstract terms.

V. PROBLEMS FOR POLICY

There has been presented in the three preceding sections a description of the major influences in recent years which science and the machine have exerted upon society, and also an account of how the influences operate; and in the first section a brief summary was given of some of the more important of these general trends. The concluding section is devoted to the presentation of certain issues which, it is thought, are important for a society interested in the direction in which it is moving and in the plan and control of its future. The purpose is only to set forth the problems. No attempt is made to say what the policies regarding them should be. These problems are of two kinds. One is that of the encouragement of invention, and the other deals with society’s relation to the invention which it promotes.

Delays in Invention.—The first problem to be discussed concerns the delay in developing an invention. Thus there is a long period of time between the date of originating an invention and the time when it becomes ready for commerce. This interval has been measured in the case of many of the inventions previously listed, and it has been found to vary from two years to several hundred, the median interval being thirty-three years. Following the date when the invention is ready for practical use, improvements occur in most cases fairly rapidly, because no doubt brighter chances for profits stimulate study, manufacture and risk taking. It is this early period of gestation that appears slow, and toward which attention should be directed. Perhaps endowment, which has proved invaluable for research in pure sciences and in the medical sciences, may be a solution. The industrial research laboratories may solve it in some cases, for in these laboratories the delay between the conception date and success date is said to be less in general than with the individual inventor. Great prospects of financial reward to the inventor also lessen these delays. Objections to such proposals are readily at hand, however, for, in the nature of the case, aiding inventors and

63 Some of the governmental forms are summarized in Chap. XXIX.
nascent inventions is a gamble. Yet where the invention concerned is new and without substitutes, and where the need is great, the conditions argue for success, unless there be some necessary element missing. An effective cure for cancer has not yet been forthcoming, yet endowed research continues.

Incentives to Invention.—Related problems center in the patent laws, our one institutional expression for the encouragement of the inventor. There are several ways in which it is admitted the patent laws do not work wholly satisfactorily. For even with the protection of patents, the money return to the inventor is on the average quite small and hardly equal to the wages he might have earned during the time in which effort was put on the invention.64

There is thus the problem of the incentive and the protection of the inventor, which are hardly satisfactory when his reward proves slow. The low return may be caused not by the patent laws, however, but rather by the nature of the invention (for not all inventions are in great demand) and its exploitation, often a difficult economic undertaking. Thus the problem of incentive to the individual inventor is not solved by patent laws. Another type of encouragement has been tried with some slight success by industries in giving bonuses to employees for inventive suggestions.65

Abuse of Patent Procedure.—Another problem for which a solution is sought in patent legislation concerns the abuse of the monopoly control of a patented invention. Of several such abuses, the most serious is the denial in some cases to the public of the use of the invention. Various remedies have been proposed; that of compulsory licensing is found in other countries, though difficult to operate in practice.

The Death Rate of Inventions.—The patent laws do not encompass all of the social aspects of inventing. Even after inventions are made, patented, and demonstrated mechanically, there is a very high death rate during their infancy. Perhaps many deserve to die; it may suffice that one of the competitors lives. But this is not always true, as perhaps was the case with the magnetic phonograph. A successful competitor or the failure to obtain simplicity, durability, cheapness or some other desired quality is the usual reason for the large proportion of inventions failing to attain use. Very obstructive also are financial and organizational difficulties which beset effectively the pathway to success of many inventions. Problems of inventions do not center wholly around the inventor. Cooperating technicians and business men share a significant part in the successful launching of innovations.

64 From an unpublished study by L. J. Carr of the University of Michigan.
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This problem of the high infant death rate of inventions is being solved in part by the great growth of industrial research laboratories. Large scale organization has swept into its train invention, along with economic organizations. Industrial and consulting research laboratories in the United States numbered 999 in 1927, according to a survey made at that time. The growth of science and the cost of equipment no doubt aided such a development, which may be affecting the single inventor as the factory affected the handicraftsman. A growing proportion of significant inventions now comes from these laboratories. The future of many changes in civilizations will be determined by what goes on in them. So important an agency of social change needs to be studied.

What Inventions to Be Encouraged.—The foregoing matters of policy deal with various aspects of inventions and inventive ability. Policies of a different order deal with the direction which invention takes. A society interested in where it is going will find it important to concern itself with the question of what types of invention should be encouraged. Thus society values very greatly medical discovery, and much money and attention are given to it. It seems to be valuing research less in pure science than in applied science, as is indicated in a later chapter on social attitudes, if the attention given to pure science in published articles in general literature be an index. The wishes of society are not, however, the sole determinants of invention, any more than necessity is the mother of invention. The elements that go to make up an invention must be present before the synthesis can take place, no matter how much it be desired. Earlier peoples needed and wanted medical progress as much as modern man and put about as much time proportionately on trying to heal and cure, but it was not until science had grown sufficiently to accumulate the necessary elements of knowledge that medical progress occurred. Nevertheless, the particular social valuations of society do determine how much effort is put in this or that direction. Effort may be fruitful in a measure, although there is a certain inevitability about the grand sweep of invention, especially apparent when the possibilities of human control are considered. Still, it is important to question the social valuations in regard to invention, particularly as to the relative amount of encouragement given to social invention as compared with mechanical invention.

Indeed, instead of comparing the attention given to social and mechanical invention, it might be well to ask first whether society wishes to encourage mechanical invention and natural science at all. The question appears either absurd or academic, yet the changes which many conservatives object to are the result of invention. And even radicals

66 National Research Council, July 1927, Bulletin no. 60.
67 See Chap. VIII.
have suggested "declaring a moratorium" on invention until society catches up.

A New Environment.—Invention is creating a new material environment which is itself changing swiftly. Humanity must adjust itself to this material culture as it changes. Invention thus causes for man problems of adjustment. It is hardly possible to discuss such problems in detail here for there are so many of them; perhaps most of the present day social problems are of this nature. But it is desirable to see this problem of adaptation as a whole.

The Lag in Adaptation.—The problem of adaptation is characterized by a time element. The inventions occur first, and only later do the institutions of society change in conformity. Material culture and social institutions are not independent of each other, for civilization is highly articulated like a piece of machinery, so that a change in one part tends to effect changes in other parts—but only after a delay. Man with habits and society with patterns of action are slow to change to meet the new material conditions. International relations are adjusting only slowly to the great linking forces of communication and transportation. These delays are costly. Thus, child labor in industry was a product of the delay on the part of the family and society in adjusting to the factory; and many thousands of unnecessary industrial accidents were the result of a maladaptation until, after long delay, better adjustments were made through the provision of safety devices and compensation plans. Technology seems to change sooner than do social institutions. Society will hardly decide to discourage science and invention, for these have added knowledge and have brought material welfare. And as to the difficulties and problems they create, the solution would seem to lie not so much in discouraging natural science as in encouraging social science.

The problem of the better adaptation of society to its large and changing material culture and the problem of lessening the delay in this adjustment are cardinal problems for social science. It seems very difficult to anticipate inventions and their social effects. Yet the researches of the preceding pages suggest that with further study some success may be expected.
Chapter IV
THE AGENCIES OF COMMUNICATION

By Malcolm M. Willey and Stuart A. Rice

IMPRESSIVE as technological changes have been in other fields, there is no more striking example than in communications of how they operate to instigate social change, modifying the material environment, creating new and perplexing problems of adjustment and changing manners and morals. Communications may be studied either in terms of the symbols which are transmitted or the agencies facilitating transmission. In the present chapter the emphasis is placed upon the latter in order to illustrate the integrative tendencies and to throw into relief the problems which modern communication agencies have engendered.

The agencies of transportation which increase the potential number of our personal contacts, and the agencies for the transmission of messages from person to person or en masse which provide individual contacts, show many innovations as well as changes in the utilization of the agencies. Particularly noteworthy is the rapidity with which new inventions have been adopted and diffused. The automobile, the airplane, the motion picture and the radio have all had their development since the turn of the twentieth century. Each new communication agency bids for public favor and its ultimate acceptance adds to the complexity of our civilization.

The surface picture is one of chaos and conflict: railroads competing with bus lines, buses competing with street railways, newspapers concerned over the broadcasting of advertisements, the motion picture competing with radio and already alarmed at the possibilities of television. Out of the seeming chaos, however, certain tendencies appear. There has developed a partially integrated system whereby contacts are established between individuals with a maximum of ease over an area of ever increasing radius.

I. THE TRANSPORTATION AGENCIES

The function of transportation agencies is to provide physical conveyance for human beings or goods. They have importance for our subject because they extend the range of contacts and make possible face to face meetings with increasing frequency and ease for individuals normally
RECENT SOCIAL TRENDS

separated. In this chapter, only passenger functions will be considered, for while the movement of goods has significance in studying social contacts it is indirect and secondary.

The historical development of transportation agencies has been adequately treated in other studies and will not be reviewed here. Furthermore, selection is required from among the many contemporary agencies. Horse drawn vehicles and barge canal systems, for example, have played and still play roles of importance, although their relative significance for human transportation is now so slight in the United States that they are omitted from consideration. On the other hand, steam railroads, electric railways, highways, motor vehicles, water carriers and the airplane are integral units in the transportation system. The growth, utilization, interrelationship and social effects of these agencies, commercial or private, form the subject of this section.¹

The Railroads.—In 1930 and the years immediately following American railroads were confronted by problems involving both financial stability and actual operation. "The plight of the railroads" was a general catchphrase covering a variety of specific items. Many services had been curtailed and numerous short lines abandoned. Passenger traffic, which had long been declining, began to drop more sharply, and the per capita mileage travelled in 1930 had receded nearly to the 1900 level. On the financial side, railroad securities were suffering depreciation.

These evidences of the changing status of the railroads gain importance when viewed against the historical background of national development. In the post-Civil War era it was the railroads that made possible the continuous expansion of the western frontiers. They furthered the vital industrial development following the Civil War. They were a factor in the movements of the people and the determination of population centers. In fact, the railroads were an outstanding influence in economic and social life during the last half of the nineteenth century.

In addition to their economic effects, the railroads exerted psychological influences. As the outward world was transformed, the minds of men were reoriented and new horizons established. Communities connected by inferior highways were now joined by ribbons of steel over which locomotives ran at incredible speed. An older isolation disappeared. The railroads wove themselves into the fabric of the nation's culture. They were the dominant agency of communication at the outset of the century. From then on to the end of 1931, however, statistics give striking evidence of changes which were threatening the preeminent position held by the railroads for nearly one hundred years.

¹ In the pages that follow many statements and conclusions will be based upon data that are not included in full. The complete statistical basis for each statement and generalization will usually be found in the monograph in this series, entitled Communication Agencies and Social Life, and frequent reference to this will be made.

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Railroad Trackage and Traffic.—In 1900 locations and interconnections of present day railroad trackage were virtually complete. The 193,346 miles of first track owned by American roads in 1900 increased to a maximum of 254,037 in 1916, and declined by 1930 to 249,052. Significant as trackage figures may be in indicating “coverage,” they do not serve as a useful index of passenger traffic. More adequate are “passengers carried” and “passenger-miles,” and Interstate Commerce Commission data for all steam railways in the United States show that measured by either, a maximum passenger volume was attained approximately in the year 1920. In this year 1,269,913,000 passengers were carried 47,369,906,000 passenger-miles, or 444.6 miles per capita. This is more than double the 1900 figures for passengers carried (576,831,000), passenger-miles (16,038,076,000) and passenger-miles per capita (212.5). The sharpness of the recent decline is evident from the fact that in 1930 only 707,987,000 passengers were transported on all roads, with a total of 26,875,642,000 passenger-miles, or 218.3 miles per capita.

During the past decade the decline in these indexes, except for one year (1923), has been consistent. It is thus apparent that the difficulties from which the railroads suffer have not been caused primarily, but rather aggravated by, the current economic depression. The Interstate Commerce Commission has indicated the tendency toward decline, even within years of prosperity, by a downward sloping trend line for the years 1922–1930. It is significant that the Commission found it inadvisable to fit a single trend line to a longer period because of the introduction into the railroad passenger traffic situation of “a new force in recent years”—the automobile. What the automobile has meant for the railroads is shown more clearly in the subsequent discussion of the motor vehicle. Its diffusion has resulted unquestionably in competition that strikes the railroads at vital points.

2 Data from Statement 53, appearing annually in Statistics of Railways in the United States, issued by the Interstate Commerce Commission. For a more detailed analysis of trackage figures see the monograph, section I.

3 Figures for “passengers carried” represent a summation of the totals of each road, and accordingly involve duplication in all cases of interroad journeys. “Passengers carried” is less satisfactory as an index of travel than “passenger-miles” (the number of passengers carried one mile) or “passenger-miles per capita.” While a change in operating control of given trackage might change the figures for “passengers carried,” it would not influence the data pertaining to “passenger-miles.” Figures presented in Table 1 on “Miles per Passenger per Road” are in each case less than would be corresponding figures for “average journey per passenger,” which are not available.


5 U. S. Interstate Commerce Commission, Bureau of Statistics, Graphical Supplement to Monthly Reports, Series, 1931, no. 5. See pp. 172–180; see also Figure 1 of the monograph for the graph referred to.
The influence of the automobile is apparent when passenger traffic data are analyzed in terms of length of journey. It is customary to distinguish commutation and non-commutation traffic and the significance of the two is obviously different. The former is characterized by greater frequency, lesser mileage and habitual routine; the latter ordinarily involves trips of less frequency, greater distance and some uniqueness of occurrence. Commutation traffic is evidence of the overflow of the city into suburban areas and reflects an extension of the radius of the customary circle of daily life. During recent years when the total passenger traffic has been declining, commutation traffic has grown. It follows that the declines in non-commutation traffic have been even greater than the totals indicate.

The essential commutation and non-commutation traffic data are given in Table 1. The extent to which commutation traffic has gained while other traffic has declined will appear from a comparison of columns 2 and 3. The gains in commutation mileage (col. 2), however, are not primarily due to increased numbers of passengers, for the average commuter’s journey has lengthened by nearly one mile during the same period (col. 6). Between 1922 and 1930, commutation passenger-miles increased by 8.8 percent, while commutation miles per passenger per road increased 6.4 percent, or almost enough to account for the entire commutation increase. At the same time, the miles per passenger per road for

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<td>24,900,575</td>
<td>54.9</td>
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<td>1929</td>
<td>6,898,473</td>
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<td>1930</td>
<td>6,650,111</td>
<td>20,153,406</td>
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<tr>
<td>1931</td>
<td>6,017,959</td>
<td>15,880,547</td>
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b Figures for 1951 are preliminary and subject to revision; they are from *Revenue Traffic Statistics of Class I Steam Railways in the United States*, Interstate Commerce Commission, Statement no. M-220, December, 1981.

c See Table 10 in Chap. IX.
non-commutation traffic grew consistently from 54.68 to 75.95 miles (col. 7) or 38.9 percent. The result could be explained by relative increases in the length or number of longer journeys, or by relative decreases in the length or number of shorter non-commutation journeys. There is insufficient evidence to indicate which of these factors has been effective. The conclusion is nevertheless supportable that it is primarily the short haul passenger traffic, other than commutation, that the railroads have been losing.

Pullman Traffic.—The preceding data give no direct evidence concerning the tendencies with reference to long hauls. Pullman Company figures indicate that losses have not occurred in long haul passenger traffic to the same extent as in short haul traffic. Since 1922 the totals representing passengers carried in Pullman cars have been segregated as berth and seat passengers and it may be assumed that the former, in general, represent longer hauls. In 1922, 19,725,000 berth passengers were carried; in 1926, the maximum for the decade was reached, 22,658,000. There has been a decline in each subsequent year, and in 1930 the total berth passengers numbered 18,499,000. The total Pullman passenger miles (berth and seat passengers) declined somewhat between 1924 and 1930, but these drops are by no means parallel to that of railroad passenger traffic as a whole. Since 1924 the length of journey of Pullman passengers has increased regularly each year and this has tended to offset the decline in the total number of passengers carried. These Pullman data support the conclusion that it is the short haul passenger traffic, other than commutation, that the railroads have lost.7

The Problem of the Railroads.—The foregoing changes in railway passenger traffic cannot be interpreted as reflecting a decreasing need for transportation throughout the country. The railroads have been instrumental in binding the nation together and in creating an interdependence that could scarcely have been realized without them. The interdependence still exists and also the necessity of rapid transportation between communities. The railroad unquestionably induced habits of mobility within the population and there is no reason to assume these habits have lost strength. The changes give evidence, rather, of the new competition from the motor vehicle. Imperceptibly but surely the automobile, and especially the private vehicle, encroached upon the short haul traffic of the railroads. A shift in performance of function has occurred. The problem is now one of integration, for both railway and motor vehicle have become accepted parts of the contemporary social pattern. In furthering the use

7 Data of Pullman traffic compiled from Growth of Traffic on Steam Railways of the United States, 1900-1928. Interstate Commerce Commission, Statement no. 2982 (mimeographed); Statistics of Railways in the United States, op. cit., Table B, annually; and Standard Statistics Company, New York, Standard Corporation Records, Individual Reports Section. For more detailed analysis of the data see the monograph, section I.
of the automobile, which is admirably adapted for short journeys, there has been created a competition between two agencies of transportation which seriously affects the older of them. A general question involves the advisability of stimulating a new type of transportation agency without attempting to consider in advance the probable effects upon agencies already firmly interwoven into the culture. The problem involves the possibility, through foresight and control, of making necessary adjustments between competing agencies more gradual, and, through planning, of eliminating some of the disquieting consequences that inevitably follow when shifts occur that are controlled only by opportunistic competition. Since with the present agencies the shift has occurred, the immediate problem is that of reconciling the roles of the two.

Further discussion of these points cannot be undertaken until the place of the automobile in the communication system has been outlined.

The Motor Vehicle.—In 1900 there were 8,000 "horseless carriages" in the United States, according to estimate. On January 1, 1931, the number of motor vehicles registered was 25,814,103. It is probable that no invention of such far reaching importance was ever diffused with such rapidity or so quickly exerted influences that ramified through the national culture, transforming even habits of thought and language.

The Number of Motor Vehicles: Private Automobiles.—Some form of motor vehicle registration was first required by all states in 1913. Between 1913 and 1931 the increase in registration in the United States was twenty-fold. This phenomenal growth involved a displacement of earlier vehicles, such as the horse carriage and the bicycle. It also involved habituation to the use of the automobile of classes in the population who formerly owned no vehicle of private transportation. Within the space of a few years, for vast numbers motor travel ceased to be a novelty and came to be regarded as a necessity. At the end of 1930 there was one automobile for every 4.63 persons in the population. The ratio varied considerably by states: at the extremes, California contained one automobile for every 2.78 persons, Alabama one for every 9.55 persons.

Trucks and commercial vehicles, important as they are in the total story of the motor vehicle, are secondary as agencies of human mobility. It is the private automobile, the bus, the taxicab that are of immediate concern. Since 1921 the Bureau of Public Roads has each year assembled

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* Prior to 1913 data are unreliable. Even in 1931 registration practices were far from uniform, with the result that entirely comparable data are not even now available, though the magnitude of growth has been such that statistical shortcomings do not affect general conclusions. Detailed registration data for all the states are given in the monograph, Tables 9, 10 and 13.

* Facts and Figures of the Automobile Industry, National Automobile Chamber of Commerce, New York, 1931, p. 15. See also figures in Chap. XVIII.
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for the country the registrations of private passenger automobiles, cars for hire, taxicabs and buses combined. The steady increase in these registrations, until 1930, is shown in Table 2.

Although the total number of motor vehicles increased slightly between 1929 and 1930, the increase was primarily in the number of trucks, and even these declined in 1931. When trucks are removed the losses shown in Table 2 (cols. 2, 4 and 5) appear. It is safe to conclude that the declines of 1930 and 1931 are attributable primarily to declines in the use of private automobiles.

It is impossible completely to segregate the private passenger automobile from the taxicab and the bus. A special survey in 1925 by the

<table>
<thead>
<tr>
<th>Year (1)</th>
<th>Number (2)</th>
<th>Population per vehicle (3)</th>
<th>Annual increase</th>
<th>Number (4)</th>
<th>Percent (5)</th>
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<td>1930</td>
<td>25,039,500</td>
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<td>$-71,462$</td>
<td>$-3.1$</td>
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<td>1931</td>
<td>22,347,500</td>
<td>5.5</td>
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* U. S. Bureau of Public Roads, Table B.P.R. — Misc. — A-I. S-March 11, 1924, and annual continuations. As adjusted these appear in Facts and Figures of the Automobile Industry, op. cit., 1931, p. 16. The National Automobile Chamber of Commerce has kindly supplied the figure in col. 2 for 1931 and a revised figure as here given for 1930.

Bureau of Public Roads showed the number of taxicabs and cars for hire to be nearly double the number of buses. Together these classes were but 1.2 percent of the vehicles recorded for that year in Table 2. While the ratio may have changed somewhat in later years, it is evident that among motor vehicles the private automobile is preeminent. With the acceptance of the automobile the individual citizen in virtually all classes of the population has acquired a vehicle that gives a freedom of control in personal transportation such as never before existed. Potential mobility is increased immeasurably and easy, swift movement over distances
The Motor Bus: Numbers and Control.—While all evidence indicates that the private automobile is primarily responsible for traffic losses to steam railroads and electric lines, the motor bus has also assumed importance as a competitor of both. It not merely competes but supplements. In both local and interurban transportation the bus has advantages that indicate for it a lasting function. In 1930 estimates show 48,250 of these vehicles in operation for revenue, and 47,150 for non-revenue purposes. The non-revenue buses, in consequence of more extensive use for school transportation, have shown the more rapid rate of increase. Of the revenue buses, it is estimated that 13,350 were operating on city routes, and 32,150 in intercity and interstate service. Buses in the latter services in 1930 were approximately two and one-half times as numerous as those in local service. On the other hand, local buses carried 1,350,000,000 revenue passengers, while intercity buses carried but 428,000,000. Passenger-miles of city buses were slightly more than half the passenger-miles of intercity buses in the same year. Measured either by passengers carried or passenger-miles, the intercity buses have shown more rapid and continuous growth. Unfortunately data are not available to permit direct analysis of the extent to which the bus is a competitor of urban-suburban electric lines and steam roads respectively. Some indication of the permeation of the country by buses is shown by comparing the 249,433 miles of first tracks operated by American steam railroads in 1929 with the estimated 332,500 miles of intercity bus routes, although admittedly this comparison fails to take into consideration differences in intensity of use.

There has been steady growth since 1924 in the number of buses operated by electric railway companies and steam railroads. In 1924, Bus Transportation estimates, electric railway companies controlled about 3,000 vehicles; in 1930, 11,827, or approximately four-fifths of all

The vertical diffusion of the automobile, explicable in terms of increased cheapness of cars, coupled with a generally high purchasing power, has resulted in a marked decline in the domestic use of motorcycles and sidewheel vehicles. Data on this point are included in the monograph, Table 13.

The increased production of closed cars has contributed to the general utility of the automobile, since it facilitates wider usage and greater comfort under varied weather conditions. As the automobile becomes generally used, the demand for comfort assumes importance, and increased comfort furthers the use of the automobile. In 1931, 92.9 percent of all cars produced in the United States and Canada were of the closed type, in contrast to 22.1 percent in 1921. C.f. the monograph, Table 14.

city buses. Their hold on local bus operations is still increasing and the problem of relationship between the two types of services seems well on the way toward solution, by a process of unified corporate control combined with coordination of functions.

Steam railroads operated about 375 buses in 1925 and 1,750 in 1930. It is not improbable that they will seek in the future to acquire greater control of the buses that now compete with them and to effect a more efficient and economical coordination of services thereby. Public policy with respect to this foreshadowed development may clearly point in either of two directions: On the one hand, the integrative tendency may be encouraged, supported by arguments found in the monopolistic character of transportation, in the vital relationship between the carriers and the nation's industrial and financial structure and in the requirements of public service. On the other hand, if the integrative tendency is deemed undesirable, it would seem to imply that attention should be given to delimiting the areas of competition between the two sets of agencies. These questions thus intrude: To what extent should a new nation wide agency of transportation be allowed to develop in competition with the rail system; and on the other hand, to what extent should these two agencies be deliberately coordinated?

Highways and Highway Utilization.—What the basic rail network is to railroad passenger traffic, the system of American highways is to motor vehicle travel. Highways and motor vehicles have developed in close relationship, each effecting changes in the other and in the social habits related thereto.\(^\text{13}\)

Highway Mileage.—Although early data are unreliable, the extraordinary development of highways has been apparent even to casual observation. In 1904 the total estimated mileage of "rural roads" (i.e., excluding streets of municipalities) was 2,151,379, of which 153,645 miles were surfaced; about 144 miles had "high type surface," or some form of paving. By 1930 the estimated total had increased more than 40 percent, to 3,009,066. Surfaced roads had grown by 330.5 percent, to 693,559 miles; and high type surfaced roads, almost non-existent in 1904, had grown to 125,708 miles. Whereas surfaced roads in 1904 were 7.1 percent of the total, in 1930 they were 23.0 percent. Of these surfaced roads, the proportion with a high type surface increased in the same period from 0.1 percent to 18.1 percent.\(^\text{14}\)

These highway extensions, demanded by the automobile, have at the same time facilitated and stimulated its use. With a vehicle at hand over which the user has almost complete control and with highway networks

\(^\text{13}\) See discussion of social effects of automobiles in Chaps. III, IX and XVIII.

\(^\text{14}\) Data from United States Department of Agriculture, Bureau of Public Roads, Table D-1, 1929 (unpublished), based on figures compiled by the Bureau as reported to it by state authorities. Cf. the monograph, Table 15.
on which it may be freely run, a multiplication of social contacts over wider ranges of territory is all but inevitable. For rural populations the importance is even greater, for enhancement of mobility is accompanied by a decrease in physical isolation as well.

Automobiles and Highway Engineering.—The use of the automobile has introduced entirely new highway engineering problems. Old roadways that served adequately for horse drawn vehicles at once became antiquated. With high-powered cars and high speeds roads must be straightened, curves lengthened, vision increased, shoulders carefully planned, embankments equipped with guards, grade crossings protected and surfaces increased in trueness and durability. These are but typical requirements confronting the engineers who are concerned with the swift and certain flow of traffic.\(^\text{15}\)

The extension and improvement of highways brought increased vehicle speeds. Connecticut was first to limit automobile highway speeds by law (15 miles an hour, 1901). By 1923 all states had such statutes and analysis indicates a steady increase in the maximum speed permitted by law. In 1905 the median average for those states where regulations were enacted was 25 miles an hour; in 1919 this had increased to 30; in 1925, to 35; and in 1929 the median average had reached 40.\(^\text{16}\) The automobile has been an important contributory influence in increasing the tempo of modern life.

The Problem of Centralized Control.—From colonial days onward roads were for the most part a responsibility of local governments and an important reason for the latter’s existence. The automobile has made state wide and national highway planning essential. Roads must serve the integrated needs of wide areas throughout which standard construction practices and traffic rules must be formulated and introduced. It is an accepted principle that the poorest unit in any roadway determines the capacity of the entire road. Purely local planning and construction accordingly become anachronistic.

In 1900 only seven states had even rudimentary highway administration; by 1917, highway commissions in some form were found in all.\(^\text{17}\) Nevertheless local administration, unrelated to the needs of larger areas, still remains in many respects a troublesome social lag. Those who con-


\(^{16}\) Compiled by John P. Horlacher from analysis of speed legislation in the 48 states. Employment of the arithmetic mean instead of the median does not change the results. In some states a specific maximum speed is not designated, but drivers are held to a rate that is customarily phrased as “reasonable and proper.” These “reasonable and proper” states are not included in the figures given above. When included, by assuming that they fall at the upper end of the distribution of maximum speeds, no differences in the median resulted. For details see the monograph, Table 16.

\(^{17}\) See Chaps. XXVII and XXV.
demn centralizing tendencies in American government cannot avoid the obligation to reconcile a decentralizing policy with the advantages of integration. In the case of highways the smooth and direct flow of traffic seems to require further centralization of administrative responsibility. If so, the fact should be accepted and impediments in the form of legalistic survivals of local autonomy should be removed as quickly as possible. The logical alternatives are to contend that human mobility itself is an undesirable phenomenon or that the advantages of efficiency would be offset by other disadvantages that are not apparent.\textsuperscript{18}

Automobile Utilization.—The rapid growth of automobile ownership and the national permeation of the highway system, already traced, provided unprecedented motives and opportunities for mobility. Although travel possibilities hitherto existed in the rail and water systems their use was subject to certain restrictions that did not pertain to the automobile. In no inconsiderable degree the rapid popular acceptance of the new vehicle centered in the fact that it gave to the owner a control over his movements that the older agencies denied. Close at hand and ready for instant use, it carried its owner from door to destination by routes he himself selected, and on schedules of his own making; baggage inconveniences were minimized and perhaps most important of all, the automobile made possible the movement of an entire family at costs that were relatively small. Convenience augmented utility and accelerated adoption of the vehicle.

A distinction may be drawn between necessity and pleasure travel. The automobile has many uses in connection with the former and it fosters the latter. The short trip, the vacation tour, the after dinner ride, the Sunday picnic are forms of pleasure travel stimulated by the motor car. In addition, there are many uses for the automobile in the day’s routine. Imperceptibly, car ownership has created an “automobile psychology”; the automobile has become a dominant influence in the life of the individual and he, in a real sense, has become dependent upon it.

The annual passenger automobile mileage in the country can only be stated as an estimate. Such an estimate involves three factors: average annual car mileage, average number of passengers per car, and the proportion of all passenger cars registered in any year that are actually in use. For the first of these, the National Automobile Chamber of Commerce uses 7,000 miles. Balancing rural and urban differences, the American Electric Railway Association assumes an average load of 2.2 passengers per automobile. By calculation to allow for scrappage and non-use the private passenger cars in operation in 1930 may be stated as 21,554,500. The total passenger miles for 1930, obtained as the product of the three

\textsuperscript{18} Cf. the monograph, section IV.
factors, is approximately 332,000,000,000. No attempt is made here to obtain a comparable figure for earlier years.

What this figure signifies is more clearly indicated when it is stated that the per capita passenger mileage in passenger automobiles in 1930 was 2,697 miles. In the same year the per capita mileage on all steam railroads was 218.3, a decline of 227.8 from the peak of 446.1 in 1919. Comparison of these figures lends additional support to the conclusion that it is from the competition of the private automobile that the passenger business of the railroads has suffered most. While the comparison is admittedly unfair (since the automobile is used in numerous ways for which the railroad offered no corresponding service) there is here some ground for belief that the lost short haul passenger traffic of the rail carriers has been assumed by the private passenger automobile. Some may have been shifted to commercial buses, but if every passenger carried by bus in 1930 had been carried by the railroads instead, it would have increased the per capita passenger mileage figure of the latter by only 57.5 miles, and brought this to but slightly more than three-fifths of the 1919 figure.

Although these figures indicate the mobility of the population, in themselves they give no clue to the characteristics of the travel that is involved. Data pertaining to highway travel are fragmentary, and are derived chiefly from separate highway surveys, the most important of which, as far as non-urban traffic is concerned, have been conducted by the Bureau of Public Roads in conjunction with state highway departments. The data of these studies, except for the recent western survey, are grouped, in general, according to the same plan. Four major criteria of classification are employed, each with two dichotomous categories: Registration, "local" or "foreign"; Type of Trip, "touring" or "non-touring"; Type of Usage, "business" or "non-business"; and Situs of Ownership, "farm" or "non-farm." The data indicate that while the average number of passengers per car varies from state to state, it is consistently higher in some categories than others. Foreign (out of state) cars carry more passengers than local.

The method here employed is that of Hawley S. Simpson, Research Engineer, American Street Railway Association. For a detailed explanation of the various estimates involved in this figure, see section V of the monograph.

Cf. the monograph, section V.


For definitions of these categories see the monograph, Table 17.
tours and foreign passenger cars from to passengers. Presumably cars on city streets would show fewer passengers in general than were found in these surveys on open highways.

In three of the surveys (New Hampshire, Vermont, Ohio) data on the length of trip was obtained. The cars in which a higher ratio of passengers prevails, as indicated in the preceding paragraph, have consistently higher trip mileage. Considering the trip as the distance from point of departure to destination, trip mileages of foreign cars averaged from four to nine times that of local cars and the trip mileages of touring cars were from five and one-half to fifteen times those of non-touring cars. Business cars averaged consistently less than non-business cars in trip length. In the study of the eleven western states made in 1930 the daily mileage of passenger cars was recorded. In all of the states, the average travel of foreign cars exceeded that of local cars, although differences between them were not as great as the trip figures of cars in the surveys made in eastern states. Differences in the areas of the states, western as compared with eastern, presumably account for this fact. The western study also showed that city owned passenger cars tend to travel longer distances (as measured by average daily mileage) than village owned cars, and these latter in turn exceed the daily average mileage of farm owned vehicles.

The frequency of out of state cars on the highways leads naturally to the tendency to think of the automobile in terms of extended mileage. "Long" and "short" are relative terms and long trips of one generation may be short to another. The automobile has done much to revise conceptions of distance, but at the same time it has probably led to misconceptions concerning range of mobility. In the five states covered by the surveys cited, from one-third to one-half of all automobiles were on trips of less than 20 miles, from one-half to two-thirds were on trips of less than 50 miles, and distances of 100 miles were not reached by from three-fifths to nine-tenths of the machines. In Vermont, 42 percent of cars bearing Vermont plates were travelling less than ten miles. Were city data included the average trip mileage would presumably be much reduced.23 In the western states, where distances in general are greater, "travel of less than 100 miles a day clearly predominates." Considering the states as a group, about 38 percent of all local cars were traveling between 20 and 70 miles a day, and about 50 percent, less than 100 miles.

Some Implications.—There are important implications to all this, both practical and theoretical. Practically, the increased mobility made possible by widespread automobile ownership creates problems associated with

23 Detailed analysis on these points, with statistical tabulations based on the surveys cited, is contained in the monograph, section V.
chronic migration. The "gypsy family" has become familiar to every social welfare organization. Ease of movement induces a readiness to shift residence on various provocations. "Transient families" complicate the work of the school systems. While these problems do not concern the vast majority of the population, the numbers that are involved cannot be overlooked. Theoretically, automobile ownership raises the question of the influence of the concomitant mobility upon the standardization of social habits. With increasing contacts with individuals at distant points localisms may be lessened. It is clear from the foregoing data that longer trips are now made more frequently than ever before by a larger proportion of the population. But at the same time there is also a strong presumption from the data that contacts within local areas have also multiplied and out of proportion to those at a distance. Herein lies the possibility of an intensification of localisms. The problem is how to appraise the effects of these opposing tendencies.

Electric Railways.—The preeminence of the steam railroads at the outset of the century had its counterpart in the electric lines, as far as local, suburban and short interurban transportation was concerned. By providing a type of service not afforded by the steam roads they facilitated the expansion of cities, met the needs of local necessity travel, and also afforded a cheap and convenient means of pleasure travel, a function that has all but disappeared. Like the railroads, they have undergone changes attributable to the rapid rise of the automobile.

The diffusion of the automobile has not affected all types of electric lines alike. Changes occurring in necessity travel on electric railways are related to community size. In the largest cities, where distances are great and street traffic dense, elevated, subway and other rapid transit systems have developed and their patronage has increased. In large cities, too, where traffic makes the driving of private cars more difficult, street surface lines have tended to maintain their position. It is conspicuously in smaller communities that electric lines have lost patrons to the private automobile and will probably continue to do so. The effects have also been marked on interurban lines.²⁴

Electric Railway Traffic.—The maximum traffic for electric lines as a whole was attained in or about 1922, whether the measure be number of passengers, revenue trips per inhabitant, or revenue trips per urban inhabitant. By 1927 it was clear that a decline had set in and estimates of the American Electric Railway Association for subsequent years indicate its continuation.²⁵ In 1922, 15,331,000,000 passengers rode in electric

²⁴ It is difficult to establish these points directly, but a detailed analysis in section II of the monograph leaves little doubt concerning them.
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vehicles and about 40 millions more in buses operated by electric railway companies. The aggregate number of passengers per capita was 139.3. In 1927, 14,901,000,000 passengers travelled in electric cars and 991,000,-000 in affiliated buses; the aggregate passengers per capita had dropped to 133.2. For 1930, the Association estimates the respective numbers as 13,197,000,000 and 1,308,000,000; the per capita figure had shrunk to 117.8. Further declines were evident in 1931.

It is clear that traffic has been lost by the electric railway companies and that in addition passengers who formerly rode in electric cars are now riding in buses. Since electric railway companies have been increasingly acquiring bus subsidiaries\(^{26}\) it is unlikely that their traffic losses have appeared as gains by buses not affiliated with the industry and whose traffic is not included in the foregoing figures. On the other hand, increase in private automobile registrations, plus the fact that urban traffic surveys indicate increasing congestion by private automobiles at central points, make it a safe conclusion that private passenger motor vehicles have been the outstanding cause of electric line traffic losses.

The figures of electric railway traffic losses clearly indicate a shift in social habits. In seeking an explanation, the element of personal control is once more apparent. With the private automobile there are no schedules, the car is at the door and the convenience is great. With ownership of an automobile comes a readiness to use it wherever it is possible and convenient.

*Integrative Tendencies.*—The attempts of street railway companies to meet changing conditions have resulted in extensive coordination of bus and electric vehicle services, and, in some cities, taxicab operations also. Within the industry is a clear recognition that the public seeks transportation, and to the extent that it resorts to commercial operators, what vehicles are employed is secondary. The trend is toward coordination of the local transportation systems. It is possible that their traffic has nearly reached the point of stabilization; street congestion beyond a certain point even in small communities makes the operation of the private automobile increasingly undesirable and difficult. Already there is evidence of more rigorous restriction on the use and parking of private cars in urban areas. Within the disease that has afflicted the electric lines may be contained the germ of their recovery.

*Water Transportation.*—Waterways once served as main arteries of domestic communication, antedating the railroads, while sailing vessels mitigated national isolation. In recent years passenger transportation by water has been affected by one or another of four sets of conditions, with modifications that have differed accordingly. (1) Where forced to compete directly with railroads or automobiles for necessity traffic water carriers

\(^{26}\text{See above, pp. 174–175.}\)
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have rapidly lost ground. Thus new bridges or tunnels have eliminated many ferry services. (2) Where water transit has a natural monopoly, as from the mainland to an island, traffic has kept pace with the normal social and economic development of the populations concerned. Air transportation, in some situations of this type, is becoming a competitive threat. (3) Water vehicles may supplement the employment of other transportation agencies and reflect the latter’s growth. Ferry traffic across Lake Michigan, for example, has increased with automobile travel. (4) Where water carriers can offer a pleasure inducement, either by itself or in conjunction with necessity travel, they may maintain themselves in the face of competition.

Changes in water borne passenger traffic reflect variations in one or more of these type situations, singly or combined. Data concerning total traffic, however, cannot be analyzed with respect to these situations. Moreover, totals supplied by the War Department do not segregate passengers by type of travel, with the result that a ferry passenger from New York to Jersey City cannot be discriminated from a transoceanic voyager. The total water borne passengers thus reported numbered 286,199,000 in 1920, 546,573,000 in 1929 and 388,937,000 in 1930. The much larger volume of traffic on the Atlantic Coast doubled between these years, while Pacific Coast traffic showed little variation. Port traffic is far greater than river traffic, but the latter showed greater increase between the two years. However, it is obvious that changes in highway routes and ferry services, construction of bridges and vehicular tunnels, all producing diversions and rerouting of land vehicles, would affect the totals greatly; and the extreme irregularity of the figures for years intervening between 1929 and 1929 seems largely attributable to such factors. While the general picture is one of growth, the unevenness of the total series and the heterogeneity of its constituent parts, makes any confident consideration of trend virtually impossible.

When the data of total water traffic are compared with foreign water borne traffic, thereby eliminating ferry services, Great Lakes, coastwise and other short haul trips, it is readily seen that the bulk of the traffic discussed in the preceding paragraph is in the short haul service. In 1929 less than one-half of one percent of the traffic reported by the War Department was reflected in the compilations of the United States Shipping Board, which records all foreign traffic and non-contiguous and intercoastal domestic traffic. Shipping Board data may be said to reflect

27 U. S. Department of War, “Commercial Statistics: Water-Borne Commerce of the United States for Calendar Year 1929,” Ibid. 1930, in Annual Report of the Chief of Engineers, 1930, 1931. The 1929 decline in water borne traffic was reflected in all divisions and types, with one inconsequential exception—interior rivers not tributary to the ocean or Gulf of Mexico.

28 (cf. the monograph, Table 26, and passim.)
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the long haul traffic. These data show an annual increase in the number of passengers to foreign countries between the fiscal years 1925 and 1930. They likewise show a consistent increase in intercoastal travel except in 1926.

A survey of water borne passenger agencies suggests that the functions of the water carriers have become far more sharply delimited than have the functions of the land carriers. When natural monopoly disappears, the water carrier will normally lose traffic. Where water carriers can supplement new competitors, they may show increase in traffic, and where they can offer a "pleasure" inducement, they will presumably maintain their position. It may also be expected that the stimulation to travel for travel's sake, engendered by the automobile, will be reflected in some increases in travel of this type on the water. This is to be considered in the section on touring and travel.

Air Transportation. Since the World War the airplane has become a recognized passenger carrier whose services must be considered in relation to other transportation agencies, especially the railroad. Civil aeronautics (which excludes military and naval operations) is of two types: (1) scheduled air transportation; (2) miscellaneous flying which covers a variety of services and does not involve fixed schedules and defined routes. While forms of the second developed somewhat earlier, the first is obviously of greater significance in the development of communication. Comparable data concerning a variety of operations and services related to civil aeronautics have been compiled by the United States Department of Commerce for each year, 1926 to 1931.

In 1926 scheduled air service was at its beginning. The eighteen airway services in operation that year over 3,715 miles of passenger route had grown in 1931 to 126 services, covering 45,704 miles. The increase in route mileage was more than ten-fold and included foreign as well as domestic extensions. The daily average miles flown increased more than ten-fold, from less than 12,000 to 129,825. More significant than facilities is growth in utilization as shown by the number of passengers. Only 5,782 in 1926, these numbered 417,505 in 1930 and 522,345 in 1931.

It must be kept in mind that these figures are inconsiderable when compared with the total rail passengers in the same years. The rapidity of growth in air travel is significant for what it may forecast. In 1930 the average air passenger per scheduled air service travelled 248.4 miles, in

29 U. S. Shipping Board, Bureau of Research, Report B. R., No. 157 (annual); summarized in the monograph, Table 27.
30 See also Chap. III.
31 These data have been assembled by the Aeronautics Branch and are published in Air Commerce Bulletin, vol. 3, pp. 558-561, 1932. They form the basis of the discussion in this section, and of the summary compilations which are presented in Tables 31, 32 and 33 of the monograph. The development of air mail service will be discussed in section II of this chapter.
RECENT SOCIAL TRENDS

cannot to 75.9 miles per passenger per road for non-commutation riders on steam railroads. It has already been shown that railroad traffic losses have been proportionately more heavy in short hauls, where competition with motor vehicles has been most severe. If air travel continues to grow, as seems likely, it will increasingly become competitive with the railroads for the long haul business.

Passengers carried in miscellaneous flying in 1930 still greatly exceeded the number carried on scheduled routes although the increase from the previous year was slight. Moreover, the excess would appear less, or disappear, if passenger miles in both services could be compared. Miscellaneous flying has attracted many passengers because of the novelty, and short flights predominate. As established routes become more general the novelty appeal will be lessened or will be satisfied on scheduled trips.

Two major factors influence public attitudes toward travel by air: cost and safety. The average passenger fare per air line mile decreased from $0.12 a mile in 1926 to $0.083 in 1930 and $0.0674 in 1931. While costs have dropped, rail or bus travel is still cheaper for the mass of the population, although speed may be a factor in making air travel more economical for some.

The safety factor is best measured in terms of passenger-miles flown per fatal accident. For scheduled transport planes in 1930 (the first year for which data are available) the figure was 4,322,802; in 1931 it was 4,770,876. No comparable figure for miscellaneous flights exists. If the gauge of safety used is “miles flown per fatal accident” (which does not distinguish passengers and operators) Department of Commerce data indicate a steady improvement in safety on scheduled air lines but little if any improvement in miscellaneous flying. In 1930, the last year for which figures are available, one railroad passenger was killed for every 311,647,390 passenger-miles travelled, which, when compared with the scheduled flight figure for 1930, indicates that the risk of fatal accident that year was about 72 times greater on the air routes than on the railroads. In view of the more favorable 1931 air fatality figures, the disparity has presumably been lessened. Data for a similar comparison between air passenger safety and motor vehicle passenger safety are unavailable, but would probably appear less unfavorable to the air carriers.

During the past five years there has been continuous expansion and development of the airways network. The number of landing fields has grown; many intermediate landing fields for emergency use have been established; the lighting of routes has been extended widely; and various safety aids, such as radio communication stations, weather reporting stations, etc. have been developed. The expansion of aviation is further indicated by the steady increase in the number of states with regulatory aeronautical legislation.
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The growth of commercial aviation brings administrative and legislative problems, \(^32\) and as routes become international introduces new health problems. The speed of air vehicles so reduces the time of journeys that the period of incubation for certain diseases, exceeded by the elapsed time of travel by land or water, is not exceeded by the time of an air journey. Forced landings, also, might make difficult the control of diseases with existing organization for health protection. \(^33\)

The Integration of Transportation Agencies.—The preceding pages sketch in broad outline the changes that have been occurring to specific transportation agencies within the present century. Although discussed separately the various agencies in reality are closely interwoven, and factors that influence one agency ramify to them all. The appearance of each new agency modifies older ones. Relationships develop that may be said to constitute a moving equilibrium.

The coming of the automobile dominates the three decades since 1900. The steam railways and the electric lines especially have felt the impact of its influences. With a widespread car ownership the individual naturally turns to his own vehicle when the need for travel arises. Furthermore, in his pleasure travel involving longer trips as at vacation times, he resorts to his own car. With it comes a freedom that was denied him when there was dependence upon commercial carriers operating on fixed schedules. A widespread and significant shift in social habits is correlated with the growth in numbers of motor cars. The full effect of the newest agency, the airplane, is not yet apparent. If and when private ownership of air vehicles develops, it is certain that adjustments in human habits will be required that are as far reaching as those necessitated by the automobile.

These adjustments in the past have been two-fold: (1) commercial organizations controlling one or another of the agencies compete with each other—as rail lines with bus companies; (2) the commercial carriers together confront the private individual operating his own vehicle. Such have been the conflicts in the past and presumably they will take these forms in the future. If a quarter century of change can be simply characterized on the basis of the data here presented, it would be by saying that the passing years have given the private individual greater control over his freedom of movement and lessened his dependence upon commercial transportation.

It does not follow that commercial transportation agencies have lost their functions as passenger carriers. Each possesses unique advantages; but readjustment to changing conditions has been slow in the case of the older systems. Integration of services is a clear requirement of survival or growth, and tendencies in this direction, already apparent, may be

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\(^32\) See Chap. XXVIII.

\(^33\) This was discussed at the annual conference of the British Medical Association in 1931. Cf. London Telegraph, July 24, 1931.
expected to continue. Railroads are joining their services with air transport; electric lines are developing bus subsidiaries or auxiliary services; motor vehicles take the place of abandoned rail lines; trolley companies operate taxicabs; railways provide passenger automobiles at their terminals. In some instances such coordination involves merging of functions under one corporate control; in others separate corporate groups agree upon coordination. These points are of no concern to the individual citizen except as questions of rate and service intrude, for his need is transportation service, by rail, water, bus or air, as occasion may demand. It is not unlikely that two types of systems will eventually emerge: local transportation systems and long distance transportation systems. The functions may overlap in part but the integration of the various agencies within each will probably exceed that of today. Whether this tendency toward integration and coordination should be consciously furthered, and how, if at all, it should be controlled are problems again suggested.

Touring and Travel.—The American people have become remarkably mobile. The automobile has fostered a widespread travel psychology. Spontaneity and universality distinguish contemporary from earlier travel. The popular expression “hop in” has more than surface meaning; it typifies a state of mind. Travel for necessity and travel for the sake of travel (pleasure travel) alike are involved in the enhanced mobility. The trip of a few hours’ duration (the drive) and the longer pleasure trip (touring) have become accepted parts of modern life. It is the general extension of the touring habit that is particularly impressive.34

Data on touring are fragmentary but the extent to which it has grown is reflected by numerous indexes. Immigration authorities record automobiles entering Canada. In 1919, 59,105 permits for stays of 2 to 30 days were issued; in 1930 the number was 1,297,030, and each intervening year showed gain. One-day permits increased consistently from 1,515,035 in 1925 to 4,110,000 in 193035 for reasons which will be variously interpreted. The Dominion Bureau of Statistics estimates the average number of passengers per car as slightly over three. There has also been a consistent increase in numbers of cars classified “for touring purposes” entering the United States from Canada. There were 100,810 in 1922, and 746,924 in 1930. The number of tourists crossing the border in either direction by rail or steamer, as estimated by the Bureau, in recent years remains relatively unchanged.

Checks on traffic at bridges and at state boundaries have also indicated rapid increase in touring by automobile. In recording annually all visitors to Yellowstone National Park, the National Park Service distinguishes

34 See also Chap. XVIII.
35 Canada, Department of Trade and Commerce, Dominion Bureau of Statistics. “The Tourist Trade in Canada,” Annual (mimeographed). See also the monograph, Table 20.
rail and motor arrivals and the states in which the traffic originated. From 1922 until 1930 there was an annual increase in the number of visitors. In the earlier year 33.7 percent entered by rail; in 1930, only 11.4 percent. When the visitors are classified by state of origin, the earlier conclusion is substantiated that rails have suffered most in short haul traffic. For while the ratio of automobile arrivals has increased substantially for every geographic division, the increase has been relatively more rapid from divisions in closer proximity to the park. Conversely, rail traffic to the park has tended to maintain itself in direct proportion to the distance of travel.36

A survey of highway traffic in eleven western states in 1930 also showed extensive use of the highways of given states by passenger vehicles from other states. The check on the home registration of these foreign cars gives added evidence of a widespread touring habit. In Arizona, to illustrate, 19.9 percent of all foreign cars observed on the highways during the survey came from states east of the Mississippi, and 16.4 percent were from the northeastern states. In other states, the percentage of all foreign cars coming from east of the Mississippi also was high: California, 25.2 percent; Colorado, 20.4 percent; Idaho, 9.3 percent; Nebraska, 20.1 percent; Nevada, 10.5 per cent; New Mexico, 15.0; Oregon, 5.1 percent; Utah, 13.8 percent; Washington, 6.9 percent; and Wyoming, 20.0 percent.37

New Travel Institutions.—The increase in automobile travel has stimulated communities to attempt the attraction of visitors through advertising campaigns. The tourist "business" has swelled. This is reflected in the growth of the tourist camp and lodging. These developed largely without plan and the types have shifted with changing needs. To attract tourists, free camping grounds seem first to have been offered, often by municipalities. Minor conveniences were sometimes included. If privately operated, profits came through the sale of incidental services or goods. Pay camping grounds with more elaborate facilities developed naturally and the municipal type of camping ground began to lose popularity. Next came cabin and cottage camps which sprang up with surprising rapidity. These vary in comfort, accommodations and price, and, in some cases, purport to offer the equivalent of first class hotel facilities.38 The popularity of the roadside camp is indicative of its adaptation to the new type of travel. The traveller's costs are low, traffic congestion is avoided, frequently there are attractive rural settings and above all the patron feels none of the embarrassment that he thinks might

36 The analysis leading to these conclusions is presented in detail in the monograph, section VI.
come with entrance into an urban hotel in the clothes of the road. The camps are definitely a part of the "tourist psychology."

The "tourist home" or lodging, like the camp, has become popular; their number is undetermined. So ingrained in popular habits has the use of the automobile become that the appearance of the camp, the private tourist lodging and the refreshment stand lining the roadsides of the nation evinces but little comment. However, the growth of these new institutions has led to agitation in some states for their rigid inspection and control partly on health grounds but also for moral reasons.

In the development of "tourist accommodations" is an example of the ramifying influences of the motor vehicle, for through them the automobile has touched the hotel industry, a business which it might have been expected to benefit. Although it is by no means certain that the hotel has suffered declines in patronage because of these new institutions, there is considerable feeling within the hotel industry that it has. Between 1920 and 1929 the number of hotels in the country increased; the number of rooms increased still more rapidly. The ratio of guests to total population sagged, however, and was restored to the 1920 level only in 1929. This comparison is not altogether fair since it is probable that potential hotel patronage does not increase with the same rapidity as the population at large. However, even gross patronage has not shown a clear upward trend and declines between 1929 and 1932 have probably been sharp.

Hotel men assert that extensive modifications of the hotel have resulted from the increase in travel by women which has been induced by the automobile. Private bath facilities have become general, menus have been modified and room furnishings transformed. More adequate hotel facilities have been extended into smaller communities where patrons arrive increasingly by motor vehicle.

**Mass Travel: Conventions.**—Travel thus far considered has been essentially individual. It is sometimes a mass phenomenon as on a railroad excursion; or many may travel independently to an agreed destination. The convention is typical of the latter and is peculiarly associated with life in the United States. It has both social and business functions. Tabulations from *World Convention Dates* show that the total numbers of conventions in this country in 1920, 1925 and 1930 were, respectively, 4,192, 6,291 and 8,501. The geographical distribution of conventions in 1930 was uneven; New York and Ohio led the states, with Nevada, Delaware and New Mexico last. The last decade (1920–1930) has seen the greatest increase in regional and interstate conventions (as contrasted with international, national, state and local) and as a factor influencing

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40 The hotel is discussed in detail in the monograph, section VI.
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integration and social organization this may be of considerable significance. In general, larger cities seem to be gaining favor as convention centers, which may reflect the need for adequate hotel facilities and the extent to which the convention has assumed social importance.41

The significance of the convention lies in its possibilities for an interchange of ideas among those of similar interests. To the extent that it draws people from distant points it is a factor contributing to cultural levelling; to the extent that it draws narrow audiences it may intensify regionalisms, localisms and class or professional characteristics.

Overseas Travel.—Pleasure travel by rail and water, whether at home or abroad, is not a new phenomenon. The habit of domestic touring by automobile, however, seems partly responsible for extending the interest in foreign journeys especially among those to whom travel of any kind was formerly a wide departure from routine. It is not possible to segregate pleasure and business motives in overseas passenger traffic but if account is taken only of departures of citizens from the country there is a presumption that pleasure travel is chiefly involved.

Foreign travel was sharply curtailed by the war. The post-war recovery is striking particularly because of the type of traveller it involves. The rise of “tourist” and “tourist third” classes on ocean vessels has made it possible for large numbers of Americans of the middle and lower middle economic groups to visit other continents, notably Europe. In 1930, 32.8 percent of all citizens leaving north Atlantic ports were booked in these new classes; 10.9 percent travelled second class; cabin passengers constituted 33.4 percent; and the remainder (22.9 percent) occupied first class accommodations.42 Figures for early years are not available but it is certain that there has been decided loss in popularity of second class, which has consequently been abandoned for the newer type of quarters on many transatlantic lines.

Departures of American citizens for overseas destinations are mainly from Atlantic ports: In 1920 these numbered 137,601 of a total of 167,602 departures. Pacific port departures, next most numerous, were only 14,201. In 1930 Atlantic departures had increased almost consistently to 404,390 and Pacific port departures had risen to 22,829. Both showed declines in 1931, the former to 392,909 and the latter to 20,878. The total overseas departures of citizens in 1930 numbered 445,48543 and 429,219 in 1931. The itineraries of passengers are not known, but in 1930 immediate destinations, as recorded by the Bureau of Immigration,

41 Detailed statistical analysis of the distribution of conventions is given in the monograph, section VI.
42 Supplied from unpublished data by U. S. Bureau of Immigration.
showed 58.8 percent as European and Mediterranean. Next came the West Indies (28.0 percent).

This European drift of American travellers is probably not without influence upon American attitudes and ideas. The effects, however, must be felt unevenly in the country, since passport data, supplied by the Department of State, show wide variation among the geographic divisions in the number of passports issued. In 1929, one passport was issued for every 248 persons in the middle Atlantic states, while in the east south central states there was one for every 5,067 persons. For continental United States in 1929 one passport was issued for every 623 people. In general, the relative number of passports secured in any section is inversely proportionate to the distance from the Atlantic and Pacific seabords with the former somewhat more highly weighted.\(^4\)

The Influence of Travel.—The influence upon the population of increased mobility, as it involves either domestic or foreign travel, is problematical. The common assumption is that multiplication of contacts at a distance has a “broadening” effect. Yet it is open to question whether, mile for mile, or hour for hour, automobile touring or other domestic travel results in exchanges of attitudes and ideas with other persons equivalent in importance to exchanges effected in the shorter trips within a more narrowly circumscribed local community. Data on highway utilization lead to the tentative conclusion that local contacts have increased more rapidly than those at a distance. This may result in an intensification of localisms outweighing the modifications of attitude resulting from less frequent contacts at distant points. The facts thus far introduced do not permit an answer, although they raise a problem involving the location of balance between the contacts that the agencies of communication bring about.

Nor is it possible to evaluate confidently the effects upon the traveller, or upon those whom he meets, of overseas travel. It is possible that Americans abroad engender impressions among Europeans quite different from those engendered among Americans by European travellers in this country. Americans at home may encounter European immigrants and upper class travellers but they do not usually encounter the European middle class. American travellers abroad are more and more drawn from the middle class which may consequently serve increasingly as the basis of popular European opinions of Americans. The problem is thus far more subtle than is sometimes assumed.

One certainty remains. The tempo of life has accelerated in consequence of the application of machinery to man’s tasks. The newer agencies of communication have transformed popular habits and conceptions of speed and distance. With the increase in speed at which man may

\(^4\) Detailed analysis is included in the monograph, section VII.

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travel has come the sense of lessened distance. The continent has been spanned between dawn and dusk, and by other agencies personal contacts between the Atlantic and Pacific seaboards are established within intervals measured in minutes.

It is to some of these other agencies for furthering contact, but not involving presence face to face, that attention is now turned.

II. THE AGENCIES OF POINT TO POINT COMMUNICATION

Section I traced the development and integration of the vast transportation network whereby communities are joined, the physical mobility of the population is enhanced and social contacts are multiplied. In section II mediating agencies for the interchange of messages from person to person or from point to point will be considered. Their multiplication enables individuals to maintain contacts within constantly widening areas. Of primary importance are the postal service, the telegraph, cable and wireless and the telephone.

The Postal Service.—For over a century the postal service has been expanding its functions. Both its structure and its utilization have grown enormously, as indicated roughly by an increase in per capita gross revenue from $0.17 in 1846 to $5.29 in 1931.45

Growth of the Postal Structure.—Before the development of city carrier service and the establishment of rural free delivery, the number of post offices in the country constituted the best measure of postal “coverage.” From 1789 until 1901, when the maximum of 76,945 was reached, there was an almost regular annual increase in their number. Between 1901 and 1930 Presidential offices46 continued to increase, multiplying nearly fourfold. The total of Presidential offices on July 1, 1931, was 15,495, which is less than in 1930. The total number of offices of all classes, however, declined regularly; there were 49,063 in the latter year. This decrease involves no curtailment of service but reflects the discontinuance of many Fourth Class offices whose functions have been assumed by rural

45 U. S. Post Office Department, Annual Report of the Postmaster General, for fiscal year ended June 30, 1930, Table 58, pp. 150–151. All data in the present section are for fiscal years ending June 30. For 1931 the per capita gross revenue fell to $5.29, the lowest figure since 1925. Cf., Annual Report of the Postmaster General, op. cit., for 1931, Table 63, p. 153.

46 Post offices are distinguished by class according to annual gross revenues, and reassignments are made as of July 1, each year. Postmasters of all offices with gross revenues exceeding $1,500 (Classes I, II and III) are appointed by the President with the consent of the Senate. Fourth Class postmasters are appointed by the Postmaster General. The data cited above are from compilations made with the assistance of A. W. Watts, Cost Ascertainment Superintendent, United States Post Office Department. Discrepancies found in published reports have been adjusted on the basis of original data and preponderance of evidence. For detailed tabulation of Post Offices, 1900–1930 inclusive, by classes, see the monograph, Table 34.
carriers. Their elimination indicates the degree to which postal services have actually been brought to the doors of a continuously larger portion of the population.

Expansion of postal facilities found early expression in the inauguration of city delivery service (1863) and this was an important step in expediting the transmission of the written message. As the service grew, an increasingly smaller proportion of the population needed to go to the post office for the receipt of mail; the post office came to the citizen. In 1865 there was delivery service in 45 cities; in 1900, in 796; in 1920, in 2,086; and in 1931, in 3,098. This growth is clearly much faster than urbanization in the United States.

Rural free delivery (1896) represents another aspect of the progressive permeation of the homes of the nation by the postal structure. It was, moreover, a wedge that contributed to the breakdown of rural isolation, still later furthered by highway improvements, motor vehicles, telephones and radio. In 1931, 6,890,687 families had rural carrier service.

The maximum number of rural routes was reached in 1926 (45,318) but neither the total number of routes nor the number of carriers is a desirable index of the service because of the recent tendency to combine and lengthen routes, fostered by the use of motor vehicles. Total mileage, which increased regularly from 29,000 miles in 1900 to 1,354,759 in 1931, serves better to show the growth. The average length of route has grown slowly from 26.51 miles in 1920 to 31.94 in 1931, which is not as much as might be anticipated in an age of automobiles.

Utilization of Postal Facilities.—So varied are the functions and so numerous the types of material handled, that a complete description of the utilization of postal facilities would be difficult and laborious. Postal matter in any of the four established classes involves mediated contact, but attention will be limited here to the more personal transmissions represented by first class mail matter. This includes letters, sealed parcels, governmental postal cards and private mailing (post) cards. Regularly since 1926, and earlier in 1923 and 1908, the Post Office Department has conducted systematic sample checks on the mail matter handled, whereby it is able to estimate with considerable accuracy the annual volume and the detailed character of the postal business. Because data for a suffi-

47 Details of the growth are shown in the monograph, Table 35.
48 Testimony on this point is contained in letters written to the Postmaster General, published in U. S. Post Office Department, Annual Report of the Postmaster General, 1897.
49 Data pertaining to rural free and city delivery service from “Postal Statistics of the United States—from 1789 to 1930, by Fiscal Years,” Post Office Department, Third Assistant Postmaster General, 1931 (printed tabular sheet); and Annual Report of the Postmaster General, op. cit. Cf. the monograph, section X.
50 Some materials, such as franked matter, are handled as first class mail, but since they do not produce revenue they are not included in the totals which follow, except as indicated.
ciently long period of time are wanting, it is not possible to speak confidently of trends.\textsuperscript{51}

In general, the data reveal increasing frequency of contacts between individuals. Both total and per capita volume of first class mail showed substantial increases between 1908 and 1930. In the former year 7,103,-000,000 pieces were handled, or 80.5 per capita; in the latter, 16,901,000,-000 pieces, or 137.9 per capita. In 1931 the number of pieces handled declined to 15,912,000,000 or 128.7 per capita. This undoubtedly reflects an increase in use of the mails for business purposes. The slight decline in 1930 from 1929 volume and the much sharper decline in 1931 indicate, presumably, the sensitivity of the postal business to economic conditions.

The average individual in 1930 received 41.1 \textit{local} letters and 83.6 \textit{non-local} letters and sealed packages.\textsuperscript{52} In 1923 he received but 26.7 local letters. An increasing frequency of local contacts by mail is clear. It is impossible to show the changes in number of non-local letters and sealed packages in the same period, but from 1927 onward their number per capita has remained practically constant. When all of the available data are examined together in detail there is reason to conclude that the growth of local mail has been proportionately somewhat greater than the growth of non-local.\textsuperscript{53} Further, analysis shows that in general between 1907 and 1923 the smaller American communities, irrespective of growth in population (holding size constant), increased their ratio of local first class mail within the total, by weight, at a relatively more rapid rate than did the larger communities. One explanation of this result may be found in the expansion of rural deliveries, which may have augmented disproportionately the volume of local mail in the smaller communities. These data, however, should be considered in conjunction with the earlier hypothesis that automobile ownership, while extending contacts, has simultaneously

\textsuperscript{51} In the following discussion data for 1908 from U. S. Post Office Department, \textit{Cost of Transporting and Handling the Several Classes of Mail Matter and of Conducting the Registry, Money Order, and Special Delivery Services}, 1910. Data for 1923 from \textit{Cost of Handling Mail Matter}, Sen. Doc. 162, 68th Cong., 2d Sess., and U. S. Post Office Department, \textit{Appendix to Report on the Cost of Handling the Several Classes of Mail Matter and of Conducting the Special Services for the Fiscal Year 1923} (photolithograph), 1924. Data for 1926–1931, inclusive, from U. S. Post Office Department: \textit{Cost Ascertainment Report} (annual) and \textit{Appendix to Cost Ascertainment Report} (photolithograph—annual). For fuller treatment, and tabular material, see the monograph, section X.

\textsuperscript{52} In the \textit{Cost Ascertainment Report}, \textit{op. cit.}, the number of sealed packages is combined with "non-local letters." In 1931 the number of local letters per capita dropped to 31.5, whereas non-local letters and sealed packages per capita numbered 84.2. The general decline in 1931 in the volume of postal business as measured by number of pieces of first class mail handled reflects the general economic conditions. The analysis of the decline in terms of local and non-local first class mail makes clear that local mail is more sensitive than non-local. While data are not available to establish the point, it is probable that the drop in local first class mail is indicative of a decreasing use of local mail for business purposes, such as the sending of bills, etc.

\textsuperscript{53} For detailed analysis see the monograph, section X. It is possible to obtain a comparison between local and non-local mail for the isolated year 1907.
increased, at a more rapid rate, the frequency of contacts within the local area. Both the automobile and the mail, while exerting a "broadening" influence, may also serve to fortify local characteristics and local patterns of attitude or opinion which differ from those of other communities.

Figures of average haul indicate a moderate extension of the range of non-local postal contacts. The average distance travelled per piece (non-local domestic) increased from 507 miles in 1908 to 534 miles in 1927. The subsequent irregular decrease to 525 miles in 1930 and 520 in 1931 may be attributed to the "suburban trend" which makes for a larger number of non-local short hauls. Interesting differences in average haul are found when groups of cities and classes of offices are compared. These cannot be entirely explained on geographical grounds. They may reflect differences in breadth of cultural boundaries and may thus serve as partial indexes of insularity.

While postal facilities establish contacts between rural and non-rural areas, they are employed less by the rural than the general population. In 1930 of all first class domestic mail, only 9.2 percent, it is estimated, was delivered by rural carriers. For every piece of first class mail he sends, the farmer now receives three pieces, in contrast to 1.7 pieces in 1908. This reflects the increase in business mail directed to him for which he offers no originating counterpart. Congressional material (franked) has a relative volume in mail received on rural routes about double that in the mail of the general population.

Expediting the Mail.—No single figure summarizes the acceleration of the mails since 1900, although the interval between posting and delivery has been reduced. Postal tubes, mechanical cancelling devices, sorting of larger proportions in transit, increased frequency of collection and delivery and the use of motor vehicles have tended to expedite the mail service. Special delivery transactions have multiplied nearly twenty-fold in the period and typify a public demand for speed.

The inauguration of air mail service (1918) adds evidence of the attempt to accelerate transmission. On long hauls this has greatly reduced rail time. The development of air mail is closely correlated with the improvements in flying facilities, including lighting of routes, discussed in a previous section. Although dependability does not yet equal railway postal service there has been a general increase in volume of air mail, somewhat irregular because of changes in rates. When the five-cent rate was established in 1929 the volume tripled, and in 1931 the number of pieces of domestic origin was 91,893,934, of which 87,777,241 were for domestic destinations. Domestic air mail routes grew from 4,713 miles in

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54 For fuller discussion, with illustrative data, see the monograph, section X.
56 Cf. the monograph, section X.
1927 to 23,488 in 1931, and there have also been rapid extensions into foreign countries.\(^{57}\)

Two conspicuous trends stand out from a survey of postal data:

1. There has been a constant increase in accessibility to convenient mail facilities for a continuously increasing proportion of the population.

2. There has been a gain in the regularity, speed and frequency with which mail matter moves through the postal machinery from writer to person addressed.

**Telegraph, Cable and Wireless Services.**—At the outset of the century the postal and telegraph systems were the established agencies in point to point communication. In 1902 there were 237,990 miles of telegraph pole lines, which in 1927 had increased to only 256,809 miles, although the single miles of wire had grown more rapidly. The capacity of the wires had multiplied many times following the invention of mechanical devices for sending and receiving dots and dashes at high speed, of printing machines, and the development of multiplex systems so that a single wire could carry several messages simultaneously. Speed of transmission was approximately trebled. Reliability of service has been enhanced by the extension of land cables. Today interruptions of services are rare, regardless of weather conditions.

A corresponding growth in extent, reliability and speed of cable service is found. The first north Atlantic cable was laid in 1868. By 1900 there were 13, and by 1931, 21. The south Atlantic network had grown, drawing South America telegraphically closer to this country. The Pacific was first spanned in 1902, completing a cable circle around the world. Technical improvements have increased the carrying capacity of all of these lines. Since 1902 the United States has never been without cable contacts with the other continents; clearly the cable has been important in establishing national interdependency.\(^{58}\)

**Utilization of Telegraph and Cable.**—Telegraph and cable statistics employ the "message" as the unit of utilization. Data from the quinquen-

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\(^{57}\) For a detailed analysis of the increase in air mail services, see the monograph, Table 38. Air mail data supplied by office of Second Assistant Postmaster General, Division of Air Mail Service. The number of pieces of air mail, foreign and domestic, was first incorporated into the Cost Ascertainment Report in 1931. Prior to that date estimates of the number of pieces of air mail carried were obtained by multiplying the total poundage reported by various mail carrying lines by 40 (the estimated number of letters per pound). It was clear that this resulted in an excessive figure, because the total poundage was reported by individual lines, and thus included duplications, since a single piece might figure in the totals of several lines. Using the earlier method the total pieces carried in 1931 would be about 343,000,000 which far exceeds the 91,003,694 recorded in the Cost Ascertainment Report. Cf. United States Post Office Department, *Cost Ascertainment Report*, 1931, pp. 8, 12.

\(^{58}\) Help in the preparation of this section was given by John F. Skirrow, Vice President and Consulting Engineer of the Postal Telegraph-Cable Co. See also the monograph, section XI.
nial Census of Electrical Industries indicate that utilization of the telegraphic network has not kept pace with increase in facilities. Land messages in 1902 numbered 90,535,000, or 1.14 per capita; in 1927, the most recent census year, 215,595,000, or 1.81 per capita. Ocean cable messages increased from 820,000 in 1902 to 13,987,000 in 1927, a per capita increase from 0.01 to 0.12. Nor has the utilization of the land wire system increased as rapidly as that of the post office. In 1907 there were 71.9 pieces of first class mail for every land wire message and in 1927, 76.3 pieces. There is, however, reason to believe that the average length of telegraph messages has increased.

The telegraph has both commercial and personal uses and its utilization is probably more stable in connection with the former. The relative infrequency of the telegram, as compared with the receipt of a letter, or—as will be shown later—a telephone conversation, accounts for the importance attached to it. A crisis psychology has been involved in its use and its receipt. As telegraphic communication is popularized through stimulation of social and greeting messages and through reduced rate services, such as night letters, the attitudes may change, although an element of urgency and emphasis will presumably still be inherent.\(^{59}\)

The relatively rapid growth of cable messages implies an extension of international contacts. As the cable facilities are used for dissemination of news, they become important agencies in the development of public opinion, and its rapid crystallization.

*Wireless Communication.*—Since the first decade of the century wireless communication has expanded in importance, as measured by utilization. Its flexibility facilitates communication where it would otherwise be difficult or impossible. It has strikingly demonstrated its value in communication at sea. It has annihilated the isolation of the transoceanic voyage, and the modern liner has its daily newspaper and its broker’s office; social and business life may continue much as on shore. Under conditions where it has no competition, the wireless has produced its profoundest effects; where it competes with wire systems of communication, like the submarine cable, the chief effect claimed is a reduction in rates.

Growth in wireless messages transmitted by commercial companies of the United States follows: 1907, 154,617; 1912, 285,091; 1917, 420,000; 1922, 2,365,109; 1927, 3,777,538.\(^{60}\) Clearly the new agency is rapidly establishing itself and the eventual integration of its services with existing

\(^{59}\) Data pertaining to utilization of telegraph, cable and wire agencies from U. S. Bureau of the Census, *Census of Electrical Industries: Telegraphs*, quinquennially, 1909–1927, inclusive. For detailed analysis and limitations of the data, see the monograph, section XI, especially Table 39.

\(^{60}\) *Census of Electrical Industries: Telegraphs*, op. cit., 1927, pp. 24–26. The figure for 1917 is an estimate, made necessary because of government operation of the wireless systems during part of that year, for which period no record of commercial messages transmitted was kept.
land and oceanic cable facilities may be expected. The significance of wireless in point to point communication has been somewhat overshadowed in the public mind by the phenomenal rise of radio broadcasting. The entire range of radio frequencies from 10 to 60,000 kilocycles has been divided into "bands" of which only a relatively small number are devoted to broadcasting. Above and below the broadcasting bands are those utilized for non-broadcasting services. These services have multiplied strikingly and forecast tremendous possibilities for future communication.

Some hint of the extent of wireless is found in the number of stations, as compiled for fiscal years by the Radio Division of the Department of Commerce.61 Commercial transoceanic stations about doubled between 1928 (85) and 1930 (165), incidentally establishing direct communication between the United States and a number of countries where it was formerly wanting or dependent upon cables controlled in other countries. Potentially, wireless has brought a greater freedom of communication between the peoples of the world than ever before, and international contact accordingly assumes new forms.

Commercial ship to shore stations have also multiplied with results already mentioned. Stations employed in the navigation of commercial airplanes numbered 215 on June 30, 1930; there were only 8 such stations in 1928. Wireless and aviation are obviously associated. The number of amateur stations in the country has grown irregularly from 1,228 in 1913 to 18,994 in 1930 (fiscal years). Among amateurs informal telegraphic conversations all over the world are of daily occurrence.

Miscellaneous Telegraphing Services.—In addition to commercial transmission of messages, telegraph facilities have been adapted to various specialized needs. The telegraph has long been important in railroad dispatching, and the radio is now used to establish contacts with trains en route; ticker services are indispensable to the world of finance; prospectors and explorers utilize portable wireless sets; fire and police departments employ telegraphic signal systems and are now using wireless to maintain contact between mobile units and headquarters and to broadcast alarms; fire and burglar alarms employ wire circuits, and telegraphically operated clocks are widely used. These are only a few of many additional uses of telegraph and wireless.

The Telephone.—With the rapid expansion of economic activity in the present century, a corresponding expansion in utilization of telegraph facilities would normally have been expected. Yet it was shown in the preceding section that between 1902 and 1927 the per capita use of the telegraph increased by only 60 percent, which appears to be a relatively

61 Included in the monograph, Table 40. See also section XI for a more extended discussion of the allocation of radio bands. A chart of the radio spectrum is included in the Third Annual Report of the U. S. Federal Radio Commission, 1929.
RECENT SOCIAL TRENDS

small growth for so dynamic a period until it is remembered that the telephone had its development during these same years.

The Telephonic Network.—No single measure is adequate to describe the growth of the telephone network, for numbers of instruments (indicative of physical facilities), interconnection of instruments (indicative of efficiency in terms of potential contacts) and mechanical improvements (affecting ease, speed and certainty of contacts) must all be considered.82 Growth or improvement under any of these three headings will induce wider use of the agency.

In 1900 there were 1,355,911 telephones in the country.83 On December 31, 1930, there were 20,201,576. The total increased in every intervening year and the number per thousand population gained regularly by five year periods from 17.6 in 1900 to 163.6 in 1930. In 1931 the total declined to 19,600,187. Basic in telephonic intercourse is the Bell System, composed of the American Telephone and Telegraph Company and associated regional companies. In addition, the Bell System has working agreements for the mutual interchange of traffic with independently operated companies. Outside of this Bell System and these "Bell connected" lines is a constantly diminishing number of purely local telephone systems, for the most part rural lines.

Not only has the number of telephones included in the Bell System steadily increased until recently (855,911 in 1900; 15,682,059 in 1930; 15,389,994 in 1931); but the proportion of these within the nation’s total has increased concomitantly. The same statements may be made of the network composed of the aggregated Bell and Bell connected telephones. Independent, non-Bell connected telephones increased to a maximum of 2,879,578 in 1907. One-third of the telephone subscribers in that year were on these unconnected lines, and potential telephonic communication was to that extent limited. In 1931, only 93,849 subscribers, or 0.5 percent of the total, could not be reached by any subscriber within the Bell and Bell connected network. Thus people at nearly 20,000,000 stations, widely diffused among the homes and business places of the nation, are brought within "speaking distance" of each other.

Accompanying the ramification of the system and the absorption of non-connecting telephones have been important technical improvements that increased the range of telephonic conversation and improved the audibility. In 1915 it became possible to talk from coast to coast. Extensions of services, in terms of number of instruments, have proceeded

82 See discussion of special mechanical inventions in Chap. III.
83 Unless otherwise stated, data are from Annual Report of the Directors of the American Telephone and Telegraph Company, to the Stockholders, 1900–1930, inclusive; and Telephone and Telegraph Statistics of the World, issued annually by the American Telephone and Telegraph Co. For a detailed discussion of telephone statistics, see the monograph, section XII, especially Table 41.

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faster than the use of these facilities, in terms of number of calls. The estimated aggregate number of telephone calls in 1902 was 5,071,000,000, or 6.7 calls per telephone per day. In 1927, the aggregate number of originating calls was estimated as 29,196,000,000, or 5.4 calls per phone per day. For the Bell System the decline in originating calls per telephone per day has been from 7.0 in 1902 to 4.1 in 1927. Further, the growth in per capita calls per person per year, which increased from 64 in 1902 to 246 in 1930, has been at a rate somewhat slower than the growth in the number of telephones per thousand population.

These figures testify to the permeation of the nation by the new agency, and indicate its acceptance, not as a luxury or a desirable convenience, but as a necessity. The disadvantages of not having the telephone close at hand are so great that it is installed even where the total number of calls may be relatively few. The telephone directory has assumed importance as a city directory, and is useful in establishing contact. To be without a telephone or a telephone listing is to suffer a curious social isolation in a telephonic age.

**Range and Speed of Telephonic Contact.**—The role of the telephone in extending the range of contacts is indicated in the growth of the toll traffic. In 1902 the Census of Electrical Industries estimated the number of toll calls as 121,000,000, or 2.4 percent of all telephonic messages. While the total number of toll calls increased at each census, the ratio of these to the total telephone calls moved irregularly until 1917, since which year it has increased constantly. There were 1,087,000,000 toll messages in 1927, or 3.7 percent of all calls. Bell System local exchange messages doubled between 1917 and 1929 but toll messages trebled.

While there are difficulties in interpreting the data pertaining to average length of haul of toll messages, a sample of selected "long lines" of the American Telephone and Telegraph Company indicate a steady increase from 142.9 miles in 1922 to 176.2 miles in 1930. This is believed to be typical of the trend in toll hauls. Part of the increase reflects technical improvements which permit greater efficiency in longer transmission. Another factor may have been reductions in rates. Both are suggested by the fact that the longer calls have shown the more rapid growth in number.

The increasing efficiency of telephone service in extending the range of contacts is also shown by the decrease in the time required for establishing connections and the growth in the percentage of all calls completed.

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64 Data pertaining to utilization from *Census of Electrical Industries: Telephones, op. cit. 1902-1927*, quinquennially. For cautions in using these data, see note to Table 42 of the monograph.

65 For basis of estimate, see the monograph, Table 42.

66 For discussion of these see the monograph, section XII.

67 For data see the monograph, Table 43.
In 1930, 82 percent of all toll calls were completed while the subscriber remained at his instrument. An increase in speed is also claimed for the dial telephone, which in 1930 constituted one-third of all Bell System installations.

The availability of an instrument easy to operate, the costs of which are within general reach and the efficiency of which has constantly improved, engenders a "telephone habit." There is rapid adaptation to the needs of daily life and a device that permits quick contact within a narrower or wider area soon serves to induce more frequent contacts within the same areas. The telephone has done this. The area of its usefulness is, moreover, widening, for the telephone network now extends to foreign countries. In 1931 less than 2,000,000 of the world's 35,350,000 telephones could not be reached by any subscriber in this country. The telephone, like the agencies hitherto discussed, is serving to bind together by a communication system the peoples of the world.

Overlapping Telegraphic and Telephonic Services.—It is becoming progressively more difficult to draw lines between the various wire and wireless services; the distinctions tend to become corporate rather than functional. This is illustrated in the "teletypewriter" and "printer" services now being offered by telegraph and telephone companies, in competition. Telegraph messages may be carried by wires simultaneously carrying telephonic conversations; and telephone conversations may be transmitted by wireless, just as dots and dashes are so transmitted. Both telephone and telegraph companies offer "facsimile transmission" service, and this is now possible by wireless across the oceans. While corporate entities may persist it is clear that there has been integration of functions. As far as the patron is concerned, point to point communication is the end sought; he selects from various possibilities the particular agency that at any time best suits the purpose at hand.

The Network of Point to Point Communication Agencies.—The brief survey in section II has shown the existence of a number of agencies facilitating point to point communication, and all contributing to the ease, speed and volume of social contacts. The factor of control stressed in discussing the transportation agencies is once more apparent in considering the relation of the agencies to each other. It is this that gives to the telephone its preeminent place in point to point communication just as freedom of control underlies the rapid development of the automobile. The postal service, like the railroad, operates on a fixed schedule. This restriction does not apply to the telegram, but neither letter nor wire message permits a free interchange of thought as in direct conversation.

As with the transportation agencies, there are circumstances under which each point to point agency has special advantages. The telephone does not as yet record messages. Here is the value of the mail and tele-
gram. Where speed is necessary, post office delivery cannot compete with wire transmission, though telegraph may compete with telephone. The telegraph has the special advantage that once filed, the sender may dismiss his message from his mind knowing that it will be expeditiously delivered. In short, wire and wireless services now permeate the country and connect it with other countries. A vast system establishes potential contacts between the individual citizens. The patron wants communication service and the media are at hand to supply his demands and his needs. While there are duplications of facilities arising through multiplicity of corporate ownership, these, with few exceptions, do not now react against the efficiency of transmission. The important point is that on the spur of the moment the individual can set in motion the instrumentalities through which a message will be carried to a designated individual without interruption. Such ease of contact, through various channels, is a unique phenomenon of the present century.

What is the place of the individual within this network that in a sense converges upon him? What is the frequency with which he utilizes the several agencies at his disposal? The following tabulation shows the frequency rates, or average intervals between utilizations of each agency, as calculated for the years 1907 and 1927:

<table>
<thead>
<tr>
<th>Item</th>
<th>1907</th>
<th>1927</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Years</td>
<td>Months</td>
</tr>
<tr>
<td>Local letters</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Local telephone calls</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Non-local letters</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Toll telephone calls</td>
<td>...</td>
<td>4</td>
</tr>
<tr>
<td>Telegrams</td>
<td>...</td>
<td>11</td>
</tr>
<tr>
<td>Cablegrams</td>
<td>14</td>
<td>3</td>
</tr>
</tbody>
</table>

These figures indicate the average interval for the average person between incoming messages. For example, in 1907 the average person in this country received a local letter every 18 days; in 1927, every 9 days. At the rate of 1907, the average interval between the receipt of telegrams was 11 months and 2 days; in 1927, 6 months and 23 days.\(^{68}\)

The telephone is clearly the most obtrusive of agencies, and local calls are an accepted part of daily routine, as is the delivery of the mail. Although non-local letters still outnumber local letters in the mail box of the hypothetical average citizen, the local letters are increasing in frequency at a more rapid rate than non-local. In general, the tabulation

\(^{68}\) For further discussion of methods involved in deriving this tabulation, see the monograph, footnote to Table 44.
that, except for toll telephone calls, contacts within narrower
parameters that may be designated as the local area have been increasing
at a more rapid rate than contacts that are non-local. And the single
exception may not in reality be such, since it involves a tremendous
traffic in suburban telephone messages which may be of local significance.

The data suggest three observations:
1. Point to point communication has multiplied greatly, and over
   widening areas.
2. Local contacts are more numerous than non-local contacts, because
   of the wide diffusion and habitual use of the telephone, which instrument
dominates the field.
3. Relatively, local contacts have increased more rapidly than non-
   local contacts.

The data of sections I and II suggest a hypothesis: The intensification
of local contacts may act to preserve and even enhance local patterns
of habit, attitude and behavior, and serve as an inhibitor of the process
of cultural levelling which is so commonly assumed as an outstanding
and unopposed tendency of contemporary life. This is only a hypothesis.
Yet, if it is assumed that localisms are strengthened by multiplication
of contacts between individuals, it is a hypothesis meriting further
and careful study. It is, of course, possible that even though local contacts
are relatively more frequent, their intensity is counterbalanced by even
more powerful non-local contacts, especially as established through the
agencies of mass impression which are to be discussed later in this chapter.
It may also be that closer local contacts merely serve to provide channels
through which standardizing influences diffuse within local areas. Finally,
while the result of modern communication may be to strengthen certain
aspects of localism, it may simultaneously serve to break down the con-
trol on individual conduct hitherto exerted by the relatively closely knit
primary group. This control may be lessened through travel and enhanced
mobility and also by the fact that patterns of delinquency, for example,
can spread easily through the workings of the agencies of mass impression.
The data summarized in the chapter do not without further elaboration
warrant a balancing of the various possibilities, but they do raise interest-
ing questions.

The effects upon the individual of this elaboration of facilities can
only be suggested. Of the total contacts of a given day, an increasing
proportion apparently tend toward brevity and impersonality, induced
by the use of mediating devices. Within this part of the aggregate are
lost those values that inhere in more intimate, leisurely and protracted
personal discussion. The ultimate effects are matters for conjecture.
There is, too, an increase in the tempo of life. Mechanical aids make it
possible to communicate more extensively and to transact without per-
sonal contact many of the interchanges which formerly necessitated it. The time thus saved may be utilized in further contacts. Devices that permit speed in turn induce it, and the agencies here discussed have contributed their part toward this result. Finally, the individual is increasingly accessible to a variety of instrumentalities which maintain him in actual or potential contact with any of his fellows, and them with him. Personal isolation—inaccessibility to the demands of others for access to one’s attention—is increasingly rare, and, when desired, increasingly difficult to achieve.

III. THE AGENCIES OF MASS IMPRESSION

The agencies of mass impression, as distinguished from the mediating agencies that facilitate contacts of specific individuals, are those through which large numbers of individuals may simultaneously receive the same communications and be correspondingly influenced. The aggregate that constitutes public opinion is derived from many sources, informal and formal. Private conversation, casual discussions, recreational groups, semi-formal gatherings, ceremonials, holiday celebrations, public speeches, the schools and the church, all play their part in creating and reinforcing collective attitudes. In this chapter, however, attention will be limited to three dominant agencies—the newspaper and periodical, the motion picture, and the radio.

The Newspaper and Periodical.—At the turn of the century the railroad and electric lines were outstanding in the transportation field, the postal service and the telegraph were dominating in point to point communication and the newspaper and periodical were preeminent agencies of mass impression.

Newspapers: Numbers and Circulation.—The terms “newspaper” and “periodical” embrace publications of various types and purposes; it is accordingly difficult to summarize changes affecting either in any single set of figures. Aggregate circulation might adequately show changes but even as late as 1915 circulation figures are untrustworthy. Only during the past decade are such figures dependable, and then not for all publications. Figures indicating numbers of publications are more trustworthy for the earlier years and will be utilized here.

The largest number of daily newspapers was in 1917 (2,514); there had been a slightly irregular growth from 2,200 in 1900. Then came a tendency toward consolidation and the trend is now in the direction of

69 The distinction here is between newspapers and all non-newspaper periodicals, including magazines, which will be hereafter referred to as periodicals.

70 Data on numbers of publications compiled by Rose Epstein from annual volumes of N. W. Ayer & Son’s American Newspaper Annual and Directory, continuing as N. W. Ayer & Son’s Directory of Newspapers and Periodicals, Philadelphia. For detailed tabulation, with critical note, see the monograph, Table 45.
fewer papers. In 1931 there were 2,268. Weekly publications numbered 15,681 in 1900 and 16,323 in 1915. They have gradually, though irregularly, declined to 12,825 in 1930 and 12,636 in 1931. Of these weekly publications it is estimated that 11,015 are country newspapers. Semi-weekly publications increased from 515 in 1900 to 617 in 1907, fluctuated about this number until 1915 and fell off, with increases in occasional years, to 454 in 1931. Tri-weekly publications never exceeded 95 during the period and were 66 in 1931. Newspapers in 1931 were published in 9,830 communities, in most of which only a country weekly is found.

The Ayer’s data on daily newspapers include many special interest publications such as trade dailies and foreign language papers. More important are English language daily newspapers of general circulation. In general, both morning and evening papers show a downward trend with the morning papers declining more rapidly. Morning papers in 1921 numbered 427; in 1930, 388; in 1931, 384. Evening papers were 1,601 in 1921, 1,554 in 1930, and 1,539 in 1931.\(^7\) The combined net loss was 105. Sunday papers, including dailies with Sunday editions, also showed a loss, dropping irregularly from 545 in 1921 to 521 in 1930 and 513 in 1931.

Contrary to this trend in English language papers, the totals of foreign language dailies remained relatively constant during the first three decades of the century. Ayer listed 148 in 1900, 156 in 1910, 160 in 1920, and 159 in 1930.\(^7\) In 1930 there were 58 morning foreign language dailies, 13 more than in 1910, but the 63 evening papers were 14 fewer than the number in 1910.\(^7\) In view of war time feelings and decreases in immigration, these figures appear surprising. Possibly they reflect attempts of alien groups to maintain cultural identity even in the face of rapid cultural absorption.

In so far as it involves papers with straight party designations, the decline in numbers of English language dailies has affected both of the two major political parties. In 1900, 732 dailies acknowledged themselves in the Ayer’s directory as “democrat” and in 1930, 434. The corresponding “republican” figures were 801 and 505. Papers labelled “independent democrat” and “independent republican” have in both cases increased about five-fold, while papers professing to be “independent” politically jumped from 397 in 1900 to 792 in 1930. These now constitute the largest single class.\(^7\) The foreign language dailies show a somewhat similar trend, except that “democratic” papers have suffered a far sharper decline than

\(^7\) Compiled as of December 31 by Editor & Publisher, trade publication. Cf. Editor and Publisher, International Year Book Number, vol. 64, p. 112, 1932; and the monograph, Table 46. Circulation data that follow are from same source.

\(^7\) Compiled by W. Carl Masche from American Newspaper Annual and Directory, op. cit.

\(^7\) For detailed analysis see the monograph, Table 47.

\(^7\) Compiled by W. Carl Masche. For detailed analysis see the monograph, Table 48 and passim.
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"republican" and the "independent" papers were a larger proportion of the total throughout the period. This increase in claimed political independence may indicate that the newspaper is becoming less important as an adjunct of the political party, that it seeks greater editorial freedom, or that it desires to include various political adherents within its circulation or advertising clientele.

All of this raises significant problems of control of opinion, especially when coupled with increased chain ownership and consolidation. Modern newspapers are profit enterprises. With them, more than in other industries, retrenchment is difficult, for a paper must be issued regularly and attempts to cut content are quickly reflected in circulation losses. Consolidation and multiple ownership arise to meet the need for adjustment in the face of mounting costs. Cities having a single daily newspaper numbered in each decennial year, 1900–1930, inclusive, as follows: 353, 504, 686, 913. This increase represents suspensions and consolidations. The restriction of the reader's choice to a single paper has interesting implications. Monopoly of a field may mean a more independent journalism but it makes possible a more deliberate selection and coloring of news content.

Although numbers of general circulation newspapers had been declining, aggregate daily circulation gained regularly from 1921 to 1930 with a drop of about 2.5 per cent in 1931. For morning papers a maximum of 118.5 per thousand population in the United States was reached in 1929. For evening papers the maximum was in 1930 with a daily average of 25,155,000 copies, or 204.4 per thousand population. Sunday circulation attained its high peak in 1929 (26,880,000) with 220.5 copies per thousand inhabitants. There was a drop in 1930 and 1931. The figures for the period suggest a slight shift of preference to evening papers, and also that newspaper circulation as a whole is perhaps close to the point of maximum saturation.

Periodicals: Numbers and Circulation.—All groups of periodicals, when classed according to frequency of issue, reached their maximum number in either 1929 or 1930. Their growth throughout the period from 1900 to 1930 has been sharper and more regular than is found in the newspaper series for any portion of the field. The appearance of new bi-monthly and quarterly publications has been notable. Monthlies, the largest single group, increased in number from 2,328 in 1900 to 3,804 in 1930, and quarterlies, the next largest class, more than tripled. Both showed losses in 1932.

These increases probably reflect twentieth century changes in social organization. The growth in number of what sociologists have termed

75 For detailed analysis of these figures, see the monograph, Table 45 and passim. Data compiled by Rose Epstein from American Newspaper Annual and Directory, op. cit. See also Table 1 in Chap. VIII.
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secondary groups, in which the unity comes from specialized common interests, has been striking. Contact among members in such groups is maintained through publications and the need for these organs is reflected in the data. There has also been some increase in numbers of general purpose magazines. It is not possible to summarize circulation of these periodical publications. For selected classes, as reported in Editor & Publisher, the growth has been great. Nine of eleven women’s magazines listed in 1931 exceed a million a month and five of the general monthlies exceed 600,000 an issue. There are agricultural journals with a million circulation a month. Of the classes summarized by Editor & Publisher, circulation in the weekly group showed the most rapid gains. In aggregate, these periodical circulations are impressive and attest to the avidity with which the public is reading.

Widening News Horizons.—Following the growth of the great news associations, American papers have at their disposal more news from a wider variety of sources than ever before. A study of Associated Press traffic for one week in 1929 showed that, excluding financial and stock exchange tables, it transmitted 2,562,715 words in 17,323 items with date lines from 1,850 different communities. During the period, 94.2 percent of the wordage and 93.9 percent of the items were of domestic origin. News sources are highly concentrated; one-fourth of the domestic items bore date lines of 17 cities. That metropolitan centers shape the news patterns of the country can scarcely be questioned. The press associations are clearly important in spreading the values and interests of the great urban centers into the smaller communities.

Washington is a news center of special significance, and news from there is one bond connecting the citizen with the government. Since 1900 impressive increases have occurred both in the number of accredited newspaper men in the Congressional press gallery and in the number of papers with Washington press representatives. There has also been a marked increase in numbers and personnel of syndicates and press associations. For newspaper readers throughout the nation, there is closer contact with the capital.

For the individual the newspaper constitutes the principal source of information and stereotypes about foreign affairs. Woodward in 1927 showed that the typical American morning newspaper devoted about 5 percent of its news space to dispatches from abroad. Aggregate figures of the cable and wireless companies dispatching press matter indicate increase in volume of incoming and outgoing transatlantic and transpacific news. Each year between 1916 and 1929 the wordage received from

76 See the monograph, Table 49.
77 For detailed analysis, based on data compiled from the Congressional Directory by Charles Kachel, see the monograph, section XIV.
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Europe was more than double that transmitted, although the disparity
has lessened. In transpacific dispatches, the words sent to this country
were fewer than the outgoing in six of the eleven years between
1920 and 1930. The volume of Pacific press material is relatively small.
This is explained in part by the higher cable costs. In 1929, 20,731,000
words were received from, and 8,781,000 words sent to, Europe, whereas
only 726,000 words came from, and 1,299,000 words were sent across the
Pacific. 79

Europe, owing to cultural and geographical proximity, is
obviously more in the consciousness of the American public than
are the countries across the Pacific, judged by volume of press
material. This suggests a lack of balance in reporting world affairs,
which, in view of recent developments, may be regarded as shortsighted. The importance of the Orient and Australasia may justify more

complete news coverage.
It is impossible here to discuss the qualitative aspects of

and

newspaper

The

present purpose has been to portray in brief
the development and importance of agencies by which materials from
ever widening areas are brought to increasing numbers of newspaper and
periodical contents.

periodical readers with constantly accelerated speeds. Every agency of
transportation and point to point communication is utilized. No corner of
the earth is left unobserved, and accounts of the events of the world pour in

continuously for selection, editing and printing, so that individuals
throughout the country may read about them. Regardless of intrinsic
importance, the grist of events does bring readers in momentary touch
with regions and persons far removed. Whether enhanced understanding
increased

or

distrust among peoples results depends largely upon
and emphasis. It would be desirable to know whether newspaper
materials from distant points are increasing at a more rapid rate than
those from the area of publication. Such knowledge might again throw
light upon the net results of the antithesis between widespread standardization and intensification of localism; but, unfortunately, evidence is
selection

not available.

The Advertising Function. Advertising is another function of the
newspaper and periodical, and these publications are increasingly
dependent upon advertising revenues. In 1909, 63.8 percent of newspaper
income and 51.6 percent of periodical income was from advertising; in
80
As selling aids in
1927, 74.1 percent and 63.4 percent, respectively.
national markets these publications have their greatest advertising
utility.
79

Following the World

War

national newspaper advertising lineage

Data on wordage

in transoceanic press dispatches were compiled from figures supplied
the commercial cable and wireless companies regularly engaged in receiving and
transmitting such material. Details are presented in the monograph, Table 50.
80
U. S. Bureau of the Census, Census of Manufactures: Printing and Publishing, 1919,
1923 and 1927. Details in the monograph, Table 52.

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all

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jumped fabulously. From 1921 onward there were irregular gains with retardation evident in 1930 and a loss of 9.7 percent in 1931.

The growing proportion of newspaper and periodical revenues received from advertising gives rise simultaneously to claims of subservience to and independence from advertisers' control. It may be suggested that whatever control is exerted by publishers over news columns arises not because of direct dictation by advertisers, which is probably not frequent, but because the publisher sees the world of economic and social activity from the standpoint of a business man operating a commercial undertaking of magnitude. It is inevitable, however, that individuals with special interests will seek to utilize the mass circulation of newspapers and periodicals for their own ends. Publishers are constantly confronted with materials which have both news and publicity value. The rise of the press agent and public relations counsel reflects the desire of many individuals and groups for favorable newspaper mention, often without paying for it, and it has become increasingly difficult for the newspaper to protect itself and its readers against materials which are essentially of an advertising nature.

The Motion Picture. — The motion picture has varied uses. It is as a medium of entertainment that it achieves uniqueness as an agency of mass impression. By combining sight and sound, it commands the concentrated attention of those it reaches as does no other agency. Its rise to popularity has been rapid since the first "nickelodeon" appeared about 1905 or earlier. It is estimated that on January 31, 1931, there were 22,731 motion picture houses in the country, with aggregate seating capacity of 11,300,000. About 14,000 of these were operating at least two days a week. Small houses have been closing in recent years because of competition with larger theaters and because of the expense of installing sound apparatus, bringing probable declines in the number of theaters. Attendance through 1930, however, appeared to gain, though a decline has since set in. Competent opinion estimates about 100,000,000 admissions to motion picture performances weekly in the United States (1930). To meet the needs for pictures, 500 feature films with about 200 prints of each were made in 1930.

During the two years 1929 and 1930, the silent picture suddenly became outmoded by the introduction of the "talkie," although silent films are still produced, largely for export. On January 1, 1931, 12,500

81 From data compiled by Editor & Publisher, op. cit., for 23 selected cities. See the monograph, Table 51. See also Chap. XVII.

82 See also Chaps. III and XVIII.

83 Estimates by Motion Picture Division, United States Department of Commerce. The following estimate of operations is by the Motion Picture Producers and Distributors of America, Inc. Competitive conditions within the industry have prevented the development of adequate statistics concerning it. During 1931 and 1932 there has been a decrease in the number of motion picture theatres in operation.
theaters in the country had been wired for sound. Although the sound picture has been generally accepted for domestic exhibition, it still presents complex problems for producers. It permits a degree of characterization that was impossible to the silent film. The latter could indicate subjective states only by indirection and by captions. Hence, it depended for its appeal upon pantomime and action. With the voice, the thoughts and emotions of characters can be revealed directly and the pictures attain a psychological depth that action alone could not give. This involves subtleties that may be above the interest or background of the audience. Where talk is overstressed there is danger of loss of speed and interest; where action dominates, the talk becomes stilted and stereotyped. Producers confront the difficulty of balancing action and words to create a semblance of reality that is at the same time within the level of experience of the audience. In further consequence, the range of subject matter has been greatly widened and in many respects the motion picture has come more closely to resemble the stage. This seems to have influenced habits of attendance. Whereas individuals formerly went to performances regardless of what was to be seen, observers contend that there is now a tendency to select more carefully, as one might choose a theatrical performance.

*Motion Pictures and Social Values.*—Although the motion picture is primarily an agency for amusement, it is no less important as an influence in shaping attitudes and social values. The fact that it is enjoyed as entertainment may even enhance its importance in this respect. Any discussion of this topic must start with a realization that for the vast audience the pictures and "filmland" have tremendous vitality. Pictures and actors are regarded with a seriousness that is likely to escape the casual observer who employs formal criteria of judgment. Editors of popular motion picture magazines are deluged with letters from motion picture patrons, unburdening themselves of an infinite variety of feelings and attitudes, deeply personal, which focus around the lives and activities of those inhabiting the screen world. One editor receives over 80,000 such letters a year. These are filled with self-revelations which indicate, sometimes deliberately, more often unconsciously, the influence of the screen upon manners, dress, codes and matters of romance. They disclose the degree to which ego stereotypes may be moulded by the stars of the screen. Commercial interests appreciate the role of the motion picture as a fashioner of tastes, and clothes patterned after the apparel of popular stars, and for which it is known there will be a demand, are manufactured in advance of the release of pictures in which these stars will appear. Names and portraits of moving picture actors and actresses have also

84 Estimate supplied by Motion Picture Division, United States Department of Commerce.
been extensively used for prestige purposes in the advertisements of various commodities.

While it is the dramatic subjects that are of major interest in the study of the motion picture, the news reel also has won popular favor. With its subjects selected from a wide range of events that might be filmed, it presumably plays a part in inculcating values, although its role has never been adequately studied.

It is because of its influence in shaping attitudes and inculcating values and standards that there has been widespread discussion of motion picture censorship. On one hand are those urging extreme control, and on the other those who seek unfettered development. Because of variation in local standards, it is extremely difficult to establish a common basis for film eliminations where censorship exists. Not infrequently producers must cut pictures after production at considerable expense to meet local requirements. In attempts to avoid this, censorship within the industry has developed in the National Board of Review. The need for thoroughgoing study of the social effects of the motion picture seems clear.

Advertising and Motion Pictures.—Lantern slides carrying advertising were exhibited in the intervals between entertainment pictures from the start. Advertising films followed naturally. In 1930 appeared "sponsored" motion pictures, having entertainment value, "presented by ———" a given advertiser, but without other necessary relation to his product or services. The device was clearly borrowed from the new technique of radio advertising. For exhibiting such films theaters were paid on an attendance basis. They aroused much opposition, not only from the public, but particularly from the newspapers and magazines which feared advertising competition; in consequence they were less generally used in 1931. Attempts were also made in 1930 to include unobtrusive advertising within feature pictures. The technique is still incipient, but offers new possibilities of control.

Non-theatrical Motion Pictures.—Non-theatrical uses of the motion picture are varied. It is estimated by the Department of Commerce that over 190,000 non-theatrical projectors are in use, including home sets. In 517 primary and secondary schools within one year there were 44,186 showings of pictures, of which 73 percent were in connection with curricular activity. Churches have used the motion picture extensively as a means of attracting and holding younger members. It is also used in connection with sales campaigns, advertising and demonstrations of products, and an extensive market has developed for non-entertainment films of this character. Films also have value in showing scientific tech-

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86 Data supplied by Motion Picture Division, Department of Commerce, which is studying non-commercial uses of the motion picture.
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niques. Non-theatrical uses of motion pictures promise to develop far more extensively in the future.

Radio Broadcasting.—The dramatic evolution of the radio within one decade from a mysterious curiosity to a widely diffused and universally accepted instrument of entertainment, business, learning and mass communication, has few if any counterparts in social history. Its rapid development has brought many problems of organization and control which as yet are not definitely settled. How shall broadcasting be supported? How shall the facilities be allocated? Who shall control the programs? How may all interests be conserved? How are legal concepts of property rights affected? These are but a few of many questions awaiting conclusive answers.

Ownership and Distribution of Radio Sets.—The federal census of 1930 reported 12,078,345 families owning radio sets. On January 1, 1932, according to an estimate, there were 16,026,620 sets in use in the United States. The distribution is not uniform throughout the country. It varies from region to region, between urban and rural districts and according to economic status and race. There is also a metropolitan concentration that suggests a "pattern of ownership" around the large cities. These will be discussed briefly in turn.

The largest proportion of families with sets is in the middle Atlantic division (New York, New Jersey and Pennsylvania) and the smallest proportion in the east south central division (Kentucky, Tennessee, Alabama and Mississippi). Within these divisions there are also wide variations. Among states, the extremes are New Jersey (63.3 percent) and Mississippi (5.4 percent). Ownership is highest in the eastern, northern and Pacific states, and lowest in the south.

In general, ownership ratios in cities (10,000 or over) are greater than in non-urban areas. In Alabama, for example, the percentage of families having sets, by counties, ranged from 1.4 to 22.6; but in the city of Birmingham, was 26.7. For the state as a whole, the ratio was 9.5; for the cities of over 10,000, 18.0.

See also Chaps. III and XVIII.

It should be noticed that the units are families with sets, rather than number of sets. Data used here are from Press Releases of the U. S. Bureau of the Census on Families and Radio Sets, appearing irregularly during 1931. The numbers here are slightly larger than given in the census volume on families, because of a slightly different definition of the term "family."

Estimated by Columbia Broadcasting System on basis of federal census and subsequent sales in 1930 and 1931, with allowance for replacement.

For detailed analysis of the radio data, with tabulation by states, see Trends in Communication, especially Table 53.

Except for the middle Atlantic division, a comparison of the percentage of all families owning sets in the several geographic divisions with the median of the corresponding ratios for the cities exceeding 10,000 in population shows the median ratio of the cities to be higher. The one exception (New York, New Jersey and Pennsylvania) and the New England
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The economic differential appears by inference. The states in which set ownership is highest are also the states of greatest wealth. Further, the cities in which at least three-fourths of all families own sets are generally suburban, adjacent to large cities, where average economic status is high. The highest ownership ratio (88.7) is found in Park Ridge, Illinois, a residential suburb of Chicago. This high ratio of ownership in residential suburban districts makes safe the assumption that concentration of wealth and radio ownership are related.

States with high proportions of Negro population are low in set ownership. The ownership ratios among the white populations of southern states would doubtless be much higher than general state ratios indicate. This differential reflects the low average economic and social status of the Negro. Low set ownership in the south may in part reflect climatic conditions which affect broadcasting by increasing static and decreasing the efficiency of reception, although other factors are unquestionably involved.

The concentration of sets in and around metropolitan areas, to which the preceding differentials together lead, appears to be productive of still further concentration. In such areas, for instance, many communities in which economic status is not above the average nevertheless show higher set ownership than would be expected on the basis of their urban character alone. The importance of access to metropolitan radio programs must not be neglected as a factor; nevertheless, the data suggest the existence of metropolitan patterns of culture that call inordinately for possession of a "set."

Back of these differentials are two factors that should be kept in mind: (1) low set ownership may reflect inadequate power facilities rather than cultural non-appreciation of the radio; (2) broadcasting is an economic enterprise and develops accordingly in large cities where there are potential revenues, with program offerings correspondingly more attractive to the radio audience. Where programs are good and reception is clear, there is inducement to ownership. Whatever the final explanations, it seems clear that the radio is primarily an urban phenomenon. While it contributes to a breakdown of rural isolation, it may be affecting even more, though in ways not entirely clear, the residents of the cities.

Rise of Commercial Broadcasting.—The early rapid and unplanned growth of broadcasting in the United States produced chaotic conditions which prevailed until 1927 when the Federal Radio Commission was given control. 91 But even prior to 1927, changes in station ownership were taking place. Many of the first stations were adjuncts of radio shops,

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91 See Chap. XXVIII.
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the electrical business and service companies. In 1922, 126, or nearly one-third, were so owned. Gradually commercial broadcasting companies came to prominence. In 1930 more than one-third of the 612 stations in the country were operated by them, while only 37 were then operated by electric and service companies.

The total number of stations in the country reached a maximum in 1927, since which year the number has dropped annually, as a result of the restrictive policy adopted by the Federal Radio Commission. Ownership of stations by churches, educational institutions, and newspapers reached maxima in or by 1927, and has since declined, both absolutely and relatively. At the end of the fiscal year, June 30, 1930, educational institutions operated 52 stations, churches 30, and newspapers 36. These shifts in ownership indicate the rise of the radio as a commercial, advertising industry. This development has brought much criticism, both from those who feel that radio should be more extensively used for educational purposes, and from those who object to the domination they allege is held by the broadcasting companies and the advertisers from whom they derive support.

Its news and advertising functions, especially the latter, have brought the radio into competition with the newspaper and, to a lesser degree, the periodical. In sample periods in 1931 only 29.2 percent of the programs of one of the chains, and 34.7 percent of the other, were productive of advertising revenue (sponsored programs). These sponsored programs, however, tend to be at hours when listening is at its maximum. The sums involved are sufficiently great to arouse publishers. Exclusive of talent costs to advertisers, their purchases of program time from the two major broadcasting companies increased from $10,252,497 in 1928 to $26,819,156 in 1930. There is evidence that the current decline in newspaper advertising cannot be attributed primarily to the increase in radio advertising as is frequently done, since the increases in radio income are much less than the losses in advertising revenue sustained by the newspapers. Further, one study seems to indicate that advertisers who use radio have cut their newspaper advertising appropriations less than advertisers who do not use the newer medium. The relations of these two agencies of mass impression are problems as yet unsettled. There is evidence that control of radio advertising would be desirable in order to prohibit types denied to newspapers.

92 Data from U. S. Radio Division, Radio Service Bulletin; ownership figures compiled by Herman S. Hettinger from U. S. Radio Division, Commercial and Government Radio Stations, annual, and Federal Radio Commission, List of Licensed Broadcasting Stations by Call Letters, intermittently. For details see the monograph, Table 54.
93 On the church and the radio, see Chaps. III and XX.
94 On radio advertising, see Chap. XVII.
There is also public objection to advertising announcements. The American system of supporting radio through advertising is not generally found abroad, where there is usually governmental monopoly, operation, or strict control, coupled with a tax on all sets. There are apparent advantages in both systems and it does not seem clear that either possesses unqualified superiority. The newness of broadcasting, with lack of experience upon which to base opinions, makes it difficult to evaluate the various plans of operation.

Classification of stations according to power shows trends toward greater power. The stations under 100 watt power in 1923 were more than four times the number in 1930, whereas the number of stations with higher powers have all shown an upward trend. In 1923 there was no station in excess of 5,000 watts; in 1930 there were more than 75.96

Concentration of Broadcasting.—Growing concentration in the control of broadcasting facilities is shown in the membership of the two major broadcasting "chains." Chains are stations associated under a central company for the simultaneous broadcast of programs. Through "hook-ups" the national company is provided with widespread outlets for its advertising (sponsored) programs, while the individual stations have the advantage of obtaining programs at less cost than they otherwise could. The aggregate number of stations associated with the National Broadcasting Company and the Columbia Broadcasting System grew from 64 in 1928 to 150 on January 1, 1931. In addition to these two organizations, there are several lesser chains. While the majority of stations in the country have no chain affiliation, chain stations have advantages that give them great strength and popularity. With the trend toward increased power, which means high operating costs, it may be predicted that there will be a continuation of the downward trend in numbers of stations, with further concentration within the major chains.

The Radio Audience.—Information concerning the radio audience is fragmentary.97 There is evidence that three-fourths of all sets are in use at some time each day. Some authorities claim an average of 3.1 listeners per set, which, using the number of sets enumerated in the 1930 federal census, would give a daily audience of 37,442,869.98 The average set, according to the Starch survey, is in operation 2 hours and 25 minutes daily and all investigators agree that the maximum number of listeners is between 8 and 10 p.m.

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96 See the monograph, Table 55, for detailed analysis.
97 This is surveyed in more detail in the monograph, section XVI.
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There are undoubtedly wide daily variations in the size of the audience of any station, depending upon program popularity. The prevailing "listening area" of a station seems not to be circular with the station at the center, but is irregular, with curious results in the distribution of station audiences. For example, some Massachusetts stations apparently have closer "listeners' contact" with communities in Maine than they do with localities close at hand. Such facts indicate that regional and sectional consciousness may be affected in ways that at the moment cannot be predicted.  

Certain it is that the radio tends to promote cultural levelling. Negroes barred from entering universities can receive instruction from the same institutions by radio; residents outside of the large cities who never have seen the inside of an opera house can become familiar with the works of the masters; communities where no hall exists large enough for a symphony concert can listen to the largest orchestras of the country; and the fortunes of a Negro comedy pair can provide social talk throughout the nation. Isolation of backward regions is lessened by the new agency of communication, and moreover, by short wave transmission national as well as local isolation is broken, for events in foreign nations are thereby brought to the United States. The radio, like the newspaper, has widened the horizons of the individual, but more vitally, since it makes him an auditory participant in distant events as they transpire and communicates to him some of the emotional values that inhere in them. 

The Individual and the Agencies of Mass Impression.—It is as agencies of control that the newspaper, the motion picture and the radio raise problems of social importance. The brief survey of their development in each instance shows increased utilization coupled with concentration of facilities. For his news, the reader of the paper is dependent largely upon the great news gathering agencies; for his motion pictures, there is dependency upon a group of well organized producers; for his radio, he comes more and more in contact with large and powerful stations, dominated increasingly by the nation wide broadcasting organizations. Mass impression on so vast a scale has never before been possible. The effects produced may now be quite unpremeditated, although the machinery opens the way for mass impression in keeping with special ends, private or public. The individual, the figures show, increasingly utilizes these media and they inevitably modify his attitudes and behavior. What these modifications are to be depends entirely upon those who control the agencies. Greater possibilities for social manipulation, for ends that are selfish or socially desirable, have never existed. The major problem is to protect the interests and welfare of the individual citizen.  

IV. THE PROBLEMS OF COMMUNICATION

It is not the purpose to summarize here the many changes which have been traced in the preceding sections, for summaries have been included section by section. A few general points stand out from the survey.

1. Changes within the transportation system have engendered a mobility of the population that is unprecedented. It is not only the few, but the many who travel. The use of the private automobile makes possible travel for travel's sake, and travel has become an accepted habit.

2. There has been a constant extension of the range of mobility, fostered by modern transportation agencies.

3. Popular conceptions of speed and distance have been completely revised, in consequence of which the world has become psychologically much smaller, and an enhanced interdependency results.

4. There has been a significant shift in domestic transportation from dependence upon commercial vehicles to the private automobile. Mobility is accompanied by enhancement of freedom of movement.

5. The agencies of point to point communication have similarly extended the radius of man's contacts.

6. An interconnected system of communication has come into existence whereby the individual is enabled at scarcely a moment's notice to place himself in contact with almost any other person in the nation. Speed and distance concepts, again, have been totally recast. No longer do men in any part of the world live to themselves alone. For an increasing majority in the United States and for a substantial fraction in the whole western world, the telephone bell is always potentially within ear shot, the postman and telegraph messenger are just around the corner and the cable and wireless may bring messages which are dated the day after they are received.

7. Agencies of mass impression subject the individual to stimuli of sight and sound that may serve to make him think and act, in some measure, like millions of his fellows.

8. With the concentration of these agencies the control over his behavior is increased.

9. The integration of the agencies of communication becomes more apparent. As old agencies are confronted by newer agencies, functions shift and adjustments are required. There is a moving equilibrium that is disturbed by changes in the old agencies or the introduction of new ones.

10. Out of this integration emerges an all pervasive system of communication from which it is difficult to escape. Each new device provides one more channel that has its ultimate focus in the individual.
11. The tempo of life is speeded, for agencies that facilitate contacts engender them. Man becomes dependent upon the new instruments and their use becomes a part of routine.

12. As each agency lengthens the radius and increases the frequency of contact at a distance, it also makes possible an increased frequency of local contacts. Where is the change relatively greatest? The balance between these cannot be stated. On the one hand are the forces seeming to make for standardization, and on the other, those perhaps tending to enhance localisms. The two processes may proceed together; in externals there may be a cultural levelling, while inwardly old traditions, attitudes and beliefs may gain reinforcement through mutual interaction. Overt likeness does not guarantee subjective similarity.

In short, an interconnecting, interconnected web of communication lines has been woven about the individual. It has transformed his behavior and his attitudes no less than it has transformed social organization itself. The web has developed largely without plan or aim. The integration has been in consequence of competitive forces, not social desirability. In this competition the destruction of old and established agencies is threatened.

Admittedly the picture which has been drawn here is schematic and incomplete. The agencies which have been discussed are not isolated entities; to an extent greater than it has been possible to show, they are interrelated; moreover, many have necessarily been omitted. Informal types of communication especially—conversations, committee procedures and gossip for example—have been slighted. Even so, there emerges a picture of tremendous, interacting changes within the period of a single generation which have transformed the individual's conception of the world by virtue of bringing it, and other human beings, closer to him.
CHAPTER V
TRENDS IN ECONOMIC ORGANIZATION
BY EDWIN F. GAY AND LEO WOLMAN

Linking men, materials and technology is the economic organization—another factor of social change—which helps to determine our material culture and precipitates mechanical inventions, just as inventions in turn carry with them social consequences and stimulate social discoveries.

Especially in a period of business depression, economic problems come up for review. In the present chapter are shown some of the gaps between social inventions and their adaptation, the huge and uncalculated consequences of the World War, the movements of prices, the distribution of income and the growth of wealth, the productivity of industry, the scale of industrial operations, business combinations and mergers, changes in banking and the credit structure, and the problems arising within business itself and in the relations between business and government.

The perspective is short for the detection of events which may have continuing and far reaching effects; older tendencies and forces may still be operative and because they are familiar they may obscure the new conditions which are making obsolete current institutions and thought. The task of the economic interpreter at the present time is particularly difficult. He can trace the outstanding features of the economic development of the United States since 1914; the prosperity of the war period; the hectic spurt after the brief pause of 1919; the crisis of 1920–1921; the resumption of marked business activity stretching from 1922 to 1929, with two minor recessions in 1924 and 1927 and with certain lagging elements; the feverish speculation in securities and real estate which collapsed at the close of 1929.

But the normal recession of a business cycle beginning in 1929 has, contrary to expectations, been prolonged into a depression of exceptional magnitude. The usual phenomena of the business cycle have obviously been reinforced by long time trends which must be traced back to the period of the war or before and to post-war developments both inside and

1 The material on banking and prices was prepared for this chapter by B. H. Beckhart of Columbia University. Unpublished materials in the files of the National Bureau of Economic Research and Economic Tendencies, by Frederick C. Mills, National Bureau of Economic Research, were drawn upon heavily, particularly for data on production, banking, merchandising and consumers' credit.
outside of the United States. Major structural changes in the national
and in the world economy seem to be in operation. Statistical investiga-
tion may not be able to determine with any precision the dimensions and
weight of these changes, partly because, though measurable, the data
are not adequately available, and partly because they are too numerous
to separate and measure. Even with such aids as the price series which the
statisticians of a number of countries have been compiling, the experts
cannot be sure that the gradual downward tendency in the commodity
price level for the past decade is the precursor of a long secular downward
trend, or that the decline in prices since 1929 represents the descent to
lower levels likely to persist for a long stretch of years. The indications
seem to point to such a trend as one of several underlying factors, yet
further observation for a succession of years will be necessary to establish
the certainty of a movement which W. Stanley Jevons, seventy years ago,
described as "insidious, slow and imperceptible." If, with all the elaborate
technique of modern statistical science, the fundamentals for an analysis
of the price and monetary element in the problem are still obscure, the
investigator is left helpless in evaluating current psychological elements
such as the widespread and continued post-war nervousness of the
European investor which has been one responsible factor in throwing out
of gear the gold flow of the international exchanges. But although any
comprehensive economic survey of the post-war period must suffer
from the difficulty of distinguishing permanent from temporary forces,
it is still possible to indicate some of the outstanding changes of the period
which affect the economic organization and the social outlook of the
United States.

Some of the economic developments of this period are continuations of
old tendencies which have been accelerated or intensified by the vast
economic disturbances generated by the war. The changing position of the
United States as a producer of raw materials; the relative decline of
agriculture and the expansion of industry, trade and transportation; and
even, perhaps, the slackening rate of population growth were trends
discernable in this country during many past generations. Under the
impact of the powerful economic and political forces of the last fifteen
years the flow of immigrant labor into the United States was brought
under control; the decline of agriculture and the increase of non-agri-
cultural enterprises were accelerated; and the place of the United States
in the world economy radically transformed.

No longer does the United States have "illimitable" forests and
unplowed prairies. At the turn of the century the area of fertile land open
freely for settlement was visibly dwindling. With one last expansion
into the dry farming land of the Great Plains region, under the impulse
of the food demand of the World War and with an improved technique of
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cultivating and harvesting, the first book of American history was closed. Public recognition of the change came first under Roosevelt with the conservation of western forest areas and the beginning of desert reclamation by irrigation. The forest conservation movement is passing eastward into the hands of the states, which must also in certain areas assist in meeting the problem of soil erosion. The irrigation enterprises, projected under the century old urge for more land, have gradually been checked by the realization that capital and special training are required for irrigation farming and that for the time being the pressure for new land area is receding. The great period of extensive cultivation has definitely drawn to an end and the country’s basic industry faces a radical readjustment.

The United States still holds an unrivalled control of natural resources, essential for the development of large scale industrialism. Its nine hundred and eighty million acres of farm land, a large proportion of which is not yet intensively utilized, and its great resources of minerals, notably of coal and iron, assure its future as an economic power. But there are unmistakable signs that it is gradually losing its position among the great raw material supply countries of the world where its rank was foremost in the last quarter of the nineteenth century. It still leads in some of its old staple exports such as cotton, tobacco and pork, but with a slowly sinking percentage of total world exports. In the exports of wheat it has fallen behind Canada and Argentina. Its imports of crude petroleum and copper ore are increasing. Agricultural products composed over 80 percent of the total exports of the United States in the five year period 1876–1880; they have fallen to less than half that proportion during the years since the war. The increasing industrialization of the country is absorbing a steadily larger share of the raw products, leaving a diminishing surplus for exportation.2

The realization that the natural resources of the United States are not without limits and that the frontier with its lavish grants of free land has disappeared was influential in bringing about one of the most striking reversals of traditional American policy of the post-war period. Other factors, such as the "lump of labor" theory nationally magnified and the difficulties of union organization and social assimilation, played a steadily increasing part in bringing about the severe restriction of immigration, which was finally made effective by the Emergency Quota Acts of 1921 and 1922 and the Immigration Act of 1924. But it was not until a marked change in the racial character of the immigration and its shift from the farm to the factory had been observed that the agitation for restriction was translated into an investigation by the Immigration

2 For discussion of trends in land utilization and depletion of natural resources, see Chap. II.
Commission of 1907 leading to the successive Congressional measures and the final drastic legislation.\(^3\)

It is not possible to estimate the full effects of this restriction as yet. Part of the needs of industry have been met by internal migration, by tapping supplies of labor from the farm and by the flow into industry of Negroes and women. Immigration has also continued from the self-governing countries of the North American continent. Whether the net reduction in the labor supply has been a notable factor in lifting the wage level and in stimulating the remarkable increase in mechanization in recent years is difficult to determine. A competent student of the problem\(^4\) believes that a prevailing tendency toward mechanization, long marked in American industry, was intensified by the war, which effectively closed the Atlantic to the movement of immigration, and by the post-war restrictions. But the steady decline in the demand for labor, due first to the general introduction of machinery between 1922 and 1929 and thereafter to the effects of deep business depression, make it almost impossible to estimate the influence of immigration restriction on working conditions and the retardation in the rate of population increase. The most that can be said is that the declining birth rate and reduced immigration may, with the resumption of normal business conditions, involve a slower rate of industrial growth than we have had in the past and perhaps also higher average standards of wages and hence of living.\(^5\)

I. THE WAR ECONOMY

The World War has been the dominant influence on the economic life of the United States since 1914. Although the major consequences of the war appeared to many students of economic trends to have ended with the resolution of the depression of 1921, subsequent events have made it clear that the forces set in motion during the war years are still powerful factors in directing the currents of contemporary economic affairs and problems throughout the world. The effects of the war in this regard are manifold. But their general nature is reasonably clear; and no sound comprehension of the economic tendencies in this country during the past fifteen years is possible without an appreciation of the fundamental impact of war economy.

In a sense the three periods of business activity and prosperity in the United States from 1915 to 1918, 1919 to 1920 and 1922 to 1929 had their roots in conditions produced directly and indirectly by the war. During the earlier period, business depression was converted into recovery by the flood of orders from European warring countries and later ex-

\(^3\) For a discussion of immigration laws, see Chap. XI.


\(^5\) For estimates of future population, see Chap. I.
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panded by the vast purchases of war materials and equipment for the American military machine. This combination of new foreign and domestic purchasing power was more than enough to raise and sustain industrial and business activity at abnormal levels. The withdrawal of some 5,000,000 men from employment into the armed forces of the country at the same time that the dangers of overseas travel cut off the supply of immigrant labor, opened wide opportunities for full employ-ment to the native population, and in the United States, as elsewhere, rising wages and unusually full employment contributed to substantial increases in the income of large sections of the population.

The first period of post-war prosperity was of short duration, lasting only from the spring of 1919 to the middle of 1920. But it represented a business boom of extraordinary proportions. Prices ascended to fantastic heights; the volume of bank credit expanded; industrial activity rose in all branches of industry; wages were increased and hours reduced at rates much more rapid than during the war years themselves; the millions released from the army and war industries were reabsorbed into peace industries without apparent difficulty; and the corporations and busi-nesses of the country reaped substantial benefits in the form of huge profits and increasing corporate surpluses. It is unfortunately still impossible completely to account for the origins of such a phenomenon. It was in part due to the enhanced civilian demands of disbanded soldiers and to the replenishment of stocks of peace time goods. But, however important these factors may have been, there can be little doubt that the continued expansion of credit on the foundation of an unprecedented public war debt constituted a stimulus to business expansion which should not be underestimated.

Good business during the years 1922–1929 was likewise not of simple origin. To a considerable extent it represented recovery from the severe business depression of 1921. But to an even greater degree this period felt the influence of forces arising out of the war. Elements in the post-war business situation of this country reflected the new commercial relations between the United States and Europe and developments within the American domestic market. The requirements for the economic reconstruction of Europe meant, in the first instance, a large demand for American products. The rise of the United States in the years since the war as the most important creditor nation of the world, presumably supplied with inexhaustible funds of credit for foreign investment, combined with a willingness to lend freely to the countries of Europe and other continents, led to extensive foreign loans and to the use of the proceeds of these loans for the purchase of the goods of American pro-dusers. This potent stimulus to business from abroad was supplemented in the United States by equally powerful forces from two sources. The
first was the enormous increase in the volume of construction, initially originating in the normal process of making up the shortage in building occasioned by war embargoes on private construction and later flowering into a vast speculative boom; and the second was the swift growth of so-called new industries, whose development involved not only the current production of automobiles, petroleum, electrical equipment and the like but, more important, large capital expenditures for the construction of plant, equipment and roads. In both instances, moreover, the abnormal expansion in the volume of consumers’ credit, incurred for the purchase of mortgages and houses and for the new products of industry, created an unstable and impermanent source of purchasing power and of capital funds.

This high prosperity of the United States in the post-war years was, however, not shared by agriculture. Some time before the present depression the state of American agriculture had begun to illustrate the instabilities of the world economy through the decline in agricultural prices, the decrease in the value of farm property and the persistence of a large burden of farm debt incurred when both the prices of farm property and of agricultural products were at much higher levels. It is indeed not unlikely that the standard of living of the American farmer in the post-war era was in part sustained by the proceeds of mortgage debt which he found it increasingly difficult to liquidate. The existence of this condition of agricultural depression was confirmed by the steady and increasing number of bank failures in the rural areas which long antedated the wave of suspension of city banks occasioned by the business depression of 1930.

Throughout the whole of the war and post-war period, also, a fundamental change took place in the character and magnitude of the current expenditures and borrowings of both local and federal governments in the United States. The effect of this increase in spending and in debt was not only to increase the burden of taxation, but to lift the problem of government fiscal policy to a place of first importance in the total economic policy of the country. In common with most countries of the world, the government of the United States has had as its major war and post-war preoccupations the problem of war financing and since 1920 the more difficult problem of reducing an abnormal public debt and of adjusting the current expenditures of government to new conditions. With the

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6 For figures on building construction, see Chap. IX.
7 See below, p. 256.
8 For a fuller discussion of agriculture see Chaps. II and X.
9 President’s Conference on Unemployment, Recent Economic Changes, New York, 1929, vol. I, pp. 70-76.
10 See below, pp. 261-262.
11 On governmental expenditures, see Chaps. XXV and XXVI.

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precipitate drop in the price level and the contraction in trade since 1929, at the same time that the demands on the federal government for the relief of business and unemployment have constantly increased, both the burden of taxation and the issue of debt control have become the most significant and most troublesome of our contemporary economic problems. How radical a transformation in public finance was effected by the war is illustrated in the following tabulation of the ordinary expenditures and public debt of the federal government since the beginning of the war:\footnote{12}

<table>
<thead>
<tr>
<th>Year ending June 30—</th>
<th>Total expenditures of the federal government (billions of dollars)</th>
<th>As of June 30—</th>
<th>Gross debt of the federal government (billions of dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1916</td>
<td>0.7</td>
<td>1914</td>
<td>1.2</td>
</tr>
<tr>
<td>1918</td>
<td>12.7</td>
<td>1919</td>
<td>25.5</td>
</tr>
<tr>
<td>1919</td>
<td>18.5</td>
<td>1920</td>
<td>16.2</td>
</tr>
<tr>
<td>1929</td>
<td>3.8</td>
<td>1931</td>
<td>16.8</td>
</tr>
<tr>
<td>1930</td>
<td>4.0</td>
<td>1932</td>
<td>\textsuperscript{*}20.0</td>
</tr>
<tr>
<td>1931</td>
<td>4.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\textsuperscript{*} Estimated.

When the figures for the year ending June 30, 1932 become available, they will show a substantial increase over the preceding year. While the local governments of the country were not burdened with direct war expenditures to the same degree, their expenses and debts rose under the influence of example and the combination of rising prices and good business. After fifteen years, therefore, the current outlay of the federal government is more than six times the pre-war; the national debt has grown nearly twenty-fold; and the price level is approximately where it was in 1914.

Expansion in public credit was accompanied by an increase in the volume of private credit and by an unprecedented development in the extension of American credit to the governments and private industries of foreign countries. War loans to Europe and the private credits employed in the reconstruction of post-war Europe, each in their own way contributed to revise, if not to end, the isolated position of the United States in the world economy and precipitated that range of problems with respect to reparations, inter-allied debts and the relation of private to public foreign debts which is calculated finally to produce a basic transformation in our economic thinking. Within an economic situation of this character, trends in banking and in credit extension in the United States, markedly affected by the necessities and policies of war finance,
helped to produce that instability in our financial institutions which has played such havoc with our economic life since the beginning of the last depression.

The years since 1914, then, are marked by swift and fundamental adjustment from a peace to a war economy and then back to a peace economy again; by continuing prosperity for fifteen years, briefly interrupted in 1918, 1924 and 1927 and halted for more than a year in 1921; by the conversion of the United States from a debtor to a creditor country, sending a huge fund of credit abroad in little more than a decade; and by the imposition of severe strains upon our instruments of banking and public finance. The exciting succession of events beginning with the war and the rapidity and magnitude of the adjustments made by all economic institutions in this short space of time undoubtedly stimulated the speculative fevers which rose and fell time and again during the period and which at last culminated in the disastrous stock market and real estate booms of the late twenties.

II. THE MOVEMENT OF PRICES

The problems generated by large and frequent fluctuations in the levels of prices are well known in economic history. Disturbances in the established relationship between creditor and debtor, employer and employee, agricultural and industrial producers; the passage from high activity to deep depression; and troublesome uncertainties as to the future with their effects on business judgments and policies, are all accompaniments of frequent and drastic movements in the prices of commodities and of the variety of forms of tangible and intangible property. Whether they are the cause or effect of general business conditions, it is clear that violent fluctuations in prices were characteristic of the period since 1914. Three periods of more than ordinary rising prices and two of most severe decline, broken by a comparatively steady level of commodity prices between 1924 and 1929, punctuated the business history of this country during the last fifteen years.

**Table 1.—Prices from 1913 to the Close of the War**

<table>
<thead>
<tr>
<th>Date</th>
<th>Index number of wholesale prices(^a) (1926 av. = 100)</th>
<th>Index numbers of the cost of living(^b) (1923 = 100)</th>
<th>Average prices per share of common stocks(^c) (in dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1913 (av. for year)</td>
<td>69.8</td>
<td>192.0</td>
<td>58.7</td>
</tr>
<tr>
<td>1918 (November)</td>
<td>196.3</td>
<td>100.1</td>
<td>85.3</td>
</tr>
<tr>
<td>Percent change</td>
<td>+95.3</td>
<td>+61.5</td>
<td>+45.8</td>
</tr>
</tbody>
</table>

\(^a\) U. S. Bureau of Labor Statistics.

\(^b\) National Industrial Conference Board.

\(^c\) New York Times, Average Price in Dollars of 25 Industrial Stocks.

\(^d\) July, 1914.
RECENT SOCIAL TRENDS

Under the influence of war conditions, wholesale prices almost doubled in five years, the cost of living rose by more than 60 per cent and the prices of common stock advanced 45 per cent.

After only a slight break in prices following the cessation of hostilities, prices of all kinds started up again from the very high levels they had reached in 1918 and by May, 1920, when the top was touched, wholesale prices had advanced another 29 per cent, the cost of living 26.4 per cent and stock prices 38.7 per cent.

Table 2.—Prices from Low of 1919 to High of 1920

<table>
<thead>
<tr>
<th>Wholesale prices a (1926 av. = 100)</th>
<th>Cost of living b (1923 = 100)</th>
<th>Common stock prices c (1926 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Index number</td>
<td>Date</td>
</tr>
<tr>
<td>------</td>
<td>--------------</td>
<td>------</td>
</tr>
<tr>
<td>February, 1919</td>
<td>129.8</td>
<td>March, 1919</td>
</tr>
<tr>
<td>May, 1920</td>
<td>167.2</td>
<td>July, 1920</td>
</tr>
<tr>
<td>Percent change</td>
<td>+28.9</td>
<td>Percent change</td>
</tr>
</tbody>
</table>

b National Industrial Conference Board.

The next major movement in prices was downward and occurred during the long and severe liquidation of business and industrial depression, dating roughly from the middle of 1920 to the early part of 1922. The magnitude of the fall in prices in this period is shown in Table 3.

Table 3.—High and Low Prices, 1920–1922

<table>
<thead>
<tr>
<th>Wholesale prices a (1926 av. = 100)</th>
<th>Cost of living b (1923 = 100)</th>
<th>Common stock prices c (1926 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Index number</td>
<td>Date</td>
</tr>
<tr>
<td>------</td>
<td>--------------</td>
<td>------</td>
</tr>
<tr>
<td>May, 1920</td>
<td>167.2</td>
<td>July, 1920</td>
</tr>
<tr>
<td>January, 1922</td>
<td>91.4</td>
<td>August, 1922</td>
</tr>
<tr>
<td>Percent change</td>
<td>-45.3</td>
<td>Percent change</td>
</tr>
</tbody>
</table>

b National Industrial Conference Board.
c Standard Statistics Co.

Recovery from the depression was accompanied by the recovery of prices but not of sufficient extent to raise them again to the levels of 1919 and 1920. Wholesale prices had risen some 14 percent by March, 1923, and the prices of common stock by nearly 40 percent. The decline in
business in 1924 brought all prices down once more, but this time only moderately; and thereafter until 1929, the wholesale prices of commodities and the prices of common stock pursued a different course. At the same time that the wholesale prices were fluctuating within exceedingly narrow limits, stock prices were rising to new and unprecedented heights. Thus between 1924 and 1929 when there was only a slight increase in the average of wholesale prices, common stocks recorded more than a threefold rise in their average price.

**Table 4.—Index Numbers of Wholesale Prices and of the Prices of Common Stocks, 1924–1929**

<table>
<thead>
<tr>
<th>Date</th>
<th>Wholesale prices (average for month) (1926 av. = 100)</th>
<th>Common stock prices (average for month) (1926 = 100)</th>
<th>Date</th>
<th>Wholesale prices (average for month) (1926 av. = 100)</th>
<th>Common stock prices (average for month) (1926 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>June, 1924</td>
<td>94.9</td>
<td>65.6</td>
<td>June, 1928</td>
<td>97.6</td>
<td>148.2</td>
</tr>
<tr>
<td>June, 1925</td>
<td>103.0</td>
<td>85.1</td>
<td>June, 1929</td>
<td>96.4</td>
<td>191.0</td>
</tr>
<tr>
<td>June, 1926</td>
<td>100.5</td>
<td>96.9</td>
<td>September, 1929</td>
<td>97.5</td>
<td>216.1</td>
</tr>
<tr>
<td>June, 1927</td>
<td>93.8</td>
<td>114.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


† Standard Statistics Co.

The final period of price change in the years under discussion was, like that of 1921, one of precipitate and large decline. Beginning in 1929 this drastic fall in the price level is now in its third year and is, in June 1932, not yet arrested. The prices of all types of commodities and saleable property, while not equally affected, have suffered from this prolonged revision in the general price level.

**Table 5.—Index Numbers of Prices, 1929–1932**

<table>
<thead>
<tr>
<th>Date</th>
<th>Wholesale prices (1926 av. = 100)</th>
<th>Cost of living (1925 = 100)</th>
<th>Common stock prices (1926 = 100)</th>
</tr>
</thead>
<tbody>
<tr>
<td>September, 1929</td>
<td>97.5</td>
<td>100.8</td>
<td>216.1</td>
</tr>
<tr>
<td>March, 1932</td>
<td>66.9</td>
<td>79.6</td>
<td>53.8</td>
</tr>
<tr>
<td>Percent change</td>
<td>−32.8</td>
<td>−21.0</td>
<td>−75.1</td>
</tr>
</tbody>
</table>


† National Industrial Conference Board.

‡ Standard Statistics Co.

It is clear from this exhibit that price movements of such frequency and amplitude must have had a profound, if not a determining, influence not only on the course of business but on developments in economic and

† For data on net per capita output of selected commodities in 1929 and 1931, see Chap. XVII.
social practice and thought. Adjustment to wide price fluctuations, whether they lead to prosperity or depression, involve widespread ramifications and are the substance of many of the economic problems associated with existing economic systems. Disparities in the movement among the multitudinous prices of advanced business communities account for the major difficulties of the agricultural problem of the past ten years, for the struggle to raise wages as fast as the cost of living during the war and early post-war years, for the contemporary conflict between creditor and debtor classes, and perhaps for the prolongation of the present depression, the persistence of which, in the opinion of many students of the problem, is attributable to the failure of some prices, such as those of fabricated goods and of commodities sold at retail, to decline at anything like the rate characteristic of the prices of raw materials and of agricultural products. So far, finally, as the present fall in prices is concerned, it has already had dire consequences in stagnant business, in universal unemployment and in drastic reductions in the standard of living. The continuance of the decline for any appreciable length of time may even more fundamentally revolutionize our conceptions of the adequacy of existing standards of life and of existing social controls over the activities of private business.

III. INCOME AND WEALTH

The sustained activity of industry in the United States during the war and the majority of the post-war years has led many to believe that the income of the people of the United States has, since 1914, ascended to new and higher levels, substantially greater than those prevailing before the war. The measurement of national income even in ordinary times is a formidable task. The conception of national income is not a simple one, since the statistical measure so designated is a composite of various types of income not all susceptible of equally clear and acceptable definition. The measurement, therefore, of more or less indefinable elements leaves considerable latitude for broad estimate and difference of opinion. In periods of appreciable price changes these problems of measuring real income are multiplied many times by reason of the unavoidable difficulty encountered in constructing satisfactory index numbers of the purchasing power of the dollar. Under the circumstances it is essential to employ elaborate estimates of national income with extreme caution and to compare them with indexes of the physical output.

14 A full discussion of this phase of the price situation will be found in a book by Frederick C. Mills, on pre-war and post-war economic changes, Economic Tendencies, Chap VI, published by the National Bureau of Economic Research, New York, 1932.
15 See Chap. XVI.
16 Compare with discussion of income in Chap. XVII.
of industry, of the volume of employment and the like, before coming to final conclusions as to the trend of conditions.

Estimates of the national income in the United States have for many years been made by Willford I. King. His latest estimates, which carry the series through 1928, are shown in Table 6. The estimates, expressed

<table>
<thead>
<tr>
<th>Year</th>
<th>Millions of current dollars</th>
<th>Millions of 1913 dollars</th>
<th>Year</th>
<th>Millions of current dollars</th>
<th>Millions of 1913 dollars</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>35,647</td>
<td>35,250</td>
<td>1922</td>
<td>65,925</td>
<td>46,753</td>
</tr>
<tr>
<td>1915</td>
<td>37,205</td>
<td>36,636</td>
<td>1923</td>
<td>74,237</td>
<td>45,164</td>
</tr>
<tr>
<td>1916</td>
<td>43,248</td>
<td>39,559</td>
<td>1924</td>
<td>77,135</td>
<td>46,753</td>
</tr>
<tr>
<td>1917</td>
<td>51,331</td>
<td>40,242</td>
<td>1925</td>
<td>81,031</td>
<td>48,412</td>
</tr>
<tr>
<td>1918</td>
<td>60,408</td>
<td>40,150</td>
<td>1926</td>
<td>$85,548</td>
<td>$50,421</td>
</tr>
<tr>
<td>1919</td>
<td>65,949</td>
<td>38,017</td>
<td>1927</td>
<td>$88,205</td>
<td>$52,892</td>
</tr>
<tr>
<td>1920</td>
<td>73,999</td>
<td>37,573</td>
<td>1928</td>
<td>$89,419</td>
<td>$54,022</td>
</tr>
</tbody>
</table>


TABLE 6.—THE REALIZED INCOME OF THE PEOPLE OF THE CONTINENTAL UNITED STATES, 1914–1928

in current dollars, reflect the influence of price. When the two columns are compared in the years 1919 and 1920, an increase in the national income of substantially eight billions shrinks, after correction is made for the rising price level, to an actual decline of some five hundred millions. But even in the measure reduced to 1913 dollars, the post-war years register somewhat larger increases than the pre-war. How great the difference in the rate of increase of the national income has been may be seen from the following tabulation of changes in the per capita realized income in terms of 1913 dollars. Since final estimates of the national income require the use of a multiplicity of series, many of which are published some years after the event, the estimates are not yet carried beyond 1928. Highly tentative estimates for 1929, however, show an increase over the preceding year of more than 3 billion dollars. These figures obviously confirm the common impression that national income has increased since the war at a rate faster than during the pre-war years. Precise estimates of the

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course of national income since 1929 are at this time impossible to make, but comprehensive data on the decline in wages and salaries during 1930 and 1931, and less exhaustive data for the first half of 1932, indicate that the drop in the national income in 1930, 1931 and in all probability in 1932, will far exceed the drastic decline of 1921.¹⁸

How far the rise in total national income since 1914 has produced a more equal distribution of it, it is hard, if not impossible, to tell. Since the study by Frederick R. Macaulay¹⁹ of the distribution of personal incomes in the United States in 1918, no investigation of the problem of equal value has been made. Although the national income had by 1918 measurably increased because of large production and generally good business, Macaulay’s study revealed gross inequalities in income in that year, presumably little different from those prevailing in the years before. Estimates of the total share of employees in the national income, however, show a decided increase in the proportion received in wages and salaries in the years following 1917.

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent of national income comprised by wages, salaries, pensions, compensation, etc.</th>
<th>Year</th>
<th>Percent of national income comprised by wages, salaries, pensions, compensation, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>51.9</td>
<td>1922</td>
<td>57.2</td>
</tr>
<tr>
<td>1915</td>
<td>52.0</td>
<td>1923</td>
<td>57.7</td>
</tr>
<tr>
<td>1916</td>
<td>51.9</td>
<td>1924</td>
<td>57.7</td>
</tr>
<tr>
<td>1917</td>
<td>50.3</td>
<td>1925</td>
<td>57.2</td>
</tr>
<tr>
<td>1918</td>
<td>53.5</td>
<td>1926</td>
<td>59.1</td>
</tr>
<tr>
<td>1919</td>
<td>53.7</td>
<td>1927</td>
<td>58.8</td>
</tr>
<tr>
<td>1920</td>
<td>57.1</td>
<td>1928</td>
<td>58.9</td>
</tr>
<tr>
<td>1921</td>
<td>57.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Computed from King, op. cit., p. 74.

In view of the opinion, prevalent in this and other countries during the past years, that one probable cause of the present depression was the excessive construction of plant and equipment due to the diversion of an increasing proportion of the income of industry into profits and overhead, King’s findings are surprising. An adequate test of this hypothesis and of the income data would require elaborate and long investigation. It is pertinent to point out, however, that measures of physical output during the post-war years show a marked increase in the production of capital goods; and in the manufacturing industries, the share of wages alone or of wages and salaries combined in the total value added by manufacture

¹⁸ See Chap. XVI.

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has declined substantially since 1923. Except in 1921, when, as in all years of severe depression, wages, although much less in absolute amount, were an exceptionally high percentage of total value added, the percentage for wages alone varied only slightly from 1899 to 1923, but fell very rapidly between 1923 and 1929. The percentage for wages and salaries combined had a decided upward trend from 1899 to 1914, little change from 1914 to 1923 (except in 1921) and a considerable downward movement during the last six years.

TABLE 8.—PERCENTAGE THAT WAGES, SALARIES, OVERHEAD AND RETURN TO CAPITAL ARE OF THE TOTAL VALUE ADDED BY MANUFACTURE, 1899–1929

<table>
<thead>
<tr>
<th>Year</th>
<th>Wages</th>
<th>Wages and salaries</th>
<th>Overhead and return to capital</th>
<th>Year</th>
<th>Wages</th>
<th>Wages and salaries</th>
<th>Overhead and return to capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>1899</td>
<td>41.6</td>
<td>49.5</td>
<td>50.5</td>
<td>1921</td>
<td>44.7</td>
<td>57.5</td>
<td>48.5</td>
</tr>
<tr>
<td>1904</td>
<td>41.5</td>
<td>50.6</td>
<td>49.4</td>
<td>1923</td>
<td>43.6</td>
<td>53.4</td>
<td>48.6</td>
</tr>
<tr>
<td>1909</td>
<td>40.2</td>
<td>51.2</td>
<td>48.8</td>
<td>1925</td>
<td>40.0</td>
<td>51.0</td>
<td>49.0</td>
</tr>
<tr>
<td>1914</td>
<td>41.3</td>
<td>54.1</td>
<td>45.9</td>
<td>1927</td>
<td>39.3</td>
<td>51.3</td>
<td>48.7</td>
</tr>
<tr>
<td>1919</td>
<td>42.2</td>
<td>53.8</td>
<td>46.2</td>
<td>1929c</td>
<td>37.2</td>
<td>48.6</td>
<td>51.4</td>
</tr>
</tbody>
</table>


* The percentages for 1923 to 1929 would be slightly higher if central office salaries were included, but these are more akin to overhead.

* Adjusted.

Estimates of the size and distribution of the wealth of a country are if anything more difficult to make than estimates of national income. Aside from the confusion arising out of the factor of changes in prices, estimates of wealth involve the valuation of an infinite variety of property subject to multifarious market conditions and, in some instances, not marketable at all. If the wealth of the United States be regarded as the capacity of its industry and agriculture to produce goods, of its buildings to house its inhabitants and its industry, then the wealth of the United States has experienced a vast increase in the past several decades. Measured in terms of prices, however, indexes of wealth reflect price fluctuations, changes in the assessed valuation of real property, varying farm values and the like. Estimates of this type, obtained by interpolations and extrapolations from the decennial censuses of Wealth, Debt and Taxation have been made by the National Industrial Conference Board. They show that the total wealth of the United States had increased two and one half fold, or from 192 to 489 billions, between 1914 and 1920. Even with the decline in the price level since 1920 the estimated wealth stood at 362 billions of dollars in 1929. On the distribution of wealth, we are even more in the dark. In spite of the deliberate attempts to

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promote the wider diffusion of ownership, there is little evidence that any radical change in the distribution of wealth has taken place in this country during the past several decades.\textsuperscript{21}

IV. THE OUTPUT OF INDUSTRY

At least some of the obscurity which surrounds the changes in the national income is removed by recent inquiries into the course of the physical output of American industry and agriculture. As in the case of a growing number of economic statistical series, the adequate measurement of physical product is a comparatively recent innovation in statistical practice, being little more than ten years old. An elaborate study of contrasting economic developments in the United States during the pre-war period 1901-1913, and the post-war years 1922-1929, made by Frederick C. Mills for the National Bureau of Economic Research, has yielded measures of changes in total physical production and in the physical output of important component products which constitute the material for the discussion in this section.\textsuperscript{22}

The combined physical production of agriculture and of the manufacturing, mining and construction industries increased 34 percent from 1922 to 1929, as is shown in the following index numbers from Mills:

\begin{center}
\begin{tabular}{|c|c|c|c|}
\hline
Period & Volume of production & Population & Per capita production \\
\hline
1922 & 100 & & \\
1923 & 111 & & \\
1924 & 109 & & \\
1925 & 118 & & \\
1926 & 125 & & \\
1927 & 124 & & \\
1928 & 130 & & \\
1929 & & & \\
\hline
\end{tabular}
\end{center}

The advance in output was steady throughout the period and even in the recession years, 1924 and 1927, the decline was surprisingly small. Much more important, however, is the comparison between the rate of increase in physical output in the pre-war and post-war periods. Per capita output, reflecting the retardation in the rate of population growth, as well as the rise in production, advanced twice as fast in the later years as in the earlier, as is indicated by the average annual rate of increase.\textsuperscript{23}

So drastic a change in the pace of industry must necessarily have involved significant consequences in the banking, investment and business policy

\textsuperscript{22} See Mills, \textit{op. cit.}
\textsuperscript{23} Mills, \textit{op. cit.}
of the country and may, indeed, furnish a useful clue to the reasons for
the severe decline in production which has continued since 1929.

Evidence contained in the measures of important component series
of the total index of production supports the conclusion that the produc-
tion of capital goods in the post-war years rose much more rapidly than
the output of commodities designed for direct consumption. While the
greatest disparity in output exists between the production of consump-
tion goods and machinery, the supply of transportation equipment remains
consistently higher than that of consumption products in each of the
years, except 1928, and non-residential construction, including the capital
expenditures of governments, outstrips consumers’ goods in the last four
years of the period.

Table 9.—Physical Production of Consumption Goods and Capital Equipment, in
Index Numbers, 1922–1929

(1922 = 100)

<table>
<thead>
<tr>
<th>Year</th>
<th>Consumption goods (including residential construction)</th>
<th>Machinery</th>
<th>Transportation equipment</th>
<th>Non-residential construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1922</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1923</td>
<td>111</td>
<td>134</td>
<td>175</td>
<td>80</td>
</tr>
<tr>
<td>1924</td>
<td>110</td>
<td>154</td>
<td>175</td>
<td>80</td>
</tr>
<tr>
<td>1925</td>
<td>120</td>
<td>155</td>
<td>176</td>
<td>120</td>
</tr>
<tr>
<td>1926</td>
<td>125</td>
<td>153</td>
<td>141</td>
<td>142</td>
</tr>
<tr>
<td>1927</td>
<td>124</td>
<td>146</td>
<td>129</td>
<td>144</td>
</tr>
<tr>
<td>1928</td>
<td>130</td>
<td>157</td>
<td>90</td>
<td>150</td>
</tr>
<tr>
<td>1929</td>
<td>131</td>
<td>191</td>
<td>139</td>
<td>157</td>
</tr>
</tbody>
</table>

* Mills, op. cit.

Probably the most striking and unusual developments in production
since the war are to be found in the divergencies in output among various
categories of goods purchased and used by the ultimate consumer.24
The great expansion in the automobile and electrical industries had far
reaching effects in diverting the consumers’ purchasing power from old to
new products and placing in the hands of consumers stocks of durable
products which have a slow rate of obsolescence and which, consequently,
need to be replaced only after the lapse of considerable intervals of time.
The effects of the widespread substitution of such durable goods for the
perishable and semi-perishable commodities which before accounted for a
larger share of the ordinary consumer’s expenditures are unquestionably
being felt during the current depression in the form of an exceedingly low
replacement demand for such products. The sharp contrast between the
output of the new and the old products is shown in Table 10. The differ-
ence between the increase of 72 percent in the production of durable goods

24 See discussion of consumers’ goods given in Chap. XVII.
and the increase of less than 15 percent in the production of the staple articles of consumption explains the depressed state of the staple industries during many of the prosperous post-war years.

Table 10.—Physical Production of Types of Consumption Goods, in Index Numbers, 1922–1929*

<table>
<thead>
<tr>
<th>Year</th>
<th>Durable consumption goods</th>
<th>Residential construction</th>
<th>Staples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Foods</td>
</tr>
<tr>
<td>1922</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>1923</td>
<td>127</td>
<td>125</td>
<td>106</td>
</tr>
<tr>
<td>1924</td>
<td>120</td>
<td>123</td>
<td>107</td>
</tr>
<tr>
<td>1925</td>
<td>140</td>
<td>155</td>
<td>108</td>
</tr>
<tr>
<td>1926</td>
<td>151</td>
<td>159</td>
<td>110</td>
</tr>
<tr>
<td>1927</td>
<td>130</td>
<td>155</td>
<td>110</td>
</tr>
<tr>
<td>1928</td>
<td>154</td>
<td>165</td>
<td>113</td>
</tr>
<tr>
<td>1929</td>
<td>172</td>
<td>175</td>
<td>113</td>
</tr>
</tbody>
</table>

* Mills, op. cit.

Includes automobiles, furniture, electrical equipment, carpets, mattresses, radios, phonographs and pianos.

So far as physical production is concerned, the “new era” was characterized by an accelerated rate of total output; by the more rapid expansion in the production of plant and equipment than of consumers’ goods; by an unprecedented rise in the output of durable consumption goods; and by a substantial lag in the output of the staples, food, textile and leather products. Since 1929 this trend in physical output has, of course, been entirely reversed. By 1931 manufacturing output was 25 percent below 1929; the production of minerals had fallen by substantially the same amount. Automobile production in 1931 was less than half that of 1929; and the decline in both construction and in the manufacture of capital equipment far exceeded the drop in the general level of physical production.

Mechanization.—The high level of per capita physical output in the United States from 1922 to the turn of business in 1929 was accompanied, if indeed it was not made possible, by an unusual increase in the productivity of labor. By reason of scientific invention and the mechanization resulting from the application of invention to industrial processes, and also as the result of vast improvements in the methods of factory management, the output of labor in many industries rose so rapidly as to make the phenomenon of technological unemployment one of the most pressing of the economic and social problems of the post-war decade. While various measures of the productivity of labor differ considerably

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25 On production inventions, see Chap. III.
in detail, there is little reason to doubt that the advances in productivity since 1923 surpass the experience of similar earlier periods of which we have any adequate record. Between 1899 and 1909 the output per worker in agriculture increased 6 percent; in mining 18 percent; in manufacturing 7 percent; and in rail transportation 14 percent. Between 1923 and 1929, a much shorter period, the productivity of manufacturing labor increased 22 percent; from 1920 to 1929 output per service hour of railway employees rose 22 percent; and from 1919 to 1929 the production per man per day of bituminous coal miners increased 30 percent. In confirmation of this acceleration in the advancing rate of output of labor, it is necessary only to point to the huge developments in the consumption of energy in the United States in comparatively recent years.

The advance in mechanization has been made possible not only by the invention and wide spread adoption of new and more efficient machinery for the making and moving of material, but also by a marked increase and refinement of the methods of standardization, by a wider recognition and utilization of scientific research and by a broad acceptance of the principles underlying what F. W. Taylor called the science of management.

Standardization and that application of its general practice, interchangeability of parts, are basic for quantity production at low unit cost. The principle is not new; the Dutch shipbuilders of the late 17th century excelled in cheapness and rapidity of ship construction by using essentially the same method as that adopted in the recent war-time production of fabricated ships; Mandelay in England and Eli Whitney in the United States at the beginning of the 19th century were exploiting the use of machine tooled, interchangeable parts for relatively large scale production. The application of the general principle to processes and products is as yet far from its full effectiveness, but it has become an essential element in practically all branches of modern American industry and is supported and furthered by the agencies of the federal government, such as the Bureau of Standards and the Division of Simplified Practice, both operating under the Department of Commerce.

Another factor in this broad movement has been the intensification of scientific research. Though the realm of such investigation includes the origination of new products and the utilization of wastes, scientific research has made outstanding contributions to the mechanization of industry. From the leaders in this field, the laboratories of the General Electric Company, the American Telephone and Telegraph Company,

27 Mills, op. cit.
28 Unpublished data of the National Bureau of Economic Research.
29 For index number on coal production, see Chap. II.
30 See Chap. II.
the General Motors Company and other concerns—which together expend many millions of dollars solely on research and experimentation—have come a series of new devices to economize labor and speed the conversion of raw materials into consumable goods. Indeed, one of the most promising new developments in American industry since the war is the new respect for science—even for pure research—on the part of the business public. In 1927 the National Research Council listed 999 research agencies, company, joint, consulting and trade association laboratories and research services in universities cooperating with industries.\(^{32}\)

From organized research in the physical sciences, American industry is gradually beginning to widen its use of scientific research in the field of the social sciences. Statistical departments began to be more widely organized by industry immediately after the experience of the war; this movement was set back temporarily in the depression of 1921, but has since been growing. Research is extending into labor management, industrial psychology, sales management and advertising. But in the next book of American economic history, now opening, it is to be hoped that the record will tell of much more scientific intelligence brought to bear on the complexities of business problems than has been characteristic in the past.

Though since the war the study of improved methods of management has progressed far beyond the scope envisaged before the war by F. W. Taylor and is now directed with new emphasis to personnel and to marketing, it has still found its chief field in the improvement of mechanization in a broad sense. New methods for “routinizing” industry, such as operating budgets and inventory control, have been successfully applied. But while the concepts and methods of good management are fairly widely diffused and the rank and file of American industrialists are held to be more open minded in the exchange of information and in the adoption of approved new practices than those of other countries, there still remains too wide a spread within industries and between industries.\(^{33}\) The stresses and strains of the period since 1921, with great variations in the economic pressure on industries and regions, have produced no uniformity of good practice. If one of the best informed observers, H. S. Dennison, found the management situation “spotty” in 1928, what is it likely to be when the country emerges from the depression of more recent years? Some, perhaps many, industrialists will have jettisoned promising experts and whole personnel departments. The deepening pressure will necessarily tend to overemphasize economies in the cost of

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\(^{33}\) *Recent Economic Changes*, op. cit., vol. II, p. 546.
production, to exalt process invention at the expense of product invention and to neglect those humanizing internal agencies for the betterment of industrial relations which have been so promising a feature of the post-war factory system.

Localization of Industry.—The expansion of industry since the war and the keen struggle for markets have set up new or intensified regional competition. That of southern cotton mills with the older establishments of New England dates back to the pre-war era, of course, but since the war the dislocation of northern manufacture has become more marked. The southern enterprises grew in number and in capacity to handle the production of superior goods. Aided by lower wages, by the laxity of labor laws—especially as regards night work—and substantially untrammeled by labor union organizations, they were able to force the closing of many northern mills. In some cases this meant the termination of institutions generations old; in others it involved the transfer of the machinery and the movable sections of the organization to the more favorable southern area, leaving unemployed workers behind. In somewhat similar manner, the shoe manufacturers of Lynn, Haverhill and other New England cities have been confronted with increased competition of shoe production in St. Louis and Minneapolis. Shoe manufacture in New England has even longer traditions than cotton cloth production for it dates back to the time when English handicraftsmen began the fabrication of footwear in the small Massachusetts towns. Its evolution on a factory basis had been slower than that of its sister industry, but up to the end of the 19th century it seemed firmly rooted in New England soil. In other branches of manufacture, such as steel, wood working and heavy chemicals, somewhat comparable shifts are to be observed, with the result that industrial activity has become more widely dispersed through the United States than ever before. A careful study of locational factors for each industry and for each region would be required to understand this complex movement. While some industries or branches of them are moving closer to the great consuming centers, others are moving away. And a continued phase of the zoning process, westward and southward, in the movement of the American Industrial Revolution is here apparent.

Although it is impossible to present a complete statistical exhibit of the extent and variety of this regional movement in American industry, the data on the geographical shift of manufacturing industries between 1919 and 1929 throw considerable light on the nature of the movement. The large losses in the New England states and the gains in the south Atlantic and east south central region roughly measure the major shift in the localization of the various divisions of the textile

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Footnote: On the associated population shifts, see Chap. I.
RECENT SOCIAL TRENDS

TABLE 11.—CHANGES IN NUMBER OF WAGE EARNERS IN MANUFACTURING INDUSTRIES, 1919–1929a

<table>
<thead>
<tr>
<th>Geographic division</th>
<th>Percent change in number of wage earners, 1919–1929</th>
<th>Geographic division</th>
<th>Percent change in number of wage earners, 1919–1929</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>− 1.8</td>
<td>South Atlantic</td>
<td>+ 11.6</td>
</tr>
<tr>
<td>New England</td>
<td>−18.7</td>
<td>East South Central</td>
<td>+14.8</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>−10.8</td>
<td>West South Central</td>
<td>+4.4</td>
</tr>
<tr>
<td>East North Central</td>
<td>+ 6.1</td>
<td>Mountain</td>
<td>− 6.2</td>
</tr>
<tr>
<td>West North Central</td>
<td>− 5.1</td>
<td>Pacific</td>
<td>+ 8.3</td>
</tr>
</tbody>
</table>

* United States Bureau of the Census, Census of Manufactures (biennial).

industry in this country. Within the regions, moreover, the extent of the movement is most striking. Thus while the number of wage earners in the Massachusetts manufacturing industry declined 21.9 percent, their number increased 33 percent in North Carolina and 28.6 percent in Georgia. The growth of industry, measured by the number of wage earners, in the east north central states was in large part attributable to the development of the automobile industry during this period. For while the entire region recorded an increase in wage earners of 6 percent, their numbers in Indiana and Michigan rose by 13 percent.

Under the severe competitive conditions which prevail during a long depression characterized by falling prices and continuous efforts to reduce cost, the movement from high to low cost areas of production is stimulated. Certainly since 1930 producers in the cotton textile, clothing, hosiery and shoe industries have taken advantage of more favorable labor conditions and lower rents and taxes with the result that a migration of major proportions to small towns has in these industries been under way for some time. Only, in fact, since the middle of 1931, when drastic readjustments in labor and overhead costs and in rents began to be made in the larger cities, was this movement from the established centers probably arrested.

V. BUSINESS ORGANIZATION AND COMBINATION

The domination of American business by the large corporation and the growth in the scale of industrial operations, exemplified in the development of methods of mass production, selling and the like, has long been an observed tendency in American economic organization. Since 1920, partly as the result of the operation of slow traditional forces and partly because of factors peculiar to this latest period, the movement toward the centralization of business control, toward the combination of business enterprise and toward further increase in the size of typical industrial units has received considerable impetus and has
revealed itself in the creation of formidable new problems in the private and social control of business and in the aggravation of old ones.

Scale of Industrial Operations.—Important as a knowledge of the size of typical industrial units is for the proper understanding of future trends in industrial relations, of the requirements for capital expenditure and of the nature of the issues of social control, the facts furnished by government agencies on the question are far from illuminating. Data published by the United States Census of Manufactures show that relatively small industrial establishments continue greatly to predominate in number and that the average number of wage earners per establishment increased between 1914 and 1929 by less than two workers per establishment. More enlightening as to scale of production are the data for the distribution of establishments according to number of employees, use of power or value of output. These figures are not yet available for the Census of Manufactures of 1929, but the earlier evidence, summarized by Willard Thorp, indicates a decided trend toward larger units of production. In 1923 the establishments which employed more than 250 wage earners were less than 4 percent of all establishments but they employed over half of the industrial wage earners. Thorp’s study of the central offices owning two or more establishments revealed the fact that over 20,000 establishments, subsidiary to larger manufacturing organizations, employed at least one-third of all wage earners in manufacturing.

The Trend toward Combination.—While numerous reasons have from time to time been advanced to account for the tendency toward business combinations, there can be little doubt that it originates in the desire for stability. Particularly during the decade of the 1920’s and even in the course of the current depression, attempts at consolidation or understandings or the actual merger of independent business units were in the main aimed to limit the vicissitudes and uncertainties of uncontrolled competitive business. Efforts directed toward the regulation of private, competitive business, in earlier periods of American history carried on surreptitiously by business men, have now grown into ambitious programs, sponsored by many business leaders, for the thoroughgoing regulation of private enterprise in the interest of stability in operation and regularity in employment. Although it is true that private business has by no means demonstrated its capacity to stabilize industry and, what is more important, to come to terms with the public as to standards of service and price, the fact remains that the goal of stability through consolidation and agreement is now more widely accepted by business than ever before and that it is destined to play a dominant role in affecting the trend and purposes of business organization in the next years.


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Coupled with the need for stability and certainty is the attempt to eliminate waste and reduce costs of operation through consolidation. Mergers in the field of retail trade, which are essentially a post-war development, were entered into mainly to produce savings in operating costs, to eliminate duplication and to reap the benefits from the centralized purchase of the products of manufacturers and wholesalers. Many of the recent vertical combinations between manufacturer and retailer have been designed, therefore, not only to insure the producer more stable operations through his control over his outlet, but even more to effect savings in selling costs. How much has been accomplished in either direction it is impossible to determine at a time when the volume of retail business has steadily declined for two years and when both wholesale and retail prices have pursued the most erratic courses. The logic, however, which promoted the early consolidations in the retail industry is now stronger than ever and may be expected to lead to the continuance of the combination movement in this field of business under conditions more favorable than the present.

However potent these internal economic reasons for combination may have been, it must be admitted that much of the incentive to the movement is to be found in the extraordinarily favorable financial conditions which for ten years facilitated the organization of mammoth corporations, the exchange of new securities for old and the raising of additional investment funds. The plethora of funds seeking investment in the United States between 1923 and 1929, the apparently insatiable appetite of the public for securities, the large banking profits involved in the flotation of new security issues and the very long duration of the period of rising security prices, represented an irresistible combination of circumstances which hastened, where it did not occasion, the gathering together of independent businesses into consolidated corporations and other controlling organizations.

Much of the centralization in the control of business in this period was achieved by the outright merger of independent firms and subsequently by the unified management of the consolidated company. But in this era, as in the past, control was wielded by a variety of indirect methods, the most important of which was the holding company. This is an old institution in American corporate history but in the past decade it had an enormous development, particularly as an instrument of control in the public utility business, and also to a lesser but important extent in the railway and banking business as well.

Mergers.—The full extent of the merger movement is not recorded. A compilation of figures on mergers and acquisitions by Willard Thorp. 36


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ECONOMIC ORGANIZATION

shows that it is no misnomer to characterize the post-war decade as the era of consolidations. The record of over 1,200 mergers in manufacturing and mining between 1919 and 1928, involving a net disappearance of over 6,000 independent enterprises by the end of 1928 and some 2,000 more by the end of 1930, is far from a complete record of mergers in all fields. Over 4,000 enterprises among public utilities were absorbed in the same period before 1929 and nearly 1,800 bank mergers caused the disappearance of an unrecorded but probably larger number of banks. Many consolidations have taken place in other fields, such as the movement toward vertical integration in the motion picture industry from film producer to chains of theaters, and the development of chains of retail stores with their extraordinary increase of sales since the war. To meet the new competition in the retail field, the older leaders in large scale retailing, the department stores and the great mail order houses,

Table 12.—The Extent of Mergers, 1919-1930

<table>
<thead>
<tr>
<th>Year</th>
<th>Manufacturing and mining</th>
<th>Public utilities</th>
<th>Banking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of mergers recorded</td>
<td>Number of concerns merged</td>
<td>Number of concerns acquired</td>
</tr>
<tr>
<td>1919</td>
<td>89</td>
<td>292</td>
<td>235</td>
</tr>
<tr>
<td>1920</td>
<td>173</td>
<td>474</td>
<td>450</td>
</tr>
<tr>
<td>1921</td>
<td>89</td>
<td>373</td>
<td>303</td>
</tr>
<tr>
<td>1922</td>
<td>67</td>
<td>220</td>
<td>156</td>
</tr>
<tr>
<td>1923</td>
<td>67</td>
<td>218</td>
<td>160</td>
</tr>
<tr>
<td>1924</td>
<td>95</td>
<td>263</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>580</td>
<td>1,840</td>
</tr>
<tr>
<td>1925</td>
<td>121</td>
<td>333</td>
<td>342</td>
</tr>
<tr>
<td>1926</td>
<td>130</td>
<td>587</td>
<td>498</td>
</tr>
<tr>
<td>1927</td>
<td>207</td>
<td>678</td>
<td>399</td>
</tr>
<tr>
<td>1928</td>
<td>221</td>
<td>687</td>
<td>572</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>688</td>
<td>2,293</td>
</tr>
<tr>
<td>1929</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td>1930</td>
<td>.</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>.</td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>Total 1919–1930</td>
<td>.</td>
<td>.</td>
</tr>
</tbody>
</table>

---

* Recent Economic Changes, op. cit., p. 187.
* U. S. Federal Reserve Board, Annual Report, 1927, p. 51. The figures are for the number of mergers affecting capital resources of member banks. The number of banks affected is, of course, considerably greater than the number of mergers.
* Estimated after December 10.
* First nine months.
RECENT SOCIAL TRENDS

have been changing in structure, the department stores commencing to join in chains and the mail order houses themselves to operate retail chain stores.

Combination in Retail Trade. The business combination movement, in former periods a feature of the manufacturing and public utility industries illustrated by the establishment of the historic consolidations in the oil, steel, packing and telephone industries, in this latest era spread rapidly into the areas of merchandising and banking. Although the retail chain store and the large mail order houses antedated the post-war years, it was only then that the wholesale replacement of the independent store by the centrally controlled and managed corporation took place. Partly in response to the recognition of the existence of great wastes arising from duplication in the business of retail merchandising and partly out of the purely fortuitous circumstances of

Table 13.—Share of Total Retail Business Done by Chain* Stores, 1929b

<table>
<thead>
<tr>
<th>Type of business</th>
<th>Total number of stores in United States</th>
<th>Total number of stores operated by chains</th>
<th>Percent number of chain stores are of total stores</th>
<th>Total net sales of all stores (millions)</th>
<th>Total net sales of chain stores (millions)</th>
<th>Percent chain-store sales of total sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food</td>
<td>497,715</td>
<td>57,601</td>
<td>12</td>
<td>$111,311</td>
<td>$3,063</td>
<td>27</td>
</tr>
<tr>
<td>Drug</td>
<td>57,710</td>
<td>5,385</td>
<td>6</td>
<td>1,684</td>
<td>312</td>
<td>19</td>
</tr>
<tr>
<td>Tobacco</td>
<td>33,381</td>
<td>3,205</td>
<td>10</td>
<td>417</td>
<td>127</td>
<td>30</td>
</tr>
<tr>
<td>Variety</td>
<td>11,680</td>
<td>5,444</td>
<td>47</td>
<td>860</td>
<td>810</td>
<td>93</td>
</tr>
<tr>
<td>Apparel</td>
<td>112,960</td>
<td>16,733</td>
<td>15</td>
<td>4,315</td>
<td>1,170</td>
<td>27</td>
</tr>
<tr>
<td>Department and dry goods</td>
<td>46,000</td>
<td>3,004</td>
<td>8</td>
<td>5,305</td>
<td>772</td>
<td>14</td>
</tr>
<tr>
<td>General merchandise</td>
<td>12,643</td>
<td>2,661</td>
<td>21</td>
<td>876</td>
<td>226</td>
<td>26</td>
</tr>
<tr>
<td>Furniture</td>
<td>25,070</td>
<td>992</td>
<td>4</td>
<td>1,524</td>
<td>808</td>
<td>14</td>
</tr>
<tr>
<td>Musical instruments</td>
<td>17,479</td>
<td>603</td>
<td>4</td>
<td>578</td>
<td>85</td>
<td>15</td>
</tr>
<tr>
<td>Hardware</td>
<td>26,555</td>
<td>458</td>
<td>2</td>
<td>862</td>
<td>82</td>
<td>4</td>
</tr>
</tbody>
</table>

* Consisting of 4 stores and over. 

prospective real estate profits and bankers’ gains, the creation of great business combinations in retailing spread from one branch of merchandising to another. By 1930 sectional and national chains were transacting practically one-fifth of the total retail trade of the country, but in many retail fields the proportion was much higher. The disparity between the number of stores operated in chains and the volume of their business indicates the difference in the average size of unit of the chain

27 For a discussion of chain stores in relation to consumption, see Chap. XVII. On marketing in rural areas, see Chap. X.
stores and the independent retail stores. In many instances, also, the bulk of the business is carried on by some four or five of the largest chains.

The importance of these dominating companies and their relative stability through much of this severe depression is shown in Table 14. While some of the larger chain store companies have had difficulty in weathering the storms of the last several years, have effected reorganizations by dropping unprofitable units, have in some cases even considered

<table>
<thead>
<tr>
<th>Type of business and firm</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1927-1928</td>
</tr>
<tr>
<td>Mail order</td>
<td>+15.7</td>
</tr>
<tr>
<td>Sears Roebuck</td>
<td>+19.0</td>
</tr>
<tr>
<td>Montgomery Ward</td>
<td>+14.8</td>
</tr>
<tr>
<td>National Bellas Hess</td>
<td>0.0</td>
</tr>
<tr>
<td>Food</td>
<td>+48.1</td>
</tr>
<tr>
<td>Great Atlantic &amp; Pacific</td>
<td>+47.8</td>
</tr>
<tr>
<td>Kroger</td>
<td>+48.6</td>
</tr>
<tr>
<td>Safeway</td>
<td>+48.5</td>
</tr>
<tr>
<td>First National</td>
<td>+17.7</td>
</tr>
<tr>
<td>Mac Marr</td>
<td>+30.9</td>
</tr>
<tr>
<td>National Tea</td>
<td>+46.1</td>
</tr>
<tr>
<td>H. C. Bohack</td>
<td>+ 5.8</td>
</tr>
<tr>
<td>Grand Union</td>
<td>+ 6.4</td>
</tr>
<tr>
<td>Daniel Reeves</td>
<td>+ 8.9</td>
</tr>
<tr>
<td>Variety</td>
<td>+11.5</td>
</tr>
<tr>
<td>J. C. Penney</td>
<td>+16.3</td>
</tr>
<tr>
<td>F. W. Woolworth</td>
<td>+ 5.3</td>
</tr>
<tr>
<td>S. S. Kresge</td>
<td>+10.2</td>
</tr>
<tr>
<td>S. H. Kress</td>
<td>+12.0</td>
</tr>
<tr>
<td>F. W. Grand-Silver</td>
<td>+38.9</td>
</tr>
<tr>
<td>McCrory</td>
<td>+ 4.5</td>
</tr>
<tr>
<td>W. T. Grant</td>
<td>+37.3</td>
</tr>
<tr>
<td>J. J. Newberry</td>
<td>+36.8</td>
</tr>
<tr>
<td>Drug</td>
<td>+47.2</td>
</tr>
<tr>
<td>Walgreen</td>
<td>+50.2</td>
</tr>
<tr>
<td>People's Drug</td>
<td>+39.5</td>
</tr>
<tr>
<td>Restaurants</td>
<td>- 4.0</td>
</tr>
<tr>
<td>Childs</td>
<td>- 8.5</td>
</tr>
<tr>
<td>Waldorf</td>
<td>-  .4</td>
</tr>
<tr>
<td>Thompson</td>
<td>+ 1.7</td>
</tr>
<tr>
<td>Melville Shoe</td>
<td>+26.7</td>
</tr>
<tr>
<td>Western Auto Supply</td>
<td>+11.5</td>
</tr>
</tbody>
</table>

* Compiled by Merrill Lynch & Co. and reprinted in various issues of the Commercial and Financial Chronicle. The data are for fiscal years. In several cases the fiscal does not coincide with the calendar year.
merging with other chains and in still others have been forced to liquidate, their financial strength and their ability to buy on favorable terms have exposed them to lesser casualties than those suffered by the independent retailer. In fact, the growth of the chain stores and their methods of doing business encouraged, in the later years of the decade, the organization of voluntary chains, particularly in the grocery trade, which make exclusive purchase arrangements with wholesale grocers or with groups of them. The American Institute of Food Distribution reported as of May 1, 1930 that it had record of 273 of such groups with a total membership of 34,311 retailers.\textsuperscript{39}

**Combinations in Banking.**—The relations of banking to business are so universal, intimate and sensitive that developments in the organization and practice of banking possess unusual importance. The very large number of banks in the United States, the small size of many of them and the deep sectional concern in this country over the independence of local banks have for a long time constituted an invitation toward centralization in the face of powerful political and economic resistance. Since the war the instability of banks in agricultural areas, the vulnerability of the small bank to rapid changes in economic conditions and the contagion of the combination movement in other business fields

**Table 15.**—Branch Systems and Branches in the United States, 1900–1931\textsuperscript{a}

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of banks with branches</th>
<th>Number of branches</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In head office city</td>
<td>Outside head office city</td>
</tr>
<tr>
<td>1900</td>
<td>79</td>
<td>25</td>
</tr>
<tr>
<td>1903</td>
<td>188</td>
<td>155</td>
</tr>
<tr>
<td>1910</td>
<td>292</td>
<td>271</td>
</tr>
<tr>
<td>1915</td>
<td>397</td>
<td>455</td>
</tr>
<tr>
<td>1920</td>
<td>590</td>
<td>772</td>
</tr>
<tr>
<td>1921</td>
<td>547</td>
<td>904</td>
</tr>
<tr>
<td>1922</td>
<td>610</td>
<td>1,150</td>
</tr>
<tr>
<td>1923</td>
<td>671</td>
<td>1,297</td>
</tr>
<tr>
<td>1924</td>
<td>706</td>
<td>1,514</td>
</tr>
<tr>
<td>1925</td>
<td>719</td>
<td>1,724</td>
</tr>
<tr>
<td>1926</td>
<td>742</td>
<td>1,877</td>
</tr>
<tr>
<td>1927</td>
<td>738</td>
<td>1,958</td>
</tr>
<tr>
<td>1928</td>
<td>773</td>
<td>2,140</td>
</tr>
<tr>
<td>1929</td>
<td>763</td>
<td>2,275</td>
</tr>
<tr>
<td>1930</td>
<td>749</td>
<td>2,385</td>
</tr>
<tr>
<td>1931</td>
<td>722</td>
<td>2,290</td>
</tr>
</tbody>
</table>

\textsuperscript{a} For the years 1900 to 1923 inclusive the figures are not as of any uniform month. For 1924 they are as of June, for 1925 and 1926 as of December, and for 1926 to 1931 inclusive they are as of June. These data were compiled from unpublished material in the possession of the authors.

ECONOMIC ORGANIZATION

produced a great acceleration in the tendency toward larger banking institutions and toward the centralization of control.

Branch banking has received particular attention in recent years as one means of providing a banking system which can effect greater equalization and more efficient utilization of the credit resources of the country. The future trend in banking organization would seem to be in the direction of the multiplication of branch banking systems and liberalization of the laws respecting them. This conclusion is supported by the great rapidity with which branch banking has grown in the past decade. Before 1921 the movement was confined principally to state banks, but since then national banks have expanded in the same way.

While the smallest independent banks of the country are found in the rural areas and towns, branch banking has developed principally in the larger cities, where size and prestige as much as safety have been important factors in the spirited competition for business which has notably characterized American banking since the war. About two-thirds of the branches established are located in the city in which the parent bank is situated. Over 60 percent of the branch banks are in cities of 100,000 and over; and the principal branch banking centers are New York City and Detroit. Only in the state of California has statewide branch banking had any considerable development.

Table 16.—Branch Banks by Size of City, June 30, 1931

<table>
<thead>
<tr>
<th>Population of city</th>
<th>In head office city</th>
<th>Outside head office city</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
</tr>
<tr>
<td>Under 500</td>
<td>2</td>
<td>0.1</td>
<td>185</td>
</tr>
<tr>
<td>500 to 1,000</td>
<td>7</td>
<td>0.3</td>
<td>169</td>
</tr>
<tr>
<td>1,000 to 2,500</td>
<td>11</td>
<td>0.5</td>
<td>212</td>
</tr>
<tr>
<td>2,500 to 5,000</td>
<td>6</td>
<td>0.3</td>
<td>145</td>
</tr>
<tr>
<td>5,000 to 10,000</td>
<td>11</td>
<td>0.5</td>
<td>106</td>
</tr>
<tr>
<td>10,000 to 25,000</td>
<td>29</td>
<td>1.3</td>
<td>92</td>
</tr>
<tr>
<td>25,000 to 50,000</td>
<td>70</td>
<td>3.0</td>
<td>47</td>
</tr>
<tr>
<td>50,000 to 100,000</td>
<td>131</td>
<td>5.7</td>
<td>60</td>
</tr>
<tr>
<td>100,000 and over</td>
<td>2,063</td>
<td>88.9</td>
<td>154</td>
</tr>
<tr>
<td>Total</td>
<td>2,299</td>
<td>100.0</td>
<td>1,164</td>
</tr>
</tbody>
</table>

* Compiled from unpublished material in the possession of the authors.

Group and chain banking represents the control over separate institutions through stock ownership either by individuals or groups of individuals or by holding companies. Of the two forms of centralization, chain banking is the older, but group banking, essentially holding company control, represents at this time the major tendency in American banking.
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On June 30, 1931, there were in operation in the United States 288 chain and group systems, controlling 2,047 banks with aggregate loans and investments of $13,600,000,000. These systems covered 10 percent of all banks and 31 percent of the loans and investments of all banks in the country. Since branch banking is prohibited in many American states and restricted in others, group and chain banking has had its greatest growth in precisely those states.

Bank mergers and consolidations though perhaps less important than the trend toward group and chain banking have nevertheless exhibited the same accelerated pace since the war. Undertaken for the same reasons as motivated the promoters of branch and group banking, the need for mergers has unquestionably been increased since 1929 by the expedient of absorbing weak banks which are on the verge of failure into the stronger institutions of the same community. Bank consolidations, comparatively

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of mergers</th>
<th>Year</th>
<th>Number of mergers</th>
<th>Year</th>
<th>Number of mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>80</td>
<td>1911</td>
<td>115</td>
<td>1921</td>
<td>963</td>
</tr>
<tr>
<td>1901</td>
<td>41</td>
<td>1912</td>
<td>135</td>
<td>1922</td>
<td>388</td>
</tr>
<tr>
<td>1902</td>
<td>50</td>
<td>1913</td>
<td>113</td>
<td>1923</td>
<td>319</td>
</tr>
<tr>
<td>1903</td>
<td>37</td>
<td>1914</td>
<td>145</td>
<td>1924</td>
<td>365</td>
</tr>
<tr>
<td>1904</td>
<td>63</td>
<td>1915</td>
<td>146</td>
<td>1925</td>
<td>359</td>
</tr>
<tr>
<td>1905</td>
<td>69</td>
<td>1916</td>
<td>136</td>
<td>1926</td>
<td>432</td>
</tr>
<tr>
<td>1906</td>
<td>56</td>
<td>1917</td>
<td>195</td>
<td>1927</td>
<td>538</td>
</tr>
<tr>
<td>1907</td>
<td>54</td>
<td>1918</td>
<td>113</td>
<td>1928</td>
<td>512</td>
</tr>
<tr>
<td>1908</td>
<td>97</td>
<td>1919</td>
<td>178</td>
<td>1929</td>
<td>601</td>
</tr>
<tr>
<td>1909</td>
<td>80</td>
<td>1920</td>
<td>172</td>
<td>1930</td>
<td>735</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of mergers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1910</td>
<td>126</td>
</tr>
</tbody>
</table>

Data for 1900–1920 taken from Banking Inquiry—1925, vol. VI, prepared under the direction of H. Parker Willis and filed with the U.S. Senate Committee on Banking and Currency. Later data compiled from unpublished material in the possession of the authors.

rare before the war, rose sharply in the depression of 1921 and have increased constantly ever since. In this movement, also, all types of banks—national, state, trust companies, stock and mutual savings and private banks—have participated.

Holding Companies.—As an instrument for the concentration of business control, the holding company, defined as “any company which holds securities in any other company or companies” in an amount sufficient to ensure control, deserves special mention because of the great strides it has made in recent years and because of the peculiar problems

40 See footnote to Table 16.
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its development has created. Like other forms of business consolidation, the holding company dates back in American history. Since the war it has had an enormous development primarily in the public utility industry, but substantially also in transportation and banking as well. The popularity of the holding company and the public significance of its growth are ascribed by students of the question to two of its features. It is, in the first place, "the most effective device that has ever been invented for combining under a single control and management the properties of two or more hitherto independent corporations. It has, therefore, made possible the development of giant systems of business enterprise at a pace far more rapid than would have been feasible by any other method of concentration." 43 And in the second place it is "largely, though not

Table 18.—Proportion of Total Utility Services That Are Rendered by the Forty Largest Public Utility Systems, 1930a

<table>
<thead>
<tr>
<th>Type of company rendering service</th>
<th>Type of service and proportion rendered</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electric, percent of all electric power output (kilowatt hours)</td>
</tr>
<tr>
<td>Subsidiaries of pure holding company</td>
<td>72</td>
</tr>
<tr>
<td>Subsidiaries of operating company</td>
<td>5</td>
</tr>
<tr>
<td>Independent operating companies</td>
<td>12</td>
</tr>
<tr>
<td>Total for forty companies...</td>
<td>89</td>
</tr>
<tr>
<td>Service by other companies</td>
<td>11</td>
</tr>
<tr>
<td>Total for nation......</td>
<td>100</td>
</tr>
</tbody>
</table>

* Bonbright and Means, op. cit., p. 95.

completely, exempt from restrictions to which other business corporations have been subject, . . . partly because it is such a new device, partly because it is protected from interference by our traditions of constitutional law, and partly because it often extends beyond the jurisdiction of any one state." 44 Because of these characteristics, the device of the holding company assumes at this time, when the issues involved in the public control over business are most confused and difficult, added significance.

The largest, most rapid and most perfect development of the holding company has taken place in public utilities, especially in the electric light and power and gas business. Ten groups of systems do approximately three quarters of the electric light and power business of the country and sixteen holding company systems control 45 percent of the country's gas

43 Ibid., p. 4.
44 Ibid., p. 6.
output. The degree to which this control is established in the electric and gas industries and the relative freedom from control of the less important traction industry is shown in Table 18.

In the railroad industry, the holding company, checked by the Northern Securities decision of 1904, is of much more recent origin. It may in its present form be said to date from the passage of the Transportation Act of 1920 which placed the security issues of railroad operating companies under a measure of control by the Interstate Commerce Commission. The organization of the Pennroad Corporation and the Van Sweringen group of holding companies marked the extension of this device into the railroad business. By 1930, 20 percent of the entire railroad mileage was under the ultimate control of holding companies. With the railroads, as in the case of the power industry, certainly a major purpose of the holding company has been the avoidance or mitigation of public control. "In the field of the railways . . . it is doubtful whether any one of the great holding companies and investment companies which have recently been created by several of the rival systems would ever have been thought of aside from their usefulness as a means of escaping the guiding hand of the Interstate Commerce Commission."

The latest type of holding company, which is practically a product of the nineteen twenties and born of the desire for control and the public avidity for securities, is the investment trust. Although the original purpose of the investment trust was the management of investment funds of diverse individuals, the abrupt expansion of the funds of American investment trusts to roughly $3,000,000,000 in less than ten years encouraged in some trusts the idea of employing these funds for the purchase of corporate control. The evil days upon which the investment trusts have fallen as a result of the steadily declining security markets since 1929 make the future of this form of holding company uncertain. On the other hand, the consolidation of existing trusts, the liquid condition of some of them and the low prices at which control can be bought would appear to encourage the further entrance of the surviving investment trusts into this field of business consolidation.

No simple summary will suffice to describe the extent of concentration prevailing in the United States in 1930. An interesting attempt to do so has been made by Gardiner C. Means. The two hundred largest non-financial corporations in 1927 (45 railroads, 58 public utilities and 97 industrials), he finds, had gross assets of over 67 billion dollars. This

47 Bonbright and Means, op. cit., p. 228.
48 Ibid., p. 7.
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represented control of almost one-half of all corporate assets, excluding those of financial corporations. Of 573 companies, having securities regularly quoted on the New York Stock Exchange, 130 had gross assets in each case of over 100 million dollars in 1929, totaling over 80 percent of the assets of all the 573 companies. The growth in assets of the great corporations appears to have been between two and three times as rapid as that of all other non-financial concerns. Less than a quarter of the increase in assets apparently has come from mergers or consolidations; somewhat more than a quarter may be calculated as corporate savings; but more than half is new capital obtained in the open market. The steady growth in number of stockholders in these great enterprises betokens the degree of public confidence which this corporate development enjoyed, a confidence which became deliriously speculative at the time of the great bull market of 1928–1929, in which the shares of these leading corporations led in the upward movement. In the great drop or series of drops in security prices following the stock market crash of October, 1929, the public has scanned even these leviathans of industry with a somewhat disillusioned eye. This analysis of the trend toward consolidation Means concludes on a note of warning prophecy. "If," he says, "the more rapid rate of growth from 1924 to 1927 were maintained for the next twenty years, 80.5 percent [of all non-financial corporate wealth] would be held by the large 200 [corporations] in 1950. If the indicated rates of growth of the large corporations and of the national wealth were to be effective in the future, within 20 years virtually, half of the national wealth would be owned by the 200 giant corporations."50

The Problem of Public Control.51—These colossal efforts of business itself to achieve internal and private control over the operations of business have in recent years given rise to renewed public interest in the regulation of private enterprise in the social interest. The advance of concentration has in each field of industry raised the issue of the problem of adequate public control. The conflict over public utility rates is again being waged with more than traditional vigor; and the amenability of the utility holding company to public regulation has only recently become the subject of general concern. Unregulated control of banks by chain and group banking has already resulted in congressional banking inquiry and in the submission of regulatory legislation to the Congress of 1932.52 The chain store movement has produced widespread local agitation against its effect in displacing the independent retailer and has even brought about the passage of local prohibitory laws.53 And strong protest

50 Ibid., p. 35.
51 On business and financial law, see Chap. XXVIII.
53 See Chap. XXVIII.
against what were regarded as the unsound practices of investment
trusts has forced the consideration of tentative measures of control over
the operations of this newest type of financial institution.

The dominant public opinion of business in the United States unques-
tionably looks to the continuance of the consolidation movement in all
or any of its forms as the source of the solution of the major problems of
competitive business. Even before the unsettlements created by the
depression, the trend toward the regulation of price, production and other
business practices had become stronger than it has ever been before in
this country. Added to the unusual number of outright consolidations,
mergers, and varieties of holding companies, the period since 1920 was
featured by the organization of a multitude of informal price controls
and trade associations hoping to achieve by gentlemen's agreements, in
part at least, the goals and benefits of actual concentration in ownership
and management. Although the effect of these measures of private regula-
tion was probably to render areas of our competitive business system
more inflexible than they should have been, to sustain some prices at
excessively high levels, to encourage the abnormal expansion of produc-
tive plant equipment and hence to aggravate the existing instabilities in
the system, it is clear that the business community hopes to achieve greater
stability and certainty not by the abandoning of these devices of control
but by extending and strengthening them. The prevailing organized
opposition to our anti-trust legislation, the efforts during the past decade
to persuade the United States Department of Justice to sanction the
exchange of statistical information among the members of trade associa-
tions and the continuance of the combination movement since 1929 are
straws that show which way the wind is blowing. The announcement,
finally, of the Swope plan, a proposal essentially for the centralized
control of areas of industry through the medium of trade associa-
tions endowed with authority and the power to enforce their deci-
sions, is the latest evidence of the desire of industry to appease
public criticism but at the same time to pursue the course of business
consolidation.

On the whole question of business organization and social control,
the general attitude of the American public is now in a state of confusion. It is, however, reasonably clear that the prohibitions of anti-trust legis-
lation are no longer considered the panaceas they were held to be during
the administration of Theodore Roosevelt. While we are still far from
discarding such legislation, it is nevertheless true that our faith in its
potency has greatly weakened; and it may be no exaggeration to state

44 Swope, Gerard, *The Swope Plan: Details, Criticisms, Analysis*, The Business Bourse,
New York, 1931.
45 See discussion of organized groups and governments in Chap. XXIX.
that the dire consequences of instability have done much to create a more sympathetic attitude toward combination.

The most striking, and thus far perhaps the only, definitive reversal of public opinion was expressed in the railroad legislation of 1920. Historically the railroads had led in the movement for consolidation by the accumulation of railroad properties into systems. The further development of this original impetus was checked in 1904 when in the Northern Securities case a combination of two great railroad systems was forbidden. But by 1920 the public had accepted the idea that further consolidation, under the supervision of a powerful federal body, the Interstate Commerce Commission, was not only permissible but advantageous, and the Commission was instructed to work out a scheme. The principle of railroad competition was retained in the Act and plans for amalgamation of competitive super-systems have been drawn and redrawn, but the jealous rivalries of the existing great systems have seriously complicated the inherent difficulties of the task so that after twelve years it remains undone. The English solution of the problem, a regional amalgamation in four great railroad companies, was simpler and more expeditious. A considerable amount of competition is, under that plan, in any case retained. Not only do the regional systems compete at their borders and by penetrating cross lines, but the new period of mechanization has produced new competition in transportation. The motor truck has taken away some freight and the automobile has alarmingly reduced the number of railroad passengers.

As unsettled as many of the elements of the future of business organization and of public control in the rail transportation industry are, it is substantially certain that the way has at least been paved for further consolidation and that more effective tools of social control will be forged in the process. In the public utility industry, likewise, the advance toward centralization already made may be expected to predetermine the trend of the immediate future; and the problems in this field will be concerned with rate regulation as in the past, with defining the boundaries of federal and state control, and, in connection with the exercise of regulative measures over the activities of public utility holding companies, with the setting up of controls over security issues and with the redefinition of the relations between operating and holding companies. The revelations of many of the weaknesses inherent in our highly decentralized banking system, dramatized by the unprecedented number of bank failures since 1920, will unquestionably strengthen the prevailing efforts to liberalize our branch banking laws, to effect closer affiliation between banks and the Federal Reserve System and to tighten the whole machinery of

56 175 U. S. 211.
57 On the need for integrating the transportation agencies, see Chap. IV.
public bank examination and regulation. In the highly diversified field of manufacturing industry; in the crucial business of investment banking which is now so much the subject of public discussion; and in retailing, where concentration is a relatively recent development, the case is not so clear. The most that can be said is that a reversal of the trends of the past ten years is not to be expected. The public interest in stability and the conviction of business that stability can be achieved by combination will no doubt further promote the consolidation movement. Whatever forms business chooses to effect its ends, the public's preoccupation will be with the invention and improvement of regulatory machinery, burdened with more puzzling and difficult problems of social control than ever before.  

VI. BANKING AND CREDIT

Under conditions so complex, novel and temporary as those prevailing in the United States and throughout the world since 1914, no simple characterization and estimate of trends in banking and credit policy and practice are possible. In a period of the flotation and absorption of huge war loans and the persistence of large public debts; of rapid and vast changes in the amount and composition of industrial output; of extreme fluctuations in all groups of prices; of the flow, in so brief a space of time, of an unprecedented volume of funds into plant and equipment, foreign war and reconstructions uses and into the capital requirements of business combinations, the task of discerning the true sequence of events, of tracing the sources of error in policy and practice and of discovering guides for future conduct is obviously one of extraordinary difficulty.

The events of the last few years have disclosed more forcibly than ever the necessity of delicate adjustment between the multifarious processes of business and the machinery for the regulation of credit and currency. In some way the excessive multiplication of credit may, and does, convert prosperity into depression. The failure to exercise effective control over the issue and use of credit may, and does, result in the diversion of large amounts of credit into speculative enterprises which are bound to breed ultimate collapse. The functions exercised by a banking system, when it is called upon to act as the fiscal agent of the government, may inevitably involve pressure to indulge in unsound banking practice. The commercial policy of countries, designed to protect their people against the competition of their foreign neighbors, may produce such dislocations in the foreign exchanges as to endanger the prosperity of all.

For a possible clue to the direction which such public experiments in business regulation may take, see dissenting decision rendered March 21, 1932, by Justice Brandeis in the case of The New State Ice Company of Oklahoma City v. Ernest A. Liebman, 52 Supreme Court Reporter, p. 371.
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Unthinking competition among numerous banks, in the quest for business and profits, may adulterate the investment portfolios of many banking institutions and weaken the safeguards of the depositor. And ignorant, inefficient and lax public supervision over the financial institutions of a country may nullify reasonable standards of regulation imposed upon banking management by the law.

Several and sometimes all of these conditions prevailed through the American and foreign banking and financial systems during one or another of the phases of our war and post-war economic history. The effect of such banking conditions, when added to the continuance of unsound international commercial policy and a universal wave of speculative business activity, has been the world wide depression of the past years, the appalling sequence of bank failures in the United States, the disintegration of the gold standard throughout the world and a catastrophic decline in property values of all kinds. So drastic has been this impairment of existing standards and so far flung have been its consequences, that the episode has been described by sober commentators as marking the collapse of the modern credit system and the beginning of the end of the system of competitive business. For this state of affairs, also, not a few hold banking policy ultimately responsible. Although it is clear that much that has happened since 1914 has been the joint result of commercial, industrial, fiscal and investment policy, which banking policy might influence but not direct, the ramifications of financial policy are so pervasive as to make its consequences crucial in the total situation.

The Course of Credit.—The period from the beginning of the war until 1929 was one of notable expansion in the volume of bank credit, interrupted markedly only once—by the depression of 1921. From June 1914 to June 1918 the volume of loans and investments of all banks increased 53 percent or from approximately 21 to 32 billions. In the next years of the first post-war boom, their amount increased 30.5 percent or from 32 to 42 billions. As a result of the liquidation of 1921, this volume dropped back only 4 percent or to roughly 40 billions. But by 1924, a year of business recession, loans and investments of all banks had expanded steadily from the already high level of 40 billions to the even higher one of 45.5 billions.

This trend in the expansion of bank credit thus first accompanied the extraordinary successive rises in the commodity price levels which have already been described. Beginning with the recovery of business from the 1921 depression, the increase in bank loans and investments continued steadily onward and was not halted, except for brief and slight reversals in trend, until after 1929. In this latest phase of the process of credit expansion, however, the wholesale prices of commodities failed to register

[253]
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wide fluctuations and stood, indeed, in June 1929 not much higher than they were in the middle of 1924. Comparative price stability of this nature induced many observers either to disregard the changes in the volume of bank credit or to regard them as appropriate to the legitimate needs of business since they produced no observable effect on the prevailing level of prices.

Part, at least, of the explanation of this discrepancy in the movement of the volume of bank credit and of commodity prices is to be found in the changes in the types of loans and investments made by the banks of the

**Table 19.—Loans and Investments of Federal Reserve Member Banks, 1924–1929**

(Millions of dollars)

<table>
<thead>
<tr>
<th>Date</th>
<th>Loans and investments</th>
<th>Loans</th>
<th>Date</th>
<th>Loans and investments</th>
<th>Loans</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 30, 1924</td>
<td>27,167</td>
<td>19,204</td>
<td>June 30, 1927</td>
<td>32,756</td>
<td>22,938</td>
</tr>
<tr>
<td>Dec. 31, 1924</td>
<td>28,746</td>
<td>19,933</td>
<td>Dec. 31, 1927</td>
<td>34,827</td>
<td>25,388</td>
</tr>
<tr>
<td>April 6, 1925</td>
<td>29,046</td>
<td>20,176</td>
<td>Feb. 28, 1928</td>
<td>33,688</td>
<td>23,090</td>
</tr>
<tr>
<td>June 30, 1925</td>
<td>29,518</td>
<td>20,655</td>
<td>June 30, 1928</td>
<td>35,061</td>
<td>24,303</td>
</tr>
<tr>
<td>Sept. 28, 1925</td>
<td>30,176</td>
<td>21,285</td>
<td>Oct. 3, 1928</td>
<td>34,920</td>
<td>24,325</td>
</tr>
<tr>
<td>Dec. 31, 1925</td>
<td>30,884</td>
<td>21,996</td>
<td>Dec. 31, 1928</td>
<td>35,654</td>
<td>25,155</td>
</tr>
<tr>
<td>April 12, 1926</td>
<td>30,819</td>
<td>21,785</td>
<td>March 31, 1929</td>
<td>35,393</td>
<td>24,945</td>
</tr>
<tr>
<td>June 30, 1926</td>
<td>31,184</td>
<td>22,060</td>
<td>June 30, 1929</td>
<td>35,711</td>
<td>25,658</td>
</tr>
<tr>
<td>Dec. 31, 1926</td>
<td>31,642</td>
<td>22,652</td>
<td>Oct. 4, 1929</td>
<td>35,914</td>
<td>26,165</td>
</tr>
<tr>
<td>March 23, 1927</td>
<td>31,949</td>
<td>22,927</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a U.S. Federal Reserve Board, Annual Report, 1930, p. 94.

country in the last period of credit expansion. For, as subsequent events indicated, the character and quality of the loans and investments held in increasing amount by the banks, were probably more powerful sources

**Table 20.—Loans and Investments of Members Banks, 1921–1929**

(Millions of dollars)

<table>
<thead>
<tr>
<th>As of June 30—</th>
<th>Investments</th>
<th>Loans on securities</th>
<th>Loans on urban real estate*b</th>
<th>All other loans</th>
<th>Total loans and investments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1921</td>
<td>6,002</td>
<td>$4,400</td>
<td>$875</td>
<td>12,844</td>
<td>24,141</td>
</tr>
<tr>
<td>1922</td>
<td>7,017</td>
<td>$4,500</td>
<td>$1,100</td>
<td>15,155</td>
<td>24,102</td>
</tr>
<tr>
<td>1923</td>
<td>7,757</td>
<td>$4,950</td>
<td>$1,350</td>
<td>14,450</td>
<td>26,507</td>
</tr>
<tr>
<td>1924</td>
<td>7,965</td>
<td>$5,350</td>
<td>$1,875</td>
<td>14,279</td>
<td>28,176</td>
</tr>
<tr>
<td>1925</td>
<td>8,863</td>
<td>$6,718</td>
<td>$2,161</td>
<td>14,062</td>
<td>29,518</td>
</tr>
<tr>
<td>1926</td>
<td>9,125</td>
<td>$7,921</td>
<td>$2,449</td>
<td>14,333</td>
<td>31,184</td>
</tr>
<tr>
<td>1927</td>
<td>9,818</td>
<td>$8,156</td>
<td>$2,944</td>
<td>14,611</td>
<td>32,756</td>
</tr>
<tr>
<td>1928</td>
<td>10,738</td>
<td>$9,068</td>
<td>$3,700</td>
<td>14,804</td>
<td>35,711</td>
</tr>
<tr>
<td>1929</td>
<td>10,632</td>
<td>10,098</td>
<td>2,800</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*a U.S. Federal Reserve Board, Annual Reports.
*b On real estate, other than farm land.
*c Partly estimated.
of strain and weakness in the banking system than the extent of the total expansion in credit. The composition of the loan portfolios of all member banks and the relation of investments to loans are shown in Table 20.

It is clear from this exhibit that the banking business in the United States, as practised by our commercial banks in the past decade, experienced a radical transformation. Commercial loans, which traditionally constituted the bulk of the business of commercial banking institutions, were no greater in the exceptionally active year 1929 than in the depression year 1921. The practice of operating business with low inventories, universally adopted by American firms as a result of their sad experience in liquidating the huge inventories of 1919-1920; the unusual cash reserves and surpluses accumulated by the large corporations of the country; and the ease with which business needs could be financed by the sale of capital stock in these years accounted for the stability in the volume of commercial loans at a time when the volume of industrial output and general business activity were increasing by leaps and bounds.

Meanwhile, however, the more speculative and less liquid loans on securities and on urban real estate together rose nearly 8 billion dollars, representing almost three-fourths of the total increase in loans and investments during the period. Diversion of credit into these markets had the two-fold consequence of financing a prolonged and colossal speculation and of loading the banks with appreciable assets which are particularly difficult to liquidate under conditions of declining prices. From 1922 to 1929, then, the ratio of loans on securities to the total loans and investments of reporting member banks advanced from 25 to somewhat more than 34 percent; while from 1924 to 1929, the prices of industrial common stock more than tripled, their index numbers rising from 65.6 to 216.1 in September, 1929. Toward this rise in security prices, also, the unusual cash balances of private corporations and the attractive opportunities for lending in the security markets contributed greatly through the unprecedented expansion of loans to brokers from private corporations, the well known loans to brokers for the account of others than banks, which from 1926 to October, 1929 increased from 500 millions to almost 4 billions.

The extent of the growth of bank credit on urban real estate is not adequately indicated in the available data. There is reason to believe, indeed, that a considerable and increasing proportion of the commercial loans made by banks in this period were directly and indirectly loans on real estate. The tremendous urban and suburban developments, begun and completed in this decade and the continued rise in the assessed valuation of real property, coupled with the large real estate holdings of

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60 Index numbers of industrial common stock prices of the Standard Statistics Company.
61 On the growth of metropolitan communities, see Chap. IX.
RECENT SOCIAL TRENDS

banks disclosed since the beginning of the depression, afford convincing
evidence of the magnitude of speculative enterprise in real estate and of
the important role which bank credit played in its unfolding.

Investment expansion has, in the form which it took during this
decade, likewise proved to be a serious weakness in banking policy and
practice. The opportunities for apparently great appreciation in the value
of bonds and the lure of high coupon bonds converted many banks into
investment institutions. The prospects of high yields and large profits
from the turnover of investments filled the portfolios of banks with many
high coupon bonds of foreign governments and private corporations and
with the second, third and fourth grade bonds of American companies.
Moreover the speculative spirit prevailing in the country and the organi-
zation and development by the large city banks of departments for the
sale of security issues made it certain that securities of even low quality
would find a wide market. Securities, consequently, normally regarded as
unfit for banking investment, were bought in large volume by banks of
all sizes and in all parts of the country.

Consumers' Credit.62—The most spectacular and most novel develop-
ment in the field of credit was the growth after 1920 of a variety of forms
of consumers' borrowing. While this type of credit had always been widely
used in the United States for the purchase of furniture, pianos and the like,
and in the form of many sorts of instalment credit, there is reason to
believe that the amount of such credit was tremendously expanded, both
absolutely and relatively, during the past decade. The initial impetus to
the expansion undoubtedly came from the efforts of the producers of new
commodities such as automobiles, radios and refrigerators to obtain a
wide market for their products. But once the device became widely
employed and its benefits appreciated, it was seized upon as an automatic
measure for the expansion of consumers' purchases and for the mainte-
nance of markets. In reality expansion of consumers' credit involved the
same dangers of the creation of disparities between income and debt as
are encountered in the excessive growth of all credit.

How great the amount of outstanding consumers' credit became at
its peak cannot be precisely estimated. This is in part due to the fact that
the accounting systems of the numerous institutions engaged in one or
another of the many phases of this business are neither standardized,
nor is their publication required. But in larger measure the difficulty
arises from confusion in definition, since such consumers' credit as arises
out of the granting of loans on life insurance policies, not normally
regarded as consumers' credit, constituted in this period an important
element in the total structure of consumers' debt. One student of the
question has estimated that the proportion of total retail sales made on

62 Compare with Chap. XVII.
credit increased from 10 percent in 1910 to 50 percent in 1929, and the volume of outstanding family credit in 1929 he has placed at more than eleven billion dollars.

Table 21.—Current Family Financing in the United States, a 1929

<table>
<thead>
<tr>
<th>Class of indebtedness</th>
<th>Total amount outstanding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open account debts</td>
<td>$4,500,000,000</td>
</tr>
<tr>
<td>Instalment debts</td>
<td>2,500,000,000</td>
</tr>
<tr>
<td>Short-term cash credit</td>
<td>1,500,000,000</td>
</tr>
<tr>
<td>Life insurance policy loans</td>
<td>2,200,000,000</td>
</tr>
<tr>
<td>Real estate mortgages b</td>
<td>1,000,000,000</td>
</tr>
<tr>
<td>Total current family debts</td>
<td>$11,700,000,000</td>
</tr>
</tbody>
</table>

a Ryan, op. cit., p. 418.

b Ryan does not include this item in his table, but in a footnote to the table he concludes that “fully $1,000,000,000 or more of the real estate mortgages on homes in the United States has been incurred on account of current household needs . . .” Ibid., p. 418.

The Liquidation of Credit.—During the severe depression in business which began in 1929, the condition of the banking system reflected the results of the sharp decline in the volume of business and the stupendous fall in the prices of commodities, securities and real estate. Because of the character of bank expansion in the years prior to the depression, liquidation pursued a varied course. With the first collapse in the stock market in October, 1929, the banks found it necessary to take over loans on securities hitherto financed by others, and the volume of security loans between June, 1929, and June, 1930, actually increased by 5.6 percent. The slow realization of the fact that the downward trend in security prices would be long and great led thereafter to the more rapid liquidation of such loans, and by December 1931 they amounted to slightly more than 7 billion or approximately one-third less than their volume in June, 1930. The peculiar character of the real estate market, likewise, renders the liquidation of real estate loans a slow and painful process. Property thrown on the market in large amounts cannot be easily absorbed and causes the demoralization of prices. The real estate loans of banks, therefore, showed no decline between 1929 and 1931, but it is probable that they have dropped rapidly in the past year and that much of the real estate previously held as collateral by the banks now rests in their investment portfolios. All other loans, in large part commercial loans, on the other hand declined at once and continuously. Investments increased from 1929 to 1931, but after the middle of 1931 they were reduced, although investments by banks in securities issued by the United States government have since increased. Perhaps the most dramatic change in the period was the

practically total disappearance of loans on securities to brokers by "others," which had risen by 1929 to 4 billions and which were reported on March 23, 1932 as only $5,000,000.

Factors Affecting the Volume of Credit.—Changes in the volume of bank credit are the resultant of many known and unknown factors. While the regulative procedure of banking systems and the policies and practices of individual banks can be conceded to have exerted important influence on trends in the amount and quality of banking credit, much greater significance attaches to the movement of several major underlying factors in the situation. Of these, the use of government securities as the base of bank credit and the continuous flow of gold imports into the United States have unquestionably been the prime factors. The spectacular rise in the debt of the federal government has already been noted. Particularly in the war years and from 1918 to 1919, borrowing by member banks at their reserve banks collateralized by securities of the United States government, served to expand the volume of bank credit. The second factor was the rise in gold stocks in this country. Due to a combination of forces, arising out of the methods of financing the war expenditures of the Allied governments, the post-war reconstruction need of Europe and the post-war commercial and investment policy of the United States, American gold holdings increased from the beginning of the war and, in spite of the huge withdrawals by foreign countries in 1932, stood at twice their pre-war amount in the middle of that year.

Table 22.—Stocks of Gold Coin and Bullion in the United States, 1914-1932

<table>
<thead>
<tr>
<th>Year</th>
<th>Gold coin and bullion (Millions of dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of June 30—</td>
<td></td>
</tr>
<tr>
<td>1914</td>
<td>1,891</td>
</tr>
<tr>
<td>1915</td>
<td>1,866</td>
</tr>
<tr>
<td>1916</td>
<td>2,445</td>
</tr>
<tr>
<td>1917</td>
<td>3,220</td>
</tr>
<tr>
<td>1918</td>
<td>3,163</td>
</tr>
<tr>
<td>1919</td>
<td>3,113</td>
</tr>
<tr>
<td>1920</td>
<td>2,865</td>
</tr>
<tr>
<td>1921</td>
<td>3,275</td>
</tr>
<tr>
<td>1922</td>
<td>3,785</td>
</tr>
<tr>
<td>As of June 30—</td>
<td></td>
</tr>
<tr>
<td>1923</td>
<td>4,050</td>
</tr>
<tr>
<td>1924</td>
<td>4,498</td>
</tr>
<tr>
<td>1925</td>
<td>4,500</td>
</tr>
<tr>
<td>1926</td>
<td>4,447</td>
</tr>
<tr>
<td>1927</td>
<td>4,587</td>
</tr>
<tr>
<td>1928</td>
<td>4,109</td>
</tr>
<tr>
<td>1929</td>
<td>4,284</td>
</tr>
<tr>
<td>1930</td>
<td>4,593</td>
</tr>
<tr>
<td>1931</td>
<td>4,400</td>
</tr>
<tr>
<td>1932</td>
<td>3,018</td>
</tr>
</tbody>
</table>

  * As of December 31.

The International Situation.—Gold imports into the United States and many of the banking problems which remain to plague us now are

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64 See p. 224.
traceable to American war loans, the relation of these loans to the repara-
tions settlements, the great expansion of private American loans to foreign
countries after the war and the tariff policy of this country which made the
payment of interest and capital on the debt, in anything but gold, an
increasingly difficult task. As one writer put it, the conversion of the
United States into a creditor nation "presented two phenomena and a
paradox. The phenomena were the enormous stimulation of imports into
borrowing areas . . . and a notably rapid increase in their public debt.
The paradox was that America the creditor had throughout the period a
large excess of exports, while the borrowing countries commonly had an
excess of imports. This paradox was noted with some foreboding, for it
clearly indicated that the entire equilibrium of world trade, as well as
the continuity of payments of principal and interest upon international
debt had come to depend upon the maintenance of a large and uninter-
rupted flow of fresh funds from the creditor to the debtor areas." Under
such circumstances "even the vexed problem of reparations and allied
debt was solved; America lent Germany the funds with which to pay
reparations; these funds returned to the American Treasury by way of
allied debt payments; the American Treasury returned them to the
market by retiring the public debt, which in turn permitted tax reduc-
tions; thus converting a tax liability into a high yielding earning asset."

The data which illumine this statement appear in the changes in the visible and invisible items in the trade of the United States and in the
movements of capital and interest payments between the United States
and foreign countries between 1922 and 1930. In each of the years of this

Table 23.—Movements of Capital and Interest Payments between the United
States and Foreign Countries, 1922–1931a

(Millions of dollars)

<table>
<thead>
<tr>
<th>Item</th>
<th>1922</th>
<th>1923</th>
<th>1924</th>
<th>1925</th>
<th>1926</th>
<th>1927</th>
<th>1928</th>
<th>1929</th>
<th>1930</th>
<th>1931</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net private capital movement:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short term</td>
<td>+375</td>
<td>+3</td>
<td>+216</td>
<td>–61</td>
<td>+359</td>
<td>0</td>
<td>–226</td>
<td>+15</td>
<td>–486</td>
<td>–786</td>
</tr>
<tr>
<td>War debt receipts, capital and interest</td>
<td>+158</td>
<td>+60</td>
<td>+185</td>
<td>+186</td>
<td>+196</td>
<td>+306</td>
<td>+207</td>
<td>+207</td>
<td>+241</td>
<td>+113</td>
</tr>
<tr>
<td>Net Interest payments</td>
<td>+411</td>
<td>+414</td>
<td>+448</td>
<td>+400</td>
<td>+472</td>
<td>+510</td>
<td>+537</td>
<td>+565</td>
<td>+616</td>
<td>+548</td>
</tr>
<tr>
<td>Total</td>
<td>+191</td>
<td>+706</td>
<td>+109</td>
<td>+25</td>
<td>+486</td>
<td>+30</td>
<td>–200</td>
<td>+466</td>
<td>+77</td>
<td>+114</td>
</tr>
</tbody>
</table>

a U.S. Bureau of Foreign and Domestic Commerce, The Balance of International Payments of the United States in 1931, Trade Information Bulletin, no. 809, pp. 76-7. The data are for the balance, or credit items minus debit items. 1931 figures are based on unrevised estimates.

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period except one the sum of the visible and invisible items of trade of the United States showed an unfavorable balance ranging from $465,000,000 in 1923 to $12,000,000 in 1922. At the same time net interest and capital payment showed a preponderantly favorable balance. Table 23 shows how net interest payments have been growing in the period when American loans to foreigners have increased. In 1930, for example, interest payments made to Americans, omitting the payments on war debts, equalled 79 percent of the net foreign loans made by Americans; and in 1931 Americans loaned to foreigners the full hundred percent which they received as interest payments made by foreigners on net loans extended by Americans.

The granting of foreign credits enables a country to import gold in spite of an unfavorable trade balance. But the time comes when this process results in piling up debts to such an amount that debtor nations find it necessary to borrow in order to meet interest payments. At such a time, the entire debt structure is faced with the danger of collapse, as in the summer of 1931 when Germany was forced to seek the famous “Stillhaltung” agreement with her creditors.

The extent of foreign borrowing in the United States is also indicated in Table 23. The item, long term net private capital movements, is made up of foreign issues publicly offered in the United States plus foreign stocks and bonds bought by Americans, privately purchased foreign issues and direct investments abroad, less underwriting commissions and bond discounts and American securities bought by foreigners. When interest rates in the United States are high or when American investors

| Table 24.—FOREIGN SECURITY ISSUES AND ACCEPTANCES OUTSTANDING, 1922–1931*

(Millions of dollars)

<table>
<thead>
<tr>
<th>Date</th>
<th>Acceptances outstanding arising from foreign storage and shipment (end of the year)</th>
<th>Foreign security issues, excluding refunding issues (total for the year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1922</td>
<td>(0)</td>
<td>764</td>
</tr>
<tr>
<td>1923</td>
<td>(0)</td>
<td>421</td>
</tr>
<tr>
<td>1924</td>
<td>(0)</td>
<td>960</td>
</tr>
<tr>
<td>1925</td>
<td>17</td>
<td>1,076</td>
</tr>
<tr>
<td>1926</td>
<td>40</td>
<td>1,125</td>
</tr>
<tr>
<td>1927</td>
<td>130</td>
<td>1,337</td>
</tr>
<tr>
<td>1928</td>
<td>243</td>
<td>1,251</td>
</tr>
<tr>
<td>1929</td>
<td>441</td>
<td>671</td>
</tr>
<tr>
<td>1930</td>
<td>561</td>
<td>905</td>
</tr>
<tr>
<td>1931</td>
<td>296</td>
<td>229</td>
</tr>
</tbody>
</table>


* No data.
are reluctant to buy foreign securities, foreign borrowers turn to the short term money market for funds. This is done for the most part by the use of the American acceptance market. Table 24 shows how the acceptance market replaced the long term markets when it became impossible to sell new foreign bonds in this country.

Foreign security issues declined greatly in 1923. This resulted in a sharp drop in exports of American goods in that year and in gold shipments to the United States. A new alternative loan market, the acceptance market, was made available for foreign financing by a ruling of the Federal Reserve Board published in February, 1927, which liberalized the requirements for purchase of acceptances by the reserve banks. This resulted in an immediate increase in the number of outstanding acceptances of the class arising from goods stored in or shipped between foreign countries. The greatest increase was recorded in 1929 when high interest rates in the New York money market stopped the sale of foreign bonds. Germany was the country which suffered most from having this source of foreign credits unexpectedly cut off. Throughout 1928 and 1929 representatives of German banks traveled through the United States arranging lines of acceptance credits, particularly with those member banks in Chicago and San Francisco which had not utilized their full acceptance powers. The result was an increase of these acceptance powers. Thus the acceptances outstanding rose from 130 millions of dollars at the end of 1927 to 441 millions of dollars at the end of 1929. This accompanied a decline in new issues of foreign bonds from 1,251 millions of dollars in 1928 to 671 millions of dollars in 1929. In 1930 there was a further rise in this kind of issue due to increased issues by Canadian and Latin American borrowers. Germany continued to use the acceptance market for borrowing operations.

During 1931 the effects of the necessary readjustment, delayed so long by means of the extension of foreign borrowing through access to the American acceptance market, were felt in the way in which they would have been felt at an earlier date had this source of credit not existed. The exports of the United States fell, so that there was an excess of exports over imports of only 334 millions of dollars in 1931 as against 782 millions of dollars for 1930 and 1,037 millions of dollars for 1928, the last year in which long term credits were granted to foreigners to any considerable extent. In the meantime, the short term credits advanced in the acceptance market could not be repaid. These acceptances constituted a considerable portion of the fifteen hundred millions of dollars of short term credits frozen in Germany under the "Stillhaltung" agreement, consummated with American banks in January, 1932.

Changes in the Structure and Functions of American Banks.—The highly competitive and decentralized character of the American banking
RECENT SOCIAL TRENDS

system constituted for a long time a source of weakness which was aggravated by the post-war agricultural depression and by the extraordinary burdens, already described, imposed upon it or assumed by it since the beginning of the war. Our tradition of independent unit banking and the unwillingness of local banking interests to surrender their autonomy had caused a rapid multiplication in the number of banks. A large proportion of these, particularly in agricultural and rural sections but to some extent in the cities as well, were small institutions unable to withstand the impact of unfavorable conditions. From 1910 to 1920 the number of state and national banks combined increased nearly 8,000—from 21,486 to 29,230. And from 1900 to 1920, the measure of the multiplication of banks is indicated by the fact that the number of persons per bank declined from 8,828 to 3,617. These numerous institutions, moreover, were for the most part small banks, since in 1920 approximately one-fourth of the banks of the country had loans and investments of less than $150,000 each.

The inherent weaknesses in this situation were disclosed long before the present depression in the uninterrupted sequence of bank failures begun in 1921. Even by 1929 there were 5,515 fewer banks than in 1920 and by 1931 the number had been further reduced by 3,747. While a part of this reduction came through consolidations of existing institutions, most of it represented actual suspension. Between 1921 and 1931 there were 9,285 bank suspensions of which 3,643 occurred in the years 1930 and 1931. The total deposits of the suspended institutions amounted to approximately four and one quarter billion dollars.66 The earlier suspensions were largely limited to the southeastern states and to the western grain area, but the bank failures of the past two years took their toll of banking institutions in the large cities and in the industrial states. Although, finally, many medium sized and large institutions were caught in this last wave of suspensions, the effect of the reduction in the total number of banks was to eliminate the small banks mainly. Thus from 1920 to 1930, the number of banks with loans and investments of $500,000 and under had decreased by more than 25 percent; but larger institutions, with loans and investments of $2,000,000 and over, had actually increased in number in the same period.

More important, probably, under the type of conditions prevailing in the United States after the war, was the acceleration of functional trends in banking practice which exposed these institutions to additional danger. Continued departmentalization in the business of commercial banks and, in the later years especially, the growing participation by banks in the business of floating and selling securities through the instru-

mentality of the security affiliates may be said to have been the most crucial of these trends.

The earliest development of this nature was the general acceptance by commercial banks of time deposits. The Federal Reserve Act confirmed the prevailing practice in this regard by requiring lower reserves against time than against demand deposits. Between 1914 and 1929 the time deposits of all member banks had increased 12 billion dollars while net demand deposits had expanded 13.5 billions. This represented an extraordinary growth of this form of deposit. Such time deposits, moreover, need not and probably in large part did not represent genuine savings accounts. The lower reserve requirements against such deposits may have induced many banks to encourage the opening of such accounts; and the absence of any provision of the law requiring the segregation of assets against time deposits offered no impediment in the way of the shift from

Table 25.—Security Originations and Participations on the Part of Bank Security Affiliates, 1927-1930a

(Millions of dollars)

<table>
<thead>
<tr>
<th>Affiliates</th>
<th>1927</th>
<th>1928</th>
<th>1929</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>Percent of total</td>
<td>Amount</td>
<td>Percent of total</td>
</tr>
<tr>
<td>National bank affiliates...</td>
<td>292</td>
<td>10.1</td>
<td>650</td>
<td>15.6</td>
</tr>
<tr>
<td>Other bank affiliates...</td>
<td>185</td>
<td>2.7</td>
<td>921</td>
<td>7.7</td>
</tr>
<tr>
<td>Total...</td>
<td>755</td>
<td>12.8</td>
<td>971</td>
<td>23.3</td>
</tr>
<tr>
<td>Commercial banks and trust companies...</td>
<td>541</td>
<td>9.2</td>
<td>259</td>
<td>6.2</td>
</tr>
<tr>
<td>Private bankers...</td>
<td>4,567</td>
<td>78.0</td>
<td>2,924</td>
<td>70.5</td>
</tr>
<tr>
<td>Grand total...</td>
<td>5,803</td>
<td>100.0</td>
<td>4,154</td>
<td>100.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participations</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,661</td>
<td>12.6</td>
<td>909</td>
<td>8.9</td>
</tr>
<tr>
<td>National bank affiliates...</td>
<td>1,051</td>
<td>8.0</td>
<td>1,175</td>
<td>11.5</td>
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<td>Other bank affiliates...</td>
<td></td>
<td></td>
<td>1,006</td>
<td>27.2</td>
</tr>
<tr>
<td>Total...</td>
<td>2,712</td>
<td>20.6</td>
<td>2,084</td>
<td>20.4</td>
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<tr>
<td>Commercial banks and trust companies...</td>
<td>2,131</td>
<td>16.2</td>
<td>1,191</td>
<td>11.6</td>
</tr>
<tr>
<td>Private bankers...</td>
<td></td>
<td>8,910</td>
<td>68.0</td>
<td>3,427</td>
</tr>
<tr>
<td>Grand total...</td>
<td>13,153</td>
<td>100.0</td>
<td>10,282</td>
<td>100.0</td>
</tr>
</tbody>
</table>

a Hearings before a sub-committee of the Committee on Banking and Currency, United States Senate, 71st Congress, 3rd Session, pursuant to Senate Resolution 71, p. 299.
slow commercial to time accounts. In addition to the development of thrift departments, national banks were permitted by the Federal Reserve Act to engage in fiduciary activities provided that their fiduciary activities and investments conformed to the laws of the state in which the national bank was located.

The latest step toward extending the activities of commercial banks consisted in the entrance of the largest institutions particularly into the investment business. Although the earliest security affiliate, the First Security Company of the First National Bank of New York City, was organized in 1908, the spectacular expansion of this type of banking activity began only after 1920. The growth of the security affiliates of commercial banks in the last ten years has tended to give these banks a dominating position in the investment market. How rapidly this change has taken place is shown in Table 25 on page 263.

Too many banks and the absence of central supervision over them paved the way for lax and unsatisfactory bank management. The adoption of added banking functions by many commercial banks was not accompanied by the proper separation of these functions, except perhaps in the case of trust departments, and by the creation of adequate safeguards against the contingent liabilities of each. The current agitation in New York State for the segregation of the time and demand deposits of commercial banks is evidence of the failure of these institutions voluntarily to protect the interests of their new departments. Finally, the development of the security affiliate found commercial banks all too ready to lend against the securities of their own affiliates and to purchase them for their own trust accounts. Uncontrolled by the law and inadequately supervised by existing regulatory agencies, these tendencies proved an added source of weakness to a banking system already seriously handicapped by the basic business and financial development of the past 15 years and perhaps also by its own policy.

VII. CONCLUSION

The rapidity of economic change since the beginning of the World War imposed upon existing economic institutions the necessity for frequent and drastic readjustment. In practically every field of economic activity the pace of old and new trends was enormously accelerated. The physical output of our economic system, stimulated to produce the combined war and peace requirements of this country during the war years, rose in the post-war decades to heights far in excess of the pre-war. The sheer impossibility of a precise reading of the future and the inevitable difficulties involved in controlling competitive enterprise at the same time created serious and basic maladjustments in the system. Plant and equipment expanded much faster than the production of goods

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bought by the ultimate consumers. The market for consumers’ commodities became dominated by the unexpected growth in the purchase of durable goods and the decline in the sale of the staple commodities of industry and agriculture. While industry prospered and yielded high wages, fairly good employment and more than normal profits to business, agriculture languished and found it increasingly difficult to maintain the standards of well being achieved during the war. Each of the five major price movements of the period contributed further to the disparities among various groups of prices—agricultural and industrial, raw material and manufactured goods, wholesale and retail, securities and commodities—and this intensified the strain already characteristic of the war and post-war price system. First called upon to finance the extraordinary requirements of war and later caught in the trend of expanding outlays for capital equipment, the federal government and particularly our local governments experienced a huge increase in their debts, whose reduction after the war was found to be an exceedingly slow and difficult task. At the same time, private business, aware of the benefits of stability and quick to seize the opportunities afforded by the speculative temper of the country and the favorable condition of the investment markets, pushed the consolidation movement forward in all fields of business enterprise.

In the banking system of the country the accumulation of vast gold stocks, the use of the outstanding volume of government securities as a support for credit and perhaps the credit policy of the Federal Reserve Banks constituted the base for more than an equivalent expansion in the volume of bank credit. Changes in the practice of financing private business, a development limited to the years since 1920, and the inability of the banking system to control the direction of the flow of credit, accounted for the stability of the ordinary commercial loans of banks during the post-war years and the colossal wave of speculation in urban real estate and in the stock market. Throughout the period, also, increasing numbers of persons, depending in part on the permanence of fortuitous income from speculative profits, expanded their personal borrowing by incurring debts on their life insurance policies, by direct borrowing from personal finance companies and by the instalment purchase of automobiles, refrigerators, radios and common stock. The traditional competitive spirit of American banking became intensified by the atmosphere of the times. Established safeguards were abandoned; entrance into new business activities caused to some extent the neglect of the old; and the standards of public bank inspection deteriorated. These changes in the quantity and quality of banking operations constituted a much severer strain on our financial system than was commonly realized; and by 1932 the fruits of recent developments were felt in the rise in bank failures, in the uni-
versal hoarding of currency and in the adoption of desperate measures to prevent actual banking panic.

Although the economic organization of the United States presents to a surface view a high and unusual degree of economic self-sufficiency, the trend of events in this country since 1914 can be understood only in their international setting. Huge war and post-war loans to Europe, private and public; the flow of gold into the United States; the rise of this country as a creditor nation and the tremendous expansion of American foreign loans after 1922; failure of the countries of the world, including the United States, to devise a satisfactory mechanism for the conduct of international trade and for the settlement of debts and reparations; the effects of organic changes in the economic organization of Europe on world trade and on the prices of raw material, following the adoption of the Peace Treaty; and finally the universal unsettlement of currency systems, are among the more important interacting forces whose bearing on our domestic economic situation is clear. So far as the near future is concerned, the discovery by the United States of its responsibilities and duties as a creditor nation and the fixing of sound policy to regulate the relation between foreign trade and foreign loans may be regarded as at least one of our most vital national economic problems.

In this latest period we have been witnessing a continuation of the trend in the radical transformation of the relation of government to business. The problems of public control over business attributable to the growth of business combination alone are likely to be the most vexing of our immediate economic and political problems. The abandonment of the elaborate industrial controls of the war appeared to many to mark the close of a period. The difficult problems of the post-war years and especially the conditions produced by the depression, however, have given rise to new instrumentalities of government created to assist in the solution of the problems of private business. In agriculture the experiment, begun during the war, to provide special credit facilities to farmers has grown into the law creating the Federal Farm Board in 1929, charged with the task of stabilizing the prices of agricultural products. The severe financial strain suffered by the railroads since 1929 has resulted in the tightening of federal control over their activities and in the extension of public credit to them. Banking and credit policy has in the past several years come more than ever under the influence of government, not only through the loans extended to banks by the recently organized Reconstruction Finance Corporation, but perhaps even more through the attempts of the government to devise a policy of credit expansion calculated to hasten the process of business recovery.

While no elaborate development of government functions may immediately grow out of the current discussion of economic planning or the
bills in Congress providing for the establishment of Economic Councils, it is clear that public preoccupation with the problems of industrial stability and financial safety and with the government's part in achieving both is more general than before. It seems probable that control over public utilities and the banks will be extended and strengthened. And at every point in the contemporary scene the suggestion springs unforced from the evidence that the future will almost certainly see a continuation of the existing strong movement toward the building of institutions aiming to secure increased economic stability.
CHAPTER VI

SHIFTING OCCUPATIONAL PATTERNS

By Ralph G. Hurlin and Meredith B. Givens

Approximately two-thirds of the life span of the average man is devoted to gainful employment. Of these years half of the waking hours are commonly spent in active work, if vacations, illness and involuntary idleness are left out of consideration. In any community the satisfactions of life are dependent upon the character of the occupations in which the people are engaged. Among the 40 percent of the population customarily employed for monetary gain and among the additional 20 percent who are housewives, the nature of the daily tasks is the leading determinant of the real meaning and quality of living. The quality of the job goes far to set the tone, pitch and tempo of leisure as well as of working hours. The requirements of accessible vocations and the relative attractiveness of different callings also exert a dominant influence over the content and direction of elementary and advanced education and vocational training. In an age of economic interdependence and specialized subdivision of labor the welfare of the community rests upon the maintenance of balance in the numbers in the different occupational groups.

Changing occupations present a panoramic view of long time social trends. They suggest also something of the human significance of the more recent changes of the past decade. As the years have gone by there has been a smaller and smaller proportion of the population engaged in agriculture and a greater and greater proportion living in urban districts. The shift to the cities has brought a profound change in the outlook on life. More women, especially more married women, are now working for pay outside of the home. Old skills and techniques of workers that have taken years to build up are being lost with the advance in machinery. Machines are cutting down the grilling toil required in many occupations. White collar workers are increasing in number. The prevalence of indoor non-manual work has reduced the necessary calorie content of the food consumed by a large proportion of the population. The electric light has extended the activities of work and leisure into all hours of the twenty-four hour cycle. Machines are being introduced into home and office as well as factory. Before our eyes are continuous and innumerable shifts in occupations in all fields of endeavor. The shifting occupational pattern

1 See Chap. XIV.
OCCUPATIONS

is richly suggestive of the meaning of social change, revealing the decline of old habits and institutions and the rise of new.

The new entrant in the world of gainful occupation of the 1930's confronts a range of opportunities for work which differs radically from that of two decades ago, or even from that which prevailed at the close of the World War. A remarkable expansion of the technical professions and an increasing demand for specialized training have been accompanied by a decline in the relative importance of the more arduous manual occupations as the proportion of the population engaged in white collar work has shot upward. The occupational shifts of the last decade exhibit the marked characteristics of a maturing industrial and commercial civilization in which freedom of employment opportunity is more limited than in the days of vast unclaimed resources and a beckoning frontier. There is reason for increasing concern with the revamping of traditional educational and training patterns as a means of enhancing the human values of modern life. With the twentieth century has come the beginning of a new quest for stability and security in life in contrast to the easy reliance upon indefinite expansion characteristic of a country in its youth.

Despite the early expansion of population and enterprise in the United States, the tools and techniques of production and the general character of gainful employment were not subject to violent or sweeping change prior to the 1870's. The quality of the daily rounds of toil in fields, marts and workshops at the time of the Civil War was in general quite comparable with the prevalent occupations of the people of the two or three preceding generations. During the 1870's and 1880's a tremendous acceleration in the rate of economic and industrial development introduced a new element of continual change in the nature of the work performed and in the distribution of the working population among expanding industries and shifting occupations. During the last three decades of the nineteenth century revolutionary changes in technology and the release of the teeming resources of a new continent made it possible to conduct industrial enterprise on an increasingly large scale. The urgent labor requirements of industry have drawn into the factories and workshops veritable hordes of native Americans as well as a vast stream of immigrant workers.

It is inevitable that profound changes have occurred in the life and labor of a people whose physical production has increased twenty-five or thirty fold during six decades. The sheer physical expansion of activity has far outstripped the growth of population. A new industrial world has been created with whose occupations the best knowledge and skill of the seventies would be helpless to cope. In the midst of restless progress in the techniques of production and in a domestic market without known limits the superstructure of twentieth century industrial life

2 See Chap. V.
has been erected. Built on a base of coal, steel and iron, the growth of American industry may be roughly measured by the increase in the production of pig iron from one and one-half million tons annually at the close of the sixties to the amazing totals of thirty and forty million tons per year during the decade of the 1920’s. From 1899 to 1929 the output per worker in manufacturing industry increased more than fifty percent. In an environment of ceaseless change in technology, in volume of production, in consumption habits, marketing techniques, prices, wages, income and purchasing power the American people have sought and found their livelihoods and the attendant fortunes and disasters. Each successive decade has seen a remarkable transformation in the quality and diversity of occupations. The continuous breakdown, subdivision and reassembly of old jobs and skills and the constant creation of new tasks with the consequent shifts in the range and character of employment opportunity have become leading characteristics of present day industry.

In the following pages the tendencies of recent years will be examined against the long background of occupational shifts during the great expansion period since the Civil War. The discussion rests upon an analysis of the statistics of occupations, of employment, and of unemployment. The data of occupations pertain to the numbers customarily at work or dependent upon employment in various lines of endeavor without reference to the actual availability of work in these lines. Statistics of employment, on the other hand, show the numbers of workers carried on active payrolls. The statistics of unemployment, less extensive and more difficult to interpret than the statistics of occupations and employment, will be discussed in later pages. Unfortunately there are no directly comparable census statistics showing for each decade a distribution of the total gainful workers by general divisions or by subgroups of occupations. The trends in occupations have been determined by one of the authors by means of a classification of the figures given in successive occupation censuses since 1870 in an attempt to make the figures for the various years as comparable as possible. The statistics given for general divisions and for certain individual occupations are only approximately correct, since they include estimates without which no comparisons for the period can be made. However, it is believed that the figures used are sufficiently comparable to measure the broad and unmistakable tendencies which have taken place. It is the task of this chapter to sketch briefly the bold contours of these changes and to characterize their significance in the life of the people.

3 See Table 1, Chap. XVI.
4 See section V of this chapter.
5 The data of the chapter have been drawn chiefly from the successive occupation censuses since 1870. The decennial enumeration of gainful workers made in connection
OCCUPATIONS

I. PROPORTION OF THE POPULATION GAINFULLY OCCUPIED

What proportion of the people actually engages in producing and distributing the nation's goods and services? How numerous are the dependents who do not pay their own way? Has the proportion of the population which carries the load of physical production been increasing or decreasing? It might be reasonable to suppose that with the coming of the machine a smaller proportion of the population should be required to work, especially in view of the increases in aggregate and per capita wealth in recent decades. Our estimates show, however, that a larger percentage of the population has been at work since 1910 than in 1870 or in the intervening decades.

Major Divisions of the Population.—How the proportion of the total population gainfully occupied has increased during the past seventy years is shown by the data of Table 1 and in Figure 1. While the population increased over 200 percent, from forty millions in 1870 to one hundred and twenty-five millions in 1930, the number of persons gainfully occupied grew still more rapidly from a little over twelve millions in 1870 to a total of more than forty-eight millions in 1930, an increase of approximately 300 percent. From Figure 1 it will be seen that the gainfully occupied were increasing more rapidly than the total population during the first four decades of the period under consideration.

The proportion of the population engaged in gainful pursuits increased from 32 percent in 1870 to nearly 40 percent in the decades since 1910. This means that a growing fraction of the population has produced the goods and services consumed. A more illuminating picture

with the federal population censuses have related since 1870 to the entire population of the United States ten years of age and over. While the essential character of the inquiry has remained the same from decade to decade, many changes in methods have been introduced which affect the comparability of the occupation data. The time of year at which the census was taken has varied, for example, thus affecting the results obtained for various seasonal occupations, in particular, agricultural labor and building occupations. The date of the census was June 1 until 1910, when it was changed to April 15. In 1920 the date was advanced to January 1, which undoubtedly caused considerable distortion in certain figures for that year. In 1930 the date was April 1. The scheme of occupational classification has been frequently changed, so that for many important occupational groups it is impossible to obtain comparable figures over a long period. In the present use of the material, the object has been by means of detailed comparison of the data published for each census period to obtain presumptive trends for both major occupational groups and a large number of specific occupations. In obtaining figures for groups of occupations, readjustments in classification have been made from census to census in obtaining presumably comparable totals. In some cases missing figures have been estimated, and in several instances, where the reports of the census warn of probable incomparability in the data, adjustments have been made in accordance with the suggestions contained in the census reports. While many of the figures in the following tables will be found in the census publications, the figures of the chapter should be interpreted as estimates of long time trends. It should be stated that the present plans of the Bureau of the Census contemplate the publication of official figures showing occupational changes over a considerable number of decades.
of this change is obtained if those who have not reached working age are excluded from the comparisons. From Table 2 it appears that the proportion gainfully occupied among the population ten years of age and over increased from 44 percent in 1870 to nearly 50 percent in 1930.

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Fig. 2.—Primary activity distribution of the total population, 1870–1930.

Fig. 3.—Percent of male and of female population gainfully occupied in 1930, by age.
Recent Social Trends

Table 1.—Estimated Primary Activity Distribution of Total Population, 1870–1930

<table>
<thead>
<tr>
<th>Activity group</th>
<th>Percentage of total population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1870</td>
</tr>
<tr>
<td>Children under 5 years</td>
<td>14.8</td>
</tr>
<tr>
<td>Children 5 to 15 years not at school or gainfully occupied</td>
<td>10.7</td>
</tr>
<tr>
<td>Persons attending school</td>
<td>16.6</td>
</tr>
<tr>
<td>Persons gainfully occupied</td>
<td>32.4</td>
</tr>
<tr>
<td>Housewives not gainfully occupied</td>
<td>21.3</td>
</tr>
<tr>
<td>Adults in institutions</td>
<td>.8</td>
</tr>
<tr>
<td>Not accounted for</td>
<td>4.4</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* The available census data are quite inadequate for deriving a precise activity distribution of the population. The figures of this table must, therefore, be accepted as very approximate estimates. There is some overlapping between the categories, “Persons attending school” and “Persons gainfully occupied” and between “Adults in institutions” and those gainfully occupied. As subsequently explained the figures for housewives, or persons working in the home without pay, are very roughly estimated. Those not accounted for would be larger if duplication in other categories were eliminated. This category includes dependents over 16 years of age not in institutions.

Of the population 16 years of age and over, 57 percent are now customarily employed as compared with 52 percent in 1870. Thus a distinctly

Table 2.—Percentage of Population Gainfully Occupied, 1870–1930

<table>
<thead>
<tr>
<th>Population group</th>
<th>1870</th>
<th>1880</th>
<th>1890</th>
<th>1900</th>
<th>1910*</th>
<th>1920*</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entire population:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>32.4</td>
<td>34.7</td>
<td>37.2</td>
<td>38.3</td>
<td>40.6</td>
<td>39.6</td>
<td>39.8</td>
</tr>
<tr>
<td>Males</td>
<td>54.7</td>
<td>57.8</td>
<td>60.2</td>
<td>61.2</td>
<td>62.9</td>
<td>61.8</td>
<td>61.3</td>
</tr>
<tr>
<td>Females</td>
<td>9.6</td>
<td>16.7</td>
<td>13.1</td>
<td>14.3</td>
<td>17.0</td>
<td>16.5</td>
<td>17.7</td>
</tr>
<tr>
<td>Population 10 years and over:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>44.3</td>
<td>47.3</td>
<td>49.2</td>
<td>50.2</td>
<td>52.1</td>
<td>50.6</td>
<td>49.5</td>
</tr>
<tr>
<td>Males</td>
<td>74.8</td>
<td>78.7</td>
<td>79.3</td>
<td>80.0</td>
<td>80.3</td>
<td>78.8</td>
<td>76.2</td>
</tr>
<tr>
<td>Females</td>
<td>15.1</td>
<td>14.7</td>
<td>17.4</td>
<td>18.8</td>
<td>21.9</td>
<td>21.1</td>
<td>22.0</td>
</tr>
<tr>
<td>Population 16 years and over:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>52.2</td>
<td>54.0</td>
<td>55.8</td>
<td>56.5</td>
<td>59.0</td>
<td>58.1</td>
<td>57.1</td>
</tr>
<tr>
<td>Males</td>
<td>88.8</td>
<td>90.6</td>
<td>90.5</td>
<td>90.5</td>
<td>91.1</td>
<td>90.5</td>
<td>88.0</td>
</tr>
<tr>
<td>Females</td>
<td>14.8</td>
<td>16.0</td>
<td>19.0</td>
<td>20.6</td>
<td>24.3</td>
<td>24.0</td>
<td>25.3</td>
</tr>
</tbody>
</table>

* Adjustments have been made in the occupation figures used for 1910 and 1920, because of probable over-enumeration of women and children in agriculture in 1910, and probable under-enumeration of farm laborers due to the date of census in 1920. For the total population the percentage gainfully occupied according to the published census figures was, in 1910, 41.5 instead of 40.6; in 1920, 39.4 instead of 39.6.

A larger proportion even of the population which has reached working age has shouldered the load of the nation’s gainful work. Apparently, however, during the past two decades the proportion has not increased but instead has declined slightly.
OCCUPATIONS

Comparison with Great Britain.—To lend perspective to the American situation a comparison of these trends with similar figures for Great Britain is shown in Table 3. Detailed comparison of these figures should be made cautiously in view of probable differences in the census methods used in the two countries. However, it is clear that the ratio of gainfully occupied to the total population of Great Britain has declined since the 1890’s, while in America the trend has been toward a higher ratio of the working population to the total. In 1920, however, a larger fraction of the total population was engaged in gainful pursuits in Britain than in America. Especially marked is the divergence in the relative proportion of women employed in the two countries. In 1911 one-third of British women were recorded as gainfully occupied as compared with less than one-fourth of American women in 1910.

Table 3.—Percentage of Population Ten Years of Age and Over Gainfully Occupied, in the United States and in Great Britain, 1880–1921a

<table>
<thead>
<tr>
<th>Population group</th>
<th>United States</th>
<th>Great Britain</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1880</td>
<td>1890</td>
</tr>
<tr>
<td>Population 10 years and over:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47.3</td>
<td>49.2</td>
</tr>
<tr>
<td>Males</td>
<td>78.7</td>
<td>79.3</td>
</tr>
<tr>
<td>Females</td>
<td>14.7</td>
<td>17.4</td>
</tr>
<tr>
<td>Population 16 years and over:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Data for Great Britain adapted from British census figures presented in London and Cambridge Economic Service, Occupational Changes in Great Britain, 1911 and 1921 by A. L. Bowley, Special Memorandum no. 17, May 1926; and Survey of Industrial Relations by the Committee on Industry and Trade, London, 1931.

The relative number of British women gainfully employed had declined slightly by 1921 but it still exceeded the proportion of American women in this category by approximately 10 percent. This comparison is affected by the greater degree of urbanization and the relative unimportance of agriculture in Great Britian. It is also affected by the persisting influence of the employment habits of an earlier generation in England when large numbers of women were employed in the English factories and workshops of the early industrial revolution.

Productive Capacity of the Population.—The growing proportion of the total population engaged in gainful work over the past six decades in the United States is partially explained by the increased employment of women outside the home. An additional explanation is found in the increasing proportion of available labor power in the total population
brought about by a marked falling off in the relative numbers of children. From 1870 to 1930 the number of persons in the productive ages between 16 and 64 increased from 56 percent to 63 percent of the total population while the gainfully occupied of these ages increased from 45 to 50 percent of the total. As shown in Table 4, this change in the proportion of population of productive age is explained by a decline of one-fourth in the proportion under the age of sixteen during this period.

Table 4.—Change in productive capacity as indicated by the percentage of total population in three age divisions, 1870–1930

<table>
<thead>
<tr>
<th>Age</th>
<th>1870</th>
<th>1880</th>
<th>1890</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 16 years</td>
<td>41.3</td>
<td>40.0</td>
<td>37.6</td>
<td>36.4</td>
<td>33.9</td>
<td>33.5</td>
<td>31.2</td>
</tr>
<tr>
<td>16 to 64 years</td>
<td>55.7</td>
<td>56.6</td>
<td>58.5</td>
<td>59.5</td>
<td>61.8</td>
<td>61.8</td>
<td>63.4</td>
</tr>
<tr>
<td>65 years and over</td>
<td>3.0</td>
<td>3.4</td>
<td>3.9</td>
<td>4.1</td>
<td>4.3</td>
<td>4.7</td>
<td>5.4</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

In actual numbers children have always comprised a very large percentage of the population, but with the fall in birth rate and the consequent reduction in the rate of population growth the number of dependents supported by the working population has been reduced. The smaller average size of the American family is a leading cause of this shift in age distribution, a change not offset by the decrease in infant mortality.

We have seen that the gainfully employed were 40 percent of the population in 1930 as compared with 32 percent in 1870. Among these the large proportion of women engaged in the care of their own homes is not included, though they are a class contributing in an important way to the total of goods and services. By including housewives with the gainfully employed the percentage of the population at work mounts to more than 60 percent during recent decades.

In determining the number of persons actually carrying the burdens of society we must make allowance for the sick and the unemployed among those ordinarily at work. If those too sick to work and the normally unemployed are considered, the number of actively employed workers is reduced to not more than 54 or 55 percent of the total population. At the present time, in other words, a little more than half of the population carry on the current work of society and somewhat less than half are dependents.

Gainful Workers According to Age.—The structure of the working population has been affected by forces from without as well as from within. During the eighties and nineties industry and trade attracted large

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6 On the declining number of children, see Chap. I.
7 For full discussion of this subject, see Chap. XIII.
numbers of workers. Young people and children were increasingly drawn into employment until the nineteen hundreds, when the rising tide of youthful workers was stemmed by legal restrictions in most states, by the steady rise of compulsory school requirements and the growth of the population enrolled in high schools, colleges and technical institutions. Whereas 18 percent of the children between the ages of 10 and 15 were recorded by the census as at gainful work in 1890, less than 5 percent were so recorded in 1930. The number of children under 16 who were reported as gainfully occupied in 1930 is actually somewhat smaller than that in 1870 before the great industrial expansion. Thus the complexity of modern life, the technical requirements of present occupations, changing customs and legal restrictions have combined to retard the entry of potential younger workers into the ranks of available labor.8

On the other hand older workers are tenaciously clinging to employment. Contrary to popular supposition, the occupation statistics indicate that a greater proportion of persons between the ages of 45 and 65 is now customarily employed than during the nineties. This is explained largely by the increase in the employment of women. Of men, the proportion at work between these ages has remained relatively constant. Among men of 65 and over there is distinctly less employment today than formerly, as is shown by the decline of gainfully occupied in this group from 74 percent in 1890 to 58 percent in 1930. Among women past 65 the extent of

---

Table 5.—Percentage of Population Gainfully Occupied, by Age and Sex, 1890–1930

<table>
<thead>
<tr>
<th>Age</th>
<th>1890</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>10 to 15 years</td>
<td>18.1</td>
<td>18.2</td>
<td>13.7</td>
<td>8.5</td>
<td>4.7</td>
</tr>
<tr>
<td>16 to 44 years</td>
<td>57.1</td>
<td>58.3</td>
<td>61.8</td>
<td>60.7</td>
<td>59.5</td>
</tr>
<tr>
<td>45 years and over</td>
<td>52.8</td>
<td>62.1</td>
<td>82.0</td>
<td>58.3</td>
<td>52.2</td>
</tr>
<tr>
<td>45 to 64 years</td>
<td>55.5</td>
<td>55.9</td>
<td>.....</td>
<td>58.2</td>
<td>58.0</td>
</tr>
<tr>
<td>65 years and over</td>
<td>41.8</td>
<td>39.0</td>
<td>.....</td>
<td>34.2</td>
<td>35.2</td>
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<tr>
<td>Males:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 to 15 years</td>
<td>26.0</td>
<td>26.0</td>
<td>18.6</td>
<td>11.3</td>
<td>6.4</td>
</tr>
<tr>
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<td>90.6</td>
<td>91.4</td>
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<td>92.4</td>
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<td>88.1</td>
<td>85.5</td>
<td>86.6</td>
<td>85.9</td>
</tr>
<tr>
<td>45 to 64 years</td>
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<td>95.8</td>
<td>94.1</td>
</tr>
<tr>
<td>65 years and over</td>
<td>73.8</td>
<td>68.4</td>
<td>.....</td>
<td>60.4</td>
<td>55.3</td>
</tr>
<tr>
<td>Females:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 to 15 years</td>
<td>10.0</td>
<td>10.2</td>
<td>8.7</td>
<td>5.6</td>
<td>2.9</td>
</tr>
<tr>
<td>16 to 44 years</td>
<td>21.7</td>
<td>23.5</td>
<td>28.1</td>
<td>28.3</td>
<td>29.7</td>
</tr>
<tr>
<td>45 years and over</td>
<td>11.6</td>
<td>12.9</td>
<td>14.8</td>
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<td>16.1</td>
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<tr>
<td>45 to 64 years</td>
<td>12.5</td>
<td>14.1</td>
<td>.....</td>
<td>17.1</td>
<td>18.7</td>
</tr>
<tr>
<td>65 years and over</td>
<td>8.3</td>
<td>9.1</td>
<td>.....</td>
<td>8.0</td>
<td>8.0</td>
</tr>
</tbody>
</table>

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8 On child labor, see Chap. XV.
RECENT SOCIAL TRENDS

gainful employment is small and the proportion at gainful work has not changed significantly. These changes are summarized in Table 5.

Figure 3 reveals the present concentration of employment among men in the age groups between the mid-twenties and the fifties, and the steady scaling off in the proportion gainfully occupied during the later years of life. The peak of female employment naturally appears during the late

![Diagram showing employment trends](image-url)

Fig. 4.—Proportion of older men occupied and unoccupied, 1890-1930.

'teens and the early twenties, the pre-marriage age for the majority of women. There is a sharp reduction in the number of women gainfully employed during the late twenties and again during the early thirties as an increasing proportion of the female population abandons the labor market for the profession of home making. Between the late thirties and the early fifties the proportion of women gainfully occupied declines
gradually, the rate of gainful occupation falling off with increasing rapidity above the age of fifty.

For men, the change since 1890 in the ages at which they leave gainful work is shown in Figure 4, together with the proportions found in agriculture and in manufacturing. Men of 45 to 54 years of age had the same percentage in gainful work in 1890 as now, but the proportion in agriculture has greatly decreased, while those in manufacture and other pursuits have increased. For the ages 55 to 64, there has been some drop in the proportion of gainful workers since 1890, with a change in industrial distribution similar to the change in the next younger group. The oldest group, males 65 and over, is seen to have had a large increase in its proportion without gainful occupation, which is balanced by a decrease in agriculture. This change, however, is not a new phenomenon, but has come about by very gradual development.

Gainful Workers in Relation to Dependents.—A factor in the reduction of the number of dependents receiving direct family support is the relative increase of the number of adults in custodial institutions. Although the absolute number of persons thus cared for is not impressive, these changes give evidence of the community’s growing sense of responsibility for the aged, the unemployable and the indigent who cannot be adequately cared for in their own homes.

As has been shown in Table 1 above, the estimated proportion of housewives not otherwise occupied shows a surprising stability in relation to the total population, varying only a fraction of one percent during the entire sixty years under review. Of greater importance, however, is the decreasing proportion of women of employable age engaged solely in duties in the home.

Although the earning population today supports fewer dependents than heretofore there are more breadwinners per family to share in that support.

II. MAJOR OCCUPATIONAL GROUPS

More significant than the changes in the absolute or relative numbers of the total working population are the shifts which have taken place in the structure and functions of that population and in the nature of the

9 The number of housewives (women occupied in the home without receiving wages who are not also pursuing a gainful occupation) has not been tabulated by the Bureau of the Census for past censuses. An estimate of their number in 1920, however, has been published by the Bureau. In this study the trend for this group has been estimated by several methods. The method yielding the figures used in Table 1 assumes that the proportion of women of working age who are gainfully occupied or working at housework at home will have equalled the proportion of men of working age gainfully employed. While rough, the method gives indication of the probable decline in the housekeeping function which is confirmed by other methods of estimate.

10 See Chap. XIII.
RECENT SOCIAL TRENDS

tasks performed. Figure 5 portrays the rates of increase among the major occupational groups, while Figure 6 shows the resulting changes in the distribution of the working population.\textsuperscript{11}

\textbf{Fig. 5.}—Trend of major occupational groups, 1870–1930 (gainful workers 16 years of age and over).

\textsuperscript{11} In these and later figures and in corresponding tables Agriculture includes also Forestry and Fishing, while Manufacturing and Mechanical Industries includes Construction, with the exception of highway and railroad construction, and miscellaneous hand trades pursued outside of factories.
### OCCUPATIONS

<table>
<thead>
<tr>
<th>Occupation group</th>
<th>1870a</th>
<th>1880</th>
<th>1890c</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total agriculture and allied occupations</td>
<td>6,428</td>
<td>7,830</td>
<td>8,979</td>
<td>9,082</td>
<td>10,872</td>
<td>10,554</td>
<td>10,242</td>
</tr>
<tr>
<td>Farmers</td>
<td>78,021</td>
<td>74,308</td>
<td>75,290</td>
<td>75,775</td>
<td>6,139</td>
<td>6,387</td>
<td>6,018</td>
</tr>
<tr>
<td>Farm laborers</td>
<td>73,354</td>
<td>78,488</td>
<td>72,483</td>
<td>78,383</td>
<td>44,486</td>
<td>7,680</td>
<td>8,922</td>
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<tr>
<td>Wage earners</td>
<td>11,083</td>
<td>9,196</td>
<td>5,946</td>
<td>3,647</td>
<td>1,083</td>
<td>1,257</td>
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</tr>
<tr>
<td>Unpaid family workers</td>
<td>20</td>
<td>41</td>
<td>58</td>
<td>67</td>
<td>67</td>
<td>52</td>
<td>73</td>
</tr>
<tr>
<td>Fishermen</td>
<td>26</td>
<td>43</td>
<td>90</td>
<td>107</td>
<td>158</td>
<td>195</td>
<td>159</td>
</tr>
<tr>
<td>Lumbermen and woodchoppers</td>
<td>172</td>
<td>253</td>
<td>388</td>
<td>376</td>
<td>947</td>
<td>1,083</td>
<td>983</td>
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<tr>
<td>Total mining</td>
<td>179</td>
<td>700</td>
<td>450</td>
<td>326</td>
<td>616</td>
<td>759</td>
<td>646</td>
</tr>
<tr>
<td>Coal mine operatives and foremen</td>
<td>700</td>
<td>1,100</td>
<td>75</td>
<td>38</td>
<td>197</td>
<td>154</td>
<td>129</td>
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<tr>
<td>Other mine operatives and foremen</td>
<td>26</td>
<td>89</td>
<td>110</td>
<td>128</td>
<td>102</td>
<td>222</td>
<td></td>
</tr>
<tr>
<td>Oil and gas well operatives and foremen</td>
<td>2,674</td>
<td>4,038</td>
<td>7,743</td>
<td>5,737</td>
<td>10,253</td>
<td>19,425</td>
<td>13,790</td>
</tr>
<tr>
<td>Total trade and transportation</td>
<td>1,104</td>
<td>1,741</td>
<td>2,960</td>
<td>4,445</td>
<td>6,223</td>
<td>7,360</td>
<td>9,903</td>
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<td>Total trade</td>
<td>3,447</td>
<td>4,215</td>
<td>6,004</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Wholesale dealers</td>
<td>28</td>
<td>33</td>
<td>42</td>
<td>58</td>
<td>74</td>
<td>84</td>
<td></td>
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<tr>
<td>Retail dealers</td>
<td>376</td>
<td>510</td>
<td>718</td>
<td>865</td>
<td>1,016</td>
<td>1,189</td>
<td>1,338</td>
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<tr>
<td>Salespeople and clerks in stores</td>
<td>105</td>
<td>104</td>
<td>470</td>
<td>711</td>
<td>1,239</td>
<td>1,509</td>
<td>2,377</td>
</tr>
<tr>
<td>Commercial travelers</td>
<td>7</td>
<td>28</td>
<td>59</td>
<td>93</td>
<td>166</td>
<td>202</td>
<td></td>
</tr>
<tr>
<td>Real estate and insurance agents</td>
<td>125</td>
<td>233</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bankers, stock and loan brokers</td>
<td>11</td>
<td>10</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total transportation</td>
<td>2,770</td>
<td>3,140</td>
<td>3,839</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Road and street transportation</td>
<td>145</td>
<td>221</td>
<td>445</td>
<td>624</td>
<td>822</td>
<td>955</td>
<td>1,380</td>
</tr>
<tr>
<td>Steam railroads</td>
<td>153</td>
<td>235</td>
<td>461</td>
<td>580</td>
<td>1,077</td>
<td>1,182</td>
<td>1,038</td>
</tr>
<tr>
<td>Street railroads</td>
<td>5</td>
<td>12</td>
<td>37</td>
<td>69</td>
<td>106</td>
<td>147</td>
<td>110</td>
</tr>
<tr>
<td>Water transportation</td>
<td>94</td>
<td>90</td>
<td>90</td>
<td>107</td>
<td>188</td>
<td>179</td>
<td>169</td>
</tr>
<tr>
<td>Telephone and telegraph operators</td>
<td>8</td>
<td>25</td>
<td>52</td>
<td>74</td>
<td>105</td>
<td>260</td>
<td>321</td>
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<tr>
<td>Total clerical occupations</td>
<td>606</td>
<td>580</td>
<td>548</td>
<td>781</td>
<td>1,855</td>
<td>2,852</td>
<td>3,953</td>
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<td>Clerks</td>
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<td>228</td>
<td>300</td>
<td>368</td>
<td>777</td>
<td>1,540</td>
<td>2,109</td>
</tr>
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<td>Stenographers</td>
<td>71</td>
<td>116</td>
<td>130</td>
<td>214</td>
<td>609</td>
<td>810</td>
<td></td>
</tr>
<tr>
<td>Bookkeepers, cashiers and accountants</td>
<td>50</td>
<td>79</td>
<td>150</td>
<td>235</td>
<td>494</td>
<td>731</td>
<td>630</td>
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<td>Messengers and office boys and girls</td>
<td>5</td>
<td>6</td>
<td>21</td>
<td>30</td>
<td>60</td>
<td>70</td>
<td>98</td>
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<tr>
<td>Total domestic and personal service</td>
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<td>2,726</td>
<td>3,805</td>
<td>3,605</td>
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<td>Servants, including housekeepers and waiters</td>
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<td>1,056</td>
<td>1,401</td>
<td>1,578</td>
<td>1,859</td>
<td>1,680</td>
<td>2,624</td>
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<tr>
<td>Launderers, including workers in laundries</td>
<td>20</td>
<td>131</td>
<td>247</td>
<td>370</td>
<td>654</td>
<td>536</td>
<td>602</td>
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<tr>
<td>LAnderers not in laundries</td>
<td>20</td>
<td>131</td>
<td>247</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Boarding and lodging housekeepers</td>
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<td>19</td>
<td>44</td>
<td>71</td>
<td>165</td>
<td>183</td>
<td>144</td>
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<td>Restaurant and luncheon keepers</td>
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<td>13</td>
<td>19</td>
<td>34</td>
<td>61</td>
<td>88</td>
<td>165</td>
</tr>
<tr>
<td>Hotel keepers and managers</td>
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<td>24</td>
<td>44</td>
<td>55</td>
<td>65</td>
<td>56</td>
<td>57</td>
</tr>
<tr>
<td>Janitors and sextons</td>
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<td>6</td>
<td>21</td>
<td>30</td>
<td>60</td>
<td>70</td>
<td>98</td>
</tr>
<tr>
<td>Elevator tenders</td>
<td>29</td>
<td>13</td>
<td>20</td>
<td>30</td>
<td>60</td>
<td>70</td>
<td>98</td>
</tr>
<tr>
<td>Total professional service</td>
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<td>543</td>
<td>880</td>
<td>1,106</td>
<td>1,727</td>
<td>2,203</td>
<td>3,110</td>
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<td>Physicians, surgeons, osteopaths and attendants</td>
<td>36</td>
<td>86</td>
<td>105</td>
<td>132</td>
<td>157</td>
<td>163</td>
<td>188</td>
</tr>
<tr>
<td>Physicians and surgeons and osteopaths</td>
<td>36</td>
<td>86</td>
<td>105</td>
<td>132</td>
<td>157</td>
<td>163</td>
<td>188</td>
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<tr>
<td>Dentists</td>
<td>8</td>
<td>12</td>
<td>17</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>71</td>
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<tr>
<td>Trained nurses</td>
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<td>2</td>
<td>6</td>
<td>8</td>
<td>12</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>Veterinary surgeons</td>
<td>6</td>
<td>14</td>
<td>182</td>
<td>183</td>
<td>172</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lawyers, judges, abstractors, notaries</td>
<td>39</td>
<td>760</td>
<td>430</td>
<td>110</td>
<td>125</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Lawyers and judges</td>
<td>39</td>
<td>760</td>
<td>430</td>
<td>110</td>
<td>125</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Clergymen, religious and welfare workers</td>
<td>145</td>
<td>783</td>
<td>105</td>
<td>119</td>
<td>127</td>
<td>149</td>
<td></td>
</tr>
<tr>
<td>Teachers and professors</td>
<td>29</td>
<td>225</td>
<td>144</td>
<td>615</td>
<td>705</td>
<td>1,125</td>
<td></td>
</tr>
<tr>
<td>Librarians and assistants</td>
<td>10</td>
<td>50</td>
<td>62</td>
<td>91</td>
<td>138</td>
<td>130</td>
<td>165</td>
</tr>
<tr>
<td>Musicians and teachers of music</td>
<td>10</td>
<td>50</td>
<td>62</td>
<td>91</td>
<td>138</td>
<td>130</td>
<td>165</td>
</tr>
</tbody>
</table>
### RECENT SOCIAL TRENDS

#### Table 6.—Number of Persons 16 Years of Age and Over in Selected Occupational Groups, 1870–1930.6—(Continued)

<table>
<thead>
<tr>
<th>Occupation group</th>
<th>1870</th>
<th>1880</th>
<th>1890</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actors</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>28</td>
<td>28</td>
<td>98</td>
</tr>
<tr>
<td>Artists and teachers of art</td>
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<td>9</td>
<td>22</td>
<td>25</td>
<td>34</td>
<td>35</td>
<td>57</td>
</tr>
<tr>
<td>Authors</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
<td>7</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Editors and reporters</td>
<td>5</td>
<td>12</td>
<td>22</td>
<td>30</td>
<td>34</td>
<td>34</td>
<td>52</td>
</tr>
<tr>
<td>Architects</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>11</td>
<td>17</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Designers, draftsmen and inventors</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>19</td>
<td>47</td>
<td>71</td>
<td>103</td>
</tr>
<tr>
<td>Technical engineers and electricians</td>
<td>7</td>
<td>8</td>
<td>43</td>
<td>93</td>
<td>209</td>
<td>349</td>
<td>507</td>
</tr>
<tr>
<td>Electricians</td>
<td></td>
<td></td>
<td></td>
<td>51</td>
<td>140</td>
<td>213</td>
<td>280</td>
</tr>
<tr>
<td>Chemists and metallurgists</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>9</td>
<td>16</td>
<td>33</td>
<td>47</td>
</tr>
<tr>
<td>Photographers</td>
<td>8</td>
<td>10</td>
<td>20</td>
<td>27</td>
<td>32</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>Total gainfully occupied, 16 years and over</td>
<td>12,104</td>
<td>16,274</td>
<td>21,814</td>
<td>27,325</td>
<td>35,845</td>
<td>40,793</td>
<td>48,108</td>
</tr>
</tbody>
</table>

6 The figures of this table are the result of an attempt to derive presumably comparable series of figures from the successive occupation censuses. The figures will not in all cases be found in the census reports. In a few instances, estimates have been made by dividing figures for combined occupational groups contained in reports of the earlier censuses, and in other instances by combining separate census figures for later years. The composition of some of the major groups differs somewhat from that of similarly designated categories in the recent census categories, because the recent census categories could not be carried back to the earlier years. Other estimates and adjustments in the published census figures have been made, the more important of which are indicated in the following footnotes.

5 Figures for total occupied and for large occupation groups in 1870 are adjusted for the probable deficiency in the population enumeration in that year.

6 Figures for total occupied and for the larger occupation groups in 1890 are estimated from published figures for gainfully occupied persons 15 years of age and over.

7 Figures for farm laborers in 1910 are adjusted for supposed over-enumeration of women and children in agriculture. The adjustment probably leaves the figures for agricultural laborers in this year still too high.

8 Figures for paid farm laborers in 1990 are adjusted for probable under-enumeration due to the date of the census of that year.

The Shift from Agriculture to the City.—The most dramatic single movement is the great migration from the farm to the city and the relative decline in the number of agricultural workers. The increased efficiency of farming,12 in combination with rising industrial and commercial wage levels, the attractions of urban life and other factors have brought about the relative decline of agricultural employment and the concentration of an increasing proportion of the working population in the urban occupations of trade, manufacturing and professions. Exclusive of children more than half of the gainfully occupied persons in 1870 were found in the occupations of agriculture, lumbering and fishing. Although of minor importance, lumbering and fishing have more than held their own, while agricultural employment has declined consistently. By 1880 the proportion of this combined group to the total had dropped to 48 percent of the working population. In the two succeeding decades it fell off still more rapidly to 36 percent of the total in 1900, and by 1930 only 21 percent of the working population were required in this underlying basic industry which supplies the foodstuffs and an important portion

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12 See Chap. II.
of the raw materials for the clothing and other needs of the nation. Until 1910 the decline of agricultural employment was relative only, owing to the more rapid growth of other industries, but since 1910 the numbers engaged in farming have decreased absolutely as well as relatively. From 1870 until 1920 farmers made use of a constantly increasing number of horses and mules, but today the number of these animals is smaller than for more than forty years past. With the extended use of mechanical power tens of thousands of farmers have become machine operators on the farm. Artificial tractive power, gas engines, electricity and improved implements, which render agricultural work less burdensome but more productive, have become almost essential for successful commercial farming. During the depression of 1930–1932 the return to the farm of many persons seeking low cost housing and subsistence has at least temporarily stemmed the tide of decline in rural population. A minor gain of 648,000 in farm population for 1932 as compared to 1931 is shown by recent reports from the United States Department of Agriculture.

Trends in Basic Industries.—The three major producing groups of agriculture, mining and manufacturing (including construction) comprise
RECENT SOCIAL TRENDS

that fraction of the population engaged in the provision of raw materials and in their fabrication through successive stages preparatory to final consumption. Until 1920, while agriculture declined, the working population from all sources moved in large numbers into the factories, the building trades and the varied employments which supply the means of transportation and communication. Since 1920 employment in mines and factories has also ceased to expand. What change has taken place in the stream of workers during the past decade which accounts for the employment of those no longer needed in producing and manufacturing physical goods? The answer may be found in the remarkable growth of the categories which include the distributive, clerical and professional occupations.

Before considering these groups, let us examine more carefully the trends in the major producing groups themselves.

It will be seen from Table 7 that those dependent upon employment in manufacture and construction have increased in number from 22 percent of the total gainfully occupied in 1870 to a peak of 30 percent in 1920.\textsuperscript{13} The increased productivity of industry has made it possible for

<table>
<thead>
<tr>
<th>Occupation group</th>
<th>1870</th>
<th>1880</th>
<th>1890</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture and allied occupations</td>
<td>52.8</td>
<td>48.1</td>
<td>41.2</td>
<td>35.9</td>
<td>30.3</td>
<td>25.8</td>
<td>21.3</td>
</tr>
<tr>
<td>Mining</td>
<td>1.5</td>
<td>1.6</td>
<td>1.8</td>
<td>2.1</td>
<td>2.6</td>
<td>2.7</td>
<td>2.0</td>
</tr>
<tr>
<td>Manufacturing and mechanical industries</td>
<td>22.0</td>
<td>24.8</td>
<td>26.3</td>
<td>27.5</td>
<td>28.6</td>
<td>30.5</td>
<td>28.6</td>
</tr>
<tr>
<td>Trade and transportation</td>
<td>9.1</td>
<td>10.7</td>
<td>13.6</td>
<td>16.3</td>
<td>17.4</td>
<td>18.0</td>
<td>20.7</td>
</tr>
<tr>
<td>Clerical service</td>
<td>1.7</td>
<td>2.0</td>
<td>2.5</td>
<td>2.8</td>
<td>4.6</td>
<td>7.2</td>
<td>8.2</td>
</tr>
<tr>
<td>Domestic and personal service</td>
<td>9.6</td>
<td>8.8</td>
<td>9.7</td>
<td>10.0</td>
<td>10.6</td>
<td>8.8</td>
<td>11.3</td>
</tr>
<tr>
<td>Public service not elsewhere classified</td>
<td>.6</td>
<td>.7</td>
<td>.9</td>
<td>1.0</td>
<td>1.1</td>
<td>1.6</td>
<td>1.4</td>
</tr>
<tr>
<td>Professional service</td>
<td>2.7</td>
<td>3.3</td>
<td>4.0</td>
<td>4.4</td>
<td>4.8</td>
<td>5.4</td>
<td>6.5</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

this relatively small increase in factory employment to support the burden of mounting industrial production. The spurt in output per worker between 1920 and 1930 was not accompanied, however, by an equally rapid increase in the actual production and consumption of goods.

\textsuperscript{13} The 1920 census was taken at the peak of the post-war industrial expansion so that the higher proportion of gainful workers attached to manufacturing and mechanical industries in this year may be the result largely of the unusual activity of factory industries at the time of that census. Notwithstanding the expansion of manufacturing in 1920, the rapid rate of increase in manufacturing employment during the four preceding decades appears to have fallen off somewhat from 1910 to 1920, and still more from 1920 to 1930, as may be seen from Figure 4. The lower proportion in this category in 1930 than in 1920 is not likely to be explained by the business depression in 1930, inasmuch as the occupation figures include normally employed workers who may be unemployed at the time of the census. The census of 1930, moreover, was taken early in the depression period.
Consequently there has been a relative shrinkage in manufacturing employment and a decrease in the relative numerical importance of the manufacturing and mechanical occupations. The numbers engaged in construction have probably increased, but not sufficiently to counteract the gross decline of the manufacturing and mechanical occupations.

In 1870 the extractive industries required one and one-half percent of the total working population. Since that time the use of minerals has become more and more indispensable and the technical progress of these industries has kept pace with their importance. In 1920 the percentage of gainfully employed in mines and quarries had increased to almost 3 percent of the working population, while the absolute numbers employed had increased six fold, a change which reflects especially the steady growth in the production and consumption of coal and iron. As in manufacturing, recent technical improvements have led to a reduction in labor requirements in mines and quarries so that fewer persons were attached to these employments in 1930 than in 1920.\textsuperscript{14}

In 1870 about 75 percent of the gainfully employed were engaged in the production of physical goods, in agriculture, mining, manufacturing and construction. In 1930 only about 50 percent of the labor supply was so required. This reduction has been accomplished by the more effective application of science and technology in production. Man has learned to exploit his knowledge of chemistry and physics and he relies on the machine and the use of steam and electric power to aid in the conversion of nature’s wealth into consumption goods.\textsuperscript{15} Thus fully one-fourth of the nation’s active labor power has been released from the processes of physical production for other activities.

The Growth of Transportation, Trade and Clerical Work.—Numerically the most important major occupational group outside the basic producing industries is the combined category of trade and transportation which comprises those engaged in moving, storing and selling goods—a vast and growing army of workers in wholesale and retail trade, in financial employments and in the public utilities which provide the means of transportation and communication. In the simple domestic economy man produced at home what he needed and consumed it there. As market areas expanded goods were made for nearby distribution. A complex modern community, however, relies upon a wide and far flung market in disposing of its products and in obtaining goods for its own consumption. One of the most striking aspects of recent occupational changes is found in the growing importance of the selling and movement of goods. The influence of the household economy still persists in the prevalent attitude among farmers and among others who believe that

\textsuperscript{14} On productivity of mine workers, see Chap. II.

\textsuperscript{15} On chemical, physical and power inventions, see Chap. III.
the middleman is superfluous and should be eliminated. The statistics seem to indicate, however, that the role of middleman is increasing in importance despite all protestations. It may be, however, that the efficiency of the middleman has not increased as rapidly as that of the producer, and there may be real validity in the cry for elimination of waste here.

The clerical and selling occupations have expanded rapidly with the refinement and elaboration of the processes of commerce and trade. We have seen that between 1870 and 1920 those at work in agriculture fell in relative numbers from over half to a little more than 25 percent of the total working population and those in manufacturing and mechanical occupations increased from 22 to 30 percent, a combined net decline. In 1870 a scant 10 percent of the working population was sufficient for the distribution of the combined product of the one and one-half percent who were engaged in mining, the 22 percent in manufactures and the 52 percent in agriculture, but in 1930 the diversity of industrial production and the area of markets were so vastly extended that more than one-fifth of the nation's workers sought a livelihood in transportation and distribution of the nation's output. Thus those engaged in trade, transportation and communication have more than doubled in their relative numbers in the occupied population from 1870 to 1930.

The occupations of trade fall naturally into two main subdivisions—the commercial and the financial employments. The commercial group, comprising the commercial travelers, the wholesale and retail dealers and salespeople, is responsible for marketing the product of industry. In 1880 and 1890 persons in these occupations were only one-fifth as numerous as those in the manufacturing and mechanical group; from 1900 to 1920 there were about one-quarter as many and in 1930 one-third as many in trade as in the manufacturing and mechanical occupations. If real estate dealers are included with the bankers, brokers and insurance agents, the ranks of the financial groups have expanded even more rapidly than those of the retail and wholesale dealers and about as rapidly as the number of salespeople and store clerks.

The expansion of the clerical group, which is scattered widely among the fields of finance, industry and trade, has taken place in spite of the rapid introduction of labor saving office machinery. If the clerical occupations were subdivided according to industrial classifications it would doubtless be discovered that the number of white collar employees of financial houses has mounted fully as rapidly as the number of sales clerks in wholesale and retail trades. The importance of women in clerical occupations is emphasized by the enormous growth in the number of female stenographers from a negligible number in the seventies to a total rapidly approaching eight hundred thousand in 1930 and in the number
of female salespeople and store clerks from a similar small figure in 1870 to a total of seven hundred thousand in 1930. Women have also figured

Fig. 7.—Growth of selected occupations, 1870–1930—trade (gainful workers 16 years of age and over).

See Figures 3 and 4 in Chap. XIV, which includes a more complete discussion of the employment of women.
prominently in the growing employment in telephone and telegraph services and in the ranks of bookkeepers and accountants, insurance and real estate agents. Included in the clerical group are many persons em-

![Figure 8](image-url)  
**Fig. 8.—Growth of selected occupations, 1870–1930—clerical service (gainful workers 16 years of age and over).**

ployed in the public service, the character of whose occupations is distinguishable from those in other groups only because they are explicitly dependent upon the public payroll. The clerical or white collar employees are quite as dependent upon modest earnings as industrial wage earners,
but they are commonly jealous of their status as a part of the middle class. If the clerical workers are combined with those in trade and transportation it is found that this composite group has almost trebled in relative numerical importance over the seventy year period. An enormous proportion of these persons are now at work, largely indoors in stores and offices, most of them in sedentary occupations, keeping the accounts, taking the orders, carrying on the correspondence, advertising, exhibiting and selling the goods produced on the farms and in the mines, workshops and factories.

The growing number of the occupations in finance, trade and clerical service reflects the great elaboration of the processes of financing and distribution which has accompanied the specialization of industry, the minute subdivision of labor and the rise of the techniques of automatic production. The machine revolution has completely released about 25 percent of the working population from arduous manual toil while labor saving machinery has simultaneously lightened the physical burdens of the wage earners remaining on farms and in the mines and factories. For every four workers apparently displaced by increasing industrial productivity since 1870 from two to three workers more than were then required now find employment in the marts of trade, on the routes of the commercial traveler, in the warehouses, shops, offices, counting houses and miscellaneous establishments of modern business devoted to the processes of distribution and the arts of financing and selling. Thus every increase in physical output per man has been accompanied by further employment in distributive pursuits and also in those occupations where men and women spend their working hours in administration, in planning and in the routine essential for the conduct of affairs. This complex business superstructure rests upon a technological base of smooth working physical plant and human skill which turns out the material goods required; conversely the very existence and continuity of the manual worker’s job is dependent in a real and vital sense upon the efficient functioning of the overhead administrative and distributive organization which must arrange for the disposition of the industrial output if the wheels of industry are to continue in operation. The acceleration in the recent relative gains of the commercial employments is further evidence of “industry’s coming of age” in America, to which attention has already been directed.

The Public Service.—The twentieth century has seen a great multiplication of the functions of government. The activities of the public service have been extended until they touch the life of the individual and the community at innumerable points, and the number of persons required to carry on these manifold activities has been correspondingly increased. A major item in the cost of government is that of wages and salaries,
hence the taxpayer has a special interest in the number of persons the government employs.\textsuperscript{17} From the census statistics it is difficult to gain an exact impression of the growth of the public service. A considerable proportion of those actually in the public service are distributed in the manufacturing and mechanical occupations, in the clerical, professional and other groups. Except for specific occupations the direct employees of federal, state and city governments are not identifiable in the census and, moreover, many persons receiving their compensation indirectly from the state are hired directly by contractors and regard themselves as private employees. However, the trend in public employment in the categories which can be traced from the census reports over the period since 1870 may furnish some idea of both the direction and the rate of the growth in the number of public employees.\textsuperscript{18} In terms of the total gainfully occupied, the group of public service occupations which can be identified during this period has expanded from 0.6 percent in 1870 to 1.6 percent in 1920 and 1.4 percent in 1930. In absolute numbers of these public employees increased from 73,000 in 1870 to 700,000 in 1930, a growth of 1,000 percent.

An independent estimate of the growth of the public service occupations from 1910 to 1930 has been made in connection with this study.\textsuperscript{19} Figure 9 shows that an estimated total public payroll including more than a million and a half persons in 1910 had increased to about two and three-quarter millions in 1930. The growth of the teaching profession tops the list of the expanding employments within this category. It is estimated that approximately two hundred thousand clerical workers were in the public service in 1930 as compared with seventy-four thousand in 1910. The growth of employment in the public service has a significance far beyond its numbers. At one extreme the growing importance of technical boards, bureaus and commissions is responsible for the conduct of highly

\textsuperscript{17} For discussion of wages of public employees see Chap. XXVI.

\textsuperscript{18} The group "Public service not elsewhere classified" shown in Tables 6 and 7 and in Figures 5 and 6 above, includes soldiers and sailors, postmasters, governmental officials and inspectors, firemen, policemen, guards, watchmen and doorkkeepers, marshals, sheriffs, etc. It omits such rapidly increasing groups as teachers, postal clerks, clerical personnel of government offices and the large and expanding group of laborers in the various departments of local as well as state and federal governments.

\textsuperscript{19} This estimate was made primarily to determine the probable trend of governmental employment, rather than the precise number employed. To the number included in "Public service not elsewhere classified" as shown by the census reports for these years, additions from other census categories consisting wholly or mainly of governmental employees were made. The number so obtained for 1930 is a little higher than the estimate of Mosher and Polah, 2,684,000 full time governmental employees for 1926 (see National Municipal Review, January, 1932, vol. XXI, p. 71), and a little lower than King's estimate of 2,819,000 for 1927 (see W. I. King, The National Income and Its Purchasing Power, National Bureau of Economic Research, New York, 1930, p. 50). Our estimate for 1920 may be somewhat too small, since the basis for estimating the number of governmental clerical workers in this year is not good.
important constructive and essential scientific and investigative work. At the other extreme political opportunists furnish the basis for local, state and federal machine politics, frequently with too little reference to the best service of the public interest. The growing ranks of the permanent civil service commonly enjoy unusual security and continuity of employment during the vicissitudes of private business. From the point of view of the labor movement the growth of this group is significant, since

group action among them directly confronts the power and sovereignty of the state.\textsuperscript{20}

In 1910 the construction and maintenance of roads, streets and sewers required between 200,000 and 300,000 persons. In the post-war year of 1920 this employment shrank in importance only to rise again to an

\textsuperscript{20} For further discussion of government personnel problems, see Chap. XXVII.
aggregate of approximately 400,000 in 1930, partly as a result of the great urbanization of the preceding decade. Protection of life and property which was furnished by 60,000 policemen in 1910 now requires 150,000 of these guardians of the public peace, an increase due in no small part to the increased seriousness of the modern traffic problem. Firemen have increased in number at much the same rate as policemen, while the postal service has expanded less rapidly, approximately at the same rate as the growth of population. The 80,000 guardians of public property and the similar number of miscellaneous officials and inspectors of 1910 have increased at about the same rate as the total public service. The aggregate public service group has nearly doubled its numbers over the 20 years, whereas the total gainfully occupied population has expanded only 34 percent in this period.\(^{21}\)

Domestic and Personal Service.—Although domestic and personal service has shown a smaller degree of relative change than any other major category over the entire seventy year period\(^{22}\) there has been a sharp absolute increase in employment in this group between 1920 and 1930, apparently compensating for the decline in these occupations from 1910 to 1920. However, the total numbers in domestic and personal service somewhat obscure the real situation. In 1870 more than three-quarters of this group was made up of household servants and waiters, whereas in 1930 the proportionate number of such servants had declined until they comprised less than half of the total group. Today there are fewer household servants per capita than at any earlier period. The unpopularity of domestic employment is reflected in the recent reputed scarcity of domestic servants in most American cities. Meanwhile the increased popularity of residential hotel and apartment house living is reflected in the phenomenal increase in the number of janitors, laundry workers, elevator operators, boarding and lodging house keepers, restaurant, cafe and lunchroom keepers, hotel keepers and managers. Launderers and laundresses not in commercial establishments are dwindling in number. The modern American shows a growing preference for many servants rather than few, but he prefers them to be specialists, desires few on a full time basis and seeks an increasing variety of personal services away from his own premises. The decentralization of the household of which these trends are symptomatic has brought a greater degree of freedom to the housewife and has diminished the importance of the home as a workshop.\(^{23}\) For those performing these services the relative decline of household

\(^{21}\) It is unfortunate that the size of the growing public establishments cannot be determined more accurately from the census statistics and from the current statistics of employment. These throw practically no light on the magnitude and distribution of the public payroll in the varied operations of federal, state and local governments.

\(^{22}\) See Figure 5, p. 280.

\(^{23}\) For further discussion, see Chap. XIII.
Fig. 10.—Growth of selected occupations, 1870-1930—domestic and personal service (gainful workers 16 years of age and over).
service has brought the elimination of much of the "twenty-four hour employment" so frequently characteristic of domestic work, while the institutionalization of personal service has given the worker greater freedom and contact with his fellows.

**Professional Service.**—The heterogeneous professional employments have undergone a pronounced expansion which repays careful study. These groups furnish the highly technical skills required in modern life and they include the growing group of intellectuals and experts in all fields of human activity. Many new technical and artistic professions have been created in recent years. The complexity of modern life has enhanced the importance and attractiveness of scientific and intellectual pursuits. This group will be discussed in greater detail below.

**III. SELECTED OCCUPATIONAL CHANGES**

In the preceding section the major shifts in occupations have been sketched in broad outline. Attention will now be given to the changes in the nature of the work within several of the major groups.

**Character of Occupations and Basic Industries.**—We have pointed out that the mechanization of agriculture has lessened the rigors of farming where it has been mechanized. The work of the agriculturalist can now be done on a large scale with the aid of highly developed machinery and artificial power. Among the effects of the modernization of farming is the decrease in the number of farm laborers per farmer. The census figures for recent decades indicate that there has also been a rapid diminution of the unpaid family labor which has traditionally constituted so large a part of the farm labor supply. With new methods of farming and new social standards the farmer's wife now does rather less of the work than formerly and fewer of the sons and daughters remain at home to share responsibility for farm work.

Attention has been called to the growth of employment in the extraction of minerals up to 1920 and to the decline in the subsequent decade. Although the mechanization of coal mines has lagged behind that of the iron and non-ferrous metal mines, the recent extension of mechanical methods in underground operations and more effective economies in the industrial use of fuels have led to an absolute decline of more than one hundred thousand in the number of workers dependent upon the mining industries, and a relative decline of 0.7 percent in extractive employments as a whole during the decade of the 1920's. Coupled with the economic sickness of the coal industry the decline in the unit labor requirements in mining means hardship in hundreds of coal miners' villages. The recent growth of the oil and gas industries has introduced new unskilled and semi-skilled employments which are light and not particularly disagreeable in
character, but the expansion of these industries has not offset the general decline of opportunity for work in the extraction of minerals.\(^{25}\)

Still more pervasive are the qualitative changes in the manufacturing and mechanical occupations which have been brought about by technological advance. The great expansion in manufacturing took place be-

\(^{25}\) For further discussion of changes in mining, see Chap. II.
tween 1870 and 1910 when the number of persons in the manufacturing and mechanical trades increased from less than 2,750,000 to 10,250,000. From 1910 to 1920 the numbers in these occupations continued to grow from 10,250,000 to 13,750,000. The increase in the first of the past two decades was slightly greater than in the second. The mechanical and manufacturing group includes the construction workers and the hand trades, many of which (such as the plumbers and cobblers) have shown great resistance to change. It is impossible to separate the factory workers from the census statistics for the larger group, but it is among their ranks that the most far reaching changes have taken place in the nature of the work performed. In the shops and factories old jobs have continually become obsolete and new ones have appeared; old tools and methods have become inadequate and thousands of former handicrafts have been first converted into tasks auxiliary to machine operation in semi-automatic production, and then into machine operations.\textsuperscript{26} In the building trades the new technology has invaded the domain of the construction workers

\textsuperscript{26} See Chap. XVI.
and the amount of hand work has been significantly reduced, but the highly skilled crafts still remain substantially intact, though not exempt from the threat of new processes and new materials.²⁷

Fig. 13.—Growth of selected occupations, 1870–1930—transportation (gainful workers 16 years of age and over).

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There has been great expansion in the number of persons attached to the public utility industries between 1910 and 1930. These are the workers responsible for a continuous supply of gas, electric light and power for streets, homes, workshops and factories. Employees of the railroads, telephone and telegraph companies also belong in this category. A common characteristic of this group is that the continuous maintenance of service is incumbent upon these enterprises.

The occupational trends in transportation and communication are portrayed in Figure 13. Steam railroad employment rose unchecked until 1910, when a relative decline set in, followed by an absolute decline during the decade of the 1920's. Although operating and maintenance crews must be kept intact for the maintenance of service in the face of declining freight and passenger traffic, the number of persons employed in that industry declined 12 percent between 1920 and 1930.28 Water transportation lagged in importance until after 1900, but between 1910 and 1920 it gained considerably at the expense of the railroads which had hopelessly vanquished it in the preceding century. During the three decades following the first introduction of electric cars a rapidly increasing number of persons were required in the operation of street railways, but as in the case of the steam railroads the number needed in this employment fell off relatively between 1910 and 1920 and absolutely during the 1920's. The doubling in the number of employees in non-rail street transportation from 1920 to 1930 reflects the rapid growth in the number of taxicab and truck drivers. During the entire period employment in non-rail street traffic follows closely the general curve for trade and transportation. Transportation affords employment which is in general less arduous than the tasks in manufacturing industries, with more outdoor work than in the general category of trade.29

Racial Shifts in Industries.—Meanwhile the racial composition of the industrial labor supply has changed significantly. Immigration which had declined during the Civil War increased during the early 1870's and dropped again at the close of that decade. A sharp rise in the early 1880's was followed by a slump, which was accentuated during the lean years of the 1890's. This was followed by an unprecedented influx largely from southeastern Europe, mounting steadily from 1900 to 1907. From 1907 to 1914 there was only one year in which the volume of immigration sank below the high peak of 1882. In their native countries the great majority of the later immigrants had been engaged in relatively unskilled occupations, as common laborers or as agricultural workers. In their new environment most of them entered the ranks of unskilled labor, few finding employment in their accustomed occupations. The

28 See Table 6, p. 281.
29 For a discussion of shifts in means of transportation, see Chap. IV.

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southern Europeans who entered the United States in these years have been found in all industries. They are especially concentrated in factory employment, coal mining, railroad maintenance and in construction work. The period of immigration restriction has seen a general improvement of the occupational status of the foreign born whites in the heavy industries. During the 1920's there was a heavy influx of Mexicans and of southern Negroes into the unskilled employments of the manufacturing industries in northern cities.30

In 1910 Negroes accounted for less than one in every ten of all employable males over 10 years of age, while approximately two in ten were foreign born whites. During the next decade the Negroes decreased in relative importance in the population, and there was a drop in the proportion of Negro males gainfully employed. However, there was a striking increase in the number of Negroes in the northern industrial areas, especially in the iron and steel industry, in the petroleum refineries, in the foundries industry, in the metal trades and in the food industries. These changes reflect a large scale displacement of foreign born whites by colored labor. The Negro has not advanced readily into the semi-skilled and skilled pursuits.31

Management and the Entrepreneur.—The number of proprietors and officials in various branches of enterprise has expanded with the growth of industry and trade. The growth in their numbers in the manufacturing industry in recent years reflects the recent refinement and multiplication of the functions of management. During the boom period following the war there was a marked expansion of "general staff" in many large scale manufacturing corporations, including a growth in the number of personnel workers, industrial statisticians, management and marketing experts and specialists of various kinds attached to individual concerns.

It is difficult to separate the "self-employed," in technical language the entrepreneurs, from those working for wages and salaries. Gainful workers of this class differ from others in that they assume directly the risks of their own employment instead of receiving a fixed rate of compensation from an employer. According to a recent estimate, entrepreneurs comprise roughly 10 percent of the total gainfully occupied population. The proportion of this group to the total working population has declined slightly during the past twenty years.32 Between 60 and 70 percent of all entrepreneurs are farmers, a very large proportion of whom

31 On racial groups in industry, see Chap. XI. For discussion of the Negro, see Dutcher, Dean, The Negro in Modern Industrial Society: an Analysis of Changes in the Occupations of Negro Workers, 1910–1920, Lancaster, Pennsylvania, 1930.
Fig. 14.—Growth of selected occupations, 1870-1930—professional service (gainful workers 16 years of age and over).
are independent workers without hired help. Next in numerical importance are the merchants, including a vast number of small shopkeepers. The growth in this group is reflected in the figures for wholesale and retail dealers as given above in Table 6 and Figure 7. With the growth of corporate enterprise the individual entrepreneur outside of agriculture appears to be declining in importance. This means that the risk bearing of the typical modern enterprise is broken up among groups of stockholders, frequently numbering thousands of security owners. Ownership which is thus divorced from active control represents to the average person a channel for the investment of savings, while the earnings of those formerly self-employed are derived to an increasing extent from salaries or wages.

The Professions.—Internal changes in the professional group have a special significance. This group as a whole is now almost ten times as large as in 1870. Changes in individual professions are shown in Figure 14 which portrays the steady growth of some of the older professions and the rapid expansion of some of the newer ones. In a special sense the machine age is the creation of the technical engineers, whose numbers, (excluding electricians) have increased from 7,000 in 1870 to a total of more than 226,000 in 1930. Designers, draftsmen and inventors have increased in number still more rapidly than the engineers. The 2,000 architects engaged in the professional designing of the American buildings of 1870 were probably more adequate in number for their task than the 22,000 confronted by the vast scale and diversity of modern construction in 1930. That the scientific age of metals was still in its infancy at the end of the Civil War is attested by increase of chemists and metallurgists from a negligible 772 in 1870 to almost 50,000 in 1930. The number of physicians and surgeons has grown from 62,000 in 1870 to 160,000 in 1930. Since 1910 the growth of the medical profession has failed to keep pace with that of the population. The relative decline in the number of physicians has been partially offset by the remarkable recent growth of hospital facilities and personnel. The serious aspect of this lag lies, however, in the inadequate geographic distribution of physicians. Meanwhile the number of dentists has been multiplied nine fold. In the settlement of disputes and in dealing with the many complexities of business, domestic and social affairs the American people now maintain a growing legal profession of more than three hundred thousand lawyers, judges and others whose services are employed to facilitate the observance or the elucidation of the law. Many other specialties, minor in the numerical sense, have arisen, as for example the profession of librarian which has attained its present sizable total of over thirty thousand since 1870.

33 See also discussion in Chap. XXI.
Today there are ten newspapermen where there was one in 1870. During the 1920's alone the number of editors and reporters increased more than 50 percent. The group of professional authors grew from inconsequential proportions to a substantial total of twelve or thirteen thousand in 1930, twice the number enumerated in 1920. The nearly 60,000 artists of today may be compared with 4,000 at the beginning of this period, and again the largest part of this increase has come since 1920. The American public now supports 40,000 actors as against 2,000 in 1870, and 165,000 musicians as contrasted with 16,000 in 1870. Although

![Percentage distribution of gainfully occupied children, by major occupational groups, 1870-1930.](image)

the census figures do not furnish convincing proof that the artistic interests of the people have kept pace with the concentration of urban population during the seventy year period, they do give evidence of substantial recent gains which hold promise for the future.\(^\text{34}\) The ten-fold increase of the teaching profession hardly measures adequately the growth in education, since the pressure of the school population upon the supply of teachers and the supply of public funds is a critical aspect of the present educational situation. Of more than one million persons

\(^{34}\) See Chap. XIX.
now engaged in teaching perhaps 90 percent are dependent upon employment in the public schools. In 1870 the census of occupations found 84,000 women in the teaching profession; in 1930 there were over 880,000 women listed as teachers and professors including an absolute increase of 230,000 since 1920.35

Child Labor.—The decline of children's work since the turn of the century has been briefly noted above. The census figures indicate that of boys between the ages of 10 and 15, 26 percent were customarily employed in 1890 and 1900 and only 6 percent in 1930. Gainful occupation among females of the same ages dropped from 10 to 3 percent during the same years. This is an aggregate decline of the employment of children between these ages from 18 percent in 1890 to 5 percent in 1930. The internal changes in the distribution of juvenile labor are shown in Figure 15. Between 1870 and 1920 an increasing proportion of children at work outside of agriculture has been employed in the manufacturing industries, but this percentage has markedly diminished between 1920 and 1930 as a result of the greater prevalence and more rigid enforcement of child labor legislation. The relative increase of child labor in trade, transportation and clerical service is partly explained by the growing number of delivery boys, messenger boys and office boys, many of whom are in school during part of the year. Employment of children in domestic and personal service has steadily diminished. Throughout the period between 60 and 70 percent of the employment of minors has been on the farm where boys at an early age “hire out” or take the place of hired labor on the home farm. The relative increase in juvenile employment in agriculture since 1920 is explained by the more rapid shrinkage in the number of child workers in other employments. Figure 16 shows by major occupations the growth of juvenile employment up to 1900. In the next decade a decided decline appeared in every category except

35 See discussion on school enrollment below, p. 305.
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trade and transportation and clerical service, both of which declined after 1920.\textsuperscript{36} Except in agriculture, children under the age of sixteen now constitute less than 1 percent of the total employment in each of the specified major groups. How far we have moved since the earlier years is shown by the fact that 10 percent of all workers in domestic and personal service in 1870 were under the age of sixteen. As shown in Table 8, since 1920 there has been a marked decline in the employment of younger workers both below and above the age of sixteen.\textsuperscript{37}

IV. THE NON-GAINFULLY OCCUPIED

We have seen that only a little over 60 percent of the population share in the nation’s work, in gainful employment or as housewives. What do the people do who are not at work? We know of course that some are chronically ill or otherwise physically incapacitated, that many are children too young to work and that others are too old; some

\textsuperscript{36} The published census figures for children in agriculture in 1910 have been adjusted as already explained. See footnote \textit{d} to Table 6.

\textsuperscript{37} For further discussion of child labor, see Chap. XV.
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are in school and some are in prisons while still others are confined in homes for the feeble minded and in the hospitals for the insane. A brief description of the distribution of the non-gainfully occupied population will be of interest.

The School Population.—Of greatest consequence is the increase in the school population of the United States which is revealed in Table 1. From 1919 to 1928 the number in school increased by more than six millions, exclusive of kindergarten enrollment. This imposing figure includes pupils of all ages from the primary grades through the colleges. Growth has been proportionately much more rapid in the secondary schools and the universities and colleges than in the elementary schools and several million persons have thus been removed from full time gainful employment by the increased popularity of non-compulsory higher education. Of course this school population will show a direct relation to the expansion of the professional and managerial employments for which general education and technical training are required.

Table 9.—Persons Attending School as Percentage of Total Population 5 to 20 Years of Age, 1870 to 1930

<table>
<thead>
<tr>
<th>Population group</th>
<th>1870</th>
<th>1880</th>
<th>1890</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>42.5</td>
<td>54.3</td>
<td>52.0</td>
<td>51.5</td>
<td>60.5</td>
<td>65.5</td>
<td>72.6</td>
</tr>
<tr>
<td>White</td>
<td>51.2</td>
<td>58.2</td>
<td>55.4</td>
<td>54.5</td>
<td>62.6</td>
<td>67.0</td>
<td>74.8</td>
</tr>
<tr>
<td>Negro</td>
<td>9.2</td>
<td>32.5</td>
<td>32.0</td>
<td>31.3</td>
<td>45.4</td>
<td>54.0</td>
<td>61.7</td>
</tr>
</tbody>
</table>

*It should be noted that persons attending school include some under five years and some over twenty years. For the earlier years the numbers below five and above twenty years are not available separately but are believed to affect the percentages comparatively little; their influence becomes greater, however, in the later years, especially in 1930. In 1920 persons of from five to twenty years of age attending school were 64.3 percent of all persons within those age limits as compared with the percentage 65.5 shown in the table; in 1930 69.9 percent as compared with 72.6 shown in the table.

According to the census enumerations the ratio of all persons attending school to the total population of ages 5 to 20 has increased from 45 to 73 percent from 1870 to 1930, as shown in Table 9. For the white population this ratio increased from 51 percent in 1870 to 74 percent in 1930. Five years after the close of the Civil War only 10 percent of the Negro population between the ages of 5 and 20 were attending school, according to the census. By 1880, during the reconstruction period, this percentage had leaped to 33 percent and thereafter it remained substantially unchanged until 1910 when 45 percent of the colored population in this age group were recorded among the school population, the same proportion as that for both white and colored in 1870. Recent progress in eliminating illiteracy among the colored people is shown by the continued

38 See also Chap. VII.
rapid increase in the rates of school attendance among Negroes during the past two decades.

Institutional Population.—The upward trend in the proportion of the adult population in institutions has already been noted. The details of the growing number of these dependents in institutions are shown in Table 10 and Figure 17.39

Of those not in gainful pursuits, a good many are cared for by society in institutions such as homes for the aged, county poorhouses, insane asylums, institutions for the feeble minded, reformatories for children, hospitals for the sick, and the like. These are the persons most commonly

![Figure 17: Estimated growth of institutional population, 16 years of age and over, 1890-1930.](image)

thought of as dependents.40 The statistics show that those confined in institutions of this type form an extremely small percentage of the total dependent population. According to the present estimate, persons of working age in institutions were 1.6 percent of the total population in 1930, whereas all children under 16, most of whom are dependent, were

39 These estimates for the years of the population censuses are based primarily on the data of the special censuses of institutional population made in 1890, 1904, 1910 and 1928. In extending the figures to 1930 use has been made of the recent annual data of the Bureau of the Census for institutions for feeble minded and epileptic, mental hospitals, and prisons and also of reports of institutional population of state welfare departments. Like other estimates of this chapter the intent of the figures is to gauge general tendencies rather than to indicate the precise numbers of the persons designated. The figures relate only to institutional population 16 years of age and over and, therefore, omit the large number of younger children in institutions for dependent and neglected children.

40 See discussion in Chap. XXIV.
31 percent of the total population. The sick and aged dependents cared for at home greatly outnumber those in institutions. The use of these institutions is increasing, however, and this is indicative of the highly developed character of civilization in the United States. In more primitive cultures such institutions were not established and many of these groups of persons could not survive the forces of natural selection; in other cultures the family is commonly the only institution which takes care of these groups.

Table 10.—Estimated Trend of Institutional Population 16 Years of Age and Over, 1890–1930
(In thousands)

<table>
<thead>
<tr>
<th>Type of institution</th>
<th>1890</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutions for feeble minded and epileptic</td>
<td>4</td>
<td>8</td>
<td>16</td>
<td>32</td>
<td>54</td>
</tr>
<tr>
<td>Mental hospitals</td>
<td>74</td>
<td>122</td>
<td>188</td>
<td>245</td>
<td>320</td>
</tr>
<tr>
<td>Institutions for juvenile delinquents</td>
<td>5</td>
<td>8</td>
<td>11</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Prisons</td>
<td>67</td>
<td>77</td>
<td>99</td>
<td>108</td>
<td>140</td>
</tr>
<tr>
<td>Benevolent institutions</td>
<td>28</td>
<td>88</td>
<td>104</td>
<td>106</td>
<td>106</td>
</tr>
<tr>
<td>Almshouses</td>
<td>67</td>
<td>78</td>
<td>82</td>
<td>77</td>
<td>81</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>345</td>
<td>359</td>
<td>500</td>
<td>576</td>
<td>717</td>
</tr>
<tr>
<td><strong>Percent of total population 16 years and over</strong></td>
<td>0.62</td>
<td>0.74</td>
<td>0.82</td>
<td>0.82</td>
<td>0.84</td>
</tr>
</tbody>
</table>

Our estimates of institutional population should be interpreted with caution. They do not represent the total number of dependents in society, for many are still cared for by their families; nor do they indicate the growth of feeblemindedness, insanity and other defects in the population. Not all the insane are in mental hospitals, while pensions for the aged are maintaining an increasing number of dependent old people outside of institutions. The increase of institutional populations is the result of many factors including growth in the absolute number of dependents, increase in the collective responsibility of society and possibly the breakdown of the family as a protective institution.

The Housewife.—It is an anomaly that the housewife as distinguished from the paid housekeeper is regarded in all census tabulations as “not gainfully occupied.” Only housewives who report some occupation other than unpaid domestic work are included by the census among the productive workers. In 1920 the Census Bureau estimated that 22,500,000 women, who constituted 66 percent of the female population 16 years of age and over, were “home housekeepers not gainfully occupied.” This left 24 percent of the female population in gainful pursuits and 4 percent in school or college, with the remainder unaccounted for.41

Little reflection is required to discover that the great number of women who are managing homes and rearing children are among the greatest producers of physical and intangible wealth. The economic importance of the housewife’s work is suggested by the number of commercial enterprises which are now attempting to compete with her in satisfying the family needs. Of all classes in the community she is the most eagerly sought by the advertiser.\textsuperscript{42} In the “backward art of spending” to which Wesley C. Mitchell has called attention the housewives are the purchasing agents who perform for the household a skilled service which is well paid for in commercial enterprise. Without question she is as indispensable for the economic and physical well being of the community as are those employed directly for monetary rewards.

V. OCCUPATIONAL INSECURITY AND UNEMPLOYMENT

The major changes in the distribution of occupations and in the nature of work during six decades have been sketched rapidly in the preceding pages. We have pointed out that the satisfactions of the worker’s life are intimately dependent upon the nature of his employment. One of the most important aspects of any trade or calling is the degree of security which it affords. Regularity of employment, continuity of earning power and security at retirement are at least as important to the worker as the nature of the tasks which he performs. Thus far this chapter has considered the data of occupations, rather than of employment; that is, it has dealt with the size and character of the whole of labor groups irrespective of the degree to which these groups have had work or lacked it. In what follows we shall attempt to uncover any trends that may exist in the security of occupations and of employment.

Interdependence a Factor of Insecurity.—A survey of the census figures has revealed that a constantly increasing number of highly differentiated occupations is a leading feature of the shifting work pattern of the population. These changes bring a continual increase in the interdependence of tasks and in turn the security of occupations is affected by the ease with which the economic machine can be put out of gear. Just as an intricate mechanical contrivance stops working when any important single part ceases to perform its task, so in the modern economic system a delicate working balance between the interdependent parts is necessary if continuity of employment and relative security for the worker are to be maintained.

In earlier days an abundance of free land offered opportunity to anyone who might wish to cast his lot with the pioneer. This alternative for the insecure and dissatisfied has now been removed. Today few

\textsuperscript{42} See Chap. XVII.
individuals are so fortunate that they can turn to direct self-support if opportunity for customary employment disappears. Even the nominally self-employed, among whom the farmers predominate, find it difficult to secure the means of life during periods of depressed business. Modern agriculture is an integral part of the exchange system and the depression in rural America has struck a heavy blow at the farmer as a merchant, not as a producer. It is still true that a farmer could eke out a minimum of subsistence without much dependence upon the exchange system even though this recourse is fraught with hardship. But the agriculturalists are the only ones who possess this alternative. Partial direct support in industrial communities is sometimes attempted by means of individual truck gardens or by the cooperative cultivation of village plots, but in the main such a course is not available for the industrial and commercially occupied population in urban areas. In extremity the land still offers a minimum of security which the city does not provide.

The tradesman and the clerk of today are dependent upon the flow of physical goods from shops and factories and therefore upon the maintenance of the purchasing power in the community. In turn, the industrial worker is dependent upon the well being of his fellows and of others in the population who must buy the product of his industry if he is to remain employed. Each group among the gainfully occupied is dependent physically and financially upon the work of others, upon the maintenance of their buying capacity and the proper occupational distribution of the working population. Productive industry cannot distribute or consume its own product and the commercially occupied population cannot directly satisfy its own physical needs. This interdependence is the basis of the major unemployment problem of today.

Unemployment.—It is not the task of this chapter to analyze the causes of unemployment. Suffice it to say that alternating shrinkage and expansion of employment opportunity is a characteristic feature of modern industry. Seasonal unemployment is familiar enough in many trades and in all large communities. In building and in other lines large numbers of workers find it necessary to accumulate their own reserves against the recurring hazards of irregularity. The succession of the changing seasons is of course predictable and their impact on unemployment can be foreseen to a great extent. Although many techniques have been advanced for combating seasonal unemployment, a careful study has indicated that seasonal instability, far from being under control, has actually increased in recent years. The most serious unemployment of modern times has accompanied the recurring periods

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of business depression. Seasonal changes are most aggravating when they accentuate unemployment during the downswings of cyclical changes. There are many conflicting theories regarding the characteristic period, the underlying causes and possible remedies of the cycle, for this is perhaps the most baffling factor of instability in the modern industrial system.\textsuperscript{45}

Quite different from the seasonal and cyclical causes of unemployment are the long time changes in the structure of industry and the permanent shifts in the opportunities for employment which have been discussed at some length. In recognition of the direct displacement of labor which may follow in the wake of new machines and greater productivity there has been much talk in recent years of the growing seriousness of technological unemployment. But the competition between machines and labor is not new. Since the beginnings of the industrial revolution the literature is replete with discussion of the loss of employment because of the machine. Except as a name for immediate, local and frequently temporary labor displacement the term technological unemployment is probably a misnomer. Technology is only one cause of reduction in the amount of labor time required for each unit of production. Among other causes are improvements in the efficiency of management, greater skill or greater effort on the part of workers, greater regularity in the flow of work, regularization of markets and a host of other factors which may contribute to the increased efficiency of organization and operation. Technological improvements frequently open up new opportunity for enlarged employment by reducing unit costs so that the market for the product can be expanded. Changes in consumption habits and shifts in market demand, in turn may have a dislocative effect on employment similar to that of increased productivity. The impact of technical changes upon employment may be felt in either one or both of two ways—(1) in a shift in the type of worker required in a given industry, or (2) in a temporary or permanent reduction in the number of workers required. By causing shifts in necessary tasks the introduction of new techniques may affect the identity of the unemployed without affecting their numbers.

The operation of these factors is illustrated by the history of employment and technological changes in the heavy iron and steel industry. If the 1929 tonnage of iron and steel could have been manufactured with the techniques and equipment of 1890, approximately a million and a quarter men would have been required in blast furnaces, steel works and rolling mills instead of the actual employment of four hundred thousand. At the efficiency level of 1900 eight hundred thousand men would have been needed for the 1929 production. It would be absurd to say that

\textsuperscript{45} Compare with Chap. XVI.
workers have been displaced in such numbers by the increased productivity in the iron and steel industry since 1890, yet precisely this argument is frequently advanced to prove the severity of technological unemployment. Except for the depression years, actual employment in blast furnaces, steel works and rolling mills has increased consistently until the highest point in the history of the industry was reached in 1929. This expanding employment was made possible by the mounting production of iron and steel products and the continued extension of the market for these products. If technique had not changed, production could not have advanced eight-fold during this period. However, it is doubtful whether such expansion of production and markets can continue indefinitely in the basic industries or in manufacturing industry as a whole. If not, the further advance of productivity may be accompanied by an aggregate displacement of labor instead of the mere reduction in unit labor requirements which in the past has usually been followed by an absolute expansion of employment. But our ignorance of the rate of absorption in the expanding or new industries is such that quantitative prediction cannot be made.

The Recent Trends in Industrial Employment.—It has been shown above that the number of persons in manufacturing and mechanical occupations has declined relative to the total gainfully occupied popula-

![Fig. 18.—Trend of factory employment and of steam railroad employment, 1919-1931, compared with population growth.](image-url)

Factory employment: Federal Reserve Board index adjusted to biennial census of manufactures; base, 1923 to 1925 = 100.

Steam railroad employment: Actual employment as reported by United States Interstate Commerce Commission for Class I railroads.
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tion between 1920 and 1930. During the decade preceding 1930 the trend of actual employment in manufacturing industry was downward for the first time in our history. This was likewise true of steam railroads. As shown in Table 11 and Figure 18, employment comparisons for the census years 1920 and 1930 reflect the appearance of exaggerated depressional unemployment in these industries in 1930. This failure of factory and railroad employment to advance is especially significant since the gainfully occupied population increased from 42,600,000 to 48,800,000 during

Table 11.—Trend of Factory and of Steam Railroad Employment, 1919–1930

<table>
<thead>
<tr>
<th>Year</th>
<th>Factories</th>
<th>Steam railroads</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average number of wage earners employed</td>
<td>Index of number of workers employed</td>
</tr>
<tr>
<td>1919</td>
<td>$9,000,059</td>
<td>99.0</td>
</tr>
<tr>
<td>1920</td>
<td>9,094,000</td>
<td>100.0</td>
</tr>
<tr>
<td>1921</td>
<td>8,946,570</td>
<td>76.4</td>
</tr>
<tr>
<td>1922</td>
<td>7,480,000</td>
<td>85.6</td>
</tr>
<tr>
<td>1923</td>
<td>8,778,156</td>
<td>96.5</td>
</tr>
<tr>
<td>1924</td>
<td>8,115,000</td>
<td>89.2</td>
</tr>
<tr>
<td>1925</td>
<td>8,384,281</td>
<td>92.8</td>
</tr>
<tr>
<td>1926</td>
<td>8,555,000</td>
<td>94.1</td>
</tr>
<tr>
<td>1927</td>
<td>8,349,755</td>
<td>91.8</td>
</tr>
<tr>
<td>1928</td>
<td>8,300,000</td>
<td>91.3</td>
</tr>
<tr>
<td>1929</td>
<td>8,355,749</td>
<td>97.3</td>
</tr>
<tr>
<td>1930</td>
<td>7,500,000</td>
<td>82.5</td>
</tr>
<tr>
<td>1931</td>
<td>6,600,000</td>
<td>72.9</td>
</tr>
</tbody>
</table>

* From U. S. Interstate Commerce Commission reports for Class I railroads.
+ From U. S. Bureau of the Census, Census of Manufactures (biennial). Figures in this column not from Census are estimated from Federal Reserve Board index of factory employment.

these years. It appears probable that a smaller average employment in manufacturing industries was supported by a larger labor reserve in 1930 than in 1920. Many persons still regard themselves as part of these industries long after re-employment in old occupations has become unlikely. Instances are known in which the former workers in an abandoned manufacturing town refuse to seek employment elsewhere, unable or unwilling to believe that factory doors will not reopen.

Estimated Trends in the Volume of Unemployment.—It is unfortunate that no direct and reliable statistics are available to show the trend of unemployment in the United States, for it is of the utmost importance to know whether in the long run changes in the industrial organization are increasing or decreasing the risk of unemployment for the worker. The only accurate method of measuring regularly the trend of unemployment is through current registration of the unemployed, which has been achieved only in countries where registration in public employment
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exchanges is prerequisite to the payment of unemployment benefits. In this country no periodic records of unemployment of this sort are obtainable and the only way in which the probable trend of unemployment may be determined is by means of estimates based on the information of the census concerning the numbers of normally gainfully occupied persons and scattered direct or indirect evidence of the changes in the amount of employment in various industries. Several estimates of the fluctuations of unemployment in successive years have been prepared by means of these indirect methods. The elaborate estimates of Paul H. Douglas have yielded approximate unemployment percentages for the years from 1897 to 1926, which have been used in Table 12.\(^{46}\) The table shows that periods of considerable unemployment have been by no means uncommon since 1896. The source of data vary in degree of accuracy over this period, and hence it is difficult to make precise comparisons of the extent of unemployment in the different depressions or in normal times.

In April, 1930, a national census of unemployment was taken in connection with the enumeration of the population. As a result there is now available for the first time a comprehensive picture of the extent and distribution of unemployment in all occupations and throughout the country.\(^{47}\) The count was taken when the downward swing of business


\(^{47}\) In the population censuses of 1890, 1900 and 1910, attempt was made to determine the amount of working time lost during the year preceding the census by all gainful workers. The accuracy of these data have been open to doubt and the data for 1910 were never tabulated by the Bureau of the Census. From their nature, these data do not show the volume of unemployment at any given time, and partly on this account they have been little used by students of unemployment.
activity from the peak of 1929 was considerably less than half way into the trough of 1931 and 1932. The census revealed an aggregate unemploy-ment of 3,138,000 persons in two main classes: Class A, which comprises the great majority of the unemployed, consisting of persons out of a job though able to work and looking for work, and Class B, which is composed of persons still having jobs but laid off without pay. Class B also includes persons who, though unemployed on the date of the enumeration, were working short time on a plan of staggered work, but this class excludes entirely workers who were unemployed because of sickness or other personal reasons. The returns indicate that 6.6 percent of the gainfully occupied men and women were on the date of the census out of work through no desire or disability of their own.

Unemployment in Class A alone in April, 1930, as shown by the census figures, had reached a total of a little less than two and a half million persons. Since that time unemployment in the industries for which fairly satisfactory indexes of employment are available has apparently increased by almost 20 percent. In ordinary times it is assumed that many employees dropped from these industries may find employment in other occupations, but the depression of 1931–1932 has been so severe that it is inconceivable that this shrinkage in employment could be absorbed when all lines of activity were undergoing severe curtailment. If the probable increase of unemployment in the other "unknown" industries is held to a minimum a substantial shrinkage in these lines must be added to that which has been estimated for the known industries. Estimates of the total volume of unemployment rest upon very uncertain ground since errors in gauging the probable number of those seeking employment and those actually employed may result in a cumulative error in the unemployment figure. Careful computations upon the basis of the incomplete available data have shown a rising volume of unemployment since the unemploy-ment census of 1930, probably reaching around five million by the summer of 1931 and steadily increasing until July, 1932, a possible total of from eight and one-half to ten million persons or more than 20 percent of the gainfully occupied appear to have been involuntarily idle. These estimates are carefully computed from the known data but the bases for computation are quite limited so that a registration of the unemployed might show a sizeable error in these estimates. The figures exclude from consideration those workers, in Class B of the 1930 census, who are nominally holding jobs although laid off without pay.

Owing to the turnover among both employed and unemployed, the probable minimum unemployment of from four to six hundred thousand workers in manufacturing industry during the 1920's was actually shared by a much larger but indeterminate number of workers in both good and bad years. The trend of actual employment in the trade,
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clerical, and service occupations cannot be accurately determined from available statistics, but the evidence indicates that these groups enjoy a definitely higher employment stability than workers in the manufacturing and mechanical groups during both good and bad years. 48 There are no available figures to show trends in the amount of part time or under-employment, but this is known to be an important element of insecurity, especially in manufacturing industry. 49

The Occupational Distribution of Unemployment.—From Table 13 we may learn how unemployment in 1930 was distributed among some of the principal categories of gainfully occupied men and women. The average unemployment among men in all lines of work was 7 percent and among women 4.6 percent. Except in two of the selected groups included in the table it will be seen that the rate for men exceeds that for women.

The rate of unemployment for agriculture is almost negligible. Even though earnings may sink to the vanishing point there is always plenty of work in cultivating and harvesting. By definition the term unemployment is almost entirely inapplicable to agriculture except in the case of farm laborers working directly for wages, for whom the appreciable rate of 4.7 percent of unemployment was shown.

Coal mining, for which the census recorded the high rate of 22 percent of unemployment, is unique in having a significant proportion of the unemployed in Class B. The workers in this highly irregular industry remain in the mining villages at the pit heads ready for summons underground on a day’s or an hour’s notice. Thus there are thousands of coal miners who regard themselves as having jobs and who are carried on the active rolls of the coal companies, although they may be idle for months at a time.

Unemployment is conspicuous in urban districts where factory and construction workers are found in large numbers. Nearly half the unemployed male workers in 1930 were found in the manufacturing and mechanical occupations. Within this group the heaviest rates of unemployment appear among building trades, the rate for building laborers representing nearly a quarter of those gainfully employed. The high degree of seasonality in construction work means that the building tradesman must ordinarily expect a number of weeks or months of idleness each year. The added hazard of depressional unemployment is especially difficult to cope with in the building industry. For unskilled and semi-skilled factory workers, high rates of unemployment are shown, and the highest percentages of unemployment for women are found in these industries. A

48 See figures showing the probable minimum amount of unemployment as estimated by one of the present authors in Recent Economic Changes, New York, 1929, vol. II, pp. 466–478.
49 See Chap. XVI.

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# RECENT SOCIAL TRENDS

## Table 13.—Percentage of Male and of Female Gainful Workers Unemployed in Specified Occupation Groups at the Date of the 1930 Census

<table>
<thead>
<tr>
<th>Occupation group</th>
<th>Number of gainful workers</th>
<th>Number of gainful workers</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture (excluding unpaid family workers)</td>
<td>8,377,275</td>
<td>434,031</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>Farm laborers (wage workers)</td>
<td>5,561,049</td>
<td>171,323</td>
<td>3.2</td>
<td>3.2</td>
</tr>
<tr>
<td>Forestry and fishing</td>
<td>250,140</td>
<td>250,140</td>
<td>7.3</td>
<td>3.1</td>
</tr>
<tr>
<td>Mining</td>
<td>983,564</td>
<td>21,564</td>
<td>8.3</td>
<td>9.5</td>
</tr>
<tr>
<td>Coal mine operatives</td>
<td>621,545</td>
<td></td>
<td>8.0</td>
<td>15.5</td>
</tr>
<tr>
<td>Manufacturing and mechanical industries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operatives, manufacturing, semiskilled</td>
<td>12,224,545</td>
<td>1,886,507</td>
<td>10.8</td>
<td>9.7</td>
</tr>
<tr>
<td>Laborers, manufacturing</td>
<td>2,668,086</td>
<td>195,592</td>
<td>13.8</td>
<td>10.6</td>
</tr>
<tr>
<td>Building laborers</td>
<td>419,675</td>
<td></td>
<td>20.3</td>
<td>24.1</td>
</tr>
<tr>
<td>Transportation and communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Road and street laborers</td>
<td>506,280</td>
<td>291,304</td>
<td>10.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Railroad laborers</td>
<td>477,380</td>
<td></td>
<td>6.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Locomotive engineers</td>
<td>101,201</td>
<td></td>
<td>1.8</td>
<td>1.4</td>
</tr>
<tr>
<td>Switchmen, flagmen and yardmen</td>
<td>104,484</td>
<td></td>
<td>3.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Trade</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clerks in stores</td>
<td>5,118,787</td>
<td>902,680</td>
<td>3.0</td>
<td>4.4</td>
</tr>
<tr>
<td>Clerks in stores</td>
<td>238,844</td>
<td>103,147</td>
<td>5.4</td>
<td>6.0</td>
</tr>
<tr>
<td>Clerks (except store clerks)</td>
<td>2,088,494</td>
<td>1,086,830</td>
<td>4.1</td>
<td>4.7</td>
</tr>
<tr>
<td>Stenographers and typists</td>
<td>1,291,401</td>
<td>706,533</td>
<td>4.1</td>
<td>4.3</td>
</tr>
<tr>
<td>Domestic and personal service</td>
<td>36,950</td>
<td>775,140</td>
<td>6.4</td>
<td>7.2</td>
</tr>
<tr>
<td>Cooks</td>
<td>177,200</td>
<td>3,180,251</td>
<td>4.8</td>
<td>5.5</td>
</tr>
<tr>
<td>Servants (except cooks)</td>
<td>194,297</td>
<td>371,095</td>
<td>10.0</td>
<td>11.2</td>
</tr>
<tr>
<td>Waiters</td>
<td>9,777</td>
<td>2,638,864</td>
<td>5.6</td>
<td>6.2</td>
</tr>
<tr>
<td>Public service (not elsewhere classified)</td>
<td>101,215</td>
<td>291,305</td>
<td>7.3</td>
<td>8.2</td>
</tr>
<tr>
<td>Professional service</td>
<td>888,622</td>
<td></td>
<td>2.8</td>
<td>3.5</td>
</tr>
<tr>
<td>All occupations</td>
<td>38,077,604</td>
<td>10,752,116</td>
<td>5.4</td>
<td>7.0</td>
</tr>
</tbody>
</table>

A careful analysis of the incidence of unemployment within this group must be sought in other investigations which analyze the relative monthly and yearly fluctuations within individual manufacturing industries.

As compared with the mining and manufacturing industries the rates of unemployment for the distributive and service occupations will be seen [ 316 ]
to be relatively low, especially in those groups in which considerable skill or training is required. A substantial proportion of these groups are salaried workers who customarily receive notice farther in advance of layoff than is usual among industrial wage earners. Slack times bring curtailment of manufacturing schedules while distributors are still requiring the services of their employees in the effort to move stocks. Despite the greater security of the white collar groups during the earlier stages of general work shortage, eventually unemployment is felt throughout their ranks if depression is prolonged.

In forestry and fishing the relatively high rate of unemployment is explained in part by the dependence of the lumber industry upon casual laborers—migrant workers who shift with the seasons from the western lumber camps to the docks and thence to the harvest fields, spending a fairly large proportion of each year in transition between these irregular employments.

An unemployment rate of 5.5 percent for workers in domestic and personal service conceals a much higher rate for cooks, domestic servants and waiters within the ranks of the larger group. Curtailed income and more careful budgeting in the middle classes is quickly reflected in the lay off of domestic workers in large numbers and in decreased dependence upon outside establishments for the performance of services which can be done by the family at home.

Among professional workers the unemployment rate is somewhat misleading, since a large proportion of these persons are self-employed. The involuntarily workless among them are principally those normally employed by businesses and institutions whose staffs are reduced in number as income falls off.

**Occupational Insecurities within Employment.**—It must be remembered that comparison of unemployment rates for occupations does not show comparative occupational security, but only comparative likelihood of obtaining some work of whatever kind. In the census returns a man may be recorded as employed whether or not he has been able to find work in his customary line. Thus there is much insecurity of occupation which is not reflected in the unemployment rates. As general unemployment rises, there is occupational displacement from the more to the less skilled types of work. A recent study has shown that among professional workers only half as many were unemployed as had been displaced from professional occupations and among skilled workers only three-fourths as many were unemployed as had been displaced, while among the ousted unskilled workers only a very few found work in higher grades and more than half

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RECENT SOCIAL TRENDS

of their unemployment was caused by entrance of workers from other occupational levels.

Unemployment Seeks the Marginal Worker.—During periods of severe recession all industries discriminate against the marginal workers. The identity of the marginal worker varies from plant to plant, from shop to shop, from office to office and from one gainful pursuit to another, depending upon the experience, the reasoned attitude or the whim of the employer. In some cases the older worker is the first to be laid off, in others it is the unskilled, the Negro, or the foreign born; in still others the force of skilled or semi-skilled workers may be diluted by cheaper or quasi-subsidized female labor.

Table 14.—Percentage of Gainful Workers Unemployed at the Date of the 1930 Census, by Sex and Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of gainful workers</th>
<th>Percent unemployed at date of census</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Class A</td>
<td>Class B</td>
</tr>
<tr>
<td>Males:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 to 14 years</td>
<td>273,099</td>
<td>0.6</td>
</tr>
<tr>
<td>15 to 19 years</td>
<td>2,751,905</td>
<td>7.0</td>
</tr>
<tr>
<td>20 to 24 years</td>
<td>4,799,501</td>
<td>6.9</td>
</tr>
<tr>
<td>25 to 29 years</td>
<td>4,714,267</td>
<td>5.2</td>
</tr>
<tr>
<td>30 to 34 years</td>
<td>4,654,403</td>
<td>4.6</td>
</tr>
<tr>
<td>35 to 39 years</td>
<td>4,571,647</td>
<td>4.6</td>
</tr>
<tr>
<td>40 to 44 years</td>
<td>4,086,581</td>
<td>4.9</td>
</tr>
<tr>
<td>45 to 49 years</td>
<td>3,599,106</td>
<td>5.3</td>
</tr>
<tr>
<td>50 to 54 years</td>
<td>2,906,041</td>
<td>5.4</td>
</tr>
<tr>
<td>55 to 59 years</td>
<td>2,256,769</td>
<td>5.7</td>
</tr>
<tr>
<td>60 to 64 years</td>
<td>1,984,743</td>
<td>5.8</td>
</tr>
<tr>
<td>65 to 69 years</td>
<td>1,073,889</td>
<td>5.8</td>
</tr>
<tr>
<td>70 years and over</td>
<td>885,849</td>
<td>4.3</td>
</tr>
<tr>
<td>Unknown</td>
<td>31,057</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>38,077,804</td>
<td>5.4</td>
</tr>
</tbody>
</table>

| Females:          |         |         |       |
|                   | Class A | Class B | Total |
| 10 to 14 years    | 119,889 | 0.8     | 0.6   |
| 15 to 19 years    | 1,545,279 | 4.9     | 1.7   |
| 20 to 24 years    | 2,347,548 | 3.5     | 1.2   |
| 25 to 29 years    | 1,641,411 | 3.3     | 1.1   |
| 30 to 34 years    | 1,116,927 | 3.2     | 1.2   |
| 35 to 39 years    | 1,047,001 | 3.2     | 1.2   |
| 40 to 44 years    | 844,757  | 3.1     | 1.2   |
| 45 to 49 years    | 706,976  | 3.1     | 1.2   |
| 50 to 54 years    | 558,050  | 3.1     | 1.1   |
| 55 to 59 years    | 383,293  | 3.1     | 1.1   |
| 60 to 64 years    | 265,785  | 2.9     | 1.0   |
| 65 to 69 years    | 154,142  | 2.8     | 0.9   |
| 70 years and over | 113,076  | 1.9     | 0.6   |
| Unknown           | 12,402   |         |       |
| Total             | 10,758,116 | 3.4     | 1.2   |

[ 818 ]
OCCUPATIONS

The preference of employers for workers in the prime of life is brought out by the data given in Table 14 which show that unemployment of male workers is lowest between the ages of 30 and 40. In every other five-year age group the rate of unemployment is higher except for workers over 70 and child workers between 10 and 14, at which ages many of those lacking work may not have been identified as gainful workers. Female employment shows increasing stability from 20 up to 60 years of age.

Table 15 sheds light on the relative security of the native and the foreign born. Since relatively few immigrant workers are engaged in farming in which the unemployment rate is negligible, comparison by nativity is more informing if agricultural occupations are omitted.

### Table 15.—Percentage of Male Gainful Workers Unemployed at Date of the 1930 Census, by Color and Nativity

<table>
<thead>
<tr>
<th>Color nativity group</th>
<th>Number of gainful workers</th>
<th>Percent unemployed at date of census</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Class A</td>
</tr>
<tr>
<td>All occupations:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native white</td>
<td>27,511,862</td>
<td>4.9</td>
</tr>
<tr>
<td>Foreign born white</td>
<td>6,255,071</td>
<td>7.6</td>
</tr>
<tr>
<td>Negro</td>
<td>3,662,896</td>
<td>5.1</td>
</tr>
<tr>
<td>Other races</td>
<td>647,975</td>
<td>6.4</td>
</tr>
<tr>
<td>Total</td>
<td>38,077,804</td>
<td>5.4</td>
</tr>
<tr>
<td>All occupations except agriculture:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native white</td>
<td>20,360,571</td>
<td>6.3</td>
</tr>
<tr>
<td>Foreign-born white</td>
<td>5,607,822</td>
<td>8.2</td>
</tr>
<tr>
<td>Negro</td>
<td>2,170,341</td>
<td>8.2</td>
</tr>
<tr>
<td>Other races</td>
<td>377,011</td>
<td>8.1</td>
</tr>
<tr>
<td>Total</td>
<td>28,515,745</td>
<td>6.9</td>
</tr>
</tbody>
</table>

Figures of the federal census of unemployment and of recent local surveys in Buffalo, New Haven, Philadelphia and Syracuse indicate that foreign born workers suffer more severely from work shortage than do the native whites. Analysis of the New Haven survey shows that in one city at least none of the employment handicap of the foreign born can be

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traced to their ages, for the higher unemployment rate coincides with an age distribution more favorable for employment.

The consistently lower unemployment for women earners than for men may be explained in part by the tendency of women to cease to call themselves gainful workers when work becomes unobtainable provided their earnings are not absolutely essential for sustenance. Another possible factor is the contrast between the wage levels of the two sexes. The lower unemployment rate for women persists throughout all the age levels.

Duration of Unemployment.—Other figures furnished by the census of 1930 show the duration of idleness of those found unemployed. These figures shed additional light on the comparative insecurity of different groups of workers. Figure 19 reinforces the earlier conclusion that the burden of unemployment falls heavily on male workers of the higher ages. While for total unemployment men under 25 have the highest rate, this is seen to be mostly unemployment of short duration, long period unemployment being much rarer among them than among the older workers. For women workers little variation with age occurs in long term unemployment. The steady increase of long term idleness with advancing age which is evident for men in Figure 19 is borne out by the results of the local surveys already mentioned.

The Older Worker.—For older workers no discussion of unemployment rates can be complete without reference to enforced retirement. Restrictions on the hiring ages, with consequent barriers against older persons, have been in vogue in many lines of employment since the beginnings of the factory system at least. To what extent has such discrimi-
nation grown, thus increasing the insecurity of workers of advanced age? Direct evidence on this pregnant question is scanty\(^5\) but Figure 3 shows no symptom of withdrawal of men from gainful work before the age of 50 even in 1930. From Figure 4 the proportion of gainful workers among men of 45 to 54 is seen to be the same now as in 1890, while the proportion even among men of 55 to 64 has not greatly diminished.

This does not suggest that in 1930 as compared with earlier decades more men under 50 had been discouraged by adverse discrimination into

Table 16.—\textbf{Duration of Unemployment at the Date of the 1930 Census, by Sex and Age}\(^a\)

<table>
<thead>
<tr>
<th>Age</th>
<th>Percentage of gainful workers in each age and sex group unemployed for specified length of time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total(^b)</td>
</tr>
<tr>
<td>Males:</td>
<td></td>
</tr>
<tr>
<td>15 to 19 years</td>
<td>6.9</td>
</tr>
<tr>
<td>20 to 24 years</td>
<td>6.8</td>
</tr>
<tr>
<td>25 to 29 years</td>
<td>5.1</td>
</tr>
<tr>
<td>30 to 34 years</td>
<td>4.5</td>
</tr>
<tr>
<td>35 to 39 years</td>
<td>4.5</td>
</tr>
<tr>
<td>40 to 44 years</td>
<td>4.5</td>
</tr>
<tr>
<td>45 to 49 years</td>
<td>5.2</td>
</tr>
<tr>
<td>50 to 54 years</td>
<td>5.3</td>
</tr>
<tr>
<td>55 to 59 years</td>
<td>5.6</td>
</tr>
<tr>
<td>60 to 64 years</td>
<td>5.7</td>
</tr>
<tr>
<td>65 to 69 years</td>
<td>5.7</td>
</tr>
<tr>
<td>70 years and over</td>
<td>4.2</td>
</tr>
<tr>
<td>Total</td>
<td>5.3</td>
</tr>
<tr>
<td>Females:</td>
<td></td>
</tr>
<tr>
<td>15 to 19 years</td>
<td>4.9</td>
</tr>
<tr>
<td>20 to 24 years</td>
<td>3.4</td>
</tr>
<tr>
<td>25 to 29 years</td>
<td>3.2</td>
</tr>
<tr>
<td>30 to 34 years</td>
<td>3.1</td>
</tr>
<tr>
<td>35 to 39 years</td>
<td>3.1</td>
</tr>
<tr>
<td>40 to 44 years</td>
<td>3.0</td>
</tr>
<tr>
<td>45 to 49 years</td>
<td>3.0</td>
</tr>
<tr>
<td>50 to 54 years</td>
<td>3.0</td>
</tr>
<tr>
<td>55 to 59 years</td>
<td>3.0</td>
</tr>
<tr>
<td>60 to 64 years</td>
<td>2.8</td>
</tr>
<tr>
<td>65 to 69 years</td>
<td>2.7</td>
</tr>
<tr>
<td>70 years and over</td>
<td>1.8</td>
</tr>
<tr>
<td>Total</td>
<td>3.4</td>
</tr>
</tbody>
</table>

\(^a\) Class A unemployment only.
\(^b\) Reporting duration of unemployment.

\(^5\) For detailed discussion of the age distribution of industrial employees including an analysis of census data from 1870 to 1920 inclusive, see Latimer, Murray W., \textit{Relation of Maximum Hiring Ages to the Age Distribution of Employees}, American Management Association Bulletin, Personnel Series no. 3, New York, 1930.
ceasing to call themselves gainful workers. Local surveys have shown considerable prevalence of enforced retirement at the present time for men of 50 years and over. It is possible that the slightness of the increase between 1890 and 1930 in the proportion not gainfully occupied for men of ages 55 to 64 is due to a decline in the amount of voluntary retirement, while enforced retirement may have suffered a greater increase. We have already seen that the persisting importance of the older worker in an age of increasing productivity is in large part due to the changing age distribution of the population. Despite discriminations a relatively larger number of older persons in the population naturally maintains the importance of the older worker among the gainfully employed.

The Impact of Unemployment on the Family.—What effect does decreased work security have upon the family as a social and economic unit? What proportion of families are affected by different rates of unemployment, and how severely do the affected families suffer? The family is the first barrier against the disaster of unemployment.\(^5^3\) There are usually some wage earners left even though one or more may lose his job. Family amalgamations which have never existed before take place during unemployment. Unemployed children find home a haven until times improve. Several families sometimes combine in a super-family in order to reduce food bills, rentals and other items of operating and overhead costs.\(^5^4\)

Special local surveys have shown lower rates of unemployment for gainful workers with family responsibilities, whether by considering marital status alone, by separating heads of families, or by other methods of allotting responsibility. Workers with family responsibility have different age distribution from workers without it, which of itself tends to produce difference in their unemployment rates. But in the New Haven survey, analysis eliminating the age factor has indicated that in the group studied formerly married men probably were one and a fourth times as likely to be out of work as married men of the same age, while single men were nearly half again as likely to be unemployed as the married.

One may question whether the smaller proportion of unemployment among the workers with family responsibility reflects greater job tenacity chiefly, or whether it reflects preference exercised by employers in view of a desire on the part of the community to maintain the employment status of those with dependents. It seems evident enough, however, that the least secure and least stable among those available for work are the unattached males.

\(^5^3\) See discussion of protective functions of family in Chap. XIII.

In spite of the fact that unmarried men have the highest index of unemployment, analysis shows that the idleness of an earner almost always affects intimately at least one other person. Hence the impact of unemployment upon the family is a matter of great social importance. In the New Haven and Philadelphia surveys it was found that the proportion of families affected by shortage of work was greater than the proportion of earners individually affected, while the New Haven survey further showed that the relative number of the community’s children under 14 years of age in the affected families was greater yet. Part of the experimental analysis of unemployment in relation to family composition made in the New Haven survey is shown in Table 17. Of all the earners sur-

Table 17.—Percentage Distribution of Unemployment in Relation to Family Composition in New Haven, May–June, 1931

<table>
<thead>
<tr>
<th>Employment status of family</th>
<th>All families</th>
<th>Families consisting of two or more persons</th>
<th>Families with children under 14 years</th>
<th>All persons</th>
<th>All gainful workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>All earners in family idle</td>
<td>7.0</td>
<td>7.0</td>
<td>7.0</td>
<td>6.5</td>
<td>6.0</td>
</tr>
<tr>
<td>Some earners idle, some at work</td>
<td>13.5</td>
<td>16.0</td>
<td>14.0</td>
<td>20.0</td>
<td>20.0</td>
</tr>
<tr>
<td>All earners at work, some on reduced time</td>
<td>17.0</td>
<td>19.5</td>
<td>22.0</td>
<td>20.5</td>
<td>20.0</td>
</tr>
<tr>
<td>All earners at work</td>
<td>56.5</td>
<td>54.5</td>
<td>55.0</td>
<td>50.0</td>
<td>48.0</td>
</tr>
<tr>
<td>No earners in family</td>
<td>5.0</td>
<td>5.0</td>
<td>2.0</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Situation unknown</td>
<td>1.0</td>
<td>1.0</td>
<td>0.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

veyed, more than half were in families affected to some extent by idleness or insufficient work. In most of these families, however, some active breadwinners still remained; hence the total loss of income is distinctly less prevalent among families than is idleness among individuals, although the number of families affected to some extent by unemployment exceeds the number of individuals unemployed. While it is difficult if not impossible to gauge the severity of the impact of unemployment on the family, it is evident that the effects range all the way from slight inconvenience to extreme privation. Apparently nearly half of the New Haven population in the early summer of 1931 were in families which were directly affected either by complete idleness or by reduced work on the part of some or all of their earners.

What can analysis of unemployment in families suggest concerning probable future trends? The available evidence supports the natural supposition that the larger the number of earners in the family, the smaller is the likelihood that all of them should be unemployed at the same time. In consequence of this, any tendency toward earlier disinte-
RECENT SOCIAL TRENDS

gration of the family must increase its economic insecurity, while any tendency toward longer cohesion would diminish the hazard. Thus, according as the trends may be for the family to remain together longer or to separate earlier, there will be moderation or enhancement of that menace to the community which is caused by the increased insecurity of the individual worker, in lieu of organized protection against unemployment through cooperative action by industry or by the state.
CHAPTER VII
EDUCATION

BY CHARLES H. JUDD

SINCE 1875 the educational system of this country has undergone a transformation. Better equipped elementary schools have been erected; free secondary schools have been established in large numbers; public normal schools for the training of teachers have been organized by the states; and the opportunities for college education have been enlarged and made accessible to young people from all classes of society. Furthermore, schools have assumed responsibility for many phases of child care and training which formerly were thought of as belonging wholly to the home. Schools are doing much to promote the intelligent care of health. They are training youth in the proper use of leisure. They are adopting special devices to equip everyone whom they can reach for success in vocations and participation in community activities.

These changes in the popular view of the scope of education and in the institutional agencies devoted to education parallel changes in the general social order. The elementary education provided in the public schools of 1875 was fairly adequate for a nation which was engaged chiefly in pioneering and in agriculture. With the rapid development of a machine civilization, the increase in national wealth, the concentration of population in urban centers, the appearance of many new occupations, especially those open to women, and with the changes in domestic economy which have resulted from all these developments, an educational system limited in its instruction to rudimentary subjects—the three R’s—has come to be recognized as wholly inadequate.

While present day education is very different from the education of the colonial period and of the first hundred years of the national period, the influence of pioneering conditions can be clearly traced in the form of organization of the educational system of the United States. This nation is unique in the fact that it has long had an educational system which provides a single line of progress from the primary school to the university. The countries of Europe, where society before the World War was characterized by sharp class distinctions, have had until very recently rigidly divided dual school systems, one branch of which led into the university and was the exclusive privilege of the upper classes, the other branch of which offered only limited opportunities, did not
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lead into the university and provided the only education open to the children of the common people. Although the first schools on the American continent imitated the European model, the frontier view of the relation of the individual to society soon led to the development of a new type of educational system. Frontier communities organized a unit type of school. Whatever educational opportunities they could provide were made available to all classes of children. When public institutions of secondary and higher education became possible because of increased population and wealth, they followed the democratic pattern of the lower school.

Since the World War steps have been taken in most European countries to break down the traditional dual school systems. Sweden has adopted a reformed educational plan of the unit type. England has provided more “free” places in the secondary school than were ever provided before. Germany has organized new types of secondary schools and has opened them to bright pupils from all classes. She has also created a common primary school four years in length in which all children are educated. France has made the first two years of the secondary school, the lycée, free and in time probably will do the same for the later years. Furthermore, the programs of studies in all schools below the lycée have been made uniform in content. This readjustment guarantees the same kind of elementary education to the children of all classes of French society. These and other similar recent developments in Europe show how fortunate the United States is in the fact that its school system was very early turned in the direction of a unit organization.

The influence of the frontier on the organization of American schools is further reflected in the fact that these schools have long been and are today largely controlled by local authorities. Most of the countries of Europe have central ministries of education endowed with large powers of control over schools and universities. In the United States the federal government exercises no direct control over schools. Even the states, which are politically responsible for the schools within their boundaries and have full legislative control, leave the administration of education largely to representatives of local communities and to private enterprise. As a result, the schools of the United States are very responsive to the will of the people. Both through experiments undertaken by communities which are interested in improving public schools and through the efforts of many intelligent groups which have organized private experimental schools, notable enlargements of the educational program and far reaching improvements in the content and methods of teaching have been effected. The examples of aggressive centers have, in the course of time, advanced the cause of education far more than could the influence of a single dominant central authority.

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The freedom resulting from local control and private initiative has led to wide variations in administrative practices in American schools. It is therefore difficult to make general statements which apply equally to the educational institutions of all parts of the country. Evidence presented in subsequent sections of this chapter, however, shows certain general tendencies, which may be enumerated as follows: The curricula of educational institutions of all types are being expanded and are being increasingly adapted to the diverse needs of all classes of learners. More attention is being given than ever before to the training of teachers. Methods of teaching are being cultivated which are far in advance of the sterile, formal methods common in earlier times. The material equipment of schools and colleges is being steadily improved. Administration is more and more being committed to experts. Above all, there is a very general effort to arrive by scientific methods at clear, objective accounts of the results of educational operations. Tests and measures and analytical studies are producing a science of education which promises to be one of the major contributions of America to the social sciences.

Many of the changes which have occurred in the American educational system are directly related to changes in the industrial system of this country. Industry has in recent years steadily reduced the percentage of children employed. In 1870 the number of children from ten to fifteen years of age engaged in gainful occupations was 13.2 percent of the total number of children of these ages in the United States. The corresponding percentages for later periods are as follows: 1880, 16.8; 1890, 18.1; 1900, 18.2; 1910, 18.4; 1900, 8.5; 1930, 4.7. If figures were available for children from sixteen to eighteen years of age, the recent withdrawal of minors from the industries would be even more evident. The figures cited show that during the rapid development of machine industry, from 1880 to 1910, children were employed in large numbers in the factories of this country. Since 1910 the trend of employment of children has been distinctly downward. Both humanitarian and practical considerations have contributed to this trend. On the one hand it is recognized that the proper development of children is jeopardized by intensive labor in early life. On the other hand industry has been influenced by the practical fact that the ratio of adults to children in the population of the United States has steadily increased and that consequently the employment of children has been rendered less necessary and less desirable than it was in former times. In order to compensate for the tendency to close industry to children society must provide new means of protecting them and of profitably occupying their time. The schools of the present, even when thought of merely as housing facilities, are in an important sense substitutes for the employing agencies of earlier times.

1 For further discussion of child labor, see Chap. XXV.
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The improved economic status of American families has facilitated the substitution of schooling for employment of children. Children are the chief beneficiaries of this improved economic condition. They are given advantages which their parents did not have. They enjoy more years of exemption from the responsibilities of self-support than have ever been granted to the children of the common people in any land or age.

A study of fourteen high schools selected so as to represent widely separated sections of the United States gives clear evidence of the fact that the young people of this generation enjoy educational opportunities superior to those enjoyed by the generation to which their parents belong. The pupils in these schools were asked to report the number of years their parents attended school. The results of the inquiry are presented in Table 1. This table indicates that approximately half the parents of high school pupils have had no more than elementary school education. Ten percent of them have had less than six years of schooling.

Table 1.—Extent of Education of the Fathers and Mothers of 8,891 Pupils Enrolled in Fourteen High Schools in Various Parts of the United States

<table>
<thead>
<tr>
<th>Number of years of education</th>
<th>Fathers (b)</th>
<th>Mothers (c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>0</td>
<td>60</td>
<td>0.7</td>
</tr>
<tr>
<td>1</td>
<td>54</td>
<td>6.0</td>
</tr>
<tr>
<td>2</td>
<td>71</td>
<td>8.0</td>
</tr>
<tr>
<td>3</td>
<td>154</td>
<td>1.7</td>
</tr>
<tr>
<td>4</td>
<td>307</td>
<td>3.5</td>
</tr>
<tr>
<td>5</td>
<td>315</td>
<td>3.5</td>
</tr>
<tr>
<td>6</td>
<td>571</td>
<td>6.4</td>
</tr>
<tr>
<td>7</td>
<td>560</td>
<td>6.2</td>
</tr>
<tr>
<td>8</td>
<td>2,053</td>
<td>29.9</td>
</tr>
<tr>
<td>9</td>
<td>435</td>
<td>5.1</td>
</tr>
<tr>
<td>10</td>
<td>645</td>
<td>7.3</td>
</tr>
<tr>
<td>11</td>
<td>566</td>
<td>4.1</td>
</tr>
<tr>
<td>12</td>
<td>2,328</td>
<td>29.2</td>
</tr>
<tr>
<td>Unknown</td>
<td>362</td>
<td>4.1</td>
</tr>
<tr>
<td>Total</td>
<td>8,891</td>
<td>100.0</td>
</tr>
</tbody>
</table>

\(a\) Data secured by means of a questionnaire study made for this report in 1930–1931.

\(b\) Thirty-four of the 366 fathers reported as having had eleven years of education and 1,294 of the 2,328 fathers reported as having had twelve years of education received further education in colleges in the United States or corresponding institutions in foreign countries.

\(c\) Twenty-one of the 498 mothers reported as having had eleven years of education and 1,009 of the 2,468 mothers reported as having had twelve years of education received further education in colleges in the United States or corresponding institutions in foreign countries.

A unique characteristic of the American social system which has been of importance in determining the development of American education is the freedom of individual choice of occupations. In this country a boy or girl is free, as no child of older civilizations ever has been, to follow his
or her personal bent in the choice of an occupation. There are no social barriers to prevent any individual from entering any vocation. The educational system is, accordingly, at liberty to arrange the education of its wards in keeping with their individual abilities and degrees of perseverance.

While the presentation of detailed facts regarding the development of American schools must be postponed to subsequent pages, certain general statistics may properly be introduced at this point in order to show the extent to which education has become a major public interest in the United States. In 1900 there were 284,683 students in American universities, colleges and teacher training institutions. In 1930, although the population of the country had increased only 62 percent, the attendance on institutions of higher education had increased to 1,178,318, that is, by 314 percent. In 1900 there were 630,048 pupils in secondary schools. The number of such pupils in 1930 was 4,740,580. In 1930 one of every seven persons of college age was in college and one of every two persons of secondary school age was in secondary school. Never before in the history of the world has there been such a development at the upper levels of an educational system.

The great expansion of secondary schools and institutions of higher education has increased the total school population until it has reached an unprecedented number. The total enrollment in American schools and institutions of higher education is approximately 29,500,000. More than 1,000,000 teachers give instruction in these institutions. In other words, approximately a quarter of the population of the United States is directly engaged in educational activities.

Other facts will be recorded in subsequent sections of this chapter showing that schools and institutions of higher education are prominent factors in the American social order. Public schools require for their support a substantial part of the revenues collected in states and municipalities through taxation. Institutions of higher education have attracted private philanthropy on a vast scale. The enthusiasm for education in the United States has led foreign observers to declare that it is the one interest which commands the unqualified support of the American people.

I. CURRICULA AND ORGANIZATION

Nothing is more characteristic of an educational institution than the subjects in which it gives instruction. The first topic to be treated in detail will therefore be the curriculum. Since the curriculum of the secondary schools of the United States has changed radically in recent years, this will be analyzed first.

² For more detailed treatment, see the monograph in this series entitled Problems of Education in the United States.
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The Curriculum of the Secondary School.—In 1890 when the United States Bureau of Education, now known as the United States Office of Education, first began to collect statistics with regard to secondary schools the courses offered in the public schools of this grade were classified under nine headings, namely, Latin, French, German, Greek, algebra, geometry, physics, chemistry and history. Table 2 shows the number of headings used in certain subsequent years for which data are available.

TABLE 2.—SUBJECTS OF INSTRUCTION OFFERED IN PUBLIC SECONDARY SCHOOLS, 1890–1928

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of subjects</th>
<th>Year</th>
<th>Number of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890</td>
<td>9</td>
<td>1922</td>
<td>43</td>
</tr>
<tr>
<td>1900</td>
<td>18</td>
<td>1928</td>
<td>47</td>
</tr>
<tr>
<td>1910</td>
<td>23</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The facts are even more impressive than the figures in this table indicate because the headings used in 1890, such as Latin and algebra, refer to single subjects, while some of those used later cover a variety of subjects; manual training, for example, includes a number of manual arts—woodwork, machine shop, printing, etc.

Table 3 is a general table which shows the percentages of pupils in public secondary schools who were enrolled in certain subjects in various years. All subjects are included in which the registrations reached at least 5 percent in any of the years reported. In addition, Greek and English history are included, although the registrations in these subjects were less than 5 percent, so as to facilitate a study of the trends in the subjects taught in 1890.

If one examines the statistics of registration in the subjects taught in 1890, one finds that, with the single exception of French, the traditional subjects have receded in relative importance in competition with the new subjects. The relative decline in the classics and mathematics, especially since the World War, is marked. There have been notable increases in practical and vocational subjects as well as in drawing and art. There has also been an increase in the number of sciences, both natural and social.

The facts reported in Table 3 show in concrete detail the truth of the statement that a change has been taking place in the view held by the American people regarding the scope of education. In 1890 and the years immediately following, secondary education was looked upon as the privilege of pupils who were preparing to enter the professions. In 1928 secondary education was much more generally thought of as a preparation for the manifold activities of ordinary life.

[ 330 ]
Table 3.—Percentage of Pupils in Public Secondary Schools Enrolled in Certain Subjects of Instruction, 1890–1928

<table>
<thead>
<tr>
<th>Subject</th>
<th>1890</th>
<th>1900</th>
<th>1910a</th>
<th>1922</th>
<th>1928</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin</td>
<td>34.7</td>
<td>50.6</td>
<td>49.1</td>
<td>27.5</td>
<td>22.0</td>
</tr>
<tr>
<td>French</td>
<td>5.8</td>
<td>7.8</td>
<td>9.0</td>
<td>15.5</td>
<td>14.0</td>
</tr>
<tr>
<td>German</td>
<td>10.5</td>
<td>14.3</td>
<td>93.7</td>
<td>.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Spanish</td>
<td></td>
<td></td>
<td>.7</td>
<td>11.3</td>
<td>9.4</td>
</tr>
<tr>
<td>Greek</td>
<td>3.1</td>
<td>2.9</td>
<td>.8</td>
<td>.1</td>
<td>.1</td>
</tr>
<tr>
<td>Algebra</td>
<td>45.4</td>
<td>58.3</td>
<td>58.0</td>
<td>40.2</td>
<td>35.2</td>
</tr>
<tr>
<td>Geometry</td>
<td>22.3</td>
<td>27.4</td>
<td>30.9</td>
<td>22.7</td>
<td>19.8</td>
</tr>
<tr>
<td>Physics</td>
<td>22.2</td>
<td>10.0</td>
<td>14.8</td>
<td>8.0</td>
<td>8.0</td>
</tr>
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<td>Chemistry</td>
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<td>7.7</td>
<td>6.9</td>
<td>7.4</td>
<td>7.1</td>
</tr>
<tr>
<td>Physical geography</td>
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<td>25.4</td>
<td>19.3</td>
<td>4.0</td>
<td>2.7</td>
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<tr>
<td>Zoology</td>
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<td></td>
<td>8.0</td>
<td>1.5</td>
<td>.8</td>
</tr>
<tr>
<td>Botany</td>
<td></td>
<td></td>
<td>16.8</td>
<td>3.8</td>
<td>1.6</td>
</tr>
<tr>
<td>Biology</td>
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<td></td>
<td>9.0</td>
<td>8.8</td>
<td>13.6</td>
</tr>
<tr>
<td>Physiology</td>
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<td>27.4</td>
<td>15.3</td>
<td>5.1</td>
<td>2.7</td>
</tr>
<tr>
<td>Hygiene and sanitation</td>
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<td></td>
<td></td>
<td>6.1</td>
<td>7.8</td>
</tr>
<tr>
<td>General science</td>
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<td></td>
<td></td>
<td>18.3</td>
<td>17.5</td>
</tr>
<tr>
<td>Rhetoric</td>
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<td>57.1</td>
<td>78.6</td>
<td>93.1</td>
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<tr>
<td>English literature</td>
<td>42.1</td>
<td>57.1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>American history</td>
<td></td>
<td></td>
<td></td>
<td>15.3</td>
<td>17.9</td>
</tr>
<tr>
<td>English history</td>
<td></td>
<td></td>
<td></td>
<td>2.9</td>
<td>.9</td>
</tr>
<tr>
<td>Ancient history</td>
<td></td>
<td></td>
<td></td>
<td>17.2</td>
<td>10.4</td>
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<td>Medieval and modern history</td>
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<td></td>
<td></td>
<td>15.4</td>
<td>11.3</td>
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<tr>
<td>World history</td>
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<td></td>
<td></td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>Civil government</td>
<td>21.7</td>
<td>15.6</td>
<td>19.3</td>
<td>6.7</td>
<td></td>
</tr>
<tr>
<td>Community civics</td>
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<td></td>
<td></td>
<td>13.4</td>
<td></td>
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<tr>
<td>Economics</td>
<td></td>
<td></td>
<td>4.8</td>
<td>5.1</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
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<td>5.1</td>
<td>14.3</td>
<td>16.5</td>
<td></td>
</tr>
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<td>Home economics</td>
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<td>14.3</td>
<td>18.5</td>
<td></td>
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</tr>
<tr>
<td>Manual training</td>
<td></td>
<td>10.6</td>
<td>12.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drawing and art</td>
<td></td>
<td>14.8</td>
<td>18.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music</td>
<td>25.5</td>
<td>26.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arithmetic</td>
<td>10.5</td>
<td>2.4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bookkeeping</td>
<td>12.8</td>
<td>10.7</td>
<td></td>
<td></td>
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<tr>
<td>Shorthand</td>
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<td>8.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typewriting</td>
<td>13.1</td>
<td>15.2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial arithmetic</td>
<td>1.6</td>
<td>7.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---


b Beginning with 1910, the percentages of pupils in each subject are based on the number of pupils in the schools reporting by subject. The percentages for earlier years are based on the total number of pupils in the schools reporting.

Expansion of the curriculum of secondary schools is not peculiar to the United States, although one motive for expansion, the diversity of interests of pupils, is stronger in this country than elsewhere because the percentage of adolescents attending secondary schools is very much larger than is the corresponding percentage in any other country. Germany has in recent years greatly increased the number and variety of her secondary schools. The new schools offer a wide range of scientific and practical courses not included in the traditional curriculum of the older schools. An English commission recently recommended a series of extensions of secondary education in order to provide for a part of the
adolescent population which heretofore has not enjoyed the privileges of education above the elementary level. Similar extensions of secondary education appear in other countries. It is clear that American secondary schools have followed a course now common to all democratic educational systems in attempting to provide through an expanded curriculum wider opportunities for the youth of the country.

The readjustments in the curricula of American secondary schools have not been made uniformly in the various states. If one lists, as is done in Tables 4 and 5, the five states which in 1928 had the highest percentages of enrollment in the traditional subjects of Latin and algebra and the five states which had the lowest percentages of enrollment in these subjects and contrasts these with the states which had the highest and the lowest percentages of enrollment in art and manual training, one finds striking evidence of regional variations in educational policies. These variations confirm what was said earlier regarding the dominance of local influence in the American educational system. Tables 4 and 5 indicate that the southeastern states are more conservative than are the northern and western states in adopting a curriculum suited to the varying needs of young people of different social groups.

Table 4.—The Five States Having in 1928 the Highest Percentages of Pupils in Public Secondary Schools Enrolled in Latin, Algebra, Art and Manual Training*

<table>
<thead>
<tr>
<th>Subject and state</th>
<th>Percentage of pupils enrolled</th>
<th>Subject and state</th>
<th>Percentage of pupils enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin:</td>
<td></td>
<td>Art:</td>
<td></td>
</tr>
<tr>
<td>South Carolina</td>
<td>34.8</td>
<td>Maryland</td>
<td>38.2</td>
</tr>
<tr>
<td>Kentucky</td>
<td>34.0</td>
<td>New York</td>
<td>38.0</td>
</tr>
<tr>
<td>Nebraska</td>
<td>32.9</td>
<td>Rhode Island</td>
<td>32.5</td>
</tr>
<tr>
<td>Virginia</td>
<td>32.9</td>
<td>Pennsylvania</td>
<td>29.6</td>
</tr>
<tr>
<td>Georgia</td>
<td>32.6</td>
<td>Massachusetts</td>
<td>29.5</td>
</tr>
<tr>
<td>Algebra:</td>
<td></td>
<td>Manual training:</td>
<td></td>
</tr>
<tr>
<td>South Carolina</td>
<td>59.8</td>
<td>New Hampshire</td>
<td>31.4</td>
</tr>
<tr>
<td>North Carolina</td>
<td>58.1</td>
<td>Maryland</td>
<td>25.8</td>
</tr>
<tr>
<td>Georgia</td>
<td>55.4</td>
<td>California</td>
<td>21.7</td>
</tr>
<tr>
<td>Tennessee</td>
<td>55.0</td>
<td>Utah</td>
<td>21.1</td>
</tr>
<tr>
<td>Texas</td>
<td>52.7</td>
<td>Indiana</td>
<td>17.4</td>
</tr>
</tbody>
</table>


A striking example of the kind of influence which has operated to produce expansions in the secondary school curriculum is to be seen in the fact that in 1917 the Congress of the United States was persuaded to make appropriations designed to stimulate the teaching of vocational courses of various types in secondary schools. The plea which was effective in securing this action by Congress was that there are many young people
for whose training no adequate provision is made in the traditional curriculum.

Table 5.—The Five States Having in 1928 the Lowest Percentages of Pupils in Public Secondary Schools Enrolled in Latin, Algebra, Art and Manual Training

<table>
<thead>
<tr>
<th>Subject and state</th>
<th>Percentage of pupils enrolled</th>
<th>Subject and state</th>
<th>Percentage of pupils enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latin:</td>
<td></td>
<td>Art:</td>
<td></td>
</tr>
<tr>
<td>Utah</td>
<td>4.5</td>
<td>North Carolina</td>
<td>0.9</td>
</tr>
<tr>
<td>New Mexico</td>
<td>9.0</td>
<td>Mississippi</td>
<td>1.2</td>
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<tr>
<td>Nevada</td>
<td>9.5</td>
<td>Idaho</td>
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</tr>
<tr>
<td>California</td>
<td>10.7</td>
<td>New Mexico</td>
<td>3.0</td>
</tr>
<tr>
<td>Arizona</td>
<td>10.9</td>
<td>South Carolina</td>
<td>3.0</td>
</tr>
<tr>
<td>Algebra:</td>
<td></td>
<td>Manual training:</td>
<td></td>
</tr>
<tr>
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<td>24.0</td>
<td>Mississippi</td>
<td>2.0</td>
</tr>
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<td>California</td>
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<td>North Carolina</td>
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<tr>
<td>Utah</td>
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<td>Louisiana</td>
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</tr>
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<td>Massachusetts</td>
<td>26.2</td>
<td>Vermont</td>
<td>4.1</td>
</tr>
<tr>
<td>West Virginia</td>
<td>26.9</td>
<td>North Dakota</td>
<td>4.2</td>
</tr>
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</table>


Table 6 shows an important result of the adoption of the new and broad view of public education. Up to 1920 the steadily increasing demand for commercial training on the part of those who were preparing to enter business positions was so little satisfied by the curricula of public educational institutions that it had to be met by private schools. As a consequence of the extension of the curriculum of public secondary schools, which is shown in Table 3, private business schools have markedly decreased in number and in enrollment since 1920.

Table 6.—Private Commercial and Business Schools and Students Enrolled, 1900–1929

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of schools</th>
<th>Number of students</th>
<th>Year</th>
<th>Number of schools</th>
<th>Number of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>375</td>
<td>91,549</td>
<td>1920</td>
<td>902</td>
<td>336,032</td>
</tr>
<tr>
<td>1905</td>
<td>525</td>
<td>146,086</td>
<td>1925</td>
<td>739</td>
<td>188,363</td>
</tr>
<tr>
<td>1910</td>
<td>541</td>
<td>194,778</td>
<td>1929</td>
<td>651</td>
<td>179,726</td>
</tr>
<tr>
<td>1915</td>
<td>583</td>
<td>183,286</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The Curriculum of the Elementary School.—The curriculum of the elementary school, at least in the lower grades, is for obvious reasons less

3 For data on girls in private and public business courses, see Chap. XIV.
RECENT SOCIAL TRENDS

susceptible of change than is the curriculum of the secondary school. There are certain rudimentary subjects, such as the three R’s, which constitute the necessary components of any system of elementary education.

Table 7.—Number of Fifty Cities Reported in 1905\textsuperscript{a}, 1910\textsuperscript{b}, and 1915\textsuperscript{c} and Number of Forty-nine Cities Reported in 1924\textsuperscript{d} as Offering Various Subjects of Instruction in Certain Grades

<table>
<thead>
<tr>
<th>Subject</th>
<th>Grade II 1905</th>
<th>Grade II 1910</th>
<th>Grade II 1915</th>
<th>Grade II 1924</th>
<th>Grade IV 1905</th>
<th>Grade IV 1910</th>
<th>Grade IV 1915</th>
<th>Grade IV 1924</th>
<th>Grade VI 1905</th>
<th>Grade VI 1910</th>
<th>Grade VI 1915</th>
<th>Grade VI 1924</th>
<th>Grade VIII 1905</th>
<th>Grade VIII 1910</th>
<th>Grade VIII 1915</th>
<th>Grade VIII 1924</th>
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<td>8</td>
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<td>Bookkeeping</td>
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<td>Miscellaneous</td>
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<td></td>
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</tr>
</tbody>
</table>

\textsuperscript{a} Payne, Bruce Ryburn, Public Elementary School Curricula, New York, 1905, p. 21.
\textsuperscript{d} Ayer, Fred C., Studies in Administrative Research, Bulletin no. 1, Department of Research, Seattle Public Schools, 1924, p. 15.
Table 7 is compiled from four studies of the elementary curriculum—the only comparable extensive studies available—published at intervals from 1905 to 1924. Each of the first three studies deals with the curricula of fifty cities; the fourth study deals with the curricula of forty-nine cities. The lists of cities for the different studies are not identical though they are very much alike and the use of such terms as “grammar,” “language” and “civics” is by no means the same. Table 7 includes for the sake of brevity data for the even numbered grades only.

The presence of accidental items resulting from local experimentation is illustrated by the number of cities reported as giving instruction in such subjects as morals, algebra, geometry, French, German, Latin, typing, writing and stenography. The ambiguity of the term “grammar” is evidenced by the fact that the later studies do not use the term.

A number of generalizations may be drawn from Table 7. The eighth grade has evidently been for some years a center of much experimentation. The curricula of the other grades have undergone, so far as the titles of the subjects taught are concerned, relatively little reorganization except in a few fields. In 1924 industrial arts were substituted for the earlier courses designated as manual training, cooking and sewing. Uncertainty as to the science which can be most successfully taught to elementary school pupils has led to different practices in different periods. The variations in science courses are seen when the numbers of cities giving instruction in geography, nature study, physiology and hygiene are considered together.

Table 7 does not indicate the full extent of the change which has taken place in the elementary curriculum. The individual subjects, even though they continue to be designated by traditional names, have often undergone great amplification. In 1898 President Eliot published the following statement: “I procured two careful estimates of the time it would take a graduate of a high school to read aloud consecutively all the books which are read in this [elementary] school during six years, including the history, the reading lessons in geography, and the book on manners. The estimates were made by two persons reading aloud at a moderate rate and reading everything that the children in most of the rooms of that school have been supposed to read during their entire course of six years. The time occupied in doing this reading was forty-six hours.”

Estimates of the time required to read the materials now commonly studied in typical elementary schools show that pupils read eight or nine times as much as was read in the school referred to by President Eliot.

Table 8 represents a much broader sampling of the elementary school curriculum than does any other table which has been compiled. This table shows the offerings in the year 1925–1926 in the various elementary

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RECENT SOCIAL TRENDS

grades of more than five hundred school systems in all parts of the country. These school systems were selected by their respective state departments as typical. The table corroborates what was said in commenting on Table 7. There has been a marked enrichment of the instruc-

Table 8.—Percentage of More than Five Hundred School Systems Offering Various Subjects of Instruction in Grades I-VIII, 1925-1926

<table>
<thead>
<tr>
<th>Subject</th>
<th>Grades</th>
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</thead>
<tbody>
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<td></td>
<td>I</td>
</tr>
<tr>
<td>Agriculture</td>
<td></td>
</tr>
<tr>
<td>Art or drawing</td>
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<tr>
<td>Handwork</td>
<td></td>
</tr>
<tr>
<td>Mechanical drawing</td>
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<td>Commercial subjects:</td>
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<td>Three</td>
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<td>English</td>
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<td>Foreign language</td>
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<td>One</td>
<td>0.2</td>
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<tr>
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<td>Geography</td>
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<td>Physiology</td>
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<td>History</td>
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<td>Current history</td>
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<tr>
<td>Home economics, domestic art, or domestic science</td>
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<td>Manual-arts subjects:</td>
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<td>One</td>
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<td>16.4</td>
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<td>Occupations</td>
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<td>Spelling or phonetics</td>
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</table>

*Report of the Commission on Length of Elementary Education, Supplementary Educational Monographs, no. 34, Department of Education, University of Chicago, 1927, p. 56. The percentages for each grade are calculated on the basis of the number of school systems reporting; 543 school systems reported for Grade I, 543 for Grade II, 544 for Grade III, 542 for Grade IV, 548 for Grade V, 540 for Grade VI, 536 for Grade VII, and 596 for Grade VIII.

Such subjects as foreign language, home economics, combination mathematics, algebra and social science
are appearing as parts of the upper grade curriculum in a number of school systems. The fact is that the upper grades are expanding in the content of their instruction to such an extent that they are gradually detaching themselves from the lower grades and are gravitating toward the secondary school.

**The Junior High School.**—The trend toward enrichment of the elementary curriculum has gone so far that it has resulted in the rise of a new administrative unit in the educational system, namely, the junior high school. Up to twenty years ago—in some school systems up to a later date—much of the energy of the seventh and eighth grades was devoted to reviews of work covered in the lower grades. A study published in 1919 dealing with the elementary school curricula of twenty-four typical cities brings out clearly this fact. The trend is now away from mere reviews and toward experimentation with new subjects and with types of social, recreational and health training formerly not recognized as parts of the school program.

The changes in the content and character of instruction in the upper grades of the elementary school constitute nothing less than a revolution in the educational system of this country. These changes were made possible by a number of improvements in elementary schools. There has been an improvement in the teaching of the lower grades. A substantial increase has been made in the length of the school year and in the average number of days of attendance of individual pupils, as is shown in Table 9. It became possible some years ago to accomplish enough in the lower grades so that the upper grades could be reorganized. In 1909 there was established in Berkeley, California, a new unit of the school system known as the "intermediate school." This new unit, which included the seventh, eighth and ninth grades, was characterized by a reconstructed program of instruction. Similar readjustments were being made at about the same time in such widely separated centers as Concord, New Hampshire, Columbus, Ohio, and Grand Rapids, Michigan. The nature of these

Table 9.—Average Number of Days Public Schools Were in Session and Average Number of Days Attended by the Pupils Enrolled, 1890–1930

<table>
<thead>
<tr>
<th>Year</th>
<th>Days in session</th>
<th>Days attended</th>
<th>Year</th>
<th>Days in session</th>
<th>Days attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1890</td>
<td>134.7</td>
<td>86.8</td>
<td>1909</td>
<td>161.9</td>
<td>121.2</td>
</tr>
<tr>
<td>1900</td>
<td>144.3</td>
<td>99.0</td>
<td>1900</td>
<td>172.7</td>
<td>149.0</td>
</tr>
<tr>
<td>1910</td>
<td>157.5</td>
<td>118.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


\(^b\) Data supplied by the U. S. Office of Education.

RECENT SOCIAL TRENDS

changes is indicated by the fact that the name “junior high school” was finally adopted for the new unit of the school system.

The junior high school is, as its name implies, an institution organized with a view to bringing into grades below the high school certain materials of instruction which formerly belonged in the high school curriculum. The movement to organize junior high schools has spread rapidly in recent years, as is shown in Table 10.

Table 10.—Cities of 10,000 Population and More Reporting Junior High Schools, Junior High Schools Reported, and Boys and Girls Enrolled, 1918–1930

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of cities</th>
<th>Number of schools</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Boys</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Girls</td>
</tr>
<tr>
<td>1918</td>
<td>123</td>
<td>259</td>
<td>119,921</td>
</tr>
<tr>
<td>1920</td>
<td>158</td>
<td>326</td>
<td>179,671</td>
</tr>
<tr>
<td>1922</td>
<td>213</td>
<td>510</td>
<td>282,098</td>
</tr>
<tr>
<td>1924</td>
<td>259</td>
<td>696</td>
<td>499,894</td>
</tr>
<tr>
<td>1928</td>
<td>383</td>
<td>980</td>
<td>756,464</td>
</tr>
<tr>
<td>1928</td>
<td>425</td>
<td>1,182</td>
<td>949,014</td>
</tr>
<tr>
<td>1930</td>
<td>460</td>
<td>1,963</td>
<td>1,151,776</td>
</tr>
</tbody>
</table>


Table 11.—Courses Announced in the Catalogues of Ten Independent Colleges and the Liberal Arts Colleges of Ten Universities, 1900–1930

<table>
<thead>
<tr>
<th>College</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent colleges:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amherst College</td>
<td>44</td>
<td>99</td>
<td>98</td>
<td>130</td>
</tr>
<tr>
<td>Carleton College</td>
<td>142</td>
<td>200</td>
<td>207</td>
<td>295</td>
</tr>
<tr>
<td>Central College</td>
<td>70</td>
<td>77</td>
<td>122</td>
<td>275</td>
</tr>
<tr>
<td>Colorado College</td>
<td>127</td>
<td>169</td>
<td>322</td>
<td>420</td>
</tr>
<tr>
<td>Grinnell College</td>
<td>67</td>
<td>225</td>
<td>271</td>
<td>296</td>
</tr>
<tr>
<td>Howard College</td>
<td>46</td>
<td>69</td>
<td>143</td>
<td>255</td>
</tr>
<tr>
<td>Knox College</td>
<td>86</td>
<td>103</td>
<td>154</td>
<td>220</td>
</tr>
<tr>
<td>Lafayette College</td>
<td>(e)</td>
<td>256</td>
<td>249</td>
<td>371</td>
</tr>
<tr>
<td>Oberlin College</td>
<td>105</td>
<td>257</td>
<td>279</td>
<td>369</td>
</tr>
<tr>
<td>Pomona College</td>
<td>101</td>
<td>185</td>
<td>292</td>
<td>267</td>
</tr>
<tr>
<td>Liberal arts colleges of universities:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harvard University</td>
<td>543</td>
<td>814</td>
<td>877</td>
<td>1,114</td>
</tr>
<tr>
<td>Princeton University</td>
<td>233</td>
<td>555</td>
<td>508</td>
<td>674</td>
</tr>
<tr>
<td>Stanford University</td>
<td>373</td>
<td>417</td>
<td>710</td>
<td>1,095</td>
</tr>
<tr>
<td>State University of Iowa</td>
<td>213</td>
<td>390</td>
<td>577</td>
<td>823</td>
</tr>
<tr>
<td>University of Alabama</td>
<td>48</td>
<td>104</td>
<td>158</td>
<td>437</td>
</tr>
<tr>
<td>University of Chicago</td>
<td>980</td>
<td>1,439</td>
<td>1,661</td>
<td>1,997</td>
</tr>
<tr>
<td>University of Colorado</td>
<td>282</td>
<td>382</td>
<td>471</td>
<td>719</td>
</tr>
<tr>
<td>University of Virginia</td>
<td>75</td>
<td>115</td>
<td>205</td>
<td>315</td>
</tr>
<tr>
<td>University of Washington</td>
<td>134</td>
<td>363</td>
<td>561</td>
<td>980</td>
</tr>
<tr>
<td>University of Wisconsin</td>
<td>434</td>
<td>772</td>
<td>913</td>
<td>1,148</td>
</tr>
</tbody>
</table>

* Courses not listed.
EDUCATION

The Curriculum of the College.—The curricula of the colleges of the United States have expanded greatly in recent years, especially during the past decade. Table 11 shows the number of different courses announced in various years in the catalogues of ten independent colleges and the liberal arts colleges of ten universities located in different parts of the United States.

A study of college curricula made by a somewhat different method is reported in Table 12. This table shows the number of courses in various subjects which appear in the records of typical members of the June graduating classes of the colleges of the University of Chicago in the years 1900, 1910, 1920 and 1930. A sample of one hundred names was selected systematically from all parts of the alphabetical list of the graduates of each of these years and the courses taken by these graduates

Table 12.—Courses in Various Subjects in the Records of One Hundred Typical Members of the June Graduating Classes of the Colleges of the University of Chicago, 1900–1930

<table>
<thead>
<tr>
<th>Subject</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomy</td>
<td>29</td>
<td>66</td>
<td>64</td>
<td>8</td>
</tr>
<tr>
<td>Anthropology</td>
<td>30</td>
<td>54</td>
<td>6</td>
<td>37</td>
</tr>
<tr>
<td>Art</td>
<td>3</td>
<td>38</td>
<td>51</td>
<td>106</td>
</tr>
<tr>
<td>Astronomy</td>
<td>10</td>
<td>42</td>
<td>27</td>
<td>21</td>
</tr>
<tr>
<td>Bacteriology</td>
<td>24</td>
<td></td>
<td>36</td>
<td>21</td>
</tr>
<tr>
<td>Botany</td>
<td>54</td>
<td>40</td>
<td>78</td>
<td>46</td>
</tr>
<tr>
<td>Chemistry</td>
<td>115</td>
<td>155</td>
<td>242</td>
<td>110</td>
</tr>
<tr>
<td>Commerce and administration</td>
<td></td>
<td></td>
<td>1</td>
<td>142</td>
</tr>
<tr>
<td>Divinity</td>
<td>63</td>
<td>88</td>
<td>41</td>
<td>86</td>
</tr>
<tr>
<td>Economics</td>
<td>107</td>
<td>159</td>
<td>303</td>
<td>217</td>
</tr>
<tr>
<td>Education</td>
<td>45</td>
<td>134</td>
<td>217</td>
<td>432</td>
</tr>
<tr>
<td>English</td>
<td>515</td>
<td>549</td>
<td>501</td>
<td>610</td>
</tr>
<tr>
<td>Comparative literature</td>
<td>5</td>
<td>73</td>
<td>47</td>
<td>35</td>
</tr>
<tr>
<td>French</td>
<td>283</td>
<td>220</td>
<td>209</td>
<td>116</td>
</tr>
<tr>
<td>General survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geography</td>
<td></td>
<td>69</td>
<td>79</td>
<td>79</td>
</tr>
<tr>
<td>Geology</td>
<td>110</td>
<td>48</td>
<td>57</td>
<td>69</td>
</tr>
<tr>
<td>German</td>
<td>306</td>
<td>330</td>
<td>180</td>
<td>65</td>
</tr>
<tr>
<td>Greek</td>
<td>195</td>
<td>109</td>
<td>19</td>
<td>12</td>
</tr>
<tr>
<td>History</td>
<td>392</td>
<td>364</td>
<td>271</td>
<td>327</td>
</tr>
<tr>
<td>Home economics</td>
<td></td>
<td>36</td>
<td>74</td>
<td>59</td>
</tr>
<tr>
<td>Latin</td>
<td>351</td>
<td>208</td>
<td>86</td>
<td>23</td>
</tr>
<tr>
<td>Law</td>
<td></td>
<td>51</td>
<td>44</td>
<td>91</td>
</tr>
<tr>
<td>Mathematics</td>
<td>253</td>
<td>198</td>
<td>142</td>
<td>151</td>
</tr>
<tr>
<td>Pathology</td>
<td>28</td>
<td>28</td>
<td>12</td>
<td>1</td>
</tr>
<tr>
<td>Philosophy</td>
<td>131</td>
<td>107</td>
<td>87</td>
<td>84</td>
</tr>
<tr>
<td>Physics</td>
<td>86</td>
<td>80</td>
<td>94</td>
<td>46</td>
</tr>
<tr>
<td>Physiology</td>
<td>54</td>
<td>88</td>
<td>45</td>
<td>31</td>
</tr>
<tr>
<td>Political science</td>
<td>154</td>
<td>65</td>
<td>47</td>
<td>93</td>
</tr>
<tr>
<td>Psychology</td>
<td>114</td>
<td>122</td>
<td>100</td>
<td>145</td>
</tr>
<tr>
<td>Sociology</td>
<td>98</td>
<td>92</td>
<td>181</td>
<td>156</td>
</tr>
<tr>
<td>Spanish</td>
<td>20</td>
<td>19</td>
<td>77</td>
<td>48</td>
</tr>
<tr>
<td>Zoology</td>
<td>53</td>
<td>58</td>
<td>83</td>
<td>70</td>
</tr>
</tbody>
</table>

* Includes law.
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were tabulated. Subjects which do not appear twenty-five times or more in the records of at least one of the years are not included in Table 12. The decline in the classics and mathematics is conspicuous. These traditional subjects have given place to professional and practical subjects, such as law and commerce.

The statistics cited give definite quantitative evidence that the American college has become an institution for the training of students whose aims in seeking higher education are very diverse. A college education is no longer thought of as a rare opportunity open only to students of distinctly intellectual tastes. Many young men who intend to enter business are in college; many young women who have no vocational expectations whatsoever are also in college. For a very large fraction of the population a college education is regarded as a natural sequel to secondary education. The colleges have responded to this new view of the meaning of college education and are offering courses in practical subjects which were not regarded as academic subjects in the nineteenth century.

The Junior College.—The great variety of student interests and purposes which are served by American colleges has resulted in the appearance of a number of different types of institutions of college rank. The particular institution which is likely to produce the most important readjustment in the whole educational system is the junior college. This institution has resulted from the complete or partial separation of the first two years of college from the later years. The growth of this movement from 1917 to 1932 is shown in Table 13.

<table>
<thead>
<tr>
<th>Year</th>
<th>Public junior colleges</th>
<th>Private junior colleges</th>
<th>Public and private junior colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>1917</td>
<td>39</td>
<td>93</td>
<td>132</td>
</tr>
<tr>
<td>1924</td>
<td>70</td>
<td>137</td>
<td>207</td>
</tr>
<tr>
<td>1927</td>
<td>136</td>
<td>189</td>
<td>325</td>
</tr>
<tr>
<td>1930</td>
<td>171</td>
<td>279</td>
<td>450</td>
</tr>
<tr>
<td>1932</td>
<td>181</td>
<td>288</td>
<td>469</td>
</tr>
</tbody>
</table>


The appearance of the junior college has been accompanied by an increase in the number and variety of professional and pre-professional courses in the last two years of the college. These last two years are now
commonly designated as the senior college. It is by no means unusual for students to devote these later years to courses in law and medicine and thus secure credit for professional courses while completing their college curricula.

Evidence of the trend toward professional courses in colleges is seen in the fact that a number of undergraduate professional and semi-professional colleges have developed within universities, such as colleges of education, colleges of commerce and administration, colleges of engineering and colleges of agriculture.

The wide diversification of educational opportunities at the college level has tended to destroy the traditional solidarity of the American college. This tendency has been drastically criticized by writers who believe that the conventional four-year college is a highly significant factor in American social life. The movement to separate junior colleges from senior colleges and in some instances to establish the former in public school systems has been regarded by these critics as especially objectionable because the rise of the junior college more than any other phase of the development of higher education tends to destroy a unique American institution—the four-year college. Small colleges which do not offer professional courses are very generally and in increasing measure losing their students after the junior college period to the larger institutions, where opportunities for professional study are provided. Many four-year colleges are in reality junior colleges in the sense that they lose more than half of their students each year.

There are indications other than those cited that the trend in American educational organization is toward a secondary school which in the length of its curriculum will be like the secondary schools of European countries. Secondary education in Europe covers approximately the range of the American high school and junior college. If the junior college movement continues, as it seems likely to do, it will probably result in a general extension upward of the secondary school. In that case, the college as now organized will tend to disappear. The senior college will be absorbed into a type of university organization in which the instruction will be of the kind now commonly administered to graduate students.

Education of Girls and Women.—Table 14 shows the great increase since 1900 in the number of young men and young women enrolled in the secondary schools and colleges of the United States. It also shows clearly one of the distinguishing characteristics of American education: Opportunities have long been given to girls and women to secure education above the elementary level. In the public secondary schools girls have from the first been more numerous than boys. As the total registration

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RECENT SOCIAL TRENDS

Table 14.—Sex Distribution of Students Enrolled in Public Secondary Schools and in Colleges, by Number and Percent, 1900–1930

<table>
<thead>
<tr>
<th>Type of institution and sex</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Public secondary schools:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys</td>
<td>216,207</td>
<td>41.6</td>
<td>398,525</td>
<td>43.6</td>
</tr>
<tr>
<td>Girls</td>
<td>305,044</td>
<td>58.4</td>
<td>510,556</td>
<td>56.4</td>
</tr>
<tr>
<td>Total</td>
<td>521,251</td>
<td>100.0</td>
<td>909,081</td>
<td>100.0</td>
</tr>
<tr>
<td>Colleges:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>68,047</td>
<td>65.4</td>
<td>113,074</td>
<td>64.9</td>
</tr>
<tr>
<td>Women</td>
<td>56,051</td>
<td>34.6</td>
<td>61,159</td>
<td>35.1</td>
</tr>
<tr>
<td>Total</td>
<td>104,098</td>
<td>100.0</td>
<td>174,233</td>
<td>100.0</td>
</tr>
</tbody>
</table>

* Data supplied by the U. S. Office of Education.
* Students in normal schools and teachers' colleges are not included. If such students were included, the total for 1930 would be 1,093,024.

has increased, the disparity has become less marked. Evidently in earlier years girls were less attracted by industrial opportunities than were boys. Furthermore, the social advantages gained by attendance on secondary schools were stronger incentives to girls than to boys. In the colleges men are in the majority but there has been a steady increase in the percentage of women.

Evolution of Postgraduate Training and Research.—The most important expansion of institutions of higher education in this country is the development of the university, which provides training of the postcollege level. The chief characteristic which distinguishes the university from all other institutions of higher education is devotion to research and productive scholarship. A generation ago American students seeking training of university grade were compelled to go to Europe. The colleges of the United States did not recognize cultivation of productive scholarship as an institutional duty. Within the past thirty years, however, there has been a radical change in the conception of the functions of a university. Productive scholarship has come to be thought of as a cardinal virtue in the individual members of university faculties. Large resources are devoted in both state and endowed institutions to stimulation and support of research in all lines. American students now find it possible to secure advanced training in many centers in this country and the resort to European institutions for postgraduate study is much less common than it was at the beginning of this century. The steady development of graduate training leading to the degree of doctor of philosophy,
the degree awarded to those who have reached the highest level of achievement in postgraduate work, is indicated in Table 15.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
<th>Year</th>
<th>Total</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>342</td>
<td>322</td>
<td>20</td>
<td>1920</td>
<td>532</td>
<td>439</td>
<td>93</td>
</tr>
<tr>
<td>1910</td>
<td>409</td>
<td>365</td>
<td>44</td>
<td>1930</td>
<td>1,024</td>
<td>1,602</td>
<td>332</td>
</tr>
</tbody>
</table>

Data supplied by the U. S. Office of Education.

While the foregoing statements will undoubtedly be accepted as accurate by all students of American education, any effort to evaluate the results of American university training or to determine how far research in this country is of high grade carries one into a sphere of the most acrimonious disagreement. Critics of American education are accustomed to scoff at the expansions which recent years have witnessed in institutions of higher education. It is said that American universities are without standards of selection and that in most instances the products of so called "research" do not rise above the commonplace. It is even asserted that America has universities in name only.

It is not the function of this chapter to attempt an answer to the critics of American universities. The trend toward development of advanced university activities is well established. The future of this trend is perfectly clear. The outcomes of university training and research are of such value that there will certainly be no turning back to the earlier conception of institutions of higher education.

Other Educational Activities.—The developments in American education which have been described up to this point are by no means the only evidences of a new view as to the value of a broad intellectual preparation for modern life. There is a marked tendency for the older members of communities to seek opportunities for self-improvement after they have passed the age of attendance on the ordinary institutions of learning. Organized adult education is distinctly on the increase in this country.

Public schools conduct evening classes for the instruction in rudimentary subjects of adults who have had limited educational opportunities. Classes for illiterates and Americanization classes for foreigners who are unacquainted with the English language and with American institutions are common in all the larger cities. Vocational training for adults is provided by night schools, by various types of extension courses and by correspondence courses. The extent of night school attendance is shown in Table 16.
### Recent Social Trends

#### Table 16.—Cities of 10,000 Population and More Reporting Night Schools and Persons Enrolled in Night Elementary Schools, High Schools and Vocational Schools, 1918–1930

<table>
<thead>
<tr>
<th>Item</th>
<th>1918</th>
<th>1920</th>
<th>1922</th>
<th>1924</th>
<th>1926</th>
<th>1928</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cities.............</td>
<td>338</td>
<td>333</td>
<td>387</td>
<td>442</td>
<td>454</td>
<td>463</td>
<td>451</td>
</tr>
<tr>
<td>Number of persons:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary schools...........</td>
<td>210,440</td>
<td>216,276</td>
<td>220,385</td>
<td>202,065</td>
<td>188,287</td>
<td>340,183</td>
<td>3,270,333</td>
</tr>
<tr>
<td>High schools</td>
<td>358,299</td>
<td>351,003</td>
<td>351,810</td>
<td>358,582</td>
<td>411,520</td>
<td>483,077</td>
<td>480,592</td>
</tr>
<tr>
<td>Vocational schools</td>
<td>70,529</td>
<td>41,099</td>
<td>138,028</td>
<td>140,031</td>
<td>163,294</td>
<td>143,244</td>
<td>138,060</td>
</tr>
</tbody>
</table>

---

Extension courses are offered by many universities, especially state universities, which, in addition to providing lecture courses on such academic subjects as history and literature, frequently give so-called “short courses,” in which groups of citizens are made acquainted with the results of the latest researches in such diverse fields as agriculture, homemaking and road construction, and with practical information about such topics as machine construction and repairing.

The extent to which education through correspondence has developed is shown by the fact that there are in this country 450 private correspondence schools, 82 colleges and universities, 44 state normal schools and teachers’ colleges and 28 theological seminaries which offer correspondence courses. There is an organization known as the National Home Study Council, of which thirty-six of the stronger private correspondence schools are members. This council has a catalogue of more than twenty-five thousand courses which it uses in advising inquirers who are seeking opportunities for self-improvement. The courses range in title from “Roman Literature” and “American Diplomatic History” to “Beekeeping” and “Reinforced Concrete.”

Other private organizations and semi-public organizations, such as social clubs, forums, workers’ colleges, churches, young men’s and women’s Christian associations and Chautauquas, also provide courses for adults.

A new agency which has possibilities of serving far more as a means of public instruction than it has up to this time is the radio. Through it music of high grade is becoming familiar to the American people. A number of educational institutions are using the radio more or less systematically in spite of competition and other difficulties. The future of this instrument of instruction seems large.

Further evidence of the desire on the part of all classes of people for broader intellectual experience is to be seen in the rapid development of public libraries and in the increased consumption of published materials.

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Details are supplied in Chaps. IV and VIII.

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Parent Education and Preschool Education.—A special branch of adult education which has been developed in recent years is that which aims to give parents training in the care of children. The development of parent education is related to a movement which extends education to very young children. So called “preschool education” provides for the training of children in habits and activities that stabilize their emotions and prepare them for life in social groups. The extent to which schools for very young children have been established is indicated in the following statements: “The number of nursery schools listed by the Bureau of Education in 1926 was 67, and in 1928 it was 121. Many of the schools listed in 1926 did not continue, and many new ones have since been opened. Of those listed in 1928, there are 68 which were opened during the years 1926, 1927, and 1928. The 121 schools are located in seventy cities in twenty-seven states and the territory of Hawaii.”

A table prepared for the White House Conference on Child Health and Protection shows that in 1930 there were 169 separate nursery schools and 114 nursery schools conducted in conjunction with kindergartens.

Special Classes and Schools.—Diversification of school opportunities is being provided for many groups of children whose education was formerly neglected. Children who suffer from mental or physical handicaps, delinquent children and children in remote and isolated districts are all being provided for as never before. Statistics which show the increase in number of some of the special types of schools are presented in Table 17.

Table 17.—SCHOOLS FOR BLIND, DEAF, AND FEEBLEMINDED AND SUBNORMAL CHILDREN, 1900–1927

<table>
<thead>
<tr>
<th>Kind of school</th>
<th>1900</th>
<th>1910</th>
<th>1922</th>
<th>1927</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of schools for blind children.....................</td>
<td>37</td>
<td>48</td>
<td>64</td>
<td>80</td>
</tr>
<tr>
<td>Number of schools for deaf children......................</td>
<td>114</td>
<td>130</td>
<td>154</td>
<td>168</td>
</tr>
<tr>
<td>Number of schools for feebleminded and subnormal children</td>
<td>29</td>
<td>41</td>
<td>214</td>
<td>303</td>
</tr>
</tbody>
</table>


All Year Schools.—A form of expansion of the educational program which appears more commonly in institutions of higher education than in elementary and secondary schools is that which keeps the institutions in operation throughout the year, thus eliminating the long summer vacation. An all year university program was inaugurated by President


RECENT SOCIAL TRENDS

William R. Harper at the founding of the University of Chicago in 1892. During the World War the various boards which considered social and economic strategy urged universities, in the interests of more effective use of their plants and with a view to training young people more rapidly and therefore more economically, to follow the plan adopted by President Harper. The United States Office of Education has a record of twenty-three institutions of higher education which now operate on the four-quarter plan.

Vacation schools, or summer schools, are commonly maintained by the school systems of the larger cities as is shown in Table 18. Summer high schools offer courses for pupils who are behind in their credits and for pupils who want to graduate as soon as possible. Some of the summer elementary schools are like the high schools in purpose; others offer limited programs with chief emphasis on play and handwork. A few cities, including Newark, New Jersey, Nashville, Tennessee, and Aliquippa, Pennsylvania, are experimenting with all year schools.

Table 18.—Cities of 10,000 Population and More Reporting Summer Schools and Pupils Enrolled in Summer Elementary Schools, Junior High Schools and High Schools, 1922–1930.

<table>
<thead>
<tr>
<th>Item</th>
<th>1922</th>
<th>1924</th>
<th>1926</th>
<th>1928</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of cities</td>
<td>174</td>
<td>237</td>
<td>290</td>
<td>265</td>
<td>251</td>
</tr>
<tr>
<td>Number of pupils:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary schools</td>
<td>206,075</td>
<td>228,812</td>
<td>276,580</td>
<td>260,468</td>
<td>265,821</td>
</tr>
<tr>
<td>Junior high schools</td>
<td>4,941</td>
<td>13,842</td>
<td>17,533</td>
<td>30,430</td>
<td>43,433</td>
</tr>
<tr>
<td>High schools</td>
<td>58,343</td>
<td>89,828</td>
<td>111,472</td>
<td>147,521</td>
<td>160,787</td>
</tr>
</tbody>
</table>


Problems Resulting from Rapid Expansion of Education.10—Expansions in an educational system as extensive and as rapid as those which have been described up to this point inevitably give rise to problems of readjustment which require the highest wisdom for their solution. Indeed, many of these problems can be solved only through experimentation which in some cases involves the compromise or even drastic invasion of vested interests and deepseated prejudices.

For example, expansion of the secondary school, which was formerly almost exclusively a college preparatory school, has encountered resistance from those who regard the enlargement of the secondary school program of courses and the enrollment of pupils of all levels of intelligence as menaces to educational standards. Acute controversies have arisen in some cases between representatives of colleges and representatives of

10 On the relation of educational problems to population problems, see Chap. I.
secondary schools. Secondary school teachers and administrators have often demanded that colleges accept the graduates of their institutions without inquiry into the particular courses pursued by these graduates. The authorities of the colleges have contended that it is impossible to carry on creditable college work unless there is a careful selection of a limited number of the best qualified graduates of high schools who have taken secondary school courses directly related to college work.

The solution of the problem of college admissions has been sought in legislation in some cases. In a number of states the legislatures have prescribed that state universities and colleges must accept without condition graduates of approved high schools. Another method of adjusting the situation is through the action of voluntary associations which include officers of both colleges and secondary schools. These associations have attempted by conference to reach agreements as to the proper relations between the two groups of institutions.

It cannot be stated that the problem of college admissions has been solved. In a very true sense this problem is one of the new problems of civilization. No other nation has attempted to open the opportunities of higher education to all classes on such liberal terms as has the United States. No other nation has educational institutions which have as much autonomy and as much freedom of experimentation under local control as have the schools and institutions of higher learning in the United States. Adjustments under these conditions are not easy to make.

American education is made acutely aware of all its problems because of the freedom with which Americans criticize their public institutions. European education is far more under central governmental control than is education in the United States. European institutions thus not only share the prestige of the central government, but they also have the prestige which comes from long established traditions. In the United States it is almost literally true that educational institutions are without the defenses of official approval and traditional sanction. Whoever will may attack the schools and he will find a sympathetic audience. If there is any sphere of social life in which American tolerance of criticism has had full play it is the sphere of education.

This chapter is not concerned with the detailed criticisms which have been made of American schools except in so far as these criticisms have led to the development of institutional practices intended to correct the faults which critics point out. It has been contended, for example, that classes in public schools are so large that pupils do not receive proper individual attention. Private schools have been organized to provide small classes. Public schools in certain communities have developed devices of individual instruction by eliminating some of the ordinary class exercises and substituting personal conferences between teachers.
and pupils, usually on the basis of written work by the pupils. In the meantime, the real trend in schools in general is toward larger classes.

Vigorous attacks on the public schools have been made on the ground that teachers and pupils are so absorbed in narrow academic tasks that the larger social and moral lessons of life are neglected. This type of attack sometimes takes the form of an assertion that the creative interests of pupils in the fine arts and literature are neglected and that initiative is destroyed through excessive emphasis on routine drill in formal subjects. Public and private schools are attempting to meet this criticism by experimenting with instruction in music and drawing and literary composition. Where there is less experimentation in these fields, it is asserted by those in charge of the schools that resources are limited and the time during which the school has supervision over the pupils is not adequate for the accomplishment of all that is demanded.

Perhaps one of the most violent attacks made by critics of the schools is expressed in the accusation that teachers are not equipped for their duties either in personal qualities or through proper training. It is true that the selection and training of teachers must be recognized as among the gravest problems of the American educational system. The recruiting of teachers is one of the most exacting demands which the rapid expansion of the schools of the United States has imposed on this generation. In 1900 the total attendance on colleges, including teacher training institutions, was 220,782. In 1930 the comparable figure was 1,033,022. The problem of staffing colleges with their vastly increased enrollments, to say nothing of the problem of providing for the teaching of 3,880,171 more pupils in public secondary schools than were attending such schools in 1900, is a problem challenging all the intellectual resources of the nation.

The next section of this chapter will describe what has been done in recent years to meet the demand for improvement of teachers. As a preface to that section, however, it may be legitimate to suggest that the effects of criticism on education are beneficial only when the critics are informed as to the magnitude of the task which has been undertaken and only when due regard is exhibited for the efforts that are being made to solve the numerous problems which confront the American educational system. In education, as in other spheres of social life, much harm is done by critics who make impossible demands on public institutions. There is justification for the statement that conservatism is in some quarters holding back American education. There is equal justification for the statement that irresponsible radicalism is suggesting the abandonment of useful practices and the substitution of practices which promise disaster rather than remedy of existing deficiencies. What is needed in this country is systematic, scientifically conducted experimentation in education.
Expansion is going on and will continue. Adjustment will be wise only to the degree to which public and private institutions are subjected to searching scientific inquiry which will describe their practices and show the results secured through these practices. Mere speculative attacks on public education and theoretical recommendations which are lacking in sympathetic understanding of American schools are worse than valueless.

II. TEACHERS AND TEACHING PROBLEMS

Professional Training of Teachers.—Striking statistics which show an increase in facilities for the training of teachers are supplied in Table 19. Although the first public normal school in the United States was organized as early as 1839, the development of normal schools was very slow until the last decade of the nineteenth century. Since 1900 normal schools have made rapid progress not only in securing financial support but in advancing their admission requirements, in improving their methods of teaching and in enlarging the content of instruction. Many of them are now adopting the designation “teachers’ college” as an indication of their improved status.

Table 19.—Receipts of Teachers’ Colleges and Normal Schools from Public Funds for Current Expenses, 1900-1930

<table>
<thead>
<tr>
<th>Year</th>
<th>Receipts</th>
<th>Year</th>
<th>Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>82,786,123</td>
<td>1920</td>
<td>815,589,094</td>
</tr>
<tr>
<td>1910</td>
<td>6,675,152</td>
<td>1930</td>
<td>37,210,645</td>
</tr>
</tbody>
</table>


Evidence of the enrichment of the curriculum of state teacher training institutions is presented in Table 20, which shows the increase from 1900 to 1930 in the number of courses announced in the catalogues of fourteen such institutions selected as typical of different sections of the United States.

A national survey of teacher training is now being conducted by the United States Office of Education under a special appropriation made by Congress. This survey should show the demands for trained teachers and the lines of desirable organization of the teacher training program of the United States.

Teachers’ Licenses.—With the development of teacher training institutions there has been a steady advance in all states in the requirements for teachers’ licenses. Licenses to teach in public elementary schools were originally granted in the older states by the local school trustees. Gradually it became apparent that the local district is not competent either to train teachers or to judge whether or not a person is qualified to
RECENT SOCIAL TRENDS

Table 20.—Courses Announced in the Catalogues of Fourteen State Normal Schools and Teachers’ Colleges, 1900–1930*  

<table>
<thead>
<tr>
<th>Institution</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona State Teachers College, Flagstaff</td>
<td>($)</td>
<td>48</td>
<td>105</td>
<td>284</td>
</tr>
<tr>
<td>Colorado State Teachers College, Greeley</td>
<td>65</td>
<td>180</td>
<td>493</td>
<td>728</td>
</tr>
<tr>
<td>Georgia State Teachers College, Athens</td>
<td>67</td>
<td>91</td>
<td>138</td>
<td>197</td>
</tr>
<tr>
<td>Kansas State Teachers College, Emporia</td>
<td>81</td>
<td>480</td>
<td>428</td>
<td>928</td>
</tr>
<tr>
<td>North Texas State Teachers College, Denton</td>
<td>($)</td>
<td>55</td>
<td>373</td>
<td>438</td>
</tr>
<tr>
<td>Northern Illinois State Teachers College, DeKalb</td>
<td>68</td>
<td>132</td>
<td>390</td>
<td>342</td>
</tr>
<tr>
<td>Southeastern State Teachers College, Durant, Oklahoma</td>
<td>($)</td>
<td>150</td>
<td>287</td>
<td>475</td>
</tr>
<tr>
<td>State Normal School, Gorham, Maine</td>
<td>32</td>
<td>31</td>
<td>71</td>
<td>38</td>
</tr>
<tr>
<td>State Normal School, Westfield, Massachusetts</td>
<td>29</td>
<td>22</td>
<td>23</td>
<td>35</td>
</tr>
<tr>
<td>State Teachers College, Chico, California</td>
<td>45</td>
<td>64</td>
<td>68</td>
<td>265</td>
</tr>
<tr>
<td>State Teachers College, Jacksonville, Alabama</td>
<td>66</td>
<td>70</td>
<td>63</td>
<td>117</td>
</tr>
<tr>
<td>State Teachers College, Mansfield, Pennsylvania</td>
<td>52</td>
<td>195</td>
<td>149</td>
<td>167</td>
</tr>
<tr>
<td>State Teachers College, Oshkosh, Wisconsin</td>
<td>86</td>
<td>111</td>
<td>920</td>
<td>517</td>
</tr>
<tr>
<td>Western State Teachers College, Kalamazoo, Michigan</td>
<td>7/12</td>
<td>178</td>
<td>314</td>
<td>434</td>
</tr>
</tbody>
</table>

* The catalogues from which the data are derived are in some cases one or two years earlier or later than the years indicated. Where the differences in dates are more than two years, special footnotes are included.

b Data not available.
c Number for 1903.
d Institution not organized.
e Number for 1904.
f Number for 1905.

conduct school. The function of licensing teachers was accordingly assumed by state departments of education. This transfer of the licensing function has resulted in a general elevation of standards. While there are some low grade licenses even today in most states, the trend is distinctly upward. It is also in the direction of specializing licenses so that a candidate receives a statement of qualification to teach in a particular division of the school system or to teach a particular subject or group of subjects.

Improvements in the Status of Teachers.—The changes in requirements for entrance into the teaching profession have been accompanied by changes in the privileges of those who have been admitted. Legislation has been enacted in a number of states prescribing minimum salaries, allowing teachers to secure leaves of absence, assuring teachers of either permanent tenure or indefinite tenure after a period of trial and making provisions for retirement and pensions. As a result of this legislation the teaching profession is now much more attractive than it was in former times.

The average salaries of teachers in public schools from 1914 to 1930 are shown in Table 21. There was a period during the World War and immediately after when the increases in teachers’ salaries did not keep pace with the increases in the cost of living. It was not until after 1920 that the average salaries of teachers began to have the real value that they had before the war. Since 1922 they have increased far beyond the pre-war level. The steady upward trend since 1922 has resulted in large [ 350 ]
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<table>
<thead>
<tr>
<th>Year</th>
<th>Average salary</th>
<th>Index number of the cost of living(^b)</th>
<th>Corrected average salary</th>
<th>Year</th>
<th>Average salary</th>
<th>Index number of the cost of living(^b)</th>
<th>Corrected average salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>8525</td>
<td>100.0</td>
<td>8525</td>
<td>1924</td>
<td>1,927</td>
<td>168.6</td>
<td>8727</td>
</tr>
<tr>
<td>1916</td>
<td>563</td>
<td>110.0</td>
<td>512</td>
<td>1926</td>
<td>1,977</td>
<td>172.8</td>
<td>759</td>
</tr>
<tr>
<td>1918</td>
<td>635</td>
<td>156.0</td>
<td>407</td>
<td>1928</td>
<td>1,964</td>
<td>169.2</td>
<td>806</td>
</tr>
<tr>
<td>1920</td>
<td>871</td>
<td>194.8</td>
<td>447</td>
<td>1930</td>
<td>1,420</td>
<td>160.8</td>
<td>851</td>
</tr>
<tr>
<td>1922</td>
<td>1,166</td>
<td>167.0</td>
<td>604</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


\(^c\) Figures supplied by the U. S. Office of Education.

increases in the number of candidates for teaching positions. It has also tended to check the increase in the ratio of women to men in the teaching profession. During the year 1931–1932 there were drastic reductions in school budgets which resulted in direct or indirect reductions in teachers’ salaries in many school systems.

**Men and Women in the Teaching Profession.**—For many years there was a steady increase in the percentage of women teachers employed in the schools. Men seldom serve in the elementary schools except as teachers in the upper grades or as principals and supervisors. High schools and institutions of higher education employ a far larger percentage of men than do elementary schools. The facts are presented in Table 22. There have been small increases during recent years in the percentages of women teachers in elementary schools, colleges and professional schools. In the high schools and normal schools there have been increases in the percentages of men teachers. The fact that on the whole men teachers were relatively more numerous in 1930 than in 1920 is undoubtedly to be explained in part by the higher salaries paid to teachers since the World War.\(^{11}\)

**Special Training of College Teachers.**—The movement to improve the training of teachers has reached the point where better training of college teachers is advocated by influential educational authorities. In 1929 the Association of American Colleges addressed a communication to the graduate schools of universities stating that it is the experience of the colleges that the teachers whom they employ are not properly trained. It

\(^{11}\) For special discussion of women teachers in schools and colleges, see Chap. XIV.
## RECENT SOCIAL TRENDS

### Table 22.—Men and Women Teachers in Five Types of Educational Institutions, by Number and Percent, 1900–1930*

<table>
<thead>
<tr>
<th>Type of institution and sex</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Public and private elementary schools:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>123,064</td>
<td>28.7</td>
<td>90,762</td>
<td>18.7</td>
</tr>
<tr>
<td>Women</td>
<td>306,042</td>
<td>71.3</td>
<td>410,524</td>
<td>81.3</td>
</tr>
<tr>
<td>Total</td>
<td>429,106</td>
<td>100.0</td>
<td>501,286</td>
<td>100.0</td>
</tr>
<tr>
<td>Public and private high schools:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>14,447</td>
<td>47.4</td>
<td>23,402</td>
<td>44.3</td>
</tr>
<tr>
<td>Women</td>
<td>16,042</td>
<td>52.6</td>
<td>29,411</td>
<td>55.7</td>
</tr>
<tr>
<td>Total</td>
<td>30,489</td>
<td>100.0</td>
<td>52,813</td>
<td>100.0</td>
</tr>
<tr>
<td>Universities and colleges:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>8,987</td>
<td>81.0</td>
<td>14,051</td>
<td>81.3</td>
</tr>
<tr>
<td>Women</td>
<td>2,110</td>
<td>19.0</td>
<td>3,290</td>
<td>18.7</td>
</tr>
<tr>
<td>Total</td>
<td>11,097</td>
<td>100.0</td>
<td>17,341</td>
<td>100.0</td>
</tr>
<tr>
<td>Professional schools:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>8,277</td>
<td>100.0</td>
<td>13,285</td>
<td>100.0</td>
</tr>
<tr>
<td>Women</td>
<td>0</td>
<td>0.0</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>8,277</td>
<td>100.0</td>
<td>13,285</td>
<td>100.0</td>
</tr>
<tr>
<td>Public and private teachers' colleges and normal schools:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>1,860</td>
<td>42.5</td>
<td>2,195</td>
<td>37.1</td>
</tr>
<tr>
<td>Women</td>
<td>2,512</td>
<td>57.5</td>
<td>3,719</td>
<td>62.9</td>
</tr>
<tr>
<td>Total</td>
<td>4,372</td>
<td>100.0</td>
<td>5,914</td>
<td>100.0</td>
</tr>
</tbody>
</table>


Data supplied by the U. S. Office of Education.

Includes teachers in junior high schools.

was contended in this communication that the graduate schools require too much attention on the part of prospective college teachers to formal and unproductive research. This communication gave rise to a vigorous discussion, the result of which will undoubtedly be more attention in the future to the specific preparation of college teachers for their professional activities.

**Teacher Training in Summer Schools.**—An important contribution to the better professional training of teachers in institutions of all levels from the elementary school through the college is being made by the summer sessions or special summer schools now conducted by all the leading universities and by many teachers’ colleges. The attendance on summer sessions has increased rapidly in recent years, as is shown by Table 23. The great majority of those attending these sessions are
teachers. Bonuses, increases in salary and other rewards are offered by many school systems to encourage summer study. Institutions of higher education, often in response to the stimulation of standardizing associations, are insisting that the members of their faculties be in possession of higher degrees. As a result, there is a large representation of college teachers in attendance on summer sessions of universities.

Table 23.—Students enrolled in summer sessions of colleges and universities and teacher training institutions, 1917–1929

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Colleges and universities</th>
<th>Teacher training institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1917</td>
<td>132,688</td>
<td>54,624</td>
<td>78,059</td>
</tr>
<tr>
<td>1918</td>
<td>168,186</td>
<td>94,838</td>
<td>73,348</td>
</tr>
<tr>
<td>1921</td>
<td>267,971</td>
<td>148,063</td>
<td>119,908</td>
</tr>
<tr>
<td>1923</td>
<td>322,802</td>
<td>189,943</td>
<td>139,859</td>
</tr>
</tbody>
</table>

b Data supplied by the U. S. Office of Education.

Supervision.—There has been a steady increase in professional supervision of teaching and of the other activities of schools. It was the custom a century ago to leave the supervision of schools to lay public officials. Teachers were visited at rare intervals by lay inspecting committees. Today the situation is very different. Practically every school in the country has some measure of professional supervision through a local superintendent and supervisors, through a county superintendent or through the state department of education. Training for supervision, like training for teaching, is being provided on a more liberal scale and evidence that a candidate for a supervisory position has had such training is now very generally required.

A recent statement describing the evolution of expert supervision may be quoted to show the reasons why such supervision has become a part of general school organization: “Some of the first superintendents of city school systems were not even school men, and their duties were more those of a school-board clerk or business manager of today than those of a modern professional school superintendent...”

“With the still more rapid growth of cities since about 1880 and the still more rapid expansion of our city school systems since about 1900, even further specialization of functions and delegation of authority has become a necessity, if intelligent educational service is to be rendered to the community supporting the schools. The problems relating to organization, instruction, and school management have become far too technical to be handled successfully by the ordinary layman, while the business and clerical work has so increased in quantity as to demand the continuous
services of an officer specially capable in such lines. Even more, the problems relating to instruction and school organization have in themselves become so differentiated as to require, in our larger cities, a division of executive functions among a number of specially trained educational officers. . . .

"There has been a marked tendency, within the past quarter of a century, toward a very material reduction in the size of city school boards and toward the entire elimination of their standing committees. There has also been a marked tendency toward the delegation to expert officers, not members of the board, of most of the powers and executive functions formerly possessed and exercised by the city school boards, and the establishment of the superintendent of schools as the chief executive officer of the school system." 12

In rural schools supervision has developed more slowly than in city schools. Extracts from a recent bulletin describe the situation: "A little more than two decades ago a movement was initiated to provide county superintendents with assistants responsible for the improvement of classroom instruction. . . .

"While the increase [in the number of county supervisors] is encouraging, it leaves much to be desired according to those interested in the extension of supervision. As shown in the table, only 516 of 2,122 counties have established supervision." 13

In the same bulletin is an account of the achievements of pupils in supervised and relatively unsupervised rural school districts in four states. Pronounced superiority is shown in the supervised districts.

The Problem of Supplying Teachers.—In spite of all the efforts which have been made to professionalize teachers and school administrators, untrained persons are still to be found in charge of many schools, and, especially in rural sections, supervision is sometimes so limited as to be ineffective. It is estimated by the National Survey of the Education of Teachers that between 20 and 30 percent of the elementary school teachers of this country have less than two years of education beyond the high school and that between 10 and 15 percent of the teachers in senior high schools have less than four years of college education. Much larger percentages of both groups of teachers are without special professional training.

As was pointed out earlier, the draft on the nation's material and intellectual resources to staff schools and colleges is one of the most exacting demands made on the American educational system. The average tenure of teachers is between seven and nine years. At least

12 Cubberley, Ellwood P., Public School Administration, Boston, 1929 (revised), pp. 161–2.
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every nine years more than a million new teachers are required by the educational system of the country. When it is recognized that the teaching profession must compete with industry and with the other professions for the higher grades of intelligence, the magnitude of the task of recruiting the teaching profession is apparent.

Improvements in Methods of Teaching.—The professional training of teachers has been accompanied by widespread experimentation with methods of instruction. The movement to introduce radical changes in methods of teaching made decided progress during the last decade of the nineteenth century. A notable group of educational reformers attacked the methods then in use as formal and unadapted to the experiences of pupils. The efforts of these reformers were powerfully reinforced during the early years of this century by the findings which issued from tests and measures applied to school results. After the application of these tests the educational world was convinced that formal drill was not so effective as it had been assumed to be.

No phase of teaching was more vigorously criticized than the formal recitation which resulted from the slavish use of textbooks. American schools differ radically from the schools of Europe in the fact that they depend largely on textbooks while most of the instruction in European schools is oral. The use of textbooks has the advantage of supplying pupils, provided they are competent readers, with a range of information broader than that which is likely to be in the possession of individual teachers. On the other hand, the use of textbooks has the distinct disadvantage that teachers and pupils may become dependent on verbal formulae. It was the universally accepted procedure in the middle of the nineteenth century and a very common procedure at later periods for teachers to conduct recitations which were literally exercises in verbatim repetition of the sentences in the textbooks. It was against formalism of this type that the reformers directed their most vigorous attacks.

Although it survives in some quarters, the memoriter method of teaching and learning is now very generally recognized as inadequate. New methods are being experimented with on a large scale. Laboratory exercises are being employed, especially in courses in the sciences. Shop exercises have been introduced in many schools. The substitution of the library method is becoming increasingly common. Today in many schools, even schools at the elementary level, pupils are supplied with several books on any subject which they are studying. They thus become acquainted with the method of comparing different views and different modes of presentation and they cultivate intellectual independence through the evaluation of what they read.

Another innovation in teaching is known as “supervised study.” This is a form of expert guidance of pupils in methods of attacking intel-
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lectual problems in order that they may avoid the ineffective methods which they are likely to adopt if left to themselves. For example, a pupil who is confused about the reasoning that is outlined in his textbook in geometry often prepares for recitation by committing to memory the words and letters of the textbook. Such a pupil is shown that he is not really learning and is led by direct instruction to adopt a method of analysis and reasoning which the teacher as an expert in the field knows to be advantageous.

In order to provide opportunity for this new type of intellectual guidance many schools have reconstructed their daily programs. Sometimes a separate period is set aside for consultations between pupils and teachers. Sometimes the class periods are lengthened from forty or forty-five minutes to sixty minutes or even ninety minutes and the teachers are directed to use the longer periods partly for recitation and partly for supervised study.

Various methods of individual instruction have been adopted in recent years. Reform in this respect was made first in institutions of higher education through the adoption of the elective system. In lower schools differentiated curricula for bright and dull pupils have been arranged. Experiments have also been tried with minimum assignments for all members of a class and additional assignments for the abler pupils. Sometimes pupils have been classified according to ability and instruction has been adapted by various devices to the different classes.

Individual teaching is sometimes carried a step farther. Each pupil is thought of as so distinctly different from all other pupils that he is allowed to exercise his initiative not only with regard to methods of study but with regard to the topics to be studied. Class organization and the coherent sequences which have characterized the traditional courses of instruction are sometimes abandoned and the individual is encouraged to discover and follow his personal intellectual or practical interests. Extreme reconstructions of the educational program, such as are referred to in this paragraph, are found in small private schools rather than in ordinary schools. It is quite certain that no movement to abandon a systematic curriculum can be successful.¹⁴

Significant experiments in new methods of organizing instruction have been inaugurated in a number of colleges. One type of innovation is designed to overcome the dangers of excessive specialization. The multiplication of courses has resulted in a distinct limitation of the opportunities of students to come in contact with all the different lines of study which are desirable for one who is to be fully equipped for the complex life of modern society. It is difficult for a student of the sciences,

¹⁴ For further discussion of the trend toward individualization, as shown in social case work, juvenile courts, probation, etc., see Chaps. XXII and XXIII.
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for example, to find the time to secure acquaintance with literature. General survey courses, or orientation courses as they are sometimes called, have therefore been developed. These courses give a general view of broad fields of learning rather than intensive drill in narrow specialties.

Another change which is being introduced, especially in the later years of the college, consists in the substitution of extended personal readings for class exercises. It is believed that students can be trained to carry on independent study more effectively if they select some field of concentrated individual readings instead of following specific assignments made by a class instructor.

The changes in educational procedure which have been cited are merely selected illustrations. It is quite impossible in this chapter to give more than an indication of the experimentation which is today engaging the attention of educators.

Changes in methods of teaching not only have improved instruction but also have contributed to far reaching modifications of general school management. For example, a problem which has always made a large demand on the energy of teachers is that of keeping pupils in order. Under the older, more formal types of teaching, a kind of military discipline was enforced and infractions of the system were severely punished, frequently by the administration of corporal punishment. Since the general abandonment of formal methods of teaching, the discovery has been made that there are very few problems of discipline when the content of the curriculum is such as to appeal to the interests of pupils and when the methods of teaching are such as to adjust instruction to individual capacities and to the pupils' desire to apply what they learn to practical situations. The harsher forms of punishment have entirely disappeared from the school.

Stimulated by the discovery that pupils can be led rather than driven, schools have adopted devices which are intended still further to cultivate spontaneous cooperation on the part of pupils. For example, some schools have been organized on the pattern of a municipality or state, and control of the organization has been turned over to the pupils, Such experiments have succeeded only when the demand on untrained children that they assume social responsibility has not been excessive. The mature judgment of a sympathetic adult has been essential to the proper conduct of a school city. Where adult supervision has not been supplied in adequate degree, experiments in self government have uniformly ended in failure.

A number of extra-curriculum activities, that is, activities entirely outside the ordinary routine of the classroom, are fostered in schools and colleges as means of absorbing the surplus energy of young people and as means also of cultivating self reliance and independence in the assump-
tion of responsibilities. Clubs of various kinds are organized. Sports are made a part of the physical education program or are developed as independent after-school exercises. Frequently, after trial, an extra-curriculum activity is adopted as a part of the instructional program and is recognized as a legitimate addition to the curriculum.

The development of less formal types of instruction has been accompanied by the extensive development of plans of so-called "guidance" of pupils. The richness of the curriculum, which is designed to meet the varying tastes and capacities of individual pupils, and the fact that the present-day school places greater responsibility on the pupil to plan his own education require as counterparts a greater consideration by the school of the needs of the individual and the devotion of much energy to the directing of pupils. In many colleges and secondary schools counselors, or special officers known as deans of men or boys and deans of women or girls, have been appointed and assigned the duty of studying the abilities and prospects of individual students and of giving them guidance in planning their careers.

Guidance is of two distinct types. One type helps the student to find his way through the intricacies of the elective system or through the complexities of the school or college environment. Such guidance is called "educational guidance" and is strikingly illustrated by the organization of so-called "Freshman Week." Many colleges require the members of the entering class to arrive some days before the opening of the autumn session for the purpose of receiving instruction about life in the institution and about academic requirements. The second type of guidance looks toward the student's future and aims to assist him in choosing a vocation. The purpose of this kind of guidance is to help in finding an occupation which is suited to the student's abilities and also to help in shaping the student's school program so as to prepare for his chosen calling. Guidance of this type is commonly called "vocational guidance." Both types are now regarded as essential phases of a complete secondary school or college program.

The better social adjustment of the individual which is sought through educational and vocational guidance is sought also through other devices. Schools have taken over in no small measure the function of preventing delinquency. A new type of attendance officer has been developed in many school systems, a type which can be described as a social worker rather than a police officer. Sometimes visiting teachers have been added to the school staff. Behavior clinics have been provided in many school systems either through private philanthropy or at public expense. The care of all phases of the welfare of pupils is coming to be recognized as a duty which society must assume and for which provision must be made through public institutional organizations.
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**Enlarged Material Equipment.**—Present day programs of instruction require a type of material equipment which was not called for when schools administered meager curricula and when classes were conducted by the recitation method.

The following rooms are included in a recently erected junior high school:

Thirty regular classrooms.
An auditorium seating 728 persons and equipped with motion picture booth, stage, proscenium, etc.
One boys' gymnasium (60 by 90) equipped with lockers, showers, director's office, etc.
Two girls' gymnasiums (60 by 54 and 60 by 44) equipped with lockers, showers, restrooms, and director's office.
A corrective gymnasium.
A swimming pool.
A cafeteria seating 650 children at one time.
An administration suite for the principal and deans.
A library with an outside entrance so that it may be available for adult community use.
A doctor’s, dentist’s, and nurse’s suite.
A civics room.

Four science rooms.
Four art rooms.
Two mechanical drawing rooms.
Two commercial rooms.
One typewriting room.
One band and orchestra room.
Two chorus rooms.
Two sewing rooms.
Two cooking rooms.
One wood shop.
One printing shop.
One general metal shop.
One home mechanics room.
One electric shop.
Special rooms for the janitorial and engineering force.
Special restrooms and workrooms for teachers.

This list of rooms shows that special equipment is provided for many units of the new curriculum. The fact that there are laboratories, drawing rooms, shops, rooms for home economics, and a library emphasizes what has been said regarding the enrichment of the curriculum and regarding the development of new methods of teaching. The principle that a school building should be adapted to its special functions is new but it has gained wide acceptance. If one looks at a picture of an older school building, one immediately recognizes that its external architecture was dictated by the church, with which the school was originally affiliated. Not many years ago the school was, in its interior structure, a foursquare room with no furnishings except desks and seats. The room was lighted by windows placed without regard to the hygiene of lighting. Ventilation and heating were of a primitive type. There was no provision for separating the pupils of the different grades from one another.

As late as 1910 the architect who was employed to design a school building usually proceeded with less regard for the educational plans of the school than for the external appearance of the building. The erection of a school building was thought to be a business matter for which the academic staff had no talent. Today all the larger school systems have special administrative divisions in charge of building plans and the smaller systems more frequently than formerly employ architects who
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recognize the principle that a school building is not properly planned unless full regard is given to the instructional program of the school.

The relation of the plans of a school building to instructional arrangements can be very impressively illustrated by reference to a type of elementary school which has become common in recent years, namely, the so-called "platoon school." A platoon school is provided with such facilities as an auditorium, a gymnasium, a swimming pool, shops and laboratories. Evidently these special rooms cannot be used in the same way as conventional classrooms. In any one of the special rooms only a part of the school program can be carried on. Pupils must, accordingly, be accommodated elsewhere in the building for a part of the day. Pupils move about from period to period, sometimes occupying the special rooms mentioned, sometimes occupying ordinary schoolrooms where the conventional subjects such as reading, writing and arithmetic are taught. The pupils are organized in groups or platoons, which alternate in the use of the various facilities. Hence the name "platoon school." It is to be noted that the organization of the pupils into platoons would be of no advantage if the physical equipment of the school were not much more elaborate than that provided in a school building of the older type.

Well constructed modern school buildings are carefully planned with reference to lighting, ventilation and toilet facilities. They are equipped with hygienic furniture. They are supplied with rooms for medical examinations and dental clinics. The presence of these facilities shows that communities are coming to think of the schools as public agencies for the care of children's physical well being as well as for their mental training. Many new school buildings have projection apparatus for visual education and radio equipment, thus providing for new types of instruction.

Some school buildings, especially those in the larger centers of population, have been constructed so as to serve the adults of the communities in which they are located as centers for social gatherings. The auditorium and the gymnasium are so placed that they are easily accessible and readily used at hours when the school is not in session.

School yards have undergone expansion no less extensive than that which has been made in buildings. A report which supplies strong evidence in support of this statement contains the following account of the provisions which are being made in law with regard to school yards: "Laws have been passed in eight states requiring that certain areas be provided for school playgrounds. Rules and regulations have been made by state boards of education in twenty states requiring certain areas for school sites. Definite areas have been suggested as standards for city and rural schools of various enrollments by thirty-six state departments of education.
“Areas required by law vary from one to six acres. Areas required by rules and regulations of the state boards of education vary in the elementary schools from one to six acres, and in the high, junior high, and senior high schools from two to ten acres. Areas recommended by state boards of education vary in the elementary schools from one to twelve, in junior high schools from one to ten acres, and in senior high schools from one to twenty.”

College buildings and equipment have been expanded and improved quite as much as have those of the lower schools. Laboratories and libraries are far more fully equipped than formerly. Offices for consultation are being supplied to faculty members and elaborate social accommodations are being provided for students. The barren dormitories of a generation ago have given place to commodious living quarters supplied with modern equipment and providing for a type of community life which is designed to contribute to the social education of students.

III. ADMINISTRATION AND CONTROL

Frequent use has been made in this chapter of the term “the American educational system.” Strictly speaking, there is no such system. The administrative control of the schools and colleges of the United States is in the hands of many different and entirely separate authorities. Each state is quite independent in educational matters. As a result, there are great divergencies in the organization of state school systems. Within the states, local districts have very wide latitude in the conduct of schools and many private agencies conduct educational institutions of grades ranging from nursery schools to universities.

The Units of the American Educational System.—Historically, the different institutions which supply education to American youth grew up quite independently and originally served different purposes. The early colleges were schools for the training of the clergy. The elementary schools were the schools of the common people. The first high schools were essentially college preparatory schools. The normal schools when first organized had nothing in common with the colleges and universities. Not only were the various units of the educational system distinct and separate in origin and purpose but even at the present time they often derive their support from different sources and are, as was noted earlier, under the control of separate boards.

The influence which has gradually compelled all these diverse units to become parts of a more or less harmonious system is the social demand for efficient treatment of the young people who pass from unit to unit. As the pupil population passing from the elementary school to the secondary

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school has increased, it has become necessary for the two institutions to coordinate their activities more completely. Similarly, as the registration of students in colleges has increased, the requirements for admission have been modified to conform to the ability of secondary schools to educate average pupils. Rigidly prescribed items have been replaced by general specifications corresponding closely to the conditions for graduation imposed by secondary schools.

As was pointed out earlier in this chapter, adjustments between colleges and secondary schools have been effected in part by legislation and in part through the action of voluntary associations. Perhaps the most striking example of organized cooperation is to be seen in the so-called "regional associations," in which representatives of colleges and secondary schools come together for the purpose of determining standards and preparing lists of approved institutions. These regional associations, though they have no legal authority, have gained such prestige that institutions regard it as highly desirable that they be approved by one of the associations.

**Federal Participation in Education.**—The absence of direct federal control over the schools of the United States is, as was pointed out earlier, one of the distinguishing characteristics of the political organization of this country. Participation by the federal government in public education has been through subventions of one kind or another or through the collection and dissemination of information about the educational institutions of the nation.

In the early years of our national history, especially during the opening up of the states which were organized out of the Northwest Territory, the federal government gave sections of the public domain for the support of schools but did not supervise the disposition of the land thus given. During the Civil War Congress gave to the states subventions of land and money for the specific purpose of encouraging education in agriculture and the mechanical arts. A loose form of supervision, hardly more than an annual audit, was attached to these subventions. Later subventions, similar to those inaugurated during the Civil War, were made from time to time without increased control until 1914, when a law was passed giving federal aid to agricultural education and stipulating that the states, if they accepted this aid, must match from their own funds dollar for dollar the amounts supplied out of the federal treasury. Since the federal subsidies were for a specified purpose and required matching, they operated to direct state funds into the channel which was determined by the federal law. There was thus created a form of indirect control over state educa-

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tion. During the World War Congress took another step in the direction of control of state education. The Smith-Hughes Law, passed in 1917 for the purpose of encouraging vocational education, not only specifies the type of education for which federal subsidies are to be used and requires matching of funds but also prescribes that the plans formulated by the states for the use of federal money must be acceptable to a special federal board—the Federal Board for Vocational Education.

The trend toward increased determination of state educational policies by federal influence showed itself very impressively in the enabling acts which were the bases for the transfer from territorial status to statehood of a number of the newer states. The latest enabling acts were far more specific in their requirements regarding education than were the earlier enabling acts.

Those who favor the successive steps in the direction of control of education taken by the federal government hold that Congress is more sensitive to the social needs of the country as a whole than are the various state legislatures. For example, it seems difficult to secure from state legislatures funds for the support of scientific research while Congress has repeatedly shown its willingness to appropriate money for research enterprises. It is further contended by those who favor a measure of federal control of education that higher standards can be maintained under direct federal supervision than are likely to be maintained under state or local supervision.

It is widely believed, on the other hand, that the exercise of federal control of education tends to weaken local and state initiative and that in the long run education will profit by adherence to the American tradition of local control.

There has appeared in recent years in various quarters a reaction against the form of the later federal grants for education and against the disposition exhibited by some federal agencies to dominate state policies in education. The National Advisory Committee on Education, appointed to formulate a policy for federal participation in education, overwhelmingly opposed dictation to the states directly or indirectly. This committee recommended that in the future no specifications be made of particular phases of education to be supported by federal grants, that no requirement of matching be imposed when federal aid is provided and that no approval of plans be required.\(^1\)

The question of the extent to which federal money shall be given to the states for the support of education is not easy to answer. The income tax has provided the federal government with vast resources. Most of the

\(^1\) Federal Relations to Education, Part I, Report of the National Advisory Committee on Education, Washington, 1931, pp. 37–8. For further information on this subject, see Chaps. XXV and XXVII.
taxing systems of the individual states are antiquated and overburdened. So long as there are large revenues derived from the federal income tax, it is natural that urgent demands should be made for federal support of education. Furthermore, with the present concentration of wealth in a few urban centers, it is difficult to adjust taxation except through the national government in such a way as to provide some of the less densely populated states with the funds necessary to conduct schools.\(^{18}\)

Federal participation in education is universally regarded with favor when it consists in the collection and dissemination of statistical and other kinds of information about American education. Only a federal agency can perform these functions on an adequate scale. The United States Office of Education has for many years prepared and published statistical and descriptive reports which rank as the most complete educational reports published by any nation in the world. In the performance of its function as an information collecting agency, the United States Office of Education is seriously handicapped by lack of financial resources and by the fact that it is dependent on the purely voluntary cooperation of states and educational institutions. It has no authority to require reports. Furthermore, the information which is available in various state departments of education is not uniform and is consequently not readily usable for federal reports. A recent study\(^{19}\) showed that the departments of education of ten representative states collect information on a total of 2,005 different items and that no single item of information is collected by all the ten state departments. In recent years the Office of Education has been gradually enlarged. Since 1929 it has been relieved of certain administrative functions and has been given appropriations which have made possible an improvement of its services as an information gathering and information disseminating agency.

Vigorous discussions have been going on for some years as to the best form of organization of the federal agencies which deal with education. All the federal departments are engaged to some degree in educational activities.\(^{20}\) The Department of the Interior includes the Office of Education and has charge of Indian schools and the schools for the native population in Alaska; the Department of War and the Department of the Navy conduct institutions for the training of officers and both departments have charge of schools in outlying possessions of the United States; the Department of Agriculture supervises courses for adults as well as for children; the Department of Labor, through its Children's Bureau, supervises many welfare activities which are closely related to education;

\(^{18}\) On taxation, see Chap. XXVI.


and other departments participate in education in less conspicuous ways. Whether an attempt should be made to coordinate all these activities through the organization of a new federal department, through the creation of a council, or by some other device is a question on which there are many divergent opinions. The one principle on which there seems to be general agreement is that no federal agency should be endowed with power to control the educational systems of the states. The states are the primary sovereigns in control of education.

**Education as Controlled by the States.**—The control exercised by the various states over the schools within their borders is limited only by the prohibition of the federal Constitution that no state shall deprive any person of liberty or of property without due process of law or deny to any person the equal protection of the laws. The limitations of state control are illustrated in two important decisions of the Supreme Court of the United States.

In 1919, during the reaction of war times against the teaching of German in the schools, the legislature of the state of Nebraska passed a law prohibiting the teaching of German in public and private schools in that state to pupils who had not completed the work of the eighth grade. The Supreme Court of the United States declared this law unconstitutional. The following statement is quoted from the decision: "No emergency has arisen which renders knowledge by a child of some language other than English so clearly harmful as to justify its inhibition with the consequent infringement of rights long freely enjoyed." In 1922 the state of Oregon passed by referendum a law which in effect abolished all private elementary schools. The Supreme Court of the United States declared the law unconstitutional because it deprived private schools of property, and parents of liberty, without due process of law. A brief quotation from the decision is as follows: "As often heretofore pointed out, rights guaranteed by the Constitution may not be abridged by legislation which has no reasonable relation to some purpose within the competency of the state. The fundamental theory of liberty upon which all governments in this Union repose excludes any general power of the state to standardize its children by forcing them to accept instruction from public teachers only. The child is not the mere creature of the state; those who nurture him and direct his destiny have the right, coupled with the high duty, to recognize and prepare him for additional obligations."

The extent to which states may go in controlling the curricula of public educational institutions is indicated by the fact that a number of

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states now prohibit by statute the teaching of the doctrine of biological evolution in state supported institutions. Another type of control of the curricula of the lower schools is accomplished in many states through state adoption of textbooks.

Legislatures have often enacted laws prescribing that schools teach certain subjects which are supposed to develop patriotism or to promote general welfare. A study published in 1925 contains a summary table of legislative prescriptions in force in 1903, 1913 and 1923. This is reproduced as Table 24. During the period from 1923 to 1930 at least 131 new prescriptions were added to the list. Within this period sixty-seven prescriptions dealing with nationalism alone were written into the statutes of various states. Other prescriptions were as follows: health and prohibition, 17; religious and ethical subjects, 16; days of special observance, 16; conservation of life and property, 5; humaneness, 4; practical and cultural subjects, 1; miscellaneous, 5.

Table 24.—Summary of Curricular Prescriptions for the Public Elementary Schools of the United States, 1903–1923*

<table>
<thead>
<tr>
<th>Topic</th>
<th>Number of prescriptions</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1903</td>
<td>1913</td>
</tr>
<tr>
<td>Nationalism</td>
<td>147</td>
<td>131</td>
</tr>
<tr>
<td>Health and “prohibition”</td>
<td>108</td>
<td>123</td>
</tr>
<tr>
<td>Conservation of life and property</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Practical and cultural subjects</td>
<td>24</td>
<td>44</td>
</tr>
<tr>
<td>Humaneness</td>
<td>10</td>
<td>22</td>
</tr>
<tr>
<td>Fundamental subjects</td>
<td>107</td>
<td>218</td>
</tr>
<tr>
<td>Religious and ethical subjects</td>
<td>74</td>
<td>76</td>
</tr>
<tr>
<td>Miscellaneous subjects</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Total</td>
<td>564</td>
<td>720</td>
</tr>
</tbody>
</table>

* Flanders, Jesse Knowlton, Legislative Control of the Elementary Curriculum, Teachers College Contributions to Education, no. 195, Teachers College, Columbia University, New York, 1925, p. 175.

When a legislature makes a prescription beyond the fundamental subjects its action can usually be traced to the influence of a small group of enthusiasts who are bent on using the schools as agencies for social reform. The legislature very seldom accompanies its requirement that a new subject be added to the school curriculum by any additions to the support of schools or by any extension of the time during which schools are in session. Teachers and school administrators are, accordingly, confronted with the alternative of ignoring the law or crowding the new subject into the school program by displacing instruction already included. The former alternative is not infrequently chosen.
All the states in the United States have laws compelling children to attend school. Most of the northern states enacted such laws before 1900. Sixteen states—all of them in the south except Iowa—passed their first compulsory school attendance laws after 1900; seven, between 1910 and 1918. The last state to take such action was Mississippi. The fact that the southern states were the last to pass compulsory school attendance laws is accounted for in part by the necessity of providing separate schools for Negroes and in part by the demand for children in agricultural work.

There has been a marked tendency in recent years for all states to advance the age of compulsory school attendance or otherwise increase the requirements. Every state in the United States except Maine, which had a strong law in 1875 and strengthened it in 1899, has, since 1900, either advanced the age of required school attendance or increased the number of days in the year during which pupils must attend school. Four states now require attendance up to the age of eighteen, five up to the age of seventeen, thirty-one up to the age of sixteen, and eight up the age of fourteen or fifteen. Some of the states specify in their laws a number of days less than the total number of days schools are in session, while others require attendance for the full period schools are in session. Some of the laws make attainment a substitute for age, prescribing that a pupil must attend school until he is of a given age or until he has passed a stipulated stage of schooling, such as the sixth grade or the eighth grade.23

At the beginning of the twentieth century there were many states in which the minimum age at which minors could be employed was one or two years beyond the age which was prescribed in the compulsory school attendance law. This fact shows that the doors of industry were closed to young people before the age of compulsory school attendance was advanced to its present high level. The tendency in recent years has been for legislatures to prescribe an age of compulsory school attendance equal to, or even beyond, the minimum age of employment.

The advances made in the age of compulsory school attendance have not always been accompanied by suitable readjustments in the educational system. A great many pupils are required by law to attend high schools although these schools not infrequently continue to administer traditional curricula which are wholly inappropriate for many of the pupils compelled to attend.

Legislatures have tended, as was pointed out earlier, to raise the requirements for teachers' licenses. Usually the laws requiring superior training of teachers have been deprived of their full effect because provision has been made for various types of temporary low grade licenses.

23 For special discussion of the child at work, see Chaps. XV and XVI. On the number of children employed, see Chap. VI.
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Furthermore, legislatures have been very slow to enact laws requiring districts to employ fully trained teachers. Until a requirement controlling employment is added to the laws on licenses, many districts will continue to employ at low salaries teachers with very little training.

Mention was made earlier of the fact that legislatures have been induced during recent years to pass laws guaranteeing teachers permanent tenure after a period of trial. Laws of this type have been sought by teachers' organizations as protection against arbitrary dismissal. There can be no doubt, however, that permanent tenure has the disadvantage of producing an attitude of complacent lethargy on the part of many teachers.

Minimum salary laws, pension laws and annuity laws have been passed in large numbers since the World War. Teachers' organizations have become powerful political factors since the passage of the constitutional amendment giving women the franchise.

Legislatures have recognized increasingly in recent years the necessity of defining more clearly than was common in the past the rights and powers of school executives, especially those of the superintendent. A typical problem relating to the superintendent may be cited as illustrative. If the superintendent of a school system is to be effective, he must be empowered to select competent teachers. Traditionally, the appointment of teachers has been the prerogative of the school trustees, that is, of the lay board which represents the public and alone has the right to commit the public to expenditures. On the other hand, it has become increasingly true in recent years that the selection of trained teachers is a technical duty which can be properly performed only by an educational expert. There can be no doubt that enlightened public opinion is gradually coming to a recognition of the fact that selection of teachers by a lay board is altogether perversive of school administration.

Another problem which relates to the powers of the superintendent is that of defining his control over expenditures. In many cases the superintendent has no voice in the business management of the schools. It is said in support of this type of arrangement that the superintendent, by virtue of his preoccupation with school administration and because of his academic training, is altogether incapable of dealing with business affairs. On the other hand, it is contended by those who do not believe in the separation of academic administration and financial administration that all expenditures are made in the interest of education and that the executive in charge of the educational program should direct them.

A number of important administrative problems relate to the rights and duties of the board of education. Bitter struggles have been waged in the effort to subordinate boards of education to the political machines in charge of local budgets. It is clearly stated in many court decisions,
however, that such boards are state agencies for the control of schools, not subordinate divisions of municipal governments.  

Boards of education are for the most part highly conservative. They are made up in the main of professional and business people and are likely to favor traditional policies and to be slow in accepting innovations.

Perhaps the least satisfactory situation with respect to the administration and supervision of schools is to be found in rural areas. There are in the United States approximately 150,000 school districts, of which the great majority are rural. In some districts having one-room schools there are three school trustees—three lay officials to supervise the work of a single teacher. In many states there are more school trustees than teachers. The type of supervision which is supplied by these lay trustees is far from advantageous. Even where there are county superintendents with some supervisory responsibilities, there is little or no improvement in the situation. County superintendents are commonly elected by popular vote. They are low salaried officials usually without professional training. A hopeful tendency in some states is toward strengthened state supervision. In other states there is a movement toward enlargement of school units through consolidation of districts with the resulting possibility of employing trained supervisors.

A few states have well organized and efficient state departments of education but in general the state departments are not equipped to render more than routine services to the school districts of the states. The chief executives of these departments in thirty-three states are elected by popular vote. The practice of electing state superintendents of schools is inherited from the middle of the past century, when the franchise was regarded as the bulwark of popular government. In recent years the trend in the more highly organized state educational systems has been toward the substitution of an appointive officer for the elected chief executive.

There are many unsolved problems of school administration which must be passed with hardly more than mention. Should the medical inspection in schools and the sanitary requirements imposed on school districts be under the control of school officers or under the control of health officers? To what extent should associations of parents and teachers be allowed to influence the formulation of school policies? How far should the schools be used as avenues of communication with the homes of the country by persons who are interested in propaganda, wholesome or


26 On the general trend toward fewer elective administrative officers, see Chap. XXIX.
otherwise? For example, the bankers want to inculcate thrift; the insurance companies want to teach safety and to improve health; organizations in favor of good roads, international harmony, gardening and other interests are continually knocking at the doors of the schools and attempting to persuade school administrators to let them in.

The final solution of many of these problems depends on the view which individual communities hold with regard to the school in its relation to other social agencies. The general trend is undoubtedly in the direction of a recognition of the school as society’s chief agency for the care and protection of children. The definition of public education is being broadened every year. As has been pointed out earlier, the school is being increasingly charged with new and important functions. It seems altogether probable that this trend will continue.

Health Education.—No single indication of the trend toward the enlargement of the scope of the activities of schools is more impressive than the provision of health care and health instruction as a part of public education.27 Not many years ago the home was regarded as responsible for the child’s physical condition. Only contagion was thought of as concerning the school. Today the situation is changed. It is recognized that many parents must be supervised in the control of even the most rudimentary phases of children’s health such as their diet. It is further recognized that schools must interest themselves in the health of children if they are to accomplish what they are commissioned to accomplish in the way of intellectual training. In response to the demand for health education, courses in hygiene are increasingly administered as part of the regular curriculum; school luncheons are provided in many schools; nurses and visiting teachers are frequently employed as members of the regular staff; and psychiatrists are consulted in the best organized school systems in cases of mental abnormalities.

Religious Instruction.—It is being urged in some quarters that religion should not be neglected in the scheme of general education.28 The schools of the United States are secular by tradition and law. Efforts are being made in a few cities to correct what some people regard as a deficiency of secular education. In these cities a part of the school time is devoted to religious instruction; pupils are withdrawn from their regular secular studies and are taught by special teachers provided by the churches. Sometimes the pupils are allowed to go to neighboring churches for instruction; sometimes rooms are provided in the school buildings for the classes in religion. Where school time is not secured for religious instruction, after-school classes are sometimes organized by the churches.

27 For further discussion of health education, see Chaps. XV and XXI.
28 For additional materials, see Chap. XX.
In general, the secular character of American schools resists direct concessions to the demand for religious training when this demand encroaches in any measure on public elementary and secondary schooling. There is no general tendency to incorporate religion into the public school curriculum.

Parochial elementary and secondary schools have been organized, especially by the Catholic church, chiefly because religion is omitted from the programs of public schools. Parochial schools have in recent years increasingly participated in experimentation with new methods of teaching and with enlargements of the content of instruction. They often find it difficult to keep pace with publicly supported secular schools. They are, however, especially in the larger centers of population, important factors in providing for the training of children.

Educational Finance.—One of the chief problems of educational administration is the problem of securing financial support for schools and institutions of higher education. With the expansions that have been taking place in American education in recent years and with the changes in the value of the dollar, this problem has become acute. Tables 25 and 26 give the gross statistics showing the recent very impressive increases in public school expenditures and the value of school property. Similar facts with regard to teachers' colleges and normal schools were reported in Table 19 and facts with regard to other institutions of higher education are shown in Table 27. During the year 1931-1932 school budgets were in general reduced. The statistics for 1932-1933 will undoubtedly show further material reductions in expenditures for public education.29

All the amounts reported in these tables are subject to correction because of the changing value of the dollar. A simple correction by the use of index numbers of the wholesale prices of all commodities or of index numbers of the cost of living is, however, misleading because more than half the expenditures in public schools is for salaries, as is shown in Table 28.

Table 25.—Total Expenditures of Public Elementary and Secondary Schools, 1900-1930a

<table>
<thead>
<tr>
<th>Year</th>
<th>Expenditures</th>
<th>Year</th>
<th>Expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>8214,965,000</td>
<td>1980</td>
<td>81,058,151,000</td>
</tr>
<tr>
<td>1910</td>
<td>426,250,000</td>
<td>1930b</td>
<td>2,316,790,000</td>
</tr>
</tbody>
</table>

b Figure supplied by the U. S. Office of Education.

29 See a special study made by John McCracken of the American Council on Education for estimates of decreasing school funds and maintained enrollments for 1931-1932.
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TABLE 26.—TOTAL VALUE OF ALL PUBLIC SCHOOL PROPERTY AND VALUE PER PUPIL, 1900–1930

<table>
<thead>
<tr>
<th>Year</th>
<th>Value of all school property (in thousands)</th>
<th>Number of pupils enrolled in public elementary and secondary schools (in thousands)</th>
<th>Value of school property per pupil</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>$550,089</td>
<td>15,503</td>
<td>$35.48</td>
</tr>
<tr>
<td>1910</td>
<td>1,091,008</td>
<td>17,814</td>
<td>61.24</td>
</tr>
<tr>
<td>1920</td>
<td>2,409,719</td>
<td>21,578</td>
<td>111.67</td>
</tr>
<tr>
<td>1930</td>
<td>6,211,827</td>
<td>25,678</td>
<td>241.80</td>
</tr>
</tbody>
</table>

* Data supplied by the U. S. Office of Education.

TABLE 27.—RECEIPTS OF UNIVERSITIES AND COLLEGES, 1900–1930

<table>
<thead>
<tr>
<th>Year</th>
<th>Receipts</th>
<th>Year</th>
<th>Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>$40,554,000</td>
<td>1920</td>
<td>$189,285,000</td>
</tr>
<tr>
<td>1910</td>
<td>77,879,000</td>
<td>1930</td>
<td>367,618,000</td>
</tr>
</tbody>
</table>

* Includes additions to endowments.
* Excludes additions to endowments.
* Data supplied by the U. S. Office of Education.

TABLE 28.—PERCENTAGE DISTRIBUTION OF EXPENDITURES OF PUBLIC SCHOOLS, EXCLUDING PAYMENTS OF BONDS, 1914–1930

<table>
<thead>
<tr>
<th>Year</th>
<th>General control</th>
<th>Salaries of teachers</th>
<th>Textbooks and other instructional supplies</th>
<th>Miscellaneous current expenses</th>
<th>Outlays</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>2.2</td>
<td>58.3</td>
<td>2.1</td>
<td>20.8</td>
<td>16.5</td>
</tr>
<tr>
<td>1916</td>
<td>2.4</td>
<td>58.9</td>
<td>2.0</td>
<td>22.5</td>
<td>16.2</td>
</tr>
<tr>
<td>1918</td>
<td>3.3</td>
<td>55.2</td>
<td>3.0</td>
<td>23.0</td>
<td>15.5</td>
</tr>
<tr>
<td>1920</td>
<td>3.5</td>
<td>57.3</td>
<td>4.1</td>
<td>20.8</td>
<td>14.8</td>
</tr>
<tr>
<td>1922</td>
<td>3.5</td>
<td>55.0</td>
<td>2.7</td>
<td>19.6</td>
<td>19.4</td>
</tr>
<tr>
<td>1924</td>
<td>3.0</td>
<td>52.6</td>
<td>2.8</td>
<td>20.5</td>
<td>21.1</td>
</tr>
<tr>
<td>1926</td>
<td>3.4</td>
<td>52.5</td>
<td>3.2</td>
<td>20.8</td>
<td>20.4</td>
</tr>
<tr>
<td>1928</td>
<td>3.5</td>
<td>53.4</td>
<td>2.5</td>
<td>23.0</td>
<td>17.6</td>
</tr>
<tr>
<td>1930</td>
<td>3.4</td>
<td>54.2</td>
<td>2.9</td>
<td>23.4</td>
<td>16.1</td>
</tr>
</tbody>
</table>

* Data supplied by the U. S. Office of Education.

Table 21 shows that salaries in public schools have increased greatly in recent years. The changes in teachers’ salaries from year to year are, however, at rates which are very different from those exhibited by the changes in the buying power of the dollar. Therefore, the teaching serv-[ 372 ]
ices purchased by public schools cannot be estimated in terms of commodity values. Furthermore, the actual amounts appropriated or given for the maintenance of schools and colleges represent very much more nearly the intent of those who make the appropriations or gifts than do figures corrected by the use of index numbers. In spite of the inadequacy of a simple correction by the use of index numbers, Table 29 has been prepared comparing the actual expenditures for public elementary and secondary schools and the actual values of school property in 1900, 1910, 1920 and 1930 with these amounts corrected by the use of index numbers of the wholesale prices of all commodities. This table removes all doubt as to the great increase in school costs in recent years.

Not only is the aggregate expenditure for education very large but the distribution of the burden of taxation and expenditure in different school districts is so unequal as to make impossible adequate education of many young people, especially those living in sparsely settled areas.\(^{30}\)

Much of the inequality in educational support is traceable directly to the small size of many school districts. Frequently a small district includes only property of very low assessable value. A neighboring district, on the other hand, may include an industrial plant or a railroad and be amply able to support schools. Furthermore, the numbers of children in neighboring districts are often very different. Some examples of the inequalities in ability to raise school revenues may be cited from findings of the Educational Finance Inquiry Commission. A table is presented by this commission which shows that of 1,317 elementary school districts in ten typical counties in Illinois, 352 had full assessed valuations per

\(^{30}\) For detailed statements of governmental expenditures for education, see Chaps. XXV and XXVI; for philanthropic gifts to education, see Chap. XXIII.
child of school age of $4,900 or less while at the other extreme were six districts which had valuations per child of $45,000 or more.\textsuperscript{31}

Two devices have been adopted in the effort to equalize educational opportunities. The first is the consolidation of districts and the erection of central schools. This method has often been resisted on the ground that transportation of pupils to a distance from their homes is expensive and undesirable, but the advantages which come from the organization of a large school are steadily tending to overcome these objections and consolidation of districts is progressing in all parts of the country. In the year 1929–1930, 1,014 consolidations took place. The total number of consolidated districts in the United States in 1930 was 16,232. The total number of one-room schools is, however, still very large. In 1930 there were 150,951 such schools.\textsuperscript{32}

The second device adopted in order to produce equality of educational opportunities is the use of state funds to supplement local resources. State funds are distributed in some states on a per pupil basis without regard to other considerations. This method is crude and does not go far toward correcting inequalities. A few states have adopted plans which take account of the ability of districts to levy local taxes and of the effort which the districts put forth, the state support being adjusted so as to aid liberally districts which have little wealth, provided these districts exert full effort within the limits of their assessable property. For example, in New York State the law sets $1,500 a year as the minimum expenditure for a one teacher school. The state supplies whatever is necessary to make this amount available after the district has levied a four-mill tax on the full value of property. In districts other than those maintaining one teacher schools the revenues derived from a six-tenths mill tax are supplemented far enough to provide $1,500 for each elementary school teaching unit and $1,900 for each high school teaching unit. These districts are, however, required to levy a five-mill tax for all purposes in order to participate in state aid for education. Districts which fail to levy a five-mill tax are penalized by the amount of their failure to meet the five-mill condition.

In spite of the efforts which have been made in some states to achieve equalization of educational opportunities, there is still very marked disparity in the amounts expended for education in different parts of the country. Some relevant facts are shown in Table 30. The final interpretation of the differences in the costs per pupil indicated in this table is impossible without full knowledge of the differences in the cost of living in different sections of the country.


\textsuperscript{32} Data supplied by the U. S. Office of Education.
**Table 30.—Costs per Pupil in Elementary School and in Regular and Vocational High Schools in Twelve States, 1929–1930**

<table>
<thead>
<tr>
<th>State</th>
<th>Costs per pupil in elementary school</th>
<th>Costs per pupil in regular and vocational high schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current expenses</td>
<td>Outlays</td>
</tr>
<tr>
<td>Alabama</td>
<td>$26.72</td>
<td>5.53</td>
</tr>
<tr>
<td>Arizona</td>
<td>108.74</td>
<td>18.62</td>
</tr>
<tr>
<td>Connecticut</td>
<td>84.94</td>
<td>14.36</td>
</tr>
<tr>
<td>Louisiana</td>
<td>38.50</td>
<td>8.52</td>
</tr>
<tr>
<td>Maryland</td>
<td>66.40</td>
<td>14.67</td>
</tr>
<tr>
<td>Montana</td>
<td>98.92</td>
<td>6.89</td>
</tr>
<tr>
<td>Nebraska</td>
<td>75.81</td>
<td>5.70</td>
</tr>
<tr>
<td>Nevada</td>
<td>106.03</td>
<td>28.78</td>
</tr>
<tr>
<td>New Jersey</td>
<td>105.19</td>
<td>24.28</td>
</tr>
<tr>
<td>Tennessee</td>
<td>35.08</td>
<td>2.71</td>
</tr>
<tr>
<td>Utah</td>
<td>72.07</td>
<td>17.96</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>76.65</td>
<td>10.94</td>
</tr>
</tbody>
</table>

*Data supplied by the U. S. Office of Education.*

Congress made an appropriation in 1931 for a general survey of educational finance to be conducted by the United States Office of Education. It is safe to anticipate the findings of this survey far enough to assert that the antiquated systems of taxation which now exist in most of the states cannot carry the burdens of the expanding educational program.  

**Control of Private Educational Institutions.**—Reference has been made in earlier paragraphs to the fact that many of the institutions of higher education are private in their control and in their financial support. Not a few of the administrative problems which arise in private colleges and universities result from the special interests and influence of donors, individual and corporate. Individual donors are likely to be more interested in tangible and visible equipment than in intangibles such as the quality of instruction. It is a well known fact that contributions for buildings are more easily secured from individual donors than contributions for improvement of instruction.

Establishing foundations has become the custom in recent years among individuals who have large amounts of money to give away. Certain communities have also organized foundations as agencies for the collection and disbursement of funds. Foundations are among the largest contributors to the support of colleges and universities. In general they are more willing to support research and efforts to improve organization and teaching than are individual donors. The influence of foundations has

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been very great in determining institutional policies because the foundations have in many cases selected particular lines of work which they are willing to support.\(^{34}\)

Many of the private schools and colleges of the United States were established by ecclesiastical bodies. The statistics regarding enrollments in Catholic elementary and secondary schools supplied by the National Catholic Welfare Conference for 1926 and 1928 are presented in Table 31 together with similar statistics for all private elementary and secondary schools as reported by the United States Office of Education. When these statistics are compared it is apparent that Catholic schools are by far the most numerously attended private elementary and secondary schools in this country.

So far as the other denominations are concerned, it may be said in general that their contributions to elementary and secondary education are negligible. In the field of higher education, on the other hand, their contributions have been large. Their direct control, which was formerly strong, has in recent years been steadily growing weaker. Colleges and schools which were founded by Protestant churches are now for the most part independent in their administration.

<table>
<thead>
<tr>
<th>Type of school</th>
<th>Number of pupils</th>
<th>Type of school</th>
<th>Number of pupils</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1926</td>
<td>1928</td>
<td>1926</td>
</tr>
<tr>
<td>Elementary schools:</td>
<td></td>
<td></td>
<td>Secondary schools:</td>
</tr>
<tr>
<td>Private</td>
<td>2,143,100</td>
<td>2,254,999</td>
<td>Private</td>
</tr>
<tr>
<td>Catholic</td>
<td>2,111,560</td>
<td>2,195,569</td>
<td>Catholic</td>
</tr>
<tr>
<td>Percent Catholic</td>
<td>98.5</td>
<td>98.2</td>
<td>Percent Catholic</td>
</tr>
</tbody>
</table>


Control of Athletics.—The control of athletics is one administrative problem confronting both secondary schools and colleges which is recognized on all sides as at present wholly unsolved. The American people are eager to witness athletic contests.\(^{35}\) The newspapers devote a great deal of space to reports of such contests, to descriptions of participants, and to comments, laudatory or otherwise, on all school authorities who

\(^{34}\) On the foundations, see Chap. XXIII.

\(^{35}\) See Chap. XVIII.
come into contact with athletics. The graduates as a group seem to take more interest in athletics than they do in other aspects of institutional life. The students are stimulated to more enthusiasm by victories on the athletic field than by any other happenings in the institution. Faculties, overwhelmed by all these forces, find it difficult or impossible to keep athletics within bounds. Perhaps worst of all, the income from public contests is sufficient to encourage a number of pernicious types of extravagance.

In 1929 the Carnegie Foundation issued a report in which the facts about college athletics are frankly stated. The president of the Foundation, in a preface to the report, wrote in part as follows:

Intercollege athletics are highly competitive. Every college or university longs for a winning team in its group. The coach is on the alert to bring the most promising athletes in the secondary schools to his college team. A system of recruiting and subsidizing has grown up, under which boys are offered pecuniary and other inducements to enter a particular college. The system is demoralizing and corrupt, alike for the boy who takes the money and for the agent who arranges it, and for the whole group of college and secondary school boys who know about it . . .

For many games the strict organization and the tendency to commercialize the sport have taken the joy out of the game. In football, for example, great numbers of boys do not play football, as in English schools and colleges, for the fun of it. A few play intensely. The great body of students are onlookers.36

The publication of such an indictment may be thought of as evidence that a reform in athletic management is at least contemplated. In the meantime, the fact remains that the administration of athletics in schools and colleges is badly out of control.

Control of Military Training.—Closely related to the problems of athletics is the problem of military training. Such training is regarded favorably in some quarters on the ground that it provides exacting drill and through such drill contributes both to the physical well being of boys and to the cultivation of an attitude of obedience to authority. Military training is required by act of Congress to be given in all land grant colleges. For a time it was assumed that all students attending such colleges were compelled by the Congressional legislation to take military training. The Secretary of the United States Department of the Interior, who is responsible for the administration of the federal grants to land grant colleges, has ruled that the requirements are adequately met if military training is offered as an elective. In many private schools for boys military organization prevails throughout the institution. In certain private colleges and in public high schools in a number of the large cities military training is offered as an elective. Officers from the regular army or retired officers administer the courses.

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The officers of the army and some educators are in favor of the extensive use of schools as means of preparing for military emergencies. In general, however, military training is not regarded by educators as a satisfactory substitute for physical education or as a desirable element of the high school or college curriculum. In recent years the trend has been in the direction of reduction of military training in educational institutions.

IV. SCIENTIFIC STUDIES OF EDUCATION

The most hopeful aspect of the administration of schools and colleges in the United States is that there is a growing tendency to guide all kinds of educational activities by carefully conducted analyses and by measurements of results. It has been pointed out a number of times in this chapter that American educational institutions enjoy great freedom because of their local control and that this freedom has led to much experimentation. Experimentation would undoubtedly have produced reforms even if there had never been any efforts to make systematic scientific studies of the results of the various plans of education adopted in different communities. Scientific studies have, however, accelerated reforms and directed their course.

The earliest efforts to cultivate a science of education in this country were made in the period when a vigorous expansion of the American educational system began, the decade 1880–1890. During that decade the so-called “child study movement” was inaugurated. It was an offshoot of the movement which transformed psychology from a purely philosophical discipline into an experimental science. Although the child study movement has not persisted in its original form, the use of psychological methods has been extended, and measurements of general intelligence and analyses of the learning process have supplied guidance for many recent improvements in education.

Exact measurements of the achievements of pupils were first made in the late nineties and the early years of the present century. They were made by means of tests of the ability of pupils in various school systems to spell and to solve problems in arithmetic. Comparisons of the scores made on these tests by schools following different methods of teaching were so revealing that since 1900 much energy has been devoted to the extension of the testing movement and to the establishment of “standard scores” through the use of the same tests with great numbers of pupils.

The development of devices for comparing school results led to the inauguration of school surveys. As early as 1911 certain school systems, realizing the advantage of securing expert advice in the solution of their problems, employed outside educators of recognized standing to
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observe the operations of their schools and make recommendations for possible improvements. The early surveys thus undertaken were no doubt stimulated in some measure by the fact that communities were surveying many of their activities other than education, such as housing and regulation of sanitary conditions.

The educational survey movement gradually gained momentum. The Russell Sage Foundation and the General Education Board sponsored a number of surveys, and school systems which found their financial and administrative problems growing serious sponsored others. The federal Office of Education was early drawn into the movement. Where state systems of education were involved there was a natural tendency to seek the aid of an impartial national agency. Especially where state institutions of higher education were to be surveyed it became necessary to secure an agency with as high prestige as possible. Thus the Office of Education has come to be one of the leading agencies for general surveys. In 1926 the Office of Education undertook, with financial support derived from private sources, a general survey of the Negro colleges of the country. In 1927, at the urgent request of the land grant colleges and universities, the Office of Education asked Congress for an appropriation with which to carry on a study of those institutions. Congress made the appropriation and the report of the study was published in 1930. At the present time the Office of Education is conducting three national surveys, one of secondary education, one of teacher training and one of school finance. For each of these surveys Congress made a substantial special appropriation.

In addition to publicly supported educational surveys there are important examples of privately financed surveys of private educational institutions. A number of denominational boards of education are making surveys of their dependent institutions and a number of individual colleges and universities are conducting surveys of their internal organizations and operations.

Public school systems and state departments of education have tended to establish permanent agencies for the scientific study of their problems. These permanent agencies, variously known as bureaus of reference and statistics, bureaus of tests and measurements, and bureaus or departments of research, are outgrowths of the survey movement. They have increased rapidly in number in recent years. The educational directory for 1932 published by the United States Office of Education lists the names of 182 directors of departments or divisions of research. It is true that boards of education have in some cases been in doubt as

to the functions of such departments or divisions and as to the advisability of establishing them, but there can be little question that the school systems of the country and the state departments of education will increasingly be supplied with scientific experts as permanent members of their staffs.

The chief agencies undertaking scientific work in education have been the universities. They entered this field through their efforts to train teachers for the secondary schools. At first they offered courses in the history of education and the theory of teaching. Later they contributed to the development of methods of measuring results, and, after these methods had been perfected, they applied them to the solution of a wide range of problems. Teachers College, Columbia University, was the first institution to enter vigorously on the task of promoting scientific studies in education. After that institution performed its pioneering work, strong centers were developed at various state and private universities.

These university centers have been reinforced by the foundations, which continue direct participation in surveys to some extent and also contribute to the support of the scientific work of institutions and individuals. The foundations which have been active in promoting educational research are the Carnegie Corporation of New York, the Carnegie Foundation for the Advancement of Teaching, the General Education Board, the Julius Rosenwald Fund, the Commonwealth Fund and a number of other foundations.

General organizations of educators and educational institutions have contributed in recent years to the science of education. Among these, the most active are the Division of Research of the National Education Association, the National Society for the Study of Education, the American Educational Research Association and the American Council on Education. To this list of organizations should be added, as a public agency of the first importance, the United States Office of Education.

The existence of these agencies assures the continuance of scientific studies of educational problems. The highly significant contributions to educational reorganization which have been made in recent years by tests and laboratory studies have demonstrated beyond question the possibility and the desirability of ultimately developing a complete science of education.

One of the most promising developments in the scientific studies of education has been the extensive investigation of the learning process in animals and human beings. It has been found that the rate and character of learning at different levels of intelligence, at different stages of maturity and in different spheres of experience vary greatly and must be under-
stood if successful methods of teaching are to be devised. It has been demonstrated that individuals of the same age differ markedly in mental capacity, in tastes and in achievement, and that it is possible to determine with precision the extent and nature of these differences. This demonstration has led to the abandonment of the uniform treatment of pupils which was formerly common in schools and has resulted in the development of specific methods of dealing with individuals. It has resulted in the importation into the curriculum of new and varying contents suited to pupils of various types. The administration of schools has been regulated in increasing measure by standards determined by statistical studies dealing with such matters as promotion of pupils, distribution of expenditures in the school budget, class size, and requirements of material equipment. In short, scientific investigations have produced the basis for recent reforms in methods of teaching, organization of the curriculum and administration of schools.
CHAPTER VIII
CHANGING SOCIAL ATTITUDES AND INTERESTS
BY HORNELL HART

The preceding chapters have been largely concerned with the more tangible aspects of social change. For a proper evaluation and interpretation of the changes which have occurred in these fields it is necessary to have some knowledge of what has taken place in the field of ideas—the shifts in public opinions and interests. It is the purpose of the present chapter to analyze as objectively as possible the most readily accessible indexes of the amount of discussion on certain important topics, and of approving or disapproving opinions expressed in connection with some of the more basic issues. Attitudes and opinions are, of course, subjective and hence not readily susceptible of exact measurement. For this reason it is essential to discuss in some detail the methods which were used in making this analysis and to warn the reader of the possibilities of error in interpreting the data.

In thus studying trends in discussion and opinion, the volumes of leading periodicals may well be regarded in much the way in which a geologist looks at the strata of the earth’s crust. Here are precipitated layers of evidence about the intellectual and emotional life of past years. In order to build up and hold circulation, the editors of successful periodicals must (among other things) discover and express attitudes acceptable to their readers. The problem here in hand, therefore, is to approach these strata of opinion-sediment in the impartial and systematic spirit of science, and to reconstruct the essential aspects of the life which they express, as the paleontologist reconstructs the essential characteristics of extinct plants and animals from evidences buried in past ages in the sediment of streams, swamps and oceans.

The chapter is based almost entirely upon statistical analyses of interests and opinions expressed in leading general magazines, supplemented by analyses of certain book and newspaper indexes. This procedure has been followed because the investigator in charge, after a general review of the field, came to the conclusion that no other sources fulfil the necessary requirements of (1) providing materials comparable over a period of 25 or 30 years, (2) representing fairly comprehensively the thinking of leading sections of the American people and (3) being sufficiently compact and accessible to render the task of analysis feasible.

1 For a brief discussion of the trend in political ideas, see Chap. XXIX.

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The volume of attention devoted to various social problems and interests in leading magazines at various dates during the period 1905 to 1932 has been determined primarily by analysis of the proportionate numbers of articles indexed under topics in the Reader’s Guide to Periodical Literature. On certain religious and family topics this has been supplemented by a similar analysis of books indexed in the U. S. Catalog and of articles in the New York Times Index. Changes in the relative reported circulations of certain classes of periodicals have also been considered as an index of trends in public interests.

On topics like religion, divorce, birth control, prohibition and disarmament, not only the volume of attention but also the degree of endorsement or opposition is of central interest in this study. Indicators of approval and disapproval have accordingly been tabulated systematically from representative samples of articles on these topics. To insure reliability the findings of different investigators have been checked against each other and the results from various independent sets of samples have been compared.

Attitudes reflected in fiction have been studied from data collected by William B. Mills and Francis L. McGarraghy in mass circulation and all-story magazines, and from data recorded by Bryn Mawr students in connection with short stories and moving pictures.²

² Some technical details of the methods referred to above may be summarized briefly as follows. On using the Reader’s Guide, a list of key words on the subject to be investigated was first written down. For example, in studying changes in the volume of discussion about disarmament, one might start with the words “disarmament,” “militarism,” “pacifism” and “preparedness.” Each of these words would be looked up in all of the volumes of the Guide, and all cross references noted down. These in turn would be looked up in all of the volumes, and cross references to them would be added. The process would be continued until all of the pertinent topics, under which articles bearing on the subject in hand had been indexed since 1905, had been listed. The more irrelevant of the cross reference terms would then be eliminated. The number of entries under each term in each volume of the Guide would be counted. This involved a definition of the term “entry.” In the main tables of this study (except where otherwise noted) any series of articles in a single magazine was counted as one entry. Articles reprinted or abstracted in other magazines than that in which they first appeared were counted only once.

RECENT SOCIAL TRENDS

To what extent does magazine opinion express social attitudes? Study of the problem has indicated that public opinion is highly diversified. Important differences in social attitudes undoubtedly exist between eastern and western, northern and southern, urban and rural areas. While the sources available for this study are periodicals which circulate in all these areas, they are published in a few great cities and particularly in


After the number of entries from magazines not on the excluded list had been counted, the various topics were grouped so as to bring together synonymous or closely allied terms. The totals of the entries for these groups were then found. In order to reduce these absolute figures to proportions of the total number of entries in the Guide, it was necessary to divide them by estimated totals of entries for each volume. The estimates for the respective volumes are as follows: 1905–1909, 93,750; 1910–1914, 109,680; 1915–1918, 76,640; 1919–1921, 61,300; 1922–1924, 61,470; 1925–1928, 86,800; 1929–1930, 38,650; 1930–1931, 27,620. The absolute number of entries represented in any of the Reader’s Guide tables can be found by multiplying the appropriate number of “articles per thousand” by the number of thousand entries in that volume as given above.

The question has been raised whether, by thus using articles per thousand as an index, the marked growth of one topic or group of topics would not cause a relative decline in the space given to other topics. The most pertinent example might be the possible effects of the World War in reducing the space given to other subjects in magazines. The variety and bulk of subject matter indexed, however, is so huge that this has not been of any importance as far as the writer can discover. Table 33 presents data by means of which this conclusion may be checked.

A method similar to that just described was used to ascertain changes in the number of books published on religious subjects per thousand non-fiction books. The same company which publishes the Reader’s Guide issues the U. S. Catalog of books in print at certain dates, with supplements cumulated at intervals. In connection with this Catalog, the same method of working up lists of key words and synonyms has been employed. Only books listed with a publication date in the period considered and in the volumes used are counted. The number of all books listed by subjects, and having the publication dates being considered was estimated for each volume used as follows: 1905–1909, 19,900; 1912–1917, 99,700; 1918–1921, 42,500; 1921–1924, 42,400; 1925–1926, 25,000; 1930, 12,900; 1931, 11,700.

In the development of the above methods for measuring changes in the amounts of attention devoted to various interests in periodicals and books, the advice and cooperation of James T. Ruby of the Library of Congress has been invaluable. For a year Mr. Ruby acted as the author’s research associate and to his ingenuity and energy many of the developments of research technique employed in this study are to be ascribed. Mrs. James Ruby, under the direction of the writer, made an extensive experiment in analysis of attitudes reflected in stage plays, weighting the attitudes found by the number of performances accorded the respective plays. The tentative results obtained seemed to be quite in line with those found by the other methods employed in this chapter, but the difficulties of eliminating subjective judgments and the incomplete character of the data made it inad- visable to include the material here. This field of research has considerable promise, how- ever, and it is to be hoped that other investigators will work in it. Mrs. Ruby used Burns Mantle’s annual summary of Best Plays. A more complete source would be the “Theater Collection” of the New York Public Library.

Another method of measuring the volume of attention given to various interests has been the systematic study of attitude indicators of defined types discoverable in representative issues of seven leading periodicals, each having circulations between 1,500,000
ATTITUDES

New York City. How far the point of origin has influence upon the material selected for publication is difficult to say.

Moreover, printed opinion is but one kind of opinion. Thoroughly to analyze the matter one would have to consider drifts in spoken opinion. And spoken opinion would have to be broken down into such divisions as casual conversation, lectures, debates, radio broadcasts and the like. Obviously, this field is too extensive and elusive to be entered into here. Still less can this chapter evaluate those latent but powerful attitudes that operate subtly to influence all opinion trends. These may lie more or less dormant until a challenging episode brings them into action and then they may determine the decision of the group.

Even printed expressions of opinion are highly diversified. Books, magazines and newspapers each fall into strata according to the intellectual levels to which they appeal. For instance an analysis of 44 representative newspapers in 1929 (published in the New Republic, October 8, 1930, vol. 64, pp. 201–204) showed that in the amounts of space given to news of social importance, as contrasted with sensational presentations of crime and sex, they ranged widely. At one extreme were papers like the United States Daily, the Christian Science Monitor and the New York Times; at the other the tabloids and similar sensation purveyors.

As to magazines, scientific and technical periodicals form one general group with circulations usually ranging below ten thousand. General periodicals like the Atlantic Monthly, the Forum, the Nation and the Outlook, presenting articles likely to appeal to college graduates and professional groups, reach a somewhat wider audience, but still measure

3,000,000 in 1930. With the assistance of two investigators, William B. Mills and Francis L. McGarraghy, parallel researches were made by this method. Their findings on the more important topics were fairly consistent with each other and with the results obtained in other lines of investigation.

Attitudes reflected in fiction were also analyzed. With few exceptions, short stories and moving pictures are found to present certain characters with whom the reader or spectator is expected to sympathize and other characters against whom he is expected to feel dislike or antagonism. The former are the heroes and heroines; the latter are the villains and villainesses. It is true that these distinctions cannot always be made in humorous stories, mystery tales and fiction of the ultra-sophisticated type. Moreover, in a few stories of the highest literary quality, the author takes a detached attitude and presents all his characters with sympathy and understanding. But in the great bulk of fiction, there is not much difficulty about determining with which characters the reader is expected to identify himself at given stages in the story and which he is expected to dislike.

Just as illustrators (of stories laid in contemporary times) draw the characters in the styles of the day, so the authors dress the personalities of their stories in the attitudes of the day. In 1905 it would have been impossible to have made a heroine of the post-war flapper; today the sentimental and inhibited heroine of 1905 would fail to command the sympathy and understanding necessary to the processes of identification on which fictional interest so largely depends. Because these reflections of attitudes through short story characters are less overt and consciously insisted on than opinions expressed in articles, they have peculiar advantages in throwing light upon the values which, at various periods, have commanded the enthusiasm and the sympathy of the great reading public.

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their circulations only in tens of thousands. (For the sake of brevity this group will frequently be referred to hereinafter as “intellectual” magazines.) The Saturday Evening Post, Collier’s, the Literary Digest and the American have extended their appeal to a wider group and each has a circulation running over a million. (This group will be referred to as the “mass circulation” magazines.) Approximately comparable in circulation and in intellectual caliber are the leading women’s magazines. Magazines of these two groups are of interest to persons with a high school education as well as to college graduates. Less ambitious in their intellectual requirements are the periodicals devoting themselves to sensational fiction, “confessions,” motion picture gossip and the like. Periodicals indexed in the Reader’s Guide come largely from the groups appealing to the better educated sections of the population and to that extent can hardly be regarded as reflecting the mind of America as a whole.

Even for the selected periodicals analyzed, the question must be faced whether the articles printed express truly the actual or even the incipient attitudes of their readers. The content of most magazines is determined by a careful calculation of reader reaction, but other forces also are at work in determining what shall be printed. It has frequently been charged that the contents of newspapers and magazines are determined to a greater or lesser extent by the machinations of public relations counsels and pressure groups. Furthermore there are such matters as the influence of advertisers and the whole complex of social and editorial taboos, the force of which varies from magazine office to magazine office.

Another signal for caution in interpreting these data is the fact that moving pictures have been found to reflect attitudes widely at variance with those indicated in the mass circulation and all-story magazines, in matters like divorce, sex morals and alcoholism. The movies must depend on much the same public served by these magazines; yet they seem to interpret popular interests in a way markedly less in harmony with traditional morals.

Finally it may be pointed out that discussion seems to be most intense at two periods in the life of a social institution. The first period of intensity comes when an institution is under construction or is a candidate for adoption; the second when it is undergoing remodeling or demolition. A new invention may be intensely discussed while it is being introduced but it is apt merely to be taken for granted after it has been fully incorporated into the social fabric. A satisfactory social institution will receive far less attention in periodicals than an institution which is under attack. Certain attitudes moreover, such as those related to sex freedom, spiritualism, and prohibition, seem to develop more or less extensively in particular sections of the public before they break out in periodical discussions. And long after a given opinion or attitude or institution has
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ceased to have sufficient novelty to command magazine space it may go on growing in influence and power.

Making all due allowances for reservations such as those outlined above, it will be found that the broad conclusions presented in this chapter have both reliability and validity. The reliability of the results is indicated by the fact that the same general trends in discussion and opinion appear in a number of independent sources at the same time. The weakened grip of traditional Christianity upon educated opinion in the United States has been found reflected in general "intellectual" periodicals, in scholarly journals, in the number of religious books published, in declining relative circulations of religious journals and in the attitudes reflected in mass circulation magazines. Evidence of the recent rebellion against authoritative monogamistic mores has been found not only in magazine articles, but in short stories, moving pictures and stage plays. The internal consistency of the findings indicates that the indexes derived are measuring consistently whatever they measure.

But is what they measure a true indication of changing public attitudes? At one point it has been possible to obtain a striking answer to this question. Certain early results of the study, bearing upon prohibition sentiment, were proved to be in accord with attitude changes reflected later in the Literary Digest poll and in the planks adopted by the Republican and Democratic parties. On September 21, 1931, the writer submitted to the President's Research Committee on Social Trends a preliminary report, based on analyses of representative magazines, made under his direction by William B. Mills. That report showed that, on a scale where complete approval is represented by 1.00 and complete disapproval by −1.00, the indexes of approval of prohibition were as follows: 1915, 0.62; 1920, 0.01; 1930, −0.25. After intensive supplementary research by the writer, a revised report was submitted on February 18, 1932, including the following estimate of "wet" sentiment in units of articles per thousand indexed in the Reader's Guide:

<table>
<thead>
<tr>
<th>Year</th>
<th>Wet sentiment index</th>
<th>Year</th>
<th>Wet sentiment index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1916</td>
<td>0.89</td>
<td>1929</td>
<td>4.44</td>
</tr>
<tr>
<td>1920</td>
<td>0.72</td>
<td>1931</td>
<td>3.16</td>
</tr>
<tr>
<td>1925</td>
<td>1.78</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion.—In view of the immense complexity of the problem of attitude measurement, it has been deemed wise merely to present significant data about the relative amounts of attention devoted to certain selected topics, accompanied by an attempt to analyze the frequency with which favorable and unfavorable opinion indicators occur. It must be emphasized that the social significance of the trends and fluctuations revealed is a matter which is left for the reader to determine.

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I. THE RISE OF SCIENCE IN AMERICAN THINKING

A correlation between the education of the readers and the various types of magazines has already been mentioned. This matter may now be presented with a factual background.

![Circulations and Enrollments Graph]

Fig. 1.—Rate of increase in magazine circulations compared with the increase in high school and college enrollments, 1890–1931.

High School and College Enrollments in Relation to Periodical Circulations.—A six-fold increase in periodical circulations from 1900 to 1930 (shown in Table 1) corresponds approximately with the rates of increase in the numbers of high school and college students in the United States.

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollments in—</th>
<th>Year</th>
<th>Enrollments in—</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public high schools</td>
<td>Colleges</td>
<td></td>
</tr>
<tr>
<td>1890</td>
<td>202,063</td>
<td>173,691</td>
<td>1920</td>
</tr>
<tr>
<td>1900</td>
<td>519,251</td>
<td>224,284</td>
<td>1930</td>
</tr>
<tr>
<td>1910</td>
<td>915,061</td>
<td>338,696</td>
<td></td>
</tr>
</tbody>
</table>

---


c Data supplied by the U. S. Office of Education; figure on colleges includes students in normal schools and teachers' colleges.
ATTITUDES

States. As reported by the United States Office of Education, these enrollments have been as shown on page 388. When these data are plotted on a semi-logarithmic scale, as in Figure 1 it is seen that the increases in magazine circulation shown in Table 1 have been at approximately the same rates as the increases in the number of persons receiving secondary and higher education.

Table 1.—Reported Circulation of Specified Groups of Periodicals, 1900–1930

(In this table and in all others where italic figures are used the purpose is to indicate peak years)

<table>
<thead>
<tr>
<th>Periodicals</th>
<th>Circulation (in thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1900</td>
</tr>
<tr>
<td>Popular scientific</td>
<td>57</td>
</tr>
<tr>
<td>National Geographic</td>
<td>4</td>
</tr>
<tr>
<td>Women's magazines</td>
<td>3,837</td>
</tr>
<tr>
<td>News and opinion magazines</td>
<td>1,925</td>
</tr>
<tr>
<td>Business and industrial</td>
<td>292</td>
</tr>
<tr>
<td>Social science</td>
<td>37</td>
</tr>
<tr>
<td>Protestant religious</td>
<td>261</td>
</tr>
<tr>
<td>Total</td>
<td>5,571</td>
</tr>
</tbody>
</table>

* From N. W. Ayer and Son’s Directory of Newspapers and Periodicals.

b Estimated.

c No complete circulation figures for Catholic religious journals for the period 1900 to 1930 are available.

Discussion of Education in General Periodicals Has Doubled in 25 Years.—A natural reflection of the rising popularity of education is the increased volume of its discussion. The volume of discussion devoted to certain aspects of the subject in proportion to other topics in periodicals in the Reader’s Guide is summarized in Table 2. For about half of the topics, tabulations for the 1930–1931 volume have been made. These figures indicate a slight but hardly significant increase in educational discussion in Reader’s Guide periodicals between 1929 and 1931. The general peak for educational discussion in these periodicals is clearly in the 1925–1928 period. All of the sub-topics except one have their high points either in that period or those immediately adjacent. The exception is “vocational education,” which covers such headings as “manual training,” “vocational guidance and training,” “industrial education,” “agricultural education,” and so on. A comparison between Table 2 and Table 3 in this particular is striking. General science and applied science both had their peaks of discussion in the same period when education reached its discussion peak; pure science also showed a secondary peak at that time.

# Recent Social Trends

## Table 2.—Changing Ratio of Educational Discussion, 1905–1930
(Measured by the ratio of articles indexed in Reader’s Guide)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>29.67</td>
</tr>
<tr>
<td>Educational research and experimentation</td>
<td>0.21</td>
</tr>
<tr>
<td>Teaching and its methods</td>
<td>1.38</td>
</tr>
<tr>
<td>Curricula</td>
<td>2.26</td>
</tr>
<tr>
<td>History of education, bibliographies, etc.</td>
<td>0.22</td>
</tr>
<tr>
<td>Normal schools</td>
<td>0.09</td>
</tr>
<tr>
<td>Junior high schools</td>
<td>0.00</td>
</tr>
<tr>
<td>Rural schools</td>
<td>0.35</td>
</tr>
<tr>
<td>Summer schools</td>
<td>0.19</td>
</tr>
<tr>
<td>Kindergarten and nursery schools</td>
<td>0.22</td>
</tr>
<tr>
<td>Adult education</td>
<td>0.20</td>
</tr>
<tr>
<td>Vocational education</td>
<td>4.24</td>
</tr>
<tr>
<td>Schools for the handicapped and abnormal</td>
<td>0.58</td>
</tr>
<tr>
<td>School attendance</td>
<td>0.45</td>
</tr>
<tr>
<td>Religious education</td>
<td>0.59</td>
</tr>
<tr>
<td>College students and their activities</td>
<td>2.31</td>
</tr>
<tr>
<td>College education in general</td>
<td>2.24</td>
</tr>
<tr>
<td>Radio broadcast education</td>
<td>0.00</td>
</tr>
<tr>
<td>Administrative and business aspects</td>
<td>1.73</td>
</tr>
<tr>
<td>Schools and education: general and miscellaneous aspects</td>
<td>12.33</td>
</tr>
</tbody>
</table>

The most significant fact shown by Table 2 is, however, not the relatively small relapse after the peak, but the fact that the proportional amount of educational discussion in these general periodicals almost doubled between 1912 and 1926. Intensification of general interest in education appears to have been one of the major trends in social attitudes during the past quarter-century. It is significant that the trend correlates with the trend of magazine circulation and, presumably, of magazine reading.

Circulation Data Show Losses by Religious and Gains by Scientific Periodicals.—The most fundamental change in the intellectual life of the United States reflected in the data covered by this study is the apparent shift from Biblical authority and religious sanctions to scientific and factual authority and sanctions. This is made plain by several kinds of data. First are the reported circulations of various types of periodicals, summarized in Table 1. In each of the classes of periodicals covered in the table only those journals are included for which fairly complete circulation reports are available in N. W. Ayer and Son’s Directory of Newspapers and Periodicals. The numbers of periodicals involved for the respective groups are as follows: popular scientific, 6; women’s, 24; news and opinion, 24;
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business and industrial, 78; social science, 13; and religious, 7. The shift of emphasis from religion to science is shown by comparing the percentages of the total circulations (based upon figures in Table 1) in selected years as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Popular scientific</td>
</tr>
<tr>
<td>1900</td>
<td>1.02</td>
</tr>
<tr>
<td>1925</td>
<td>4.39</td>
</tr>
<tr>
<td>1930</td>
<td>3.78</td>
</tr>
</tbody>
</table>

While popular scientific periodicals increased their proportion of the total circulation about four times, the circulation of Protestant religious periodicals decreased to about one-sixth of what it was in 1900. The comparative trends throughout the period are shown in Figure 2. 4

4 Circulation data from the early volumes of Ayer's Directory must be interpreted with caution. The data for 1930 consist almost entirely of sworn statements certified by the Audit Bureau of Circulations, but in 1900 almost all of the reported circulations were mere unsworn estimates provided by the publishers. Persons familiar with the subject have suggested that in order to approximate the true circulations at the earlier dates, the reported
RECENT SOCIAL TRENDS

The number of religious periodicals included in Table 1 is relatively small, but supplementary investigations along somewhat different lines confirm the trend. In the cities of New York, Philadelphia, Boston and Chicago, 114 periodicals with circulations of over 50,000 were published in 1900, having a total circulation of 19,480,000. Of this circulation 23.7 was credited to religious magazines. In 1930 the corresponding percentage was 4.4, representing a drop to less than one-fifth of the proportion at the start of the century. This corresponds closely with the drop shown in Table 1.5

"Pure" Versus Applied Science.—Coming to closer grips with the matter of science, it is necessary to discriminate somewhat arbitrarily between the discussions of "pure" science or the systematic development or organized knowledge pursued regardless of its immediate utility and those of applied science or the use of scientific methods and results to improve standards of living and develop such mechanical devices as moving pictures, airplanes and the radio. The line cannot, of course, be drawn with any certainty or rigidity but the data in Table 3 offer a suggestive contrast on this basis. These data were secured (as explained in a footnote earlier in this chapter) by counting the number of articles on the topics listed (including closely related subjects) as indexed in the various bound volumes of the Reader's Guide to Periodical Literature and dividing by the estimated number of thousands of entries on all subjects. Certain periodicals were excluded in order to insure comparability between the volumes.

The first group in the table has to do with science in general. It reached its peak about 1928 and then showed a definite decline as did the circulations of scientific magazines dealt with in Table 1. Indeed each of the first three subgroups in Table 3 shows a decline after 1928.

The second group isolates the subjects which most nearly approach pure scientific interests. This group, as a whole, had its peak in 1905-1099 estimates should be divided by an average exaggeration factor of 1.5. Suppose that the publishers of the various types of periodicals all exaggerated to about the same degree in 1900, and have all alike been forced closer to the truth in 1930. If exaggerations of that type were eliminated the only effect on the figures in Table 1 would be to increase somewhat the apparent rates of circulation growth, and the percentages in a given year would remain unaltered. Only if the religious circulations were more exaggerated in 1900 than the circulations of other groups, or the scientific circulations less exaggerated, would the conclusions graphed in Figure 2 be counteracted. In order to make out that the contrast there shown was due to false reports of circulations, it would be necessary to assume that the exaggeration factor used by the religious periodicals in 1900 was 20 times as great as that employed by the scientific periodicals, but that in 1930 they were equally reliable.

A more elaborate study along somewhat these same lines indicates that while Protestant religious periodicals decreased 24 percent in circulation from 1900 to 1930 and while Jewish periodicals decreased 68 percent, Catholic periodicals increased 161 percent. In this case all periodicals with reported circulations at each date were included. It may be that Catholic periodicals have, since 1900, adopted a policy of making fuller returns to Ayer's.
and sank after the war to levels between one-half and two-thirds as high. The drops in theoretical electricity and in laboratory psychology are particularly striking when compared with radio and mental tests.

**Table 3.—Trends in Applied and Pure Science, 1905–1930**

(Measured by the ratio of particular topics to all articles indexed in *Reader's Guide*)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Articles by topic per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>1.26</td>
</tr>
<tr>
<td>Scientific research</td>
<td>.31</td>
</tr>
<tr>
<td>Total, general</td>
<td>1.57</td>
</tr>
<tr>
<td>Anthropology</td>
<td>.27</td>
</tr>
<tr>
<td>Astronomy</td>
<td>.77</td>
</tr>
<tr>
<td>Botany</td>
<td>.71</td>
</tr>
<tr>
<td>Chemistry</td>
<td>.65</td>
</tr>
<tr>
<td>Electricity (theoretical and technical aspects)</td>
<td>4.57</td>
</tr>
<tr>
<td>Ethnology</td>
<td>.40</td>
</tr>
<tr>
<td>Geology</td>
<td>.87</td>
</tr>
<tr>
<td>Mathematics</td>
<td>.58</td>
</tr>
<tr>
<td>Paleontology</td>
<td>.73</td>
</tr>
<tr>
<td>Physics</td>
<td>.66</td>
</tr>
<tr>
<td>Laboratory psychology</td>
<td>.20</td>
</tr>
<tr>
<td>Zoology</td>
<td>.41</td>
</tr>
<tr>
<td>Other pure science titles</td>
<td>.06</td>
</tr>
<tr>
<td>Total, pure science</td>
<td>12.75</td>
</tr>
<tr>
<td>Educational research and experimentation</td>
<td>.21</td>
</tr>
<tr>
<td>Educational psychology</td>
<td>.14</td>
</tr>
<tr>
<td>Intelligence tests</td>
<td>.00</td>
</tr>
<tr>
<td>Other applications of psychology</td>
<td>.35</td>
</tr>
<tr>
<td>Industrial research</td>
<td>.03</td>
</tr>
<tr>
<td>U. S. Bureau of Standards</td>
<td>.03</td>
</tr>
<tr>
<td>Agricultural research</td>
<td>.06</td>
</tr>
<tr>
<td>Medical research</td>
<td>.06</td>
</tr>
<tr>
<td>Total, applied science</td>
<td>8.88</td>
</tr>
<tr>
<td>Radio</td>
<td>1.77</td>
</tr>
<tr>
<td>Other commercial applications of electricity</td>
<td>9.11</td>
</tr>
<tr>
<td>Automobiles</td>
<td>4.73</td>
</tr>
<tr>
<td>Aeronautics</td>
<td>4.68</td>
</tr>
<tr>
<td>Moving pictures</td>
<td>.33</td>
</tr>
<tr>
<td>Scientific management, efficiency, etc.</td>
<td>1.84</td>
</tr>
<tr>
<td>Total, commercial applications</td>
<td>22.46</td>
</tr>
</tbody>
</table>

*From the *Reader's Guide to Periodical Literature*. The time intervals employed in this and similar tables conform to the periods covered by the respective volumes of the *Guide*.

The third group consists of the available topics which most clearly involve direct applications of specific scientific research. In contrast with
the "pure science" group, these increased more than seven-fold between 1905–1909 and 1925–1928.

The fourth group covers certain commercial fields in which a phenomenal growth has been stimulated by scientific discoveries. In these topics, however, the scientific and research aspects are interwoven with derivative interest. While this group as a whole shows a peak in 1929–1930, each of the topics has had its independent trend. "Other commercial applications of electricity" covers such topics as electric railroads, electric lamps, the telegraph and the telephone, whose weaving into the culture fabric was going on in the latter part of the last century and the early part of this. In the last decade these innovations have been such thoroughly assimilated elements that relatively little popular discussion of them has been stimulated. Radio, on the other hand, suddenly emerged as a commercial and artistic possibility in the early 1920's and produced profound readjustments in our culture fabric, with an accompanying wave of discussion. The other topics have each had their own distinctive histories. To the list here given there might have been added the phonograph, the telephone, rayon and many other commercial applications of scientific discoveries.6

Intensive analysis by Mills and McGarraghy of articles and stories in seven leading general periodicals shows that there, as well as in the more "intellectual" magazines, it has been the immediately practical rather than the theoretical phases of sciences that have increasingly absorbed public attention. Indexes of attention in these two fields are given in Table 4. It should be noted that here as in the data of Table 3 pure research

6 Stuart Rice makes the following comment on the last section of Table 3: "The maximum attention in print given to the topic 'automobiles' appeared in the period 1915–1918. This was at the beginning of the period of most rapid extension of automobile ownership. But the maximum usage of automobiles undoubtedly occurred in 1929 and 1930. If the total volume of daily references to, and discussions of, automobiles could in some way be summarized, one would expect to find the maximum in the latter years. This public attention would, of course, apply to automobiles in use rather than, as in 1915–1918, to automobiles as new and innovative experience. One would be tempted, from this item alone, to hypothesize that the kind of attention which reaches print has its peak prior to the period of maximum adoption or utilization. The peak in 1910–1914 for the topic 'aeronautics' and in 1905–1909 for the topic 'other commercial applications of electricity' would appear to substantiate such an hypothesis. But it would scarcely be substantiated for 'radio' (peak in 1925–1928), and it is obviously inconsistent with 'moving pictures,' where the peak is in 1929–1930. In the case of the latter, it is apparent that different kinds of interest are involved. That is, the moving picture is a medium for developing and furthering interest and discussion of personalities. I should suspect that the articles on moving pictures have explicitly or implicitly their interest in personalities rather than in the motion picture as an institution or a mechanical device. In other words, an article on moving pictures is a different kind of an index of popular interest than an article on the automobile. The situations are partially comparable, but only to the extent that the public in a sense personifies the motor vehicle, regarding the fine points of a Buick or Ford in the same manner that it regards the hair, eyes or nose of its favorite actresses, as discussed in motion picture articles."
**ATTITUDES**

**Table 4.—Applied and Pure Science in Seven Mass Circulation Periodicals**

<table>
<thead>
<tr>
<th>Topics</th>
<th>Indexes of attention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1900</td>
</tr>
<tr>
<td>Applied research, factuality, etc.</td>
<td>0.9</td>
</tr>
<tr>
<td>Pure research, natural law, etc.</td>
<td>1.4</td>
</tr>
</tbody>
</table>

*These indexes were derived by dividing the number of attitude indicators in these subjects by the total number of thousands of attitude indicators noted in all topics in the issues studied. Indexes for each of the seven periodicals were calculated separately. The figures given are averages for all the periodicals.

**Table 5.—Partial Eclipse of Philosophical, Theoretical Psychological, and Psychiatric Interests, 1905–January, 1932**

(Measured by the ratio of articles indexed in *Readers Guide*)

<table>
<thead>
<tr>
<th>Item</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Philosophy</td>
<td>0.80</td>
</tr>
<tr>
<td>Logic</td>
<td>0.42</td>
</tr>
<tr>
<td>Pragmatism</td>
<td>0.35</td>
</tr>
<tr>
<td>Pessimism, optimism, time, knowledge, and other philosophical problems</td>
<td>0.63</td>
</tr>
<tr>
<td>Realism, idealism, vitalism and other philosophical viewpoints</td>
<td>0.49</td>
</tr>
<tr>
<td>Mysticism</td>
<td>0.07</td>
</tr>
<tr>
<td>Relativity; “Einstein Theory”; “Universe”; space and time</td>
<td>0.00</td>
</tr>
<tr>
<td>Matter</td>
<td>0.18</td>
</tr>
<tr>
<td>Humanism</td>
<td>0.05</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>3.60</td>
</tr>
<tr>
<td>Metaphysical aspects of psychology: personality, memory, instinct, imagination, fear, dreams, etc.</td>
<td>2.31</td>
</tr>
<tr>
<td>Insanity</td>
<td>0.90</td>
</tr>
<tr>
<td>Mental and nervous diseases, etc.</td>
<td>1.30</td>
</tr>
<tr>
<td>Psychoanalysis</td>
<td>0.00</td>
</tr>
<tr>
<td>Mental hygiene</td>
<td>0.04</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>2.24</td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td>8.15</td>
</tr>
</tbody>
</table>

*Where the distributions show definite bimodality, both maximums are in italics.

*The last column covers the cumulation covering July, 1931 to January, 1932 inclusive. This period is too short to provide any high degree of reliability, so that data given in this column should be interpreted with caution.
RECENT SOCIAL TRENDS

reached its lowest point in the middle rather than at the end of the period.

The decline of attention given to pure science is relative rather than absolute. The periodicals in which articles on science have been appearing have been expanding their circulations, often by leaps and bounds. But pure science has been getting a smaller and smaller fraction of this growing volume of attention. It is probable that the number of persons giving attention to pure science in their magazine reading has grown, but that the number of readers not attending to pure science has grown more rapidly.

**Philosophic Topics Have Passed through a Depression.**—The relative decline of attention devoted to pure science and to religion in magazine articles is allied to the partial eclipse of problems in the fields of philosophy, metaphysical psychology and psychiatry. Data on this subject are presented in Table 5.

The philosophical topics as a whole show a fairly consistent tendency toward peaks just before the war and during the year 1930–1931. The outstanding exceptions are pragmatism and mysticism which failed to recover at the second peak; humanism which rose suddenly in 1929–1930; and relativity, the maximum magazine discussion of which came in 1919–1921. With regard to pragmatism, it seems reasonable to suppose that it has not ceased to be discussed but rather that it has become assimilated into public thought to such an extent that special articles no longer appear on this subject. New philosophical terms, such as “instrumentalism” may have been substituted. The case of humanism appears to have been different. The 1929–1930 peak was the result of a complex of factors. At that time two kinds of humanism were being vigorously debated: literary humanism as propounded by Irving Babbitt and Paul Elmer More and religious humanism as conceived by such men as Charles Francis Potter and Curtis Reese. In addition there was some concern for so-called scientific humanism, proletarian humanism based on Marxian doctrines and the traditional humanism of the Renaissance. This gloss serves to underline the important fact that seemingly simple tables may mask really complex movements in public discussion.

“Personality” and allied psychological topics followed a discussion trend closely similar to that of the psychiatric topics. Among the psychiatric topics, the declining discussion of insanity and the rising interest in mental hygiene reflect the shift from the attempt to provide a suitable asylum or refuge for the mentally afflicted to the attempt to prevent and remedy mental maladjustments.7

7 For a discussion of changing concepts regarding the mentally handicapped, see Chaps. XXIV and XV.
ATTITUDES

In the seven mass circulation magazines analyzed by Mills and McGarraghy interest in philosophy and logic also dropped after the war to a level consistently lower than half the height shown in 1900.

II. CHANGES IN RELIGIOUS INTERESTS AND ATTITUDES AS REFLECTED IN BOOKS AND MAGAZINES

The fact that attention devoted to religion in periodicals has declined relative to the amount of attention given to other interests, and particularly as compared with that devoted to popular science, has already been indicated in connection with the reported circulations of various groups of periodicals, as summarized in Table 2 and the relevant text. Regional analysis of changes in the circulations of different classes of periodicals indicates that religious journals published in the eastern states, bordering on the Atlantic coast, have lost in circulation most heavily as compared with other types of periodicals, while the religious papers published in

Table 6.—Religious Books: Trends in Subject Matter, 1903–31
(Measured by ratios of titles to all non-fiction books indexed by subject in the U. S. Catalog)

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>47.7</td>
<td>31.6</td>
<td>30.2</td>
<td>35.8</td>
<td>44.0</td>
<td>59.7</td>
</tr>
<tr>
<td>Bible (all phases)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Future life: heaven, hell, immortality, salvation, resurrection, soul</td>
<td>19.7</td>
<td>11.0</td>
<td>10.6</td>
<td>12.5</td>
<td>13.4</td>
<td>10.5</td>
</tr>
<tr>
<td>Churches and ministers</td>
<td>2.1</td>
<td>1.5</td>
<td>1.0</td>
<td>1.3</td>
<td>1.8</td>
<td>1.3</td>
</tr>
<tr>
<td>Fundamentalism, modernism, creeds, dogmas, sacraments, theology</td>
<td>4.6</td>
<td>3.9</td>
<td>3.2</td>
<td>3.7</td>
<td>3.4</td>
<td>3.4</td>
</tr>
<tr>
<td>Revivals and evangelism</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jesus Christ (all phases)</td>
<td>5.3</td>
<td>3.5</td>
<td>2.9</td>
<td>3.8</td>
<td>4.4</td>
<td>6.0</td>
</tr>
<tr>
<td>Church unity and cooperation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worship and church services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Religion (in general)</td>
<td>2.0</td>
<td>1.5</td>
<td>1.1</td>
<td>1.7</td>
<td>1.1</td>
<td>1.3</td>
</tr>
<tr>
<td>Church—aesthetic aspects</td>
<td>.6</td>
<td>.9</td>
<td>.7</td>
<td>.7</td>
<td>.7</td>
<td>.6</td>
</tr>
<tr>
<td>Missions and missionaries</td>
<td>3.9</td>
<td>3.6</td>
<td>3.0</td>
<td>3.5</td>
<td>4.0</td>
<td>5.1</td>
</tr>
<tr>
<td>Prayer</td>
<td>.6</td>
<td>.6</td>
<td>.6</td>
<td>.7</td>
<td>.9</td>
<td>1.1</td>
</tr>
<tr>
<td>Religion and science</td>
<td>.9</td>
<td>.2</td>
<td>.2</td>
<td>.7</td>
<td>1.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Christian life</td>
<td>2.0</td>
<td>1.3</td>
<td>1.5</td>
<td>1.0</td>
<td>1.6</td>
<td>2.2</td>
</tr>
<tr>
<td>Spiritual life</td>
<td>.3</td>
<td>.4</td>
<td>.3</td>
<td>.5</td>
<td>1.0</td>
<td>1.4</td>
</tr>
<tr>
<td>God</td>
<td>.7</td>
<td>.4</td>
<td>1.0</td>
<td>.9</td>
<td>1.2</td>
<td>1.1</td>
</tr>
<tr>
<td>Christianity</td>
<td>1.1</td>
<td>1.2</td>
<td>1.7</td>
<td>2.5</td>
<td>2.2</td>
<td>2.0</td>
</tr>
</tbody>
</table>

a This is not a complete analysis of all religious topics. Names of the various sects, religions and denominations (too numerous to be covered in the time available) have been omitted.

b Because of limited time and the nature of the source material, it has not been practicable to assemble data for the years 1906–1911 and 1927–1929.

c The 1918–1921 volume ends with June, 1921.

Compare with discussion of religious attitudes and beliefs in Chap. XX.
RECENT SOCIAL TRENDS

the far west have grown a little more rapidly than other types of periodicals published in that region. For the country as a whole, however, three different methods of investigation all indicate that Protestant periodicals have dropped to about one-fifth as large a proportion of the total circulation of all magazines as they held in 1900.

Decline in the Proportion of Books on Religion.—Religious book titles, per thousand indexed in the U. S. Catalog, are summarized in Table 6. For the totals, the main highest point was in 1903–1905, and the lowest point in 1918–1921. The entire period from 1912 to 1921 was very low in religious interest as reflected in book publication.

The sub-topics are arranged in the descending order of net losses, and ascending order of net gains, from 1903 to 1931. The greatest loss occurred in the publication of the Bible, its parts, and books about it. This loss occurred, however, in the early part of the period. The present figure of 10.9 is approximately the average for 1912–21. The Fundamentalist controversy was associated with a revival of publication in the Bible field, but this has died down again. Another very heavy loss has occurred in discussion of the future life and allied topics.

Marked gains in the proportionate number of books published have occurred with respect to prayer, religion and science, the spiritual life, God and Christianity.

Decline in the Proportion of Articles on Religion.—Among magazine articles indexed in the Reader's Guide to Periodical Literature the curve of attention to religious subjects is somewhat similar to that of books as shown in Table 6. The magazine index was at its height in 1905–1909, when 21.4 religious articles per thousand indexed were recorded. This number sank continuously until it was 11.0 in 1922–1924. The Fundamentalist agitation brought a rise to 14.6 in 1925–1928, but the index fell off again to 10.7 in 1930–1931. Both the book and the magazine curves have their maximum in the earliest period, have a low point after the World War and show a partial recovery in 1925–1928. The proportion of religious articles was about half that of religious books in 1905; by 1930 it had fallen to one-fourth, due to the sharper decline of the magazine article curve. While religious books were at a higher level in 1930 than during the period 1911–1922, religious articles had fallen to a lower proportion than at any period since 1905.

An independent study of changes in the proportion of religious magazine articles indexed in the Reader's Guide was made by Mary Frost Jessup under the direction of C. Luther Fry. Instead of assuming, as was done in the present study, that duplications of entries under various categories would cancel out, Miss Jessup made a card catalog of the religious articles and eliminated duplicates. In spite of this difference of
method she found the same general trend as that indicated in the figures just presented.

She also sorted her cards by individual periodicals and made an important discovery. The *Outlook* and the *Independent* published 388 religious articles in 1910–1912 or nearly one-fourth of all those which Miss Jessup indexed from 69 leading periodicals in that period. But both of these preeminent religious weeklies rapidly lost circulation and at the same time decreased their religious articles. In 1928 they merged, but the combination in 1930 carried less than one-third the number of religious articles the *Outlook* alone had published in 1910. Meanwhile the *Atlantic Monthly, Forum* and *Literary Digest*, all of which were gaining circulation were at the same time increasing the number of their religious articles. At least for these five periodicals, therefore, the number of different articles published has not been a reliable index of the total number of copies of religious articles circulated.

To allow for the influence of this factor the number of copies of religious articles per 1,000 copies of the periodicals involved was calculated for 21 magazines. The periodicals had a combined circulation of 16,000,000 in 1930. The method of calculating the index was as follows. In 1905–1909 there were printed, counting all the issues of every magazine, an average of about 90,639,000 copies of these 21 periodicals per year.

Table 7.—Religious Articles per Thousand Circulated Copies of 21 Specified Magazines, 1905–1932

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Church work in women's magazines</td>
<td>171</td>
<td>129</td>
<td>110</td>
<td>56</td>
<td>66</td>
<td>80</td>
<td>83</td>
<td>79</td>
<td>86</td>
</tr>
<tr>
<td>Bible</td>
<td>81</td>
<td>36</td>
<td>17</td>
<td>25</td>
<td>72</td>
<td>73</td>
<td>81</td>
<td>23</td>
<td>4</td>
</tr>
<tr>
<td>Spiritual life, prayer, etc.</td>
<td>6</td>
<td>13</td>
<td>120</td>
<td>34</td>
<td>19</td>
<td>23</td>
<td>7</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>Ethical aspects of religion</td>
<td>15</td>
<td>29</td>
<td>21</td>
<td>52</td>
<td>62</td>
<td>29</td>
<td>42</td>
<td>41</td>
<td>50</td>
</tr>
<tr>
<td>Missions and revivals</td>
<td>25</td>
<td>25</td>
<td>68</td>
<td>37</td>
<td>24</td>
<td>34</td>
<td>41</td>
<td>50</td>
<td>23</td>
</tr>
<tr>
<td>Christianity</td>
<td>11</td>
<td>9</td>
<td>16</td>
<td>8</td>
<td>24</td>
<td>36</td>
<td>45</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td>Fundamentalism-modernism</td>
<td>8</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>23</td>
<td>31</td>
<td>3</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Religion and science; God</td>
<td>5</td>
<td>6</td>
<td>12</td>
<td>2</td>
<td>44</td>
<td>37</td>
<td>26</td>
<td>48</td>
<td>0</td>
</tr>
<tr>
<td>Aesthetic aspects of religion</td>
<td>7</td>
<td>7</td>
<td>28</td>
<td>8</td>
<td>11</td>
<td>8</td>
<td>5</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Jesus Christ</td>
<td>12</td>
<td>3</td>
<td>24</td>
<td>4</td>
<td>18</td>
<td>81</td>
<td>31</td>
<td>48</td>
<td>25</td>
</tr>
<tr>
<td>Roman Catholicism</td>
<td>17</td>
<td>27</td>
<td>32</td>
<td>24</td>
<td>19</td>
<td>38</td>
<td>15</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>Churches and ministers (in other than women's magazines)</td>
<td>52</td>
<td>113</td>
<td>94</td>
<td>153</td>
<td>113</td>
<td>183</td>
<td>117</td>
<td>89</td>
<td>117</td>
</tr>
</tbody>
</table>

* Indexed in the Reader's Guide.

9 Literary Digest, American, Collier's, Delineator, Good Housekeeping, Ladies' Home Journal, Woman's Home Companion, Atlantic Monthly, Forum, Nation, Survey, Century, Harper's Monthly, Review of Reviews, Scribner's, Outlook, Architectural Record, Arts and Decorations, International Studio, Étude and Musician. It should be noted that these magazines are not at all on the same "intellectual" plane.

[399]
During that period the *Outlook* published an average of 43 religious articles per year, circulating approximately 110,000 copies of each or a total of 4,730,000 copies of religious articles per year.\textsuperscript{10} The *Survey* printed about 10,000 copies of each of 5.8 religious articles per year or 58,000 copies in all. Similar calculations for the other 19 journals bring the total up to 37,138,000 copies of religious articles per year in the 1905–1909 period or 410 per thousand copies of the periodicals involved. Details are given in Table 7.

This weighted index of the attention given to religious matters in leading periodicals had its peak in 1925–1928, when the Fundamentalism controversy was raging. Its low point is in 1931–1932; during the twelve months ending in June, 1932, the volume of religious discussion in these periodicals was 24 percent lower than at any time previous to 1930 since 1905.

The heaviest loss has been the disappearance of church interests from the women’s magazines. Next has been the decline of discussion of the Bible, which during the two years 1930–1932 received just about one-fifth as much magazine attention as from 1905–1909. The greatest gain has been in discussion of churches and ministers in other than women’s magazines. On analysis, this is found to have occurred exclusively in the *Literary Digest*. Other marked increases have to do with Jesus Christ and with Roman Catholicism.

The weighting used in Table 7 subordinates the importance of periodicals such as the *Atlantic Monthly*, the *Forum*, the *Nation* and the *Survey*, and emphasizes the trends shown in the *Literary Digest* and other periodicals which have risen to circulations measured in millions. In order to measure shifts of attention in “intellectual” periodicals with more restricted circulations, the *Literary Digest*, *American*, *Collier’s* and women’s magazines were removed from the group covered in Table 7, and the number of copies of religious articles per thousand copies of the periodicals were re-calculated on the basis of the more restricted group. The results appear in Table 8.

Here, as in the mass circulation magazines, the peak of discussion came during and just after the Fundamentalism controversy. Since then, as with the mass circulation group, the volume of attention has dropped lower than in 1905–1918. But whereas 1931–1932 was a new low for the mass circulation group, the “intellectual” group shows a definite recovery to a point 35 percent higher than in 1919–1921.

Jesus has lost instead of gained attention in this group. The Bible, as in the mass circulation group, showed some recovery in 1931–1932, but still

\textsuperscript{10} Strictly speaking, what has been used is not the number of articles but the number of *Reader’s Guide* entries. The term “entry” in this part of the study was redefined, so that each article in a series counted as one entry, and articles printed in two different magazines counted as two entries.
TABLE 8.—Religious Articles per Thousand Circulated Copies, 1905–1932, in the Atlantic, Forum, Nation, Survey and Ten Other “Intellectual” Magazines

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Churches and ministers</td>
<td>130</td>
<td>165</td>
<td>114</td>
<td>82</td>
<td>50</td>
<td>136</td>
<td>150</td>
<td>45</td>
<td>84</td>
</tr>
<tr>
<td>Jesus</td>
<td>33</td>
<td>0</td>
<td>86</td>
<td>12</td>
<td>24</td>
<td>92</td>
<td>44</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Bible</td>
<td>40</td>
<td>55</td>
<td>16</td>
<td>7</td>
<td>30</td>
<td>15</td>
<td>5</td>
<td>6</td>
<td>22</td>
</tr>
<tr>
<td>Fundamentalism-modernism</td>
<td>14</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>25</td>
<td>27</td>
<td>5</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>Spiritual life; prayer</td>
<td>14</td>
<td>25</td>
<td>27</td>
<td>14</td>
<td>17</td>
<td>25</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Christianity</td>
<td>34</td>
<td>21</td>
<td>23</td>
<td>14</td>
<td>17</td>
<td>70</td>
<td>26</td>
<td>27</td>
<td>22</td>
</tr>
<tr>
<td>Missions and revivals</td>
<td>27</td>
<td>18</td>
<td>59</td>
<td>1</td>
<td>21</td>
<td>28</td>
<td>12</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Roman Catholicism</td>
<td>30</td>
<td>28</td>
<td>19</td>
<td>12</td>
<td>23</td>
<td>109</td>
<td>84</td>
<td>28</td>
<td>36</td>
</tr>
<tr>
<td>Religion and science; God</td>
<td>15</td>
<td>31</td>
<td>14</td>
<td>10</td>
<td>18</td>
<td>44</td>
<td>95</td>
<td>38</td>
<td>22</td>
</tr>
<tr>
<td>Aesthetic aspects</td>
<td>20</td>
<td>18</td>
<td>10</td>
<td>4</td>
<td>16</td>
<td>63</td>
<td>69</td>
<td>34</td>
<td>28</td>
</tr>
<tr>
<td>Ethical aspects of religion</td>
<td>39</td>
<td>84</td>
<td>24</td>
<td>26</td>
<td>23</td>
<td>23</td>
<td>18</td>
<td>18</td>
<td>47</td>
</tr>
</tbody>
</table>

The Bible Receives Less than Half the Attention It Had Twenty-Five Years Ago.—Among readers of periodicals and books the relative attention given the Bible has fallen notably during the past quarter century. In Table 6 it is shown that of all the books classified by subject in the United States Catalog in 1903–1905, 19.7 per thousand were about the Bible; in 1931 only 10.9 per thousand were on that subject. Among articles indexed by subject in the Reader’s Guide 1.9 per thousand were about the Bible in 1905–1909, while only 0.5 per thousand were on that subject in 1929–1930 and only 0.4 in 1930–1931. The weighted indexes in Tables 6 and 7 show even larger net reductions, but wider fluctuations. In Table 7, it should be noted that the peak is in 1929–1930.

Not only have the proportions of books and of articles shown declines between 1905–1909 and 1930–1932 of 44 to 80 percent in the relative attention given the Bible, but both books and articles showed marked recoveries in 1923 to 1926 with subsequent drops which established new low points in 1930. These humps on the curves are easily understood when the proportions of books and articles on Fundamentalism, Modernism, creeds, dogmas, sacraments and theology are examined. Both for books and for articles these subjects reached their highest proportion of attention in the period including 1925—the year in which John Scopes was tried at Dayton, Tennessee, on the charge of having taught evolution in violation of the state law on the subject. The trial was, of course, merely one climactic episode in a protracted controversy. Revivals of discussion, both of Fundamentalism and the Bible, came earlier in the magazine than in
the book data. It seems probable, then, that the temporary revival of interest in the Bible was related to the Fundamentalist controversy, though presumably other elements entered in.

When the unweighted data are compared with the indexes weighted according to circulation it is found that the bulge of interest in the Bible during and immediately after the Fundamentalist controversy was largely a popular phenomenon, probably due to the advertising value of a spectacle. Serious scholarly interest declined more sharply and showed less recovery and more relapse. From scholarly periodicals (including the Biblical Review, Biblical World, Bibliotheca Sacra, American Journal of Theology, American Journal of Semitic Languages and the Journal of Religion) "Bible" entries in the Reader's Guide and the International Index averaged 75 per year in 1905-1909; while in 1929-1931 they averaged only 17 per year.

Declining Approval of Organized Christianity.—Table 7 shows that interest in church work, as reflected in articles in women's magazines, dropped from the largest single aspect of religious attention in 1905-1909 to zero in 1931-1932. This may have resulted in part from declining general prestige of the church as an institution. It should be borne in mind, however, that under the patriarchal form of family life, which prevailed until very recently in Euro-American civilization, women were largely excluded from political, business and professional activities. One major outlet for their executive, creative and social energies was found in the church. In recent years the general adoption of woman suffrage, the rapid extension of higher education among women and the greatly increased admission of women to business and professional positions have provided outlets which have, perhaps, absorbed energies formerly devoted to church work. In addition to these factors one might suggest the possible effects of moving pictures, radio, and automobile driving as substitutes for the entertainment activities formerly provided by the churches, and the development of organized recreation under secular auspices.

In contrast with the swift disappearance of church interest from women's periodicals, discussion of ministers and churches in other periodicals, as summarized in Table 7, reached its maximum amount in 1925-1928 and was twice as high in 1931-1932 as in 1905-1909. But a large volume of discussion does not necessarily mean a high degree of approval. In order to appraise social attitudes correctly, it is necessary to obtain objective indexes of approval or disapproval as well as of attention. With that in view, representative articles on religion from the years 1905, 1930 and 1930 were selected and a systematic record was made of indications in them of approving and disapproving attitudes.11

11 The periodicals involved, with the years from which articles were used, were as follows: American Magazine, 1930; American Mercury, 1930; Arena, 1905; Atlantic, 1930; Century,
ATTITUDES

In analyzing these articles careful record was kept of every indication of favorable or unfavorable attitudes toward each of 148 different concepts or values related to religion. Toward the church and ministers there were recorded 131 indications of favorable attitudes and 83 of unfavorable in 1905; the corresponding figures in 1920 were 38 favorable and 109 unfavorable; and in 1930, 22 favorable and 90 unfavorable were recorded. The percentages of the attitude indicators which were favorable to the church and ministers were therefore 61 percent in 1905, 26 percent in 1920 and 20 percent in 1930. Taking the samples for the years 1920 and 1930, together, 21 impartially selected articles in 17 periodicals were analyzed; in these articles only 60 expressions of attitudes favorable to churches and ministers were found, while 199 indicators of unfavorable attitudes were noted.

Closely related to the attitudes just discussed have been those toward the divinity of Jesus, the inspiration of the Bible, life beyond death, creeds, dogmas, theology, atonement, baptism, Christianity, Sunday school, evangelism and missions. On these topics, 282 favorable and only 35 unfavorable indications of attitude were noted in 1905; 125 favorable and 37 unfavorable in 1920; and 58 favorable and 76 unfavorable in 1930, resulting in the following percentages of favorable attitudes: 1905, 59; 1920, 77; and 1930, 43. Here, as in the case of ministers and the church, more unfavorable than favorable reactions were recorded in 1930.

Table 9.—Traditional Christianity, 1905–1930
(Approval and disapproval in representative articles selected impartially from Reader’s Guide periodicals)

<table>
<thead>
<tr>
<th>Item</th>
<th>1905</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approving attitude indicators</td>
<td>413</td>
<td>163</td>
<td>80</td>
</tr>
<tr>
<td>Disapproving attitude indicators</td>
<td>118</td>
<td>146</td>
<td>166</td>
</tr>
<tr>
<td>Total</td>
<td>531</td>
<td>309</td>
<td>246</td>
</tr>
<tr>
<td>Percent approving</td>
<td>78</td>
<td>53</td>
<td>33</td>
</tr>
</tbody>
</table>

In Reader’s Guide periodicals, as thus sampled, the infallible Bible, traditional creeds, church organization and the propagation of organized Christianity have dropped from relatively high favor into a state of being severely criticized and opposed. This group of concepts will hereafter be referred to in brief as “traditional Christianity.”

1920 and 1930; Commonweal, 1930; Contemporary (reprinted in Living Age), 1905 and 1920; Forum, 1920 and 1930; Harper’s Monthly, 1905 and 1930; Harper’s Weekly, 1905; Independent, 1905 and 1920; International Quarterly, 1905; Ladies’ Home Journal, 1905 and 1920; New Republic, 1920; North American, 1905; Outlook, 1905, 1920 and 1930; Scrivner’s, 1930; Survey, 1930; Unpartisan Review, 1920; World Outlook, 1920; World Today, 1905; World’s Work, 1930. The method of sampling Reader’s Guide periodicals for this intensive analysis was devised purely with a view to securing representative samples of articles indexed under the chief religious topics.
RECENT SOCIAL TRENDS

When all the above attitude indicators relating to traditional Christianity are combined, the data presented in Table 9 are obtained.

The downward trend of the prestige of traditional Christianity has been confirmed by analysis of several sets of samples independent of the set just cited. Two of these were based on analysis of representative numbers of the *American*, *Collier's*, *Cosmopolitan*, *Ladies' Home Journal*, *Literary Digest*, *Saturday Evening Post* and *Woman's Home Companion*, conducted by Mills and McGarraghy under the writer's direction. The findings of the independent studies made by these two investigators agree that the ratio of approval of belief in the Bible, a future life, the divinity of Jesus, creeds, dogmas, Christianity, the church, the Y. M. C. A. and missions declined radically between 1900 and 1930. The data are summarized in Table 10.

Table 10.—Traditional Christianity in Huge Circulation Magazines, 1900–1930
(Approval and disapproval as shown in representative numbers analyzed by Mills and McGarraghy)

<table>
<thead>
<tr>
<th>Analyst</th>
<th>1900</th>
<th>1913</th>
<th>1918</th>
<th>1920</th>
<th>1925</th>
<th>1928</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mills:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approving attitude indicators</td>
<td>146</td>
<td>46</td>
<td>92</td>
<td>124</td>
<td>24</td>
<td>23</td>
<td>41</td>
</tr>
<tr>
<td>Disapproving attitude indicators</td>
<td>41</td>
<td>8</td>
<td>0</td>
<td>24</td>
<td>38</td>
<td>18</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td>187</td>
<td>54</td>
<td>92</td>
<td>148</td>
<td>70</td>
<td>41</td>
<td>76</td>
</tr>
<tr>
<td>Percent approving</td>
<td>78</td>
<td>85</td>
<td>100</td>
<td>84</td>
<td>46</td>
<td>66</td>
<td>54</td>
</tr>
<tr>
<td>McGarraghy:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approving indicators</td>
<td>212</td>
<td>83</td>
<td>201</td>
<td>110</td>
<td>207</td>
<td>50</td>
<td>27</td>
</tr>
<tr>
<td>Disapproving indicators</td>
<td>0</td>
<td>1</td>
<td>7</td>
<td>6</td>
<td>46</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>212</td>
<td>84</td>
<td>208</td>
<td>119</td>
<td>253</td>
<td>50</td>
<td>38</td>
</tr>
<tr>
<td>Percent approving</td>
<td>100</td>
<td>99</td>
<td>97</td>
<td>95</td>
<td>82</td>
<td>100</td>
<td>71</td>
</tr>
<tr>
<td>Both:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approving indicators</td>
<td>353</td>
<td>129</td>
<td>292</td>
<td>243</td>
<td>239</td>
<td>75</td>
<td>68</td>
</tr>
<tr>
<td>Disapproving indicators</td>
<td>41</td>
<td>9</td>
<td>7</td>
<td>30</td>
<td>84</td>
<td>13</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>394</td>
<td>138</td>
<td>300</td>
<td>273</td>
<td>323</td>
<td>88</td>
<td>114</td>
</tr>
<tr>
<td>Percent approving</td>
<td>90</td>
<td>93</td>
<td>98</td>
<td>89</td>
<td>74</td>
<td>85</td>
<td>60</td>
</tr>
</tbody>
</table>

The last line in Table 10 shows the analysis of Mill's and McGarraghy's data combined. It will be noted that the percentage of approving indicators among those noted for traditional Christian concepts rose to its maximum in 1918 and fell to its minimum in 1930. The trend of the curve is consistent with that shown in Table 9, but the mass circulation periodicals reflect consistently more favorable attitudes toward religion than those shown in the magazines of opinion having more restricted circulation.

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The rise from 1900 to 1918 arrests attention. Reference to Table 2 shows that the combined circulations of the religious periodicals there covered also rose during this period and this is true also when the total of reported religious circulations in Ayer's are analyzed: a rise from 10,827,000 in 1900 to 16,693,000 in 1920 is recorded. Church memberships per thousand of population increased from 219 in 1906 to 232 in 1916 and then rose very slowly to 234 in 1929, falling to 232 in 1930. The increased ratio of approval in mass circulation magazines from 1900 to 1918 is therefore consistent with other data.

While the conclusions of the two investigators, taken each by itself, are less reliable than the combination, the trends are similar. Both show the lowest points in 1925 and 1930; both show higher average levels in the first three than in the last three years studied. McGarraghy's data are consistently more favorable to traditional Christianity than are Mills', in spite of the fact that the former included in his group of four periodicals Collier's and the American—the least religious in their attitude indicators of all the seven analysed. (It should be noted that McGarraghy is a Catholic and Mills a Protestant.)

The indexes just cited were worked out before the method of weighting by circulations had been developed. The contrast between the huge circulation and the general Reader's Guide sample suggested the desirability of checking the above conclusions by a fresh inquiry, using a new sample containing only "intellectual" periodicals which have had fairly continuous gains in circulation. The available periodicals fulfilling these requirements proved to be the Atlantic Monthly, World's Work, and the Survey. The periods 1912–1914, 1927 and 1931 were selected and two articles each from the Atlantic and the Survey and one from World's Work for each of the three periods, indexed under "Christianity," "Church," "Ministers of the Gospel" or "Missions," were selected.

<table>
<thead>
<tr>
<th>Item</th>
<th>1912–1914</th>
<th>1927</th>
<th>1931</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approving attitude indicators</td>
<td>140</td>
<td>75</td>
<td>23</td>
</tr>
<tr>
<td>Disapproving attitude indicators</td>
<td>104</td>
<td>207</td>
<td>103</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>282</td>
<td>126</td>
</tr>
<tr>
<td>Percent approving</td>
<td>57</td>
<td>27</td>
<td>18</td>
</tr>
</tbody>
</table>

12 Supporting data will be found as follows: U. S. Bureau of Foreign and Domestic Commerce, Statistical Abstract of the United States, 1930, pp. 3 and 62; Scripps Foundation Population Estimates (Mimeographed, no date); American Journal of Sociology, 1931, vol. 36, p. 1039; Literary Digest, May 5, 1928, vol. 97, pp. 30–1; May 9, 1931, vol. 109, p. 22. For further discussion of religious attitudes, see Chap. XX.
purely on the basis of length, chronological scatter and other impartial considerations. The data summarized in Table 11 were derived from these 15 articles.

A composite tabulation of the results derived from the general Reader's Guide sample shown in Table 9 and the results from the “strictly intellectual” sample shown in Table 11, is as follows:

<table>
<thead>
<tr>
<th>Years</th>
<th>General sample</th>
<th>“Strictly intellectual” sample</th>
<th>Years</th>
<th>General sample</th>
<th>“Strictly intellectual” sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905</td>
<td>78</td>
<td>..</td>
<td>1927</td>
<td>..</td>
<td>27</td>
</tr>
<tr>
<td>1912–1914</td>
<td>..</td>
<td>57</td>
<td>1930</td>
<td>..</td>
<td>33</td>
</tr>
<tr>
<td>1920</td>
<td>53</td>
<td>..</td>
<td>1931</td>
<td>..</td>
<td>18</td>
</tr>
</tbody>
</table>

If separate trend lines be drawn through the points indicated on charts by each of these two samples, it will be found that the two trends are practically parallel, but that the “strictly intellectual” group shows consistently lower values at corresponding dates thus emphasizing further the conclusions already pointed out.

Somewhat in contrast with the above results are findings obtained by analyzing for each of the years 1914, 1927 and 1931, 12 articles from the Literary Digest of the types used in connection with Table 11, and for the year 1906, 6 such articles. The data are shown in Table 12.

**Table 12.—Approval and Disapproval of Traditional Christianity**
(In 42 representative articles from the Literary Digest for 1906, 1914, 1927 and 1931)

<table>
<thead>
<tr>
<th>Item</th>
<th>1906</th>
<th>1914</th>
<th>1927</th>
<th>1931</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approving attitude indicators</td>
<td>91</td>
<td>275</td>
<td>219</td>
<td>196</td>
</tr>
<tr>
<td>Disapproving attitude indicators</td>
<td>59</td>
<td>261</td>
<td>302</td>
<td>114</td>
</tr>
<tr>
<td>Total</td>
<td>150</td>
<td>336</td>
<td>521</td>
<td>310</td>
</tr>
<tr>
<td>Percent approving</td>
<td>61</td>
<td>51</td>
<td>42</td>
<td>63</td>
</tr>
</tbody>
</table>

Evidence from the Literary Digest thus shows a downward slope consistent with that of the other samples from 1906 to 1927, but then exhibits a unique and sharp upturn. It will be remembered that the volume of attention to church matters in the Digest also increased in 1931–1932.

If the percentages of approving attitudes toward traditional Christianity shown in tables 9 to 12 inclusive are plotted in four charts, one for each table, and if the points in these charts are connected by straight lines, and if, further, the values for the years indicated below are then
ATTITUDES

read off from the four charts and averaged, the following composite values, indicating approval of the church, ministers, creeds, etc., result:13

<table>
<thead>
<tr>
<th>Year</th>
<th>Approving</th>
<th>Year</th>
<th>Approving</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905</td>
<td>77</td>
<td>1920</td>
<td>58</td>
</tr>
<tr>
<td>1910</td>
<td>71</td>
<td>1925</td>
<td>48</td>
</tr>
<tr>
<td>1915</td>
<td>65</td>
<td>1931</td>
<td>40</td>
</tr>
</tbody>
</table>

In view of the general consistency of the findings from the various samplings, these figures may be taken as an approximate summary of the trend of attitudes expressed in magazines toward traditional religion.

In addition to the data just summarized, confirmation of the downward trend of religious interest and approval has come from two other investigations. The first is a study of attitudes revealed by the characteristics of heroes, heroines, villains and villainesses in magazine fiction and the second a study of motion pictures. Eleven students of sociology at Bryn Mawr14 under the direction of the writer recorded the characteristics of the characters who were obviously approved or disapproved by the writers in short stories selected at random from magazine sources. The moving pictures were selected by the students from February to May, 1932.15

The favorable and unfavorable attitude indicators toward traditional Christianity as defined above, per 1,000 noted, were as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Approving</th>
<th>Disapproving</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900-1905, magazines</td>
<td>65</td>
<td>26</td>
</tr>
<tr>
<td>1931-1932, magazines:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intellectual</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td>Mass circulation</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Women's</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td>Sensational</td>
<td>25</td>
<td>5</td>
</tr>
<tr>
<td>1932, moving pictures</td>
<td>21</td>
<td>10</td>
</tr>
</tbody>
</table>

In each of the 1931-1932 groups of magazines indications of attitudes favorable to the church, ministers, the Bible and traditional Christianity

13 The composite values given above tend to emphasize the trends in the so-called intellectual periodicals because the trends in these periodicals were more marked. These values do not take into consideration the size of the circulation.


15 The sources studied and the number of story analyses turned in by the students are as follows:

1900-1905 issues: Atlantic, 25; Century, 20; Harper's Monthly, 31; McClure's, 19; Scribner's, 14; total for group, 109 analyses, covering 94 different stories. Total of attitude indicators recorded, 737.

1931-1932 issues: "Intellectual"—American Mercury, 8; Atlantic, 34; Harper's, 45; Scribner's, 14; total for group, 101 covering 52 stories. Total attitude indicators recorded, 557. "Mass circulation"—American, 20; Collier's, 20; Cosmopolitan, 45; Saturday Evening Post, 18; total for group, 103 covering 71 different stories. Total attitude indicators recorded, 758. Women's—Delineator, 6; Good Housekeeping, 18; Ladies' Home Journal, 25; McCall's, 20; Pictorial Review, 18; Woman's Home Companion, 18; total for the group, 105 covering 68 different stories. Total attitude indicators recorded, 882. Sensational Fiction—
in general had a frequency only a fraction as great as in 1900–1905. Unfavorable attitudes were indicated less frequently also but the per centage of unfavorable indicators had increased from 29 percent in 1900–1905 to 32 percent in the mass circulation and women’s magazines and to 61 percent in the intellectual magazines in 1931–1932. Here, as in other investigations, the greatest antagonism to traditional Christianity is found in the magazines circulating in the more highly educated classes. The sensational magazines of 1931–1932 were relatively less antagonistic to religion than the standard magazines of 1900–1905.

Another study of sensational magazines was carried out with the assistance of Mills and McGarraghy. They noted a total of 17,493 attitude indicators in selected numbers of Red Book, True Stories, Action Stories and Popular Magazine for the years 1925 and 1930. Among these only 83 related to the Bible, creeds, the church and the like, but 82 of these indicated approving attitudes as against 1 disapproving, confirming the previous conclusion that the all-fiction types of magazines are more conservative religiously than the mass circulation magazines of opinion and the intellectual periodicals.

The Rise of “Open Minded Religion.”—While traditional Christianity has been sinking to a new low point in public interest and esteem as expressed in magazines, certain religious topics and concepts have in recent years reached new high levels of attention and approval. Analysis of Tables 6, 7 and 8 shows that the topics “God” and “Religion and Science” (or these two combined) received more relative attention in the latest volume analysed than in the earliest. Books and articles on these topics have been relatively on the increase. Certain other topics have shown gains more frequently than losses, or have suffered relatively minor losses as compared with the topics grouped under the “traditional Christianity” caption. Among these relatively vigorous and persistent religious topics have been prayer, worship, spiritual life, Jesus Christ, the church and social problems, and ethical aspects of religion. In general, it may be said that the topics which have suffered the smallest losses of attention, or which have actually shown net gains, have been related to aspects not in direct conflict with science and not enmeshed in eclesi-asticism, but based on personal religious experience and involving applications of the “social gospel” to economic problems. For want of a better term, this group of topics will be referred to under the caption of “open minded religion.”

All-Story and Munsey’s Love Stories, 4; Breezy Stories, 3; Love Romances, 5; Illustrated Love Magazine, Love, Real Love and Love Story, 15; Screen Romances, 3; True Confessions, 11; True Story, 12; Liberty, 8; total for the group, 61 covering 57 different stories. Total attitude indicators noted, 558. Moving pictures—49 analyses covering 33 different moving picture plays.

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Table 13.—Open Minded Religion: Approval and Disapproval in the Samples Referred to in Tables 9, 10 and 11

<table>
<thead>
<tr>
<th></th>
<th>Reader's Guide sample</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1905</td>
<td>1920</td>
<td>1930</td>
<td></td>
</tr>
<tr>
<td>Approving attitude indicators</td>
<td>400</td>
<td>159</td>
<td>811</td>
<td></td>
</tr>
<tr>
<td>Disapproving attitude indicators</td>
<td>68</td>
<td>26</td>
<td>150</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>468</td>
<td>185</td>
<td>961</td>
<td></td>
</tr>
<tr>
<td>Percent approving</td>
<td>85</td>
<td>86</td>
<td>84</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mills and McGarraghy sample</th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1900</td>
<td>1913</td>
<td>1918</td>
<td>1920</td>
</tr>
<tr>
<td>Approving attitude indicators</td>
<td>265</td>
<td>275</td>
<td>368</td>
<td>266</td>
</tr>
<tr>
<td>Disapproving attitude indicators</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>265</td>
<td>275</td>
<td>370</td>
<td>266</td>
</tr>
<tr>
<td>Percent approving</td>
<td>100</td>
<td>100</td>
<td>99</td>
<td>100</td>
</tr>
</tbody>
</table>

Atlantic, World's Work and Surrey

<table>
<thead>
<tr>
<th></th>
<th>1912–1914</th>
<th>1927</th>
<th>1931</th>
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</thead>
<tbody>
<tr>
<td>Approving attitude indicators</td>
<td>44</td>
<td>247</td>
<td>154</td>
</tr>
<tr>
<td>Disapproving attitude indicators</td>
<td>2</td>
<td>4</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>46</td>
<td>251</td>
<td>173</td>
</tr>
<tr>
<td>Percent approving</td>
<td>96</td>
<td>98</td>
<td>89</td>
</tr>
</tbody>
</table>

Literary Digest

<table>
<thead>
<tr>
<th></th>
<th>1906</th>
<th>1914</th>
<th>1927</th>
<th>1931</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approving attitude indicators</td>
<td>137</td>
<td>274</td>
<td>254</td>
<td>143</td>
</tr>
<tr>
<td>Disapproving attitude indicators</td>
<td>33</td>
<td>15</td>
<td>22</td>
<td>23</td>
</tr>
<tr>
<td>Total</td>
<td>170</td>
<td>289</td>
<td>276</td>
<td>166</td>
</tr>
<tr>
<td>Percent approving</td>
<td>81</td>
<td>95</td>
<td>92</td>
<td>86</td>
</tr>
</tbody>
</table>

Combined index

<table>
<thead>
<tr>
<th></th>
<th>1905</th>
<th>1910</th>
<th>1915</th>
<th>1920</th>
<th>1925</th>
<th>1928</th>
<th>1931</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average percent approving</td>
<td>90</td>
<td>92</td>
<td>94</td>
<td>94</td>
<td>93</td>
<td>93</td>
<td>90</td>
</tr>
</tbody>
</table>

Study of approvals and disapprovals related to these topics in the articles analyzed shows that while a measurable increase of antagonism toward these phases of religion has been registered, this opposition has been relatively negligible as compared with that shown against traditional Christianity. The combined index, derived from data summarized in [409]
Table 13, shows only 6 percent of the expressed attitudes antagonistic in 1915 and only 10 percent in 1931.

In relation to the attitude indicators analysed in Table 13, those noted in the other investigations should be studied. Short story and moving picture characters, as covered in the Bryn Mawr study previously described, revealed the following attitudes toward God and prayer per 1,000 attitude indicators noted:

<table>
<thead>
<tr>
<th>Groups</th>
<th>Attitude indicators toward “open minded religion” per 1,000 noted</th>
<th>Groups</th>
<th>Attitude indicators toward “open minded religion” per 1,000 noted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Favorable</td>
<td>Unfavorable</td>
<td>Favorable</td>
</tr>
<tr>
<td>1900–1905, magazines</td>
<td>33</td>
<td>4</td>
<td>1931–1932 magazines—(Cont’d.)</td>
</tr>
<tr>
<td>Intellectual...........</td>
<td>22</td>
<td>14</td>
<td>Sensational...........</td>
</tr>
<tr>
<td>Mass circulation........</td>
<td>7</td>
<td>1</td>
<td>1934, moving pictures...........</td>
</tr>
<tr>
<td>Women’s................</td>
<td>11</td>
<td>2</td>
<td>91</td>
</tr>
</tbody>
</table>

The hero and heroine study shows that the greatest skepticism about God and prayer are expressed in the “intellectual” periodicals, while the least skepticism is expressed in the sensational magazines. The most interest occurs at the extremes: the “intellectual” magazines, the sensational magazines and the movies are most interested, while the magazines of opinion with huge circulations show least interest. In confirmation of the reactions found for sensational magazines by the Bryn Mawr study, the analysis of fiction in True Stories, the Red Book, Popular Magazine and Action Stories in 1925 and 1930 found 556 indicators of approval of God, prayer, faith, righteousness and the like, nothing disapproving, except 17 cases in which admired characters used profanity.

Changes in Religious Discussion.—The change from traditional Christianity to open minded religion is evident also from a statistical analysis of the attitude indicators recorded in the representative articles analyzed. The most important statistical changes have involved four outstanding tendencies:

1. The 1930 and 1931 articles tend to accept science as a chief ally in the religious quest instead of regarding it as an antagonist to be fought against or as a disturbing foreign element to be reconciled or adjusted to. In the 1905 articles, 151 references to science were found, of which 40 percent were antagonistic; in the 1930 articles, 332 references to science were found, of which only 18 percent were antagonistic.

2. The recent articles emphasize progress and open mindedness. It used to be widely implied that religious truth had been revealed perfectly, once for all, 19 centuries ago. This idea has disappeared from recent
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religious articles in the periodicals analyzed. Creeds, dogmas, authority, the divinity of Jesus and the like, which received 114 favorable references and only 36 unfavorable in 1905, had 116 unfavorable and only 10 favorable references in 1930.

3. References to God increased from 108 in 1905 to 221 in 1930 but more skepticism has recently been expressed on the subject. The doubts raised have related chiefly to the question of whether God is personal. The approving references relate neither to the ancient Hebrew Jehovah, nor to the omniscient, omnipotent Deity of medieval metaphysics, but rather to the conceptions which well known scientists and philosophers have recently been discussing under such terms as Creative Coordination, Holism, Creative Synthesis or the Integrating Process at work in the universe.

4. Interest and belief in a life beyond death have dropped to a fraction of the level which they held a quarter-century ago in these periodicals. Articles on these topics numbered 0.57 per 1,000 in 1910–1914 and only 0.15 per 1,000 in 1930–1931. In the articles analysed intensively for 1905, 99 references to a future life were noted, of which 78 percent were favorable; in 1930 only 13 such references were found, of which 12 were antagonistic. The goals avowed in these recent articles on religion are fulfillment of personality, the attainment of rich experience and the achievement of basic values here on earth.

**Interest Shown in Psychical Research, Spiritualism and the Occult.**—Somewhat in contrast with the traditional religious attitudes toward spiritual matters has been the approach of certain groups who claim to have obtained verifiable contacts with the invisible world. Three groups of this general sort may be distinguished. The psychical researchers seek to apply strictly scientific methods to the investigation of alleged spiritual or mysterious phenomena. The spiritualists claim to have obtained convincing proofs of survival beyond death and have organized a religion around alleged communications from the departed. A miscellaneous

---

**Table 14.—Psychical, Spiritualist and Occult Topics, 1905–1932**

(For *Reader's Guide* magazines)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Psychical research, telepathy, etc</td>
<td>0.68</td>
</tr>
<tr>
<td>Spiritualism</td>
<td>0.33</td>
</tr>
<tr>
<td>Astrology and the occult</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>1.07</td>
</tr>
</tbody>
</table>

* Carried through the April, 1932 number.
RECENT SOCIAL TRENDS

group includes followers of astrology, theosophy and other "occult sciences." Changes in the volumes of magazine discussion under these heads are shown in Table 14.

While magazine articles appear to reflect a marked downward trend of interest in psychical research and spiritualism offset only slightly by a few recent articles on astrology, data with regard to books and New York Times Index items published in these fields reflect a somewhat different trend. The facts are presented in Table 15.

Possible Prognoses for Religion.—Tentative forecasts as to possible future developments in religious attitudes may be made in two ways: first, by extrapolation of observed trends in discussion; and second, by an attempted appraisal of underlying causal factors and their trends.

Extrapolation of trends suggests the probable further decline of interest and belief in traditional Christianity, as herein defined. Approval of the concepts and institutions there involved has clearly been declining.

Table 15.—Psychical, Spiritualist and Occult Topics, 1913–1931

<table>
<thead>
<tr>
<th>Years</th>
<th>Psychical research, etc.</th>
<th>Spiritualism, etc.</th>
<th>Astrology and the occult</th>
</tr>
</thead>
<tbody>
<tr>
<td>1913</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>1914</td>
<td>6</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>1915</td>
<td>4</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>1916</td>
<td>5</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>1917</td>
<td>10</td>
<td>0</td>
<td>17</td>
</tr>
<tr>
<td>1918</td>
<td>16</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>1919</td>
<td>15</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td>1920</td>
<td>22</td>
<td>9</td>
<td>80</td>
</tr>
<tr>
<td>1921</td>
<td>11</td>
<td>4</td>
<td>33</td>
</tr>
<tr>
<td>1922</td>
<td>4</td>
<td>2</td>
<td>28</td>
</tr>
<tr>
<td>1923</td>
<td>8</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>1924</td>
<td>4</td>
<td>1</td>
<td>17</td>
</tr>
<tr>
<td>1925</td>
<td>6</td>
<td>2</td>
<td>16</td>
</tr>
<tr>
<td>1926</td>
<td>9</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>1927</td>
<td>9</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>1928</td>
<td>6</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>1929</td>
<td>9</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>1930</td>
<td>9</td>
<td>28</td>
<td>34</td>
</tr>
<tr>
<td>1931</td>
<td>411</td>
<td>6</td>
<td>428</td>
</tr>
</tbody>
</table>

* Both in books and in New York Times Index items, spiritualism has received more attention than either of the other two groups of topics, except that occult topics have recently come to the fore. The scientific approach through psychical research has had two peaks, one in 1920 and one in 1930–1931. In the data on spiritualism it is noticeable that the peak of books came three years before the peak of newspaper attention.

b Estimated on the basis of preliminary returns.
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in the magazines analyzed, and the ratio of disapproval to approval has been increasing. If present trends continued, the subject would disappear through the triumph of the disapproving over the approving attitudes.

Trends of attention and opinion about "open minded religion," as reflected in Tables 7, 8 and 13, are contradictory: the short time trend is downward, while the long time trend is upward. Magazine interest and expressions of belief in God, the spiritual life, social applications of Christianity and the search for values harmonious with reality as revealed by science have increased during the past thirty years and have declined during the past five years. If the decline continues and no important new elements enter into the situation, it seems probable that Christianity in both its newer and its older forms will occupy a smaller and smaller place in the intellectual lives of the more highly educated sections of the American people. But if developments should continue along the trend which is evident over the longer period, it seems possible that a new religion may develop, as different, perhaps, from traditional Christianity as Christianity was from Judaism. The recent rise of interest in religious humanism may prove to be significant in connection with these alternatives.

Dependence upon a mechanical projection of trends may be the most objective method of forecasting the future, but to the present investigator it seems sounder to attempt to estimate as best one may the causal factors lying back of the superficial trends. In the opinion of this investigator, the underlying development which explains the trends evident in religious discussion has been the long time shift in prevalent criteria of truth from traditional authority to open minded, objective investigation by means of experimentation, statistical surveys, scientific history, case studies and the like. In recent years this development has been modified somewhat by the revived interest in philosophical methods of seeking truth.

If this trend away from traditional dogma and toward objective investigation is accepted as having been fundamental in its effects on religious attitudes, the opinion which anyone forms about the future of religion will be affected basically by his opinion as to whether this trend toward science will continue or relapse.

Equally important in determining one's religious forecast will be his opinion as to whether a real spiritual environment exists. Christianity has been built around beliefs in a future life, in invisible superhuman personalities, in the living leadership of Jesus Christ, in the power of prayer and in the reality and vitality of communion with God. Some eminent scientists and philosophers have of late reaffirmed their belief in these; others have denied them.
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Four possible types of forecasts result, according to the possible combinations of belief and disbelief about the future of science and about the reality of a spiritual environment. To deny both leads to an expectation of a recrudescence of superstition. To deny the increasing triumph of science but affirm the reality of spiritual things leads to an expectation of the renewed growth of mysticism. To deny the reality of spiritual things but affirm the increasing development of science leads to an expectation of growing mechanistic materialism. To believe both in the reality of spiritual things and in the continuing expansion of the fields in which objective ascertainment of truth is possible leads to an expectation of a creative partnership between science and religion.

All of these four possible positions are held by considerable groups of people, and the choice between them must as yet be based upon opinion rather than proof. But one forecast can be made with some confidence: if science and inductive philosophy go on developing, men will increasingly discover whether or not spiritual things are real and will adjust their religious attitudes accordingly.

III. SOME IMPORTANT SHIFTS IN OPINIONS ABOUT SEX AND FAMILY RELATIONS

Relative amounts of magazine attention devoted to prostitution, birth control, divorce, sex morals and family life are shown in Table 16.

TABLE 16.—SEX AND FAMILY TOPICS IN MAGAZINES, 1905–1931
( Ratio to all articles indexed in Reader's Guide)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Articles per thousand indexed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5.16</td>
<td>7.30</td>
<td>4.14</td>
<td>3.21</td>
<td>3.91</td>
<td>5.75</td>
<td>6.25</td>
<td>8.22</td>
</tr>
<tr>
<td>Prostitution</td>
<td>.00</td>
<td>.12</td>
<td>.31</td>
<td>.07</td>
<td>.17</td>
<td>.10</td>
<td>.10</td>
<td>.18</td>
</tr>
<tr>
<td>Birth control</td>
<td>.00</td>
<td>.12</td>
<td>.55</td>
<td>.10</td>
<td>.21</td>
<td>.38</td>
<td>.54</td>
<td>1.09</td>
</tr>
<tr>
<td>Divorce</td>
<td>.63</td>
<td>.78</td>
<td>.91</td>
<td>.34</td>
<td>.44</td>
<td>.67</td>
<td>.54</td>
<td>.69</td>
</tr>
<tr>
<td>Sex morals, etc.</td>
<td>.21</td>
<td>.39</td>
<td>.29</td>
<td>.20</td>
<td>.49</td>
<td>.54</td>
<td>.49</td>
<td>.65</td>
</tr>
<tr>
<td>Family, home, marriage, etc</td>
<td>4.16</td>
<td>4.78</td>
<td>2.78</td>
<td>2.50</td>
<td>2.60</td>
<td>4.06</td>
<td>4.58</td>
<td>5.61</td>
</tr>
</tbody>
</table>

Prostitution.—During the years 1910–1914, the proportional number of articles about this subject was four times as large as at any other time between 1905 and 1931; except for the war period, this peak was seven times as high as the level at any other time. Similarly, in the New York Times Index, “white slave traffic” and equivalent topics had 37 entries in 1914, 27 in 1915, 11 in 1916, 26 in 1917, 5 in 1918, 1919 and 1920
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combined, and 20 in 1921. After that date the largest number in any one year was 12 entries in 1931.

Attitudes expressed in the magazine articles analyzed were universally condemnatory of commercialized prostitution. The articles published on the subject refer repeatedly to the studies of vice conditions in Chicago and in other cities, which were being made by the newly developed social survey method. To this extent the vice crusades were connected with the application of science to the study of social problems. The prominence given the subject in the Survey magazine reflects the contribution made by social workers. Frequent references to participation by ministers and church organizations indicate that a large part was played by religious motivation. The anti-vice campaigns resulted in federal and local anti-vice legislation, and in crusades which broke up segregated vice districts in many cities. Since the war, discussion in this field has centered around night clubs, road houses and extra-marital sex relations by women who are not professional prostitutes.

Antagonism Toward Traditional Sex Attitudes.—Intensive analysis of three different sets of sample articles shows consistently that attitudes toward birth control, divorce and sex freedom before and outside of marriage became more liberal, or radical, from about 1918 until about 1925 and then became more conservative again, particularly with respect to divorce and sex freedom. These trends are evident in the mass circulation periodicals analyzed by Mills and McGarraghy, in a general sample of articles in the analysis of which the author, Mills and McGarraghy cooperated and in a more intensive sample of “intellectual” periodicals which the author alone analyzed.

Birth Control Opinion.16—Articles about birth control (which were first included under the classification “race suicide”) began to be indexed in the Reader’s Guide only after 1909 and references to the subject before that date were very scattering. But in 1915–1918 the topic had become a subject of extensive controversy. Just after the war a lull occurred, but in 1930–1931 the volume of magazine discussion was twice as large as in the earlier peak. A somewhat similar trend is found in the number of entries about birth control in the New York Times Index:

<table>
<thead>
<tr>
<th>Year</th>
<th>Entries</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914</td>
<td>0</td>
</tr>
<tr>
<td>1915</td>
<td>7</td>
</tr>
<tr>
<td>1916</td>
<td>32</td>
</tr>
<tr>
<td>1917</td>
<td>30</td>
</tr>
<tr>
<td>1918</td>
<td>1</td>
</tr>
<tr>
<td>1919</td>
<td>2</td>
</tr>
<tr>
<td>1920</td>
<td>3</td>
</tr>
<tr>
<td>1921</td>
<td>33</td>
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<tr>
<td>1922</td>
<td>41</td>
</tr>
<tr>
<td>1923</td>
<td>23</td>
</tr>
<tr>
<td>1924</td>
<td>13</td>
</tr>
<tr>
<td>1925</td>
<td>25</td>
</tr>
<tr>
<td>1926</td>
<td>16</td>
</tr>
<tr>
<td>1927</td>
<td>16</td>
</tr>
<tr>
<td>1928</td>
<td>19</td>
</tr>
<tr>
<td>1929</td>
<td>48</td>
</tr>
<tr>
<td>1930</td>
<td>42</td>
</tr>
<tr>
<td>1931</td>
<td>71</td>
</tr>
</tbody>
</table>

Opinions expressed about birth control have been predominantly more favorable than unfavorable. Very few references to the subject

16 For further discussion of birth control, see Chaps. I and XIII.
RECENT SOCIAL TRENDS

appeared in the mass circulation periodicals analyzed by Mills and McGarraghy. Combining the other two sets of samples, taken chiefly from "intellectual" magazines, the following attitude indicators on this subject were noted:17

<table>
<thead>
<tr>
<th>Period</th>
<th>Favorable</th>
<th>Unfavorable</th>
<th>Total</th>
<th>Percent favorable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905–1914</td>
<td>21</td>
<td>8</td>
<td>29</td>
<td>*86</td>
</tr>
<tr>
<td>1915–1918</td>
<td>125</td>
<td>123</td>
<td>248</td>
<td>50</td>
</tr>
<tr>
<td>1919–1921</td>
<td>124</td>
<td>18</td>
<td>142</td>
<td>87</td>
</tr>
<tr>
<td>1922–1929</td>
<td>391</td>
<td>224</td>
<td>615</td>
<td>64</td>
</tr>
<tr>
<td>1930–1931</td>
<td>256</td>
<td>134</td>
<td>390</td>
<td>66</td>
</tr>
</tbody>
</table>

* It should be noted that the figures on which this index is based are too small to make the index reliable.

Opinion Favoring and Opposing Easy Divorce.18—The volume of magazine discussion about divorce declined two-thirds during the war but came back to nearly its pre-war level in 1925 to 1931. As reflected in the New York Times Index, divorce discussion went through this

| Table 17.—Divorce Items Listed in New York Times Index, 1914–1931 |
|--------------------|--------------------|--------------------|
| Year               | Number of divorce items including accounts of individual suits | Year               | Number of divorce items including accounts of individual suits |
| 1914               | 898                | 1920               | 286                |
| 1915               | 926                | 1921               | 457                |
| 1916               | 109                | 1922               | 528                |
| 1917               | 105                | 1923               | 484                |
| 1918               | 179                | 1924               | 438                |
| 1919               | 147                | 1925               | 590                |
|                   |                   | 1926               | 654                |
|                   |                   | 1927               | ...                |
|                   |                   | 1928               | ...                |
|                   |                   | 1929               | ...                |
|                   |                   | 1930               | ...                |
|                   |                   | 1931               | ...                |

* Not indexed after 1926.

17 For the sake of clarity in exposition, and in order to avoid controversies about methodology, the various samples were merely pooled in order to obtain a general indication of shifts of opinion about birth control. More refined and intricate methods of weighting and combining the indexes from different samples indicates that the percentage of attitudes favoring birth control declined to a minimum of 69 in 1916, rose to a maximum of 90 in 1924, and declined again to 71 in 1931. These results, however, must be regarded as mere approximations, with a fairly wide margin of error.

18 For data on trends in divorces, see Chap. XIII.
same war-time depression, and also reached new peaks of volume in 1925 and 1927 with a somewhat smaller peak in 1931. The data are given in Table 17.

Approval of more freedom in seeking divorces reached a minimum during the war period and a maximum between 1922 and 1929. The evidence on which this statement is based is taken from the two sets of samples referred to in connection with birth control. The data are as follows:\textsuperscript{19}

<table>
<thead>
<tr>
<th>Period</th>
<th>Approving</th>
<th>Disapproving</th>
<th>Total</th>
<th>Percent approving</th>
</tr>
</thead>
<tbody>
<tr>
<td>1905–1914</td>
<td>170</td>
<td>188</td>
<td>358</td>
<td>47</td>
</tr>
<tr>
<td>1915–1918</td>
<td>18</td>
<td>100</td>
<td>118</td>
<td>15</td>
</tr>
<tr>
<td>1919–1921</td>
<td>45</td>
<td>67</td>
<td>112</td>
<td>40</td>
</tr>
<tr>
<td>1922–1929</td>
<td>122</td>
<td>111</td>
<td>233</td>
<td>52</td>
</tr>
<tr>
<td>1930–1931</td>
<td>119</td>
<td>188</td>
<td>307</td>
<td>39</td>
</tr>
</tbody>
</table>

The Bryn Mawr study of heroes and heroines described above sheds some additional light on shifts of opinion about divorce:

<table>
<thead>
<tr>
<th>Period and group</th>
<th>Indicators per 1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approving divorce</td>
</tr>
<tr>
<td>1900–1905</td>
<td>1</td>
</tr>
<tr>
<td>1931–1932:</td>
<td></td>
</tr>
<tr>
<td>“Intellectual,” mass circulation and women’s magazines</td>
<td>10</td>
</tr>
<tr>
<td>Movies</td>
<td>22</td>
</tr>
</tbody>
</table>

The Question of Sex Freedom.—Discussion of sex morals in Reader’s Guide periodicals was three times as frequent in 1930–1931 as in 1919–1921, according to data in Table 16. In the New York Times Index, entries under “morals,” “moral conditions,” etc., rose, from 0 in 1914, 1915 and 1918, to 92 in 1926 and then sank to 6 in 1931.

Attitudes toward extra-marital sexual intercourse have undergone rather violent fluctuations since 1900 and particularly during the past 15 years. Correlated with attitudes on adultery, seduction and the like,

\textsuperscript{19} More refined methods of weighting and combining the data indicate that the percentage of attitudes approving easy divorce reached a minimum of about 33 in 1918, rose to a maximum of about 69 in 1926, and declined again to 37 in 1931.
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have been those relating to sex "thrill," promiscuous petting and the exposure of the human body. Grouping together the attitude indicators on these topics from the two sets of samples involving Reader's Guide and "intellectual" magazines, the shifts of approval and disapproval are reflected as follows:

<table>
<thead>
<tr>
<th>Period</th>
<th>Indicators of &quot;intellectual&quot; magazine attitudes toward sex freedom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approving</td>
</tr>
<tr>
<td>1905–1914</td>
<td>150</td>
</tr>
<tr>
<td>1915–1918</td>
<td>47</td>
</tr>
<tr>
<td>1919–1921</td>
<td>26</td>
</tr>
<tr>
<td>1922–1929</td>
<td>232</td>
</tr>
<tr>
<td>1930–1931</td>
<td>198</td>
</tr>
</tbody>
</table>

Here, again, the height of sentiment against traditional sex morals occurs between 1922 and 1929, preceded by a minimum and followed by a reaction. Particularly from 1923 to 1927 it was more frequently asserted than denied in these magazines that love, not marriage, was the only justification of sex relations, that sexual intercourse was a private matter in which society had no concern as long as children were avoided, that celibacy was abnormal and deleterious and the like. Then this demand for sex freedom, like that for divorce freedom, began to decline, while objections began to be more widely voiced in these magazines than at any time during the entire period studied. In the latest magazine articles analyzed, opposition to departures from monogamy was expressed three times as frequently as approval.

As a check upon and further exploration of these conclusions, the results of the study of mass circulation magazines by Mills and McGarraghy are comprehensive enough to be of value:

<table>
<thead>
<tr>
<th>Date</th>
<th>Indicators of mass circulation magazine attitudes toward sex freedom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approving</td>
</tr>
<tr>
<td>1900</td>
<td>2</td>
</tr>
<tr>
<td>1915</td>
<td>9</td>
</tr>
<tr>
<td>1918</td>
<td>7</td>
</tr>
<tr>
<td>1920</td>
<td>15</td>
</tr>
<tr>
<td>1925</td>
<td>88</td>
</tr>
<tr>
<td>1928</td>
<td>64</td>
</tr>
<tr>
<td>1930</td>
<td>17</td>
</tr>
</tbody>
</table>

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Unlike the other trends which have been considered in relation to sex matters, the attitudes on sex freedom, as reflected in mass circulation periodicals, show an increase of radicalism from 1900 to 1918 instead of a decline. The peak comes, however, at about the same period as in the other series and the reaction in 1930 is clearly marked.

Heroes and heroines in fiction show a marked increase of sex radicalism, as shown in Table 18. The most radical views (in the groups of magazines cited) were expressed in "intellectual" magazines; but even the women's periodicals of 1931-1932 were emphatically more radical.

Table 18.—Sexual Irregularities by Heroes, Heroines, Villainesses and Villains in Short Stories and Moving Pictures, 1900-1904 and 1931-1932

<table>
<thead>
<tr>
<th>Date and group</th>
<th>Number of fictional characters in whom violation of monogamy was presented with</th>
<th>Per 1,000 indicators noted</th>
<th>Percent approving</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approval</td>
<td>Disapproval</td>
<td>Approval</td>
</tr>
<tr>
<td>1900-1904, magazines</td>
<td>1</td>
<td>29</td>
<td>1</td>
</tr>
<tr>
<td>1931-1932, magazines</td>
<td>19</td>
<td>43</td>
<td>34</td>
</tr>
<tr>
<td>&quot;Intellectual&quot;</td>
<td>18</td>
<td>39</td>
<td>17</td>
</tr>
<tr>
<td>Mass circulation</td>
<td>10</td>
<td>40</td>
<td>11</td>
</tr>
<tr>
<td>Women's</td>
<td>13</td>
<td>66</td>
<td>23</td>
</tr>
<tr>
<td>Sensational</td>
<td>34</td>
<td>42</td>
<td>54</td>
</tr>
<tr>
<td>1932, movies</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

than the 1900-1905 group. The sensational magazines showed more relative interest in sex problems than any other group, but they were only about one-half as radical as the "intellectual" group—they were markedly more conservative than even the women's magazines, though they gave two and one-half times as much attention to the description and discussion of departures from monogamistic morality.

Intense interest in sex, with avowedly conservative attitudes, characterized also the sensational magazines analyzed by Mills and McGarraghy. In 1925, in True Story, Red Book and Popular, 27 attitude indicators per 1,000 were concerned with sex, as compared with 15 per 1,000 in the mass circulation magazines. In the former group, only 31 attitude indicators approved sex thrills and other sex freedom concepts, while 233 disapproved adultery, immodesty and other aspects of sex freedom. This gives an approving percentage of 12 as compared with 35 in the mass circulation magazines of the same year. In 1930, True Story, Red Book and Action Stories had 44 sex interest indicators per 1,000, as compared with 10 in the mass circulation group. The percentage of indicators approving sex freedom had risen to 17 in the sensational
magazines, while the corresponding percentage in the mass circulation group (as analyzed also by Mills and McGarraghy) had fallen to 14.

In contrast with the conservatism of the sensational magazines, the movies were found to be more radical than even the "intellectual" magazines. In the 49 analyses, made by 10 different investigators, covering 38 different pictures between February and May, 1932, conformity with monogamistic mores was an approved characteristic in 42 instances, while nonconformity was evidently condoned or approved in 34 instances. Comparative data on sex freedom for the different groups covered by the hero and heroine study are shown in Table 18.

**The Declining Approval of Religious Sanctions for Sex Conduct.**—In the magazine articles on family and sex life, selected impartially for intensive analysis by Mills, McGarraghy and the author, varying proportions of the attitude indicators were favorable to the application of religious sanctions in relation to sex conduct—as for example endorsing church opposition to divorce and birth control, invoking Biblical authority on subjects of this sort, or calling for religious campaigns against vice and immorality. Other expressions of opinion denied the right of the church to interfere and called for emancipation from religious taboos and dogmas. The proportions of approving and disapproving expressions of opinion on religious sex sanctions (averages from two independent but consistent sets of samples) are shown in Table 19. It will be noted that in 1925 to 1929, when the wave of rebellion against traditional sex attitudes was at its height, approval of religious sex sanctions was at a minimum, amounting to less than half the proportionate level in 1905. Disapproval of religious sanctions increased about this same time to a point greater than the amount of favorable opinion. As the wave of radicalism or liberalism has subsided in magazine articles, religious sanctions have somewhat reasserted themselves but opposition also has increased.

The more extreme demands for freedom in sex conduct were based largely upon assertions of alleged fundamental principles such as that love is the only justification for sex relations. It was also argued that one's sex life is a private matter in which neither law nor public opinion has any right to interfere. Both radicals and conservatives based arguments about the "single standard of morals" upon the principle of equality between men and women.

---

20 Will Hays was kind enough to send to Washington to confer with the writer Joseph I. Breen, his assistant in charge of the application of the moral code which the moving picture producers adopted. Breen discussed with the writer and left in his hands for several weeks correspondence relating to certain moving pictures not conforming to the code. It seems clear from this correspondence that, while the spirit of the code has clearly been violated, Breen and his organization made strenuous efforts to persuade the producers to conform to the standards agreed upon.
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The subordinate peak of approval for scientific sex sanctions which came about 1910–1911 (see Table 19) was due largely to references to social surveys on which the anti-vice campaigns were based. The more recent and higher peak was the result of references to statistical studies of divorce and of birth rates as related to birth control, citation of medical, economic and other scientific authority on sex problems, and presentation of case histories or of less formal instances. This peak reached its height in 1924–1926—the same time that the largest proportions of liberal and radical opinions were being expressed in magazine articles about birth control, divorce and sex freedom generally. In this connection, the rise and decline of magazine attention to psychoanalysis and the development of interest in mental hygiene should be noted (see Table 5). The decline of reliance on scientific sanctions and the definite increase of skeptical references to them in 1931 should be compared with the decline in circulations of popular scientific magazines since 1928, as shown in Table 2, and the decline in the relative number of magazine articles about scientific research since 1928, as shown in Table 3.

Changes in sex attitudes have probably been connected to some extent with technological developments, such as the introduction of the automobile and the dissemination of birth control devices; with the results of industrial development such as the growth of cities; with the transfer of functions from the home to the factory; and with the disintegration of patriarchal family conceptions—factors discussed at greater length in other chapters, notably those on inventions and the family. The evidence presented in the present section, however, suggests to the investigator that a major factor in recent shifts of attitudes toward sex behavior has been the breakdown of traditional religious control and partially worked out attempts to substitute scientific criteria.

Table 19.—Religious and Scientific Sanctions for Sex Conduct: Approval and Disapproval, 1905–1931
(Estimated in units of attitude indicators per thousand noted)\(^a\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Religious sanctions</th>
<th></th>
<th>Scientific sanctions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approval Disapproval</td>
<td></td>
<td>Approval Disapproval</td>
<td></td>
</tr>
<tr>
<td>1905</td>
<td>197 59</td>
<td></td>
<td>125 14</td>
<td></td>
</tr>
<tr>
<td>1910</td>
<td>138 46</td>
<td></td>
<td>168 19</td>
<td></td>
</tr>
<tr>
<td>1915</td>
<td>118 40</td>
<td></td>
<td>98 17</td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td>89 71</td>
<td></td>
<td>83 3</td>
<td></td>
</tr>
<tr>
<td>1925</td>
<td>75 97</td>
<td></td>
<td>227 15</td>
<td></td>
</tr>
<tr>
<td>1928</td>
<td>78 97</td>
<td></td>
<td>208 12</td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>97 114</td>
<td></td>
<td>169 16</td>
<td></td>
</tr>
<tr>
<td>1931</td>
<td>155 132</td>
<td></td>
<td>150 28</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) The cross totals in this table would equal 1,000 if all the sex attitude indicators were included.

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Changes in Other Significant Family Attitudes.—Besides those directly related to sex conduct, opinions expressed about family matters have changed significantly in relation to three other matters. First, expressions of the desire to have children have dropped to less than one-third the relative frequency of such expressions in the magazine articles of 1905. Second, expressions of approval of marriage and family life, after declining persistently between 1905 and 1920, increased to more than double their 1905 frequency in 1930. Third, approving references to comradeship, loyalty, understanding, affection, sympathy, facilitation, accommodation, integration and cooperation in family life doubled their frequency between 1905 and 1914, fell off in 1920 and then rose to three times their 1905 level in 1930. Indexes of net frequency on these topics are presented in Table 20.

Table 20.—Relative Frequencies of Approving Minus Disapproving References to Having Children, Getting Married and Showing Cooperative Attitudes in Family Life, 1905–1930

<table>
<thead>
<tr>
<th>Topics</th>
<th>Indexes of net frequency*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1905</td>
</tr>
<tr>
<td>Desire to have, or approval of having children</td>
<td>0.12</td>
</tr>
<tr>
<td>Approval of marriage and family life</td>
<td>.18</td>
</tr>
<tr>
<td>Comradeship, loyalty, understanding, affection, sympathy, facilitation, accommodation, integration, cooperation</td>
<td>.59</td>
</tr>
</tbody>
</table>

* These indexes were derived as follows: The number of unfavorable references to the topic in question in the articles for the year in question was subtracted from the number of favorable references. The difference was divided by the total number of thousands of attitude-indicators noted in articles on family and sex for that year. This number was multiplied by the number of articles on marriage, the home, and family life for that year, per thousand indexed in the Reader’s Guide. For example, in 1905, out of 3,757 attitude indicators noted in articles on family and sex, 98 suggested the desirable aspects of having children, and 24 suggested the undesirable aspects. The desirable minus the undesirable constituted 0.0325 of the total. Articles about the family, etc. constituted 3.75 of those indexed in 1905. Multiplying these, the net approval of having children amounts to 0.12 in terms of articles per thousand.

Summary of Changes in Opinion About Sex Conduct.—All the evidence summarized above from magazine articles, short stories, moving pictures and the New York Times Index is consistent with the following conclusions:

1. Magazine discussion of family and sex matters had two peaks—one in 1910–1914 and one in 1930–1931. The latter may or may not have reached its crest.

2. Prostitution and immediately related topics provided nearly half of the sex morals subject matter in magazines in 1910–1914 but in

21 This change is not so evident in short stories. In the Bryn Mawr study, net attitude indicators (per 1,000) favorable to having children were as follows: 1900–1905 group, 22; 1931–1939, "intellectual" 20, mass circulation 14, women’s 20, sensational 40, and moving pictures 21.
1930-1931 had given place to birth control, divorce and non-commercial sex relations.

3. Approval of birth control, of easy divorce and of extra-marital sex relations in magazine articles was larger in proportion to disapproval in 1924-1927 than either before or later. 

4. Toleration of extra-marital sex relations by the general public, as reflected in short stories, moving pictures and plays, has lately been several times as great as it was in 1900. 

5. The women's periodicals gave far more attention and toleration to breaches of the sexual morality code in 1931-1932 than the magazines of 1900-1905. More attention and more toleration were given by the mass circulation magazines of 1931-1932. Much more attention and still more toleration or approval were given by the "intellectual" magazines of 1931-1932. More interested still, but avowedly most opposed to extra-marital relations, were the sensational periodicals. 

6. Moving pictures were more apt than any class of magazines studied to present divorce and sexual irregularities in an approving light. 

7. The waning power of religious sanctions is closely related with the recent rise of antagonism against monogamistic sex mores. 

IV. THE RISE AND REVERSAL OF PROHIBITION SENTIMENT

Fluctuating Volume of Liquor Problem and Prohibition Discussion.—Three well marked peaks are observable in the frequencies of articles indexed under these subjects during the past 25 years. The first and highest\(^2\) of the three came in 1908, when scores of articles were published about the "tidal wave" of state and local prohibition, particularly in the south, but also in Illinois, Michigan, Colorado, Nebraska, Indiana, Ohio, Wisconsin, Minnesota and other states.\(^3\) By 1912 magazine discussion of liquor problems had dropped to its old level which was about one-eleventh as high as in 1908. From then onward the frequency of articles on these topics again increased until it reached a second peak in 1915 in connection with the rising demand for national prohibition. A decline again took place, until in 1921 the relative frequency was only about one-third as high as in 1915. From 1921 until 1926 the discussion increased in volume until it had attained nearly its 1908 level, but since

\(^2\) When the volumes of the Reader's Guide are taken as units, the highest rate of prohibition discussion is found in the 1929-1930 volume, as shown in Table 24.

\(^3\) See Outlook, July 4, 1908, vol. 89, pp. 519-514.
1929 a new decline has set in. These fluctuations are presented graphically in Figure 3.

The shift in the subjects of these magazine articles, from topics related to the assault on the legalized liquor traffic to topics revolving around prohibition and bootlegging, is shown in Table 21.

Fig. 3.—Prohibition and liquor problem articles per 1,000 indexed in Reader’s Guide, 1905–1928.

Shifting Ratios of Wet Versus Dry Opinion in Magazines.—More significant than the changes which have occurred in the amount of discussion have been changes in the relative frequency with which attitudes favorable and unfavorable to prohibition have been expressed. In order to get reliable information on this aspect of the problem, two separate investigations were carried through.

The first was made by William B. Mills under the direction of the author. By impartial sampling methods, he selected articles related to the liquor question. The total number of attitude indicators noted by Mills in

24 The articles were taken from the following periodicals: Atlantic for March, 1905, November, 1915 and February, 1930; Arena for February, 1905; Collier’s for January 18, 1930; Commonsense for August 27, 1930; Harper’s for January, 1930; Independent for February 2, 1905 and October 9, 1920; Ladies’ Home Journal for January, 1915 and April, 1930; Living Age for May 21, 1915, January 31, 1920 and June 1, 1930; Nation for April 15, 1915, February 27, 1920 and December 31, 1930; North American Review for December, 1915 and June, 1920; New Republic for November 13, 1915, April 21, 1920 and June 11, 1930; Outlook
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**TABLE 21. PROHIBITION AND LIQUOR PROBLEM ARTICLES, 1905–1931**
(Ratios to articles indexed in the Reader’s Guide)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>---------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Grand total</td>
<td>3.25</td>
</tr>
<tr>
<td>Alcoholism, drunkenness</td>
<td>.58</td>
</tr>
<tr>
<td>Liquor problems</td>
<td>.17</td>
</tr>
<tr>
<td>Liquor traffic</td>
<td>.14</td>
</tr>
<tr>
<td>Saloons</td>
<td>.36</td>
</tr>
<tr>
<td>Temperance</td>
<td>.55</td>
</tr>
<tr>
<td>License system, local option, etc.</td>
<td>.45</td>
</tr>
<tr>
<td>Subtotal</td>
<td>2.84</td>
</tr>
<tr>
<td>Anti-Saloon League, W.C.T.U., etc.</td>
<td>.08</td>
</tr>
<tr>
<td>Prohibition (all phases)</td>
<td>.79</td>
</tr>
<tr>
<td>Bootlegging, moonshining, etc.</td>
<td>.02</td>
</tr>
<tr>
<td>Subtotal</td>
<td>.89</td>
</tr>
</tbody>
</table>

*July, 1931 to May, 1932.*

Each of the years studied was as follows: 1905, 175; 1915, 556; 1920, 383; 1930, 467. Using these totals as 1,000 for each year respectively it was found that the attitudes favorable to prohibition per thousand of all attitudes noted in articles on this group of subjects were as follows: 1905, 91; 1915, 416; 1920, 359; and 1930, 171. Attitudes unfavorable to prohibition per thousand noted were as follows: 1905, 0; 1915, 22; 1920, 275; and 1930, 428. In other words, between 1915 and 1930 indications of attitudes favorable to prohibition decreased more than half and attitudes unfavorable to prohibition increased 19-fold in these magazines.

Toward the drinking of alcoholic beverages, expressions of favorable attitudes per thousand noted were as follows: 1905, 0; 1915, 36; 1920, 97; 1930, 150. Expressions of attitudes opposed to drinking were: 1905, 262; 1915, 162; 1920, 68; and 1930, 53. Both with respect to prohibition and drinking, therefore, the representative articles analyzed by Mills showed an overturn, from emphatically dry preponderance in 1905 and 1915, to emphatically wet preponderance in 1930.

In order to obtain an independent check upon these conclusions the writer undertook a fresh inquiry, confined to a small group of periodicals which have shown such recent gains in circulation as to indicate that for March 31, 1915, May 24, 1920 and July 9, 1930; Review of Reviews for February, 1905, February, 1915, April, 1920 and March, 1930; Sunset for December, 1920; Survey (or Charities) for August 12, 1905, October 9, 1915, July 3, 1920 and March 15, 1930; World Today for December, 1905; and World’s Work for September, 1920 and November, 1930.
they are expressing attitudes acceptable to their constituencies. The periodicals employed were the Literary Digest, Survey, Forum, Nation and World’s Work. From these, average indexes of favorable and unfavorable attitudes toward prohibition and toward drinking were calculated for five representative years. The total number of attitude indicators noted relating to liquor and prohibition, in the selected years, are as follows: 1914, 1,058; 1919, 1,081; 1926, 1,217; 1929, 2,624; 1931, 1,346.

This second investigation reached conclusions essentially the same as those arrived at by Mills. Opposition toward prohibition in each of these periodicals was higher in 1929 than at any of the previous dates. Opposition to alcoholic beverages had declined in each. But the new samples show some recession of wet sentiment between 1929 and 1931; and, whereas Mills’ data showed more approval than disapproval of drinking in 1930, the new samples show disapproval exceeding approval.

By interpolation on curves representing the result of Mills’ study, his data were combined with those obtained by the writer. The resulting conclusions are summarized in Table 22.

Table 22.—Prohibition and Alcoholism: Approval and Disapproval, 1914–1931
(In representative magazine articles analyzed by Mills and Hart)

<table>
<thead>
<tr>
<th>Attitudes indicated</th>
<th>Attitude indicators per thousand noted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1914</td>
</tr>
<tr>
<td>Toward prohibition and its enforcement:</td>
<td></td>
</tr>
<tr>
<td>Approval (“Dry”)</td>
<td>211</td>
</tr>
<tr>
<td>Disapproval (“Wet”)</td>
<td>91</td>
</tr>
<tr>
<td>Toward drinking alcoholic beverages:</td>
<td></td>
</tr>
<tr>
<td>Disapproval (“Dry”)</td>
<td>322</td>
</tr>
<tr>
<td>Approval (“Wet”)</td>
<td>13</td>
</tr>
<tr>
<td>Total “Dry”</td>
<td>634</td>
</tr>
<tr>
<td>Total “Wet”</td>
<td>104</td>
</tr>
<tr>
<td>Toward religious sanctions in liquor problems:</td>
<td></td>
</tr>
<tr>
<td>Approval</td>
<td>45</td>
</tr>
<tr>
<td>Disapproval</td>
<td>22</td>
</tr>
<tr>
<td>Toward scientific study of liquor problems:</td>
<td></td>
</tr>
<tr>
<td>Approval</td>
<td>75</td>
</tr>
<tr>
<td>Disapproval</td>
<td>1</td>
</tr>
<tr>
<td>Toward the liquor traffic, bootlegging and miscellaneous items (where wet and dry sentiment could not be clearly differentiated)</td>
<td>816</td>
</tr>
<tr>
<td>Grand total</td>
<td>1,000</td>
</tr>
</tbody>
</table>

The item on liquor traffic and bootlegging consists almost entirely of disapproval of the saloon and the liquor business before prohibition and of bootlegging since. This disapproval, however, was expressed both
by wets and drys. Before prohibition the attack on liquor interests was chiefly from the dry forces, though self-criticism by wet organs was not infrequent. Since prohibition, drys have urged the suppression of bootlegging and wets have denounced it as an inevitable result of dry legislation.

Religious sanctions have played a decreasing part in prohibition discussion. In 1914 church activity in the dry cause was approved twice as frequently as it was condemned; in 1926, 1929 and 1931 it was criticized more frequently than it was approved.

Science as a means of dealing with liquor problems was emphasized twice as frequently in 1914 as at any of the subsequent dates. In 1914, 1919 and 1926 surveys, statistics, laboratory tests and scientific opinions about liquor problems were referred to with approval in almost every case where they were mentioned; but in 1929 and 1931 increasing scepticism of the scientific approach was being expressed. These trends correspond, in general, with those pointed out in connection with sex attitudes, but neither religion nor science are referred to as often in prohibition discussions as in connection with sex problems.

Some additional light upon trends in attitudes toward drinking is shed by the Bryn Mawr study of short stories and moving pictures. In the 1900–1905 stories, 16 characters were represented as drinking intoxicating liquors under circumstances which indicated toleration or approval of the act and 14 under circumstances indicating disapproval. In the 1931–1932 short stories no very striking changes had occurred, except that drinking by women was more customary. The moving pictures, however, were more than three times as wet as were the short stories of either period.

<table>
<thead>
<tr>
<th>Date and group</th>
<th>Attitude indicators toward drinking per 1,000 noted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total approving</td>
</tr>
<tr>
<td>1900–1905, magazines</td>
<td>22</td>
</tr>
<tr>
<td>1931–1932, magazines:</td>
<td></td>
</tr>
<tr>
<td>&quot;Intellectual&quot;</td>
<td>25</td>
</tr>
<tr>
<td>Mass circulation</td>
<td>30</td>
</tr>
<tr>
<td>Women’s</td>
<td>23</td>
</tr>
<tr>
<td>Sensational</td>
<td>18</td>
</tr>
<tr>
<td>1932, movies</td>
<td>83</td>
</tr>
</tbody>
</table>

V. THE PRE-WAR PEAK OF UPLIFT AND REFORM DISCUSSION

In previous sections of the present chapter it has already been pointed out that discussion reflecting the campaign against commercialized vice culminated in 1910–1914 while that against the liquor traffic reached high points in 1908 and 1915. These two reform movements appear to
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have been closely related with a general wave of discussion about movements to correct economic and social abuses and injustices by means of legislation and of welfare work.\textsuperscript{22} This general wave reached its highest volume of discussion in 1910–1914, falling off after the war to only 55 percent of its maximum height. Topics most closely related to the reforms involved are listed in Table 23, together with indexes showing the relative amount of discussion which they received in leading magazines in various periods, as reflected in the different volumes of the Reader's Guide to Periodical Literature.

TABLE 23.—CHANGING PROPORTIONS OF ECONOMIC AND SOCIAL REFORM AND ALLIED TOPICS, 1905–1930

(Measured by the ratio of articles indexed in Reader's Guide)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty, etc.</td>
<td>42.28</td>
<td>48.96</td>
<td>33.71</td>
<td>29.04</td>
<td>28.98</td>
<td>27.22</td>
<td>29.23</td>
</tr>
<tr>
<td>Slums, tenements, standards of living</td>
<td>2.30</td>
<td>.89</td>
<td>.37</td>
<td>.26</td>
<td>.20</td>
<td>.61</td>
<td>.59</td>
</tr>
<tr>
<td>Charities and philanthropy</td>
<td>4.22</td>
<td>1.75</td>
<td>1.05</td>
<td>.61</td>
<td>.33</td>
<td>.38</td>
<td>.60</td>
</tr>
<tr>
<td>Social work, Red Cross, etc.</td>
<td>.75</td>
<td>1.36</td>
<td>1.02</td>
<td>2.12</td>
<td>1.42</td>
<td>1.83</td>
<td>2.02</td>
</tr>
<tr>
<td>Social settlements and centers</td>
<td>.78</td>
<td>.72</td>
<td>.39</td>
<td>.19</td>
<td>.17</td>
<td>.11</td>
<td>.18</td>
</tr>
<tr>
<td>Juvenile and domestic relations courts</td>
<td>.57</td>
<td>.61</td>
<td>.24</td>
<td>.43</td>
<td>.21</td>
<td>.17</td>
<td>.33</td>
</tr>
<tr>
<td>Child welfare, etc.</td>
<td>1.89</td>
<td>2.58</td>
<td>3.06</td>
<td>3.21</td>
<td>3.52</td>
<td>2.76</td>
<td>2.66</td>
</tr>
<tr>
<td>Child labor, sweating, etc.</td>
<td>2.43</td>
<td>1.37</td>
<td>1.14</td>
<td>1.03</td>
<td>1.52</td>
<td>1.76</td>
<td>.86</td>
</tr>
<tr>
<td>Immigration, naturalization, etc.</td>
<td>4.59</td>
<td>4.05</td>
<td>2.46</td>
<td>4.31</td>
<td>4.09</td>
<td>2.29</td>
<td>2.17</td>
</tr>
<tr>
<td>Social legislation</td>
<td>.08</td>
<td>.37</td>
<td>.50</td>
<td>.23</td>
<td>.14</td>
<td>.08</td>
<td>.08</td>
</tr>
<tr>
<td>Pensions for mothers</td>
<td>.00</td>
<td>.58</td>
<td>.37</td>
<td>.07</td>
<td>.17</td>
<td>.03</td>
<td>.08</td>
</tr>
<tr>
<td>Old age pensions</td>
<td>.46</td>
<td>.26</td>
<td>.10</td>
<td>.10</td>
<td>.21</td>
<td>.25</td>
<td>.65</td>
</tr>
<tr>
<td>Health insurance</td>
<td>.00</td>
<td>.07</td>
<td>.50</td>
<td>.23</td>
<td>.08</td>
<td>.15</td>
<td>.18</td>
</tr>
<tr>
<td>Minimum wage</td>
<td>.00</td>
<td>.90</td>
<td>.87</td>
<td>.23</td>
<td>.58</td>
<td>.33</td>
<td>.21</td>
</tr>
<tr>
<td>Industrial accidents, employers' liability, workmen's compensation</td>
<td>1.78</td>
<td>3.40</td>
<td>1.09</td>
<td>.94</td>
<td>.77</td>
<td>1.37</td>
<td>1.42</td>
</tr>
<tr>
<td>Unemployment</td>
<td>1.14</td>
<td>.72</td>
<td>1.35</td>
<td>1.36</td>
<td>1.61</td>
<td>1.08</td>
<td>3.52</td>
</tr>
<tr>
<td>Unemployment insurance</td>
<td>.11</td>
<td>.15</td>
<td>.10</td>
<td>.13</td>
<td>.43</td>
<td>.55</td>
<td>.44</td>
</tr>
<tr>
<td>Insurance, state and compulsory</td>
<td>.26</td>
<td>1.06</td>
<td>.07</td>
<td>.01</td>
<td>.03</td>
<td>.05</td>
<td>.05</td>
</tr>
<tr>
<td>Trusts, monopolies, etc.</td>
<td>1.44</td>
<td>3.25</td>
<td>1.33</td>
<td>.86</td>
<td>.63</td>
<td>.84</td>
<td>1.35</td>
</tr>
<tr>
<td>Public utilities</td>
<td>.51</td>
<td>.75</td>
<td>.88</td>
<td>.36</td>
<td>.29</td>
<td>.65</td>
<td>1.14</td>
</tr>
<tr>
<td>Income, inheritance and “single” taxes</td>
<td>.74</td>
<td>1.44</td>
<td>.95</td>
<td>.88</td>
<td>.61</td>
<td>.78</td>
<td>.26</td>
</tr>
<tr>
<td>Other taxation topics</td>
<td>5.58</td>
<td>2.08</td>
<td>1.85</td>
<td>1.60</td>
<td>1.95</td>
<td>1.16</td>
<td>8.89</td>
</tr>
<tr>
<td>Referendum, recall, primaries, etc.</td>
<td>2.82</td>
<td>3.06</td>
<td>1.12</td>
<td>.78</td>
<td>.86</td>
<td>.89</td>
<td>.39</td>
</tr>
<tr>
<td>Woman suffrage, feminism, etc.</td>
<td>9.59</td>
<td>1.79</td>
<td>10.71</td>
<td>6.83</td>
<td>7.37</td>
<td>7.45</td>
<td>7.61</td>
</tr>
<tr>
<td>Progressive party, etc.</td>
<td>.00</td>
<td>.83</td>
<td>.53</td>
<td>.06</td>
<td>.54</td>
<td>.15</td>
<td>.23</td>
</tr>
<tr>
<td>Eugenics</td>
<td>.48</td>
<td>1.42</td>
<td>.54</td>
<td>.29</td>
<td>.29</td>
<td>.44</td>
<td>.19</td>
</tr>
<tr>
<td>Prostitution</td>
<td>.16</td>
<td>1.23</td>
<td>.32</td>
<td>.07</td>
<td>.18</td>
<td>.10</td>
<td>.10</td>
</tr>
<tr>
<td>Church and social problems</td>
<td>.65</td>
<td>1.05</td>
<td>.88</td>
<td>.95</td>
<td>.44</td>
<td>.44</td>
<td>.28</td>
</tr>
</tbody>
</table>

\textsuperscript{22} For a discussion of the concepts of public welfare in the fields of relief, penology, mental disease and child care, see Chap. XXIV.
ATTITUDES

The Relative Subsidence of Reform Discussion.—Reasons for the 44 percent drop in the relative volume of the topics listed in Table 23 have undoubtedly been numerous and complicated. Certain fairly obvious factors may be pointed out.

Many of the movements had produced legislation which met more or less adequately the needs upon which the reformers had been insisting. This accounts at least partly for the declining discussion of workmen’s compensation, woman suffrage, juvenile courts, mothers’ pensions, income taxation and the like.

Other reforms did not fulfill the hopes which their proponents had built up for them. In the case of prohibition, this brought about a still larger wave of antagonistic discussion. In other instances the reforms, while not regarded widely with violent antipathy, were not so successful as to provide powerful arguments for further reforms. It is suggested tentatively that this may have been the case with woman suffrage and other extensions of democracy, with anti-trust legislation and with anti-vice crusades.

Another factor, probably, was the change from combative reform psychology to cooperative efficiency psychology shortly after the World War. This will be discussed more at length in the next section.

The World War probably was influential in various ways, the chief of which seems to have been in bringing disarmament and international relations into the forefront. When the 1910–1914 and the 1929–1930 periods are compared, it is found that international problems and prohibition, combined, gained more attention than was lost by topics listed in Table 23. The relative prosperity of the 1920’s is a further explanation. Table 27 shows the sharp growth of interest in unemployment after the close of the period covered by Table 23.

The Discussion of Radicalism.—The World War ended with economic radicalism very much to the fore in Europe. The Bolsheviks had taken power in Russia. A republican revolution had triumphed in Germany. The Labor Party was gaining power in Great Britain. Economic radicalism was violently discussed in other countries of the world including the United States. The resulting wave of discussion of radical economic programs may be seen from Table 24.

Before the World War discussion of these programs for fundamental economic reorganization held a fairly constant level; between 1919 and 1921, it rose to more than twice that relative frequency; but since 1922 it has remained consistently lower than at any of the pre-war periods.

In sample articles dealing with economic problems in the years 1905, 1914, 1920 and 1930, analyzed by Mills, McGarraghy and the author, the attitude indicators opposed to communism, socialism and radicalism in general consistently outnumbered those favorable. In 1914
a total of 226 attitude indicators on these topics were noted, of which 218, or 96.5 percent were conservative; in 1920 a total of 124 were noted, of which 115, or 92.7 percent were opposed to these radical programs. After the war the railroads were returned to private ownership. The socialist vote dropped to low levels. It happens that Harding, Coolidge and Hoover each expressed their views on these issues in magazine articles shortly after the war and their statements each express emphatic and fundamental repudiation of radicalism.

Communism regained part of its old hold on popular interest in 1930–1931 but the period from July, 1931 to May, 1932 showed a renewed decline of articles on this subject, in spite of the fact that economic conditions have become increasingly acute.

The question has been raised whether this decline in the discussion of communism has not represented merely a shift of attention from radical theory to actual conditions in Soviet Russia. To check this point, analysis has been made of the articles indexed in the Reader’s Guide under the headings “Russia—Commerce, Economic Conditions, Economic Policies, Industries and Resources.” The numbers of entries under these heads, per thousand indexed, have been as follows: 1905–1909, 0.35; 1910–1914, 0.07; 1915–1918, 0.53; 1919–1921, 1.40; 1922–1924, 1.26; 1925–1928, 0.51; 1929–1930, 0.65; 1930–1931, 3.37; 1931–1932, 2.53. It will be noted that the trend of these figures, like that of “Communism and Bolshevism,” reached a peak in 1919–1921, relapsed, and rose to a new peak in 1930–1931, with a decline again in 1931–1932. But whereas the communism curve was lower in 1930–1931 than in 1919–1921, the Russian Economic Conditions curve was more than twice as high as before and had outstripped communism as a subject of magazine attention.
VI. THE PEAK OF SCIENTIFIC MANAGEMENT DISCUSSION

In Europe the struggle between capital and labor was carried forward by governments sympathetic to labor to the point of increasing the taxation upon the wealthy, extending greatly the systems of social insurance which mitigated the inadequacies of workmen's incomes and enforcing by legislation reduction of hours and other improvements in the status of labor. The United States also had adopted income taxes with progressively higher rates for the wealthy and had employed the principles of social insurance in its allotments to the dependents of soldiers. Just after the war, discussion of taxation was overwhelmingly antagonistic toward the high rates being paid by corporations and recipients of large individual incomes. These rates were reduced. Discussion of social insurance, which had been exceedingly active in the reform period before the war, dropped to less than half its former importance. The trend of discussion may be summarized somewhat figuratively by saying that America repudiated the policy of forcing a more equal division of the social income and adopted instead the policy of trying to increase the total amount of the national income by applying scientific methods under the leadership of the captains and generals of industry. 26

The Era of Employer Leadership.—Some of the topics under which the new interest in applying science to business and industry was expressed are shown, with their changing discussion volumes, in Table 25.

Table 25.—SCIENTIFIC MANAGEMENT AND KINDRED ARTICLES, 1905-1930
(Ratio to all articles indexed in Reader's Guide)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4.24</td>
</tr>
<tr>
<td>Scientific management, efficiency, etc.</td>
<td>1.84</td>
</tr>
<tr>
<td>Sales, salesmen, credit, purchasing, etc.</td>
<td>1.38</td>
</tr>
<tr>
<td>&quot;Business,&quot; &quot;industry,&quot; etc.</td>
<td>1.02</td>
</tr>
</tbody>
</table>

Attention given to these business efficiency topics in Reader's Guide articles has dropped off to 72 percent of what it was in 1919-1921 but it is still over twice what it was in 1905-1909. The passing of the peak of discussion in general magazines does not mean that American industry has ceased to believe in efficiency. The wave of popular discussion has left two lasting effects. First, it has probably helped to bring changes in

26 For a discussion of these topics, see Chap. XVI.
the equipment, the organization, the habits and the attitudes of business and industry. While those changes were taking place they were news. Alterations in the culture fabric always stir up emotional energy which tends to produce discussion. After new action patterns and machinery have been adopted and assimilated they cease to be exciting. A second lasting result has been the development of a group of new periodicals, specializing in business and industrial efficiency. The problems to be discussed become increasingly technical when the obvious improvements have been adopted and the obvious problems cleared up. Our present epoch is characterized by intellectual specialization. Waves of popular interest develop whole new fields of investigation and thought which create for themselves new channels of expression and discussion.

For seventy-eight industrial and business periodicals, each of which has had over 5,000 circulation at one time or another, it has been feasible to get consecutive circulation data. The list includes periodicals started before as well as those started after 1900, and those discontinued before 1930 as well as those still continuing.27 The total circulation of these 78 periodicals in even thousands, as reported in Ayer’s for the succeeding years, have been as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Circulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>262,000</td>
</tr>
<tr>
<td>1905</td>
<td>454,000</td>
</tr>
<tr>
<td>1910</td>
<td>585,000</td>
</tr>
<tr>
<td>1915</td>
<td>640,000</td>
</tr>
<tr>
<td>1920</td>
<td>887,000</td>
</tr>
<tr>
<td>1925</td>
<td>1,227,000</td>
</tr>
<tr>
<td>1930</td>
<td>1,255,000</td>
</tr>
</tbody>
</table>

The total circulations more than doubled between 1900 and 1910 with a marked slowing down in 1915; after the war the development of the scientific management epoch brought an even more spectacular growth reaching its maximum in the late twenties.

Shifts in the Discussion of Labor Relations.28—Relations between employers and employees have been discussed from viewpoints which appear to have been related to changing attitudes reflected in Tables 23 and 25. In 1910–1914, when attacks on the trusts were at their height and when demands for justice and equality were being emphasized in economic discussion, articles about strikes were at their maximum frequency. In subsequent volumes, articles about arbitration and about trade agreements attained their peaks. Then in 1919–1921, when scientific management was most widely discussed, scientific personnel work also

27 Among the periodicals included are the Aero Digest, American Banker’s Association Journal, American Builder and Building Age, the American Machinist, Barron’s, Burrough’s Clearing House, Business Week, Dun’s International Review, Electrical World, Engineering News-Record, Factory and Industrial Management and Manufacturing Industry, Forbes, Industrial Engineering and Machinery, Magazine of Wall Street, National Electric Light Association Bulletin, Power, Printer’s Ink, Radio Digest, and a large number of periodicals of similar types.

28 On trends in labor relations, see Chap. XVI.
ATTITUDES
came to the fore. Indexes for topics related to these changes are shown in Table 26.

<table>
<thead>
<tr>
<th>Topics</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>10.74</td>
</tr>
<tr>
<td>Employees and laboring classes</td>
<td>2.83</td>
</tr>
<tr>
<td>Trade unions, etc.</td>
<td>3.05</td>
</tr>
<tr>
<td>Strikes</td>
<td>0.51</td>
</tr>
<tr>
<td>Arbitration and conciliation</td>
<td>0.32</td>
</tr>
<tr>
<td>Trade agreements</td>
<td>0.39</td>
</tr>
<tr>
<td>Industrial relations</td>
<td>0.00</td>
</tr>
<tr>
<td>Wages</td>
<td>0.85</td>
</tr>
<tr>
<td>Hours of labor</td>
<td>0.69</td>
</tr>
<tr>
<td>Employment management</td>
<td>0.00</td>
</tr>
<tr>
<td>Employment systems</td>
<td>0.00</td>
</tr>
<tr>
<td>Premium wage systems</td>
<td>0.28</td>
</tr>
<tr>
<td>Industrial and labor education</td>
<td>1.35</td>
</tr>
<tr>
<td>Industrial diseases and hygiene</td>
<td>0.30</td>
</tr>
<tr>
<td>Welfare work for laborers</td>
<td>0.37</td>
</tr>
<tr>
<td>Employee representation in management, etc...</td>
<td>0.92</td>
</tr>
</tbody>
</table>

The totals of Table 26 follow the same general curve as those of Table 25, namely, an increase of more than 100 percent between the 1905-1909 and the 1919-1921 periods, with a decline of about one-third by the end of the series.

In relation to the changing attitudes apparently reflected in the above tables it is significant to observe that strikes and lockouts have decreased during the past 12 years to less than one-fifth their former frequency. According to United States Bureau of Labor Statistics reports the average numbers of strikes and lockouts per year, by three year periods since 1916, have been as follows:

1916-1918.................. 3,864  1925-1927.................. 1,023  
1919-1921.................. 3,142  1928-1930.................. 702  
1922-1924.................. 1,305

VII. DISCUSSION RELATED TO BUSINESS DEPRESSION AND PROSPERITY

Changes in the relative number of articles on topics related to the ups and downs of the business cycle are shown in Table 27, and in Figure

29 For an analysis of recent business cycles, see Chap. V.

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Fig. 4.—Unemployment and business conditions: articles per 1,000 indexed in the Reader’s Guide, 1905 to May, 1932.

Table 27.—Articles on Unemployment, Business Conditions, Prices and the Like, 1905–1932
(Ratio to all articles indexed in Reader’s Guide)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>6.05</td>
</tr>
<tr>
<td>Business cycles, depressions, panics, prosperity...</td>
<td>1.61</td>
</tr>
<tr>
<td>Business forecasting...</td>
<td>0.00</td>
</tr>
<tr>
<td>Speculation...</td>
<td>1.42</td>
</tr>
<tr>
<td>Cost of living...</td>
<td>2.79</td>
</tr>
<tr>
<td>Prices</td>
<td>0.90</td>
</tr>
<tr>
<td>Unemployment insurance...</td>
<td>0.11</td>
</tr>
<tr>
<td>Unemployment...</td>
<td>1.14</td>
</tr>
</tbody>
</table>

* Covers the period July, 1931 to May, 1932.

4. By individual years the total number of articles on the topics listed in Table 27 per 1,000 indexed, were as follows:

[ 434 ]
Examination of the several topics in Table 27 will show that various sub-peaks have appeared in each at times of other economic disturbances. These previous minor heights, however, sink into relative insignificance in comparison with the volume of discussion which the present depression has called forth. The proportionate amount of attention given to these topics in 1931–1932 was nearly twice as great as that for any year preceding 1929.

VIII. INTERNATIONAL ATTITUDE CHANGES AS REFLECTED IN MAGAZINES

The World War naturally brought a sudden increase in the proportionate amount of magazine space devoted to international questions. Not including discussions about the war itself, the number of articles on international questions, per 1,000 indexed, more than doubled in the volume of the Reader’s Guide covering the war period. Thereafter the proportionate space devoted to international problems fluctuated on a level about twice as high as before the war. The data are summarized in Table 28.

Table 28.—Articles on International Questions and Their Chief Subdivisions (Excluding the World War), 1905–1931

(Proportion of all articles indexed in Reader’s Guide)

<table>
<thead>
<tr>
<th>Topic groups</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Totals</td>
<td>12.21</td>
</tr>
<tr>
<td>Preparedness and disarmament</td>
<td>1.54</td>
</tr>
<tr>
<td>League of Nations, World Court, etc.</td>
<td>1.46</td>
</tr>
<tr>
<td>Reparations, tariff, foreign investments,</td>
<td></td>
</tr>
<tr>
<td>foreign commerce, etc.</td>
<td>4.79</td>
</tr>
<tr>
<td>General and miscellaneous</td>
<td>5.48</td>
</tr>
</tbody>
</table>

The Development of Preparedness and Disarmament Sentiment.—Subdivisions of the first subhead in Table 28 are shown in Table 29. It will be seen that the outbreak of the World War in Europe intensified

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30 See discussion of international relations in Chapter XXIX.
RECENT SOCIAL TRENDS

discussion of these topics. Articles related to preparedness expanded at first more than pacifism and disarmament topics. But toward the end of the war preparedness discussion contracted to nearly its old level, while disarmament and pacifism continued to attract increasing attention.

Table 29.—Articles on Preparedness and Disarmament, 1905-1932
(Ratio to all articles indexed in Reader's Guide)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>.54</td>
</tr>
<tr>
<td>U. S. defenses</td>
<td>.08</td>
</tr>
<tr>
<td>Conscripton, military service</td>
<td>.02</td>
</tr>
<tr>
<td>Armaments</td>
<td>.10</td>
</tr>
<tr>
<td>Sea power</td>
<td>.18</td>
</tr>
<tr>
<td>International security</td>
<td>.06</td>
</tr>
<tr>
<td>Preparedness, military</td>
<td>.00</td>
</tr>
<tr>
<td>Militarism</td>
<td>.11</td>
</tr>
<tr>
<td>Subtotal of preparedness items</td>
<td>.29</td>
</tr>
<tr>
<td>Disarmament</td>
<td>.13</td>
</tr>
<tr>
<td>Pacifism</td>
<td>.06</td>
</tr>
<tr>
<td>Non-resistance; amnesty</td>
<td>.06</td>
</tr>
<tr>
<td>War, outlawry of</td>
<td>.00</td>
</tr>
<tr>
<td>Subtotal of disarmament items</td>
<td>.15</td>
</tr>
</tbody>
</table>

* The 1930-1931 volume covers the period July, 1930 to June, 1931; the 1931-1932 volume covers July, 1931 to January, 1932.

The volume of discussion on disarmament and peace topics has fluctuated considerably since 1920 but it has never fallen below seventeen times its pre-war level.

The topics under which articles are classified, however, are not very reliable indicators of the attitudes which they express. For example, an article indexed under "militarism" might be attacking preparedness, while one listed under "pacifism" might be calling for the imprisonment of pacifists. In order to derive a more reliable index of the attitudes on these and other international questions representative articles on topics covered by Table 28 were analyzed for selected years. For example, in 91 impartially selected articles on international issues analyzed for the year 1913-1914 there were noted 137 indicators of attitudes explicitly favorable to disarmament or peace and 95 explicitly favorable to preparedness and allied interests. The total number of attitude indicators on these topics for this period was 232; the proportion of disarmament or pacifistic indicators was therefore .50 and the proportion of prepared-
ness indicators was .41. In the 11 articles selected impartially from those published on international issues in 1916 there were noted 322 explicit indicators of attitudes favorable to disarmament or peace and 524 favorable to preparedness, making the disarmament proportion .38 and the preparedness proportion .62. Similar calculations for other years produce the following disarmament proportions: 1918, .83; 1920, .85; 1925, .86; 1928, .70; and 1931, .90. These are indicated by the solid line in Figure 5.

If instead of taking the number of indicators of favorable and unfavorable attitudes toward preparedness, disarmament and allied concepts, the subtotals of Table 29 are used, it is found that the percentages of disarmament titles are as indicated by the dotted line in Figure 5. A curve of a shape quite similar to these two is obtained from applying similar methods to the data recorded by Mills and McGarraghy in their intensive analyses of seven mass circulation periodicals.

League of Nations, World Court and Other International Government Issues.—Subdivisions of the second item in Table 28 are given in Table 30.

The Hague tribunal treaties providing for the arbitration of international disputes and various proposals for international federations were under discussion before the World War. During the war the idea of a
League to Enforce Peace and other suggestions looking toward international government came to the fore. The agitation reached its height in the presidential campaign of 1920 when ratification of the Versailles Treaty and of its League of Nations Covenant was an outstanding issue. After this question was decided, discussion receded to about twice its prewar level, recovered somewhat, and again declined. Discussions of the League of Nations were less frequent in 1930–1931 than in any period since the topic began to be indexed.

In the articles intensively analysed the proportions of opinion indicators which were favorable to the League of Nations, the World Court or other forms of political and legal cooperation between nations are as follows: 1913–1914, 0.81; 1916, 0.77; 1918, 0.78; 1920, 0.66; 1925, 0.69; 1927–1928, 0.60; and 1931, 0.78.

It will be noted that the isolationist sentiment expressed in these magazines has been consistently lower than the sentiment expressed in favor of cooperation with international political activities and organizations. In spite of this fact, the United States has not joined the League nor (at the date of writing) adhered to the World Court. In this connection it must be remembered that both parties in the 1920 campaign avowed belief in some sort of international organization to promote peace. Harding repudiated not the general idea of a league, but the specific League of Nations Covenant. On the other hand, it must be recognized that Reader’s Guide periodicals express chiefly the attitudes current among the more highly educated portion of the population, and cannot be accepted as an accurate gauge of the voting sentiment of the general public. This applies also, of course, to attitudes discussed in this chapter relating to religion, prohibition and other questions, as pointed out earlier.

Rather closely related to topics in Table 30 but not specifically involving international government, are the subjects dealt with in Table 31 which itemizes the third subtopic in Table 28.

![Table 30.-Articles on League of Nations, International Courts, Arbitration and Other International Government Projects, 1905–1931](image-url)
Table 31.—Foreign Relations of the United States and General International Topics, 1905–1931
(Ratio to all articles indexed in Reader’s Guide)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>5.42</td>
</tr>
<tr>
<td>Internationalism, nationalism, etc.</td>
<td>.02</td>
</tr>
<tr>
<td>International law and relations; treaties</td>
<td>.50</td>
</tr>
<tr>
<td>U. S., foreign relations</td>
<td>1.74</td>
</tr>
<tr>
<td>Diplomatic service, etc.</td>
<td>1.25</td>
</tr>
<tr>
<td>Freedom of the seas</td>
<td>.00</td>
</tr>
<tr>
<td>Neutrality</td>
<td>.11</td>
</tr>
<tr>
<td>Imperialism, colonies, etc.</td>
<td>.89</td>
</tr>
<tr>
<td>Latin America, Mexico and the U. S.</td>
<td>.00</td>
</tr>
<tr>
<td>Intervention</td>
<td>.01</td>
</tr>
<tr>
<td>Monroe Doctrine</td>
<td>.25</td>
</tr>
<tr>
<td>Pan-Americanism</td>
<td>.23</td>
</tr>
<tr>
<td>Europe and the U. S.</td>
<td>.00</td>
</tr>
<tr>
<td>Japan and the U. S.</td>
<td>.92</td>
</tr>
<tr>
<td>Extraterritoriality</td>
<td>.03</td>
</tr>
</tbody>
</table>

Economic Aspects of International Relations.—While magazine discussion of the League of Nations had ebbed in 1930–1931 to a point lower than in any previous period since the project was launched, reparations, the tariff and foreign investments were so prominent that economic aspects of international relations received more magazine space from 1929 to 1931 than at any time since 1905. Details of these changes are presented in Table 32, which shows the ratio of articles on these subjects to all articles indexed in Reader’s guide.

Table 32.—Articles on Economic Aspects of International Relations, 1905–1931
(Ratio to all articles indexed in Reader’s Guide)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Articles per thousand indexed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4.79</td>
</tr>
<tr>
<td>Reparations</td>
<td>.00</td>
</tr>
<tr>
<td>War debts</td>
<td>.00</td>
</tr>
<tr>
<td>Tariff, etc.</td>
<td>.45</td>
</tr>
<tr>
<td>Foreign commerce</td>
<td>.33</td>
</tr>
<tr>
<td>Foreign investments</td>
<td>.00</td>
</tr>
</tbody>
</table>
**RECENT SOCIAL TRENDS**

**IX. SUMMARY AND CONCLUSIONS**

*Reader’s Guide Summary.—Some of the topics discussed in the present chapter received their greatest relative attention in magazines indexed in the Reader’s Guide in the period before the World War, or*

<table>
<thead>
<tr>
<th>Table 33.—General Summary of Topics Analyzed in the Reader’s Guide, Classified According to Periods in Which Greatest Relative Magazine Attention Occurred, 1905-1931</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Topics</strong></td>
</tr>
<tr>
<td>Religion</td>
</tr>
<tr>
<td>Philosophy</td>
</tr>
<tr>
<td>“Pure” science</td>
</tr>
<tr>
<td>Electric railways, telephones, telegraphs, automobiles, airplanes, etc.</td>
</tr>
<tr>
<td>Poverty, charities, immigration, etc.</td>
</tr>
<tr>
<td>Workmen’s compensation, mothers’ pensions, etc.</td>
</tr>
<tr>
<td>Trusts, taxation, etc.</td>
</tr>
<tr>
<td>Woman suffrage, etc.</td>
</tr>
<tr>
<td>Other political reforms</td>
</tr>
<tr>
<td>Eugenics</td>
</tr>
<tr>
<td>Prostitution</td>
</tr>
<tr>
<td>Sports</td>
</tr>
<tr>
<td>International relations</td>
</tr>
<tr>
<td>Preparedness, etc.</td>
</tr>
<tr>
<td>Total—peaks, 1905–1918</td>
</tr>
<tr>
<td>League of Nations, World Court, etc.</td>
</tr>
<tr>
<td>Socialism, communism</td>
</tr>
<tr>
<td>Scientific management, etc.</td>
</tr>
<tr>
<td>Labor relations</td>
</tr>
<tr>
<td>Radio</td>
</tr>
<tr>
<td>Applied science</td>
</tr>
<tr>
<td>Science in general</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Total—peaks, 1919–1928</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Disarmament, etc.</td>
</tr>
<tr>
<td>Tariff, war debts, etc.</td>
</tr>
<tr>
<td>Moving pictures</td>
</tr>
<tr>
<td>Family, home, marriage, etc.</td>
</tr>
<tr>
<td>Birth control, divorce, sex morals, etc.</td>
</tr>
<tr>
<td>Unemployment, business cycles, etc.</td>
</tr>
<tr>
<td>Total—peaks, 1929–1931</td>
</tr>
<tr>
<td>Totals covered above</td>
</tr>
<tr>
<td>Not covered in chapter</td>
</tr>
<tr>
<td>Grand total</td>
</tr>
</tbody>
</table>
while it was going on; others came into greatest relative prominence between 1919 and 1928; still others have been at their peaks of attention during 1929, 1930 and 1931. Comparison of these three groups of topics provides a brief summary of the shifts of interest reflected in these periodicals. For this purpose the most important or significant items from the Reader’s Guide material tables have been regrouped in Table 33. An analysis of sports articles, not presented in the chapter, has been summarized also in this table.

Conclusions.—A study of interests and opinions reflected in leading magazines and allied sources in the United States since 1900, as presented in this chapter, indicates the following as the most outstanding trends:

1. Religious sanctions have been largely displaced by scientific sanctions in discussions published in leading magazines. Applied science has risen to a paramount position in the intellectual life reflected in periodicals of opinion. Discussions of education increased to about twice as much proportionate space in general periodicals in 1928 as in 1912.

Antagonistic criticism of the church, of ministers and of traditional creeds reached a maximum in 1925–1928 in general magazines, and still exceeds the volume of favorable comment. The leading part in antagonistic criticism has been taken by the periodicals circulating among the more highly educated part of the population; periodicals read by the great masses of the people reflect a growing lack of interest in rather than aggressive criticism of religion. Favorable discussions of God, of religion in relation to science and of the spiritual life reached a new high peak in 1925–1928. Analysis of short stories suggests that even this type of religion has definitely less grip on the public in 1932 than it had in 1900–1905.

2. Sexual irregularities, easy divorce and sex freedom in general have recently been approved to an extent entirely unprecedented in 1900–1905 in the channels studied. In magazine articles, challenges to traditional sex attitudes developed to a maximum between 1925 and 1928. In fiction, increased tolerance for violations of monogamistic sex mores on the part of heroines and heroes has been evident for all groups studied but especially for the “intellectual” periodicals. The wave of approval for sex freedom appears to have been closely associated with the decline of religious sanctions for sex conduct.

3. Opposition to prohibition in magazines had increased by 1931 to five times the amount expressed in 1914. Opinions expressed about drinking had also shifted toward the “wet” side but not so extremely. Drinking by moving picture heroes and heroines is from two to seven times as frequent as for approved characters in short stories of various types.

4. Discussion of economic and political institutions has shown the following tendencies, among others: Increasing interest in social uplift and reform developed in the first two decades of the century. The World
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War was followed, in 1919–1921, by a wave of discussion of socialism, communism and other radical proposals, but the opposition expressed was overwhelming. Scientific management, industrial goodwill, low prices and high wages, service to the consumer and the like, became favorite slogans from 1915 to 1928. A new and unprecedented wave of discussion of unemployment and business conditions has developed during the present depression.

5. In international relations, the World War first intensified the agitation for military preparedness, then led to a wave of enthusiasm for international courts and international government and finally produced a new and growing demand for reduction of armaments.
CHAPTER IX
THE RISE OF METROPOLITAN COMMUNITIES

By R. D. McKenzie

A striking phenomenon of population change in the United States during the past half century has been that which may be described in general terms as a movement from the country to the city. Since 1880 the percentage of population classified as urban has nearly doubled, while that classified as rural has declined proportionately. This statement gives only a very rough idea of what has happened. Urban territory, under the census classification, includes all communities having 2,500 or more inhabitants. Thus Kenilworth, Illinois, with a population of 2,501 in 1930, falls into the same group as Chicago with 3,376,438; and Cooperstown, New York, with 2,909, is “urban” as well as Greater New York with 6,930,446.

More precise results may be obtained by subdividing “urban” communities into nine groups, beginning with those having populations between 2,500 and 5,000 and ending with those having 1,000,000 or more. By dividing our urban population into nine or more fractions according to the sizes of the communities in which it resides it is possible to determine the relative degree of “urbanization” which prevails. But even this method has proved unsatisfactory because it does not give a true picture of the organization of our urban territory. We are coming to think of the city not only as an agglomeration of people but as a way of living, with an influence extending far beyond its own borders. It is the growth of the metropolitan way of living which we now wish to trace rather than merely the increase of metropolitan populations; and it is to the tracing and analyzing of this growth that the present report is largely devoted.

With the increasing ease and rapidity of travel, particularly by motor car, the large city has not only brought under its sway much territory that was formerly rural, but has extended its influence far out into territory that is still classified as rural. Smaller communities within a wide radius of every urban center have lost much of their former isolation, provincialism and independence. Even beyond the commuting area, the city reaches out with its newspapers, radio broadcasts, amusements and shopping facilities. In this process the character of the city itself is some-

1 For details, see Chap. I.
what altered. If the suburban and country districts are urbanized the city is in a degree ruralized. Its people more and more go outside the corporate limits to live, to spend their vacations and to find recreation. Thus the city of former days is really being replaced by a new entity, the metropolitan community, with a distribution of population shading off from extreme congestion to relative sparseness, yet with some uniformity of character.

Each great city has its sphere of influence. By laying out these spheres on a map of the United States, according to criteria which will be explained in the body of the chapter, it is possible to divide the whole nation into metropolitan regions which economically and sociologically have greater reality than the several states. Three dimensions would be required in order to give a clear picture of this metropolitan organization of the country, for some of our metropolises are regional in character, some are inter-regional and one or two are international in their influence. Neighboring metropolises compete for trade and prestige, and the boundaries between the territories they control may be as fluctuating and as hotly disputed as though each were an independent principality.

At the same time each is likely to be affected in its life by one of the inter-regional metropolises, especially New York or Chicago. Each is increasingly aware of its economic and social unity, yet each tends to imitate the larger centers culturally. Thus the great cities preserve many differences arising from their history, their geographical location, the nature of their population and their sources of livelihood, but they also tend toward cultural uniformity. National advertising, motion pictures, and in recent years the radio play a large part in this latter process. There are also economic influences that cannot be so readily analyzed.

The metropolitan community is not a static thing, though it has some characteristics which are likely to distinguish it for a long time to come. It is a product of development and change and is certain to develop and change in the future. In this chapter an attempt is made to measure, in terms of recent trends, the manner in which our urban population is concentrating itself, the characteristics of the metropolitan region, the nature of the growth process within the region, the part played by regional planning and zoning, and the role of metropolitan governments.

It cannot be too strongly emphasized that the modern metropolitan community is practically a new social and economic entity, comparable in some respects with the city state of ancient and medieval times, but in other respects unprecedented. The metropolitan region is the child of modern facilities for transportation and communication. These facilities,

\[^2\] For elaboration of this subject, see Chap. IV.

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METROPOLITAN COMMUNITIES

have created the situations and problems of social and economic organization with which the present chapter deals.

I. THE TRENDS TOWARD METROPOLITANISM

Recent developments in means of communication have so enlarged the scope of local life that the ordinary individual, in the pursuit of his daily activities of work and leisure, is no longer confined to a single village, town or even a city. The modern community usually embraces a number of centers of different size, each more or less specialized in its institutions and its services. In other words it is characterized by a geographical division of labor.

We shall attempt to sketch the rise of this community of multiple centers, to examine some of the important changes taking place in local institutions as a result of specialization and differentiation of function and, finally, to outline a few of the problems associated with this complex pattern of local activities.

Two outstanding factors in the changing character of the local community are: (1) the increase in the aggregate population of the community and the extension of the area within which local activities are carried on in common; (2) the increased mobility of products and people, resulting in a wider range of individual choice, more specialization of local services and a more closely-knit community structure.

Concentration of Population.—Each of the last three censuses has reported an increasing geographical concentration of population. If the total population is divided into one-fourth, one-half and three-fourths, each fraction is found to be contained within an increasingly smaller area, as Table 1 clearly demonstrates.

Table 1.—Population Concentration as Shown by the Smallest Areas Required to Obtain One-Quarter, One-Half and Three-Quarters of the Total Inhabitants of the United States at Each of the Last Three Decennial Enumerations, 1910-1930

<table>
<thead>
<tr>
<th>Year</th>
<th>Total population</th>
<th>One-quarter of population</th>
<th>One-half of population</th>
<th>Three-quarters of population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of counties</td>
<td>Area (sq. mi.)</td>
<td>Number of counties</td>
<td>Area (sq. mi.)</td>
</tr>
<tr>
<td>1910</td>
<td>91,972,866</td>
<td>39</td>
<td>28,243</td>
<td>312</td>
</tr>
<tr>
<td>1920</td>
<td>105,710,620</td>
<td>33</td>
<td>19,270</td>
<td>250</td>
</tr>
<tr>
<td>1930</td>
<td>122,775,046</td>
<td>27</td>
<td>14,431</td>
<td>189</td>
</tr>
</tbody>
</table>

* Table is computed on county units; independent cities are included.

b Compiled from U. S. Census reports.
This table understates rather than overstates the actual facts of concentration. Counties are grouped according to rank in population rather than density. This procedure was adopted because the Bureau of the Census did not compute county densities prior to 1920. Occasionally, however, a county with a relatively small population has a high density; consequently, if the table had been based on density, the number of counties listed for each division of the population might be somewhat greater, but the number of square miles of territory would undoubtedly be considerably reduced.

Population in general is moving toward the areas of high density. In 1920 there were 265 counties with a density of 100 or more per square mile. In 1910 these counties contained 45.1 percent of the total population; in 1920, 48.2 percent; and in 1930, 52.6 percent.

Movement toward Deep Water.—There is a significant but by no means uniform movement of population toward the deep water rim of the country—that is toward the Atlantic and Pacific Oceans, the Gulf of Mexico, and the metropolitan territory adjoining the Great Lakes. Table 2 presents in summary fashion the facts regarding this population increase.

Table 2.—Population Concentration in a Zone Extending Approximately 50 Miles Inland from the Seaboard and the Great Lakes, 1900–1930

<table>
<thead>
<tr>
<th>Census year</th>
<th>Population within zone</th>
<th>Percent of total U. S. population in zone</th>
<th>Increase within zone since preceding census</th>
<th>Percent of total U. S. increase within zone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>27,849,988</td>
<td>36.6</td>
<td>5,495,234</td>
<td>42.1</td>
</tr>
<tr>
<td>1910</td>
<td>32,683,790</td>
<td>38.7</td>
<td>7,791,508</td>
<td>48.8</td>
</tr>
<tr>
<td>1920</td>
<td>48,865,921</td>
<td>41.5</td>
<td>8,231,485</td>
<td>59.9</td>
</tr>
<tr>
<td>1930</td>
<td>55,413,567</td>
<td>45.1</td>
<td>11,548,346</td>
<td>67.7</td>
</tr>
</tbody>
</table>

* Compiled from U. S. Census reports. The table is computed on county units—a list of which is available from the author on request.

The area of the zone is 435,863 square miles, or 14.65 percent of total land area of the United States. It may be defined as a region approximately fifty miles wide which skirts the salt water rim of the country and the southern shores of Lakes Ontario, Erie and Michigan.

The converse side of the concentration process, as indicated by Table 1, is reflected in the extent of territory that is declining in population. Out of a total of 2,955 counties whose boundaries remained unchanged during the last decade (the boundaries of 144 counties were changed), 1,220 had less population in 1930 than in 1920. The combined population of these decreasing counties constituted 18 percent of the total population of the country in 1930. This stands in marked contrast to the extent of decreasing area in 1900 when only 368 out of 2,936 counties showed a decrease during the decade and the total population of these decreasing counties was only 7.7 percent of the population of the nation. Nor has the recent declining territory been strictly rural. No less than 102 cities of 10,000 population or more showed declines in population during the last decade as against 57 cities of this class in the decade 1910 to 1920 and 81 in the decade 1900 to 1910.

Independent cities and the District of Columbia are included.
METROPOLITAN COMMUNITIES

Population moving toward the deep water rim does not, of course, spread itself evenly over this broad strip of territory. It concentrates in the metropolitan centers leaving other sections equally near deep water to decline. The area contains 540 counties and the District of Columbia. Of these counties, 100 actually decreased in population between 1920 and 1930 and 195 others had rates of increase less than the national average. The movement, therefore, is not a mere drift toward open water, but a migration into metropolitan regions which for various reasons are near the water.

Points of Concentration.—Population is moving toward the great cities. Table 3 reflects this movement. The 1930 census lists 93 cities with populations of 100,000 or more. A number of these are so close together, however, that they may be considered as parts of the same metropolitan community. By drawing an arbitrary circle, with a radius of from 20 to 50 miles, around the largest center in such groupings the number of metropolitan regions may be reduced to 63.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total population in United States</th>
<th>Total population in metropolitan zones</th>
<th>Percent which population in zones formed of total U. S. population</th>
<th>Percent which net increase in zones formed of total increase in U. S. since preceding census</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>75,094,575</td>
<td>28,044,688</td>
<td>36.9</td>
<td>46.4</td>
</tr>
<tr>
<td>1910</td>
<td>91,973,266</td>
<td>37,271,608</td>
<td>40.5</td>
<td>57.7</td>
</tr>
<tr>
<td>1920</td>
<td>105,710,020</td>
<td>46,491,885</td>
<td>44.0</td>
<td>67.1</td>
</tr>
<tr>
<td>1930</td>
<td>124,775,046</td>
<td>59,118,595</td>
<td>48.2</td>
<td>74.0</td>
</tr>
</tbody>
</table>

* Compiled from U. S. Census reports.

Since this table was compiled the Bureau of the Census has published the 1930 report on Metropolitan Districts (U. S. Bureau of the Census, Fifteenth Census of the United States, 1930, Metropolitan Districts, Population and Area, 1932), in which 96 districts are outlined, each with a minimum population of 100,000. The 96 districts contained 44.6 percent of the total population of the nation—almost 4 percent less than the percentage found in the districts as outlined in Table 3.

As this table shows, about half of the population of the United States at the present time lives within daily access of a city of 100,000 or more. This is approximately the same percentage of the total population as was reported in the 1,208 cities of 8,000 or more in 1930, and only 8 percent less than the total population recorded as urban. The metropolitan region cuts the population in a different way from the urban classification of the census, yet it cuts almost as large a slice.

A considerable proportion of the population included in this arbitrary definition of metropolitan territory would naturally be classified as "rural" by the Bureau of the Census. But such rural population is prob-
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TABLE 4.—Proportion of Total Population in Different Territorial Classifications, 1900–1930*

<table>
<thead>
<tr>
<th>Territory</th>
<th>1900</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total urban territory</td>
<td>40.0</td>
<td>45.8</td>
<td>51.4</td>
<td>56.2</td>
</tr>
<tr>
<td>Cities of 8,000 or more</td>
<td>32.9</td>
<td>38.7</td>
<td>43.8</td>
<td>49.1</td>
</tr>
<tr>
<td>Metropolitan zones (Table 3)</td>
<td>36.9</td>
<td>40.5</td>
<td>44.0</td>
<td>48.2</td>
</tr>
</tbody>
</table>

* U. S. Census reports.

ably more urbanized from an economic and social standpoint than much of the so-called "urban" population living in small centers remote from the larger cities.

The Metropolitan Constellation.⁵—Large cities seldom appear isolated. They are almost always surrounded by a cluster of smaller centers, varying in size, which are economically and socially intertwined. There are, to be sure, marked differences in the number of separate political communities that appear around the margins of individual cities. Geography, industry, and the degree of annexation that has occurred seem to be important factors in determining the number of political entities in a territorial grouping of population. But regardless of political boundaries the same general social and economic forces seem to be at work in every metropolitan region.

TABLE 5.—Incorporated Places of Specified Size in Selected Metropolitan Districts, 1930*

<table>
<thead>
<tr>
<th>Size of place</th>
<th>New York</th>
<th>Pittsburgh</th>
<th>Chicago</th>
<th>Philadelphia</th>
<th>Boston</th>
<th>Los Angeles</th>
<th>St. Louis</th>
<th>Cincinnati</th>
<th>Detroit</th>
<th>Cleveland</th>
<th>San Francisco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2,500</td>
<td>112</td>
<td>57</td>
<td>59</td>
<td>43</td>
<td>10</td>
<td>10</td>
<td>27</td>
<td>23</td>
<td>13</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>2,500–4,999</td>
<td>49</td>
<td>26</td>
<td>16</td>
<td>25</td>
<td>14</td>
<td>13</td>
<td>4</td>
<td>9</td>
<td>11</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5,000–9,999</td>
<td>49</td>
<td>23</td>
<td>15</td>
<td>14</td>
<td>17</td>
<td>13</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>10,000–49,999</td>
<td>48</td>
<td>27</td>
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<td>50,000–99,999</td>
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<td>1</td>
<td>1</td>
<td>4</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
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</tr>
</tbody>
</table>

Total                  | 272      | 135        | 115     | 92           | 80     | 58          | 48        | 44         | 43      | 41        | 38             |

* Fifteenth Census of the United States, 1930, Metropolitan Districts.

Table 5 shows the number of incorporated places located within some of the main metropolitan districts as outlined by the Bureau of the Census. But the metropolitan district as delimited by the Census on the basis of density represents only a part of the area that is economically and socially tributary to each of these central cities. Had trading areas

⁵ On rural-urban relations, see Chap. X.
been used as the basis of calculation the number of satellites for each of these cities would be greatly increased. The data presented, however, are sufficient to demonstrate the point that smaller cities tend to group themselves around larger ones somewhat as planets group themselves around a sun. They are, so to speak, within its gravitational field. A general analysis of urban statistics without reference to this fact is apt to be misleading. Population increases in the group of small cities are largely in areas exposed to the metropolitan influence. For example, the 78 small urban centers in the state of Illinois, falling in the 2,500 to 4,999 class in 1920, increased in population 32.2 percent in the decade 1920 to 1930; but 93.4 percent of this increase took place in the 25 towns of this size that happened to be suburbs of Chicago or St. Louis. Of the remaining 53 places in this group, located elsewhere in the state, 23 actually decreased in population during the decade. Likewise in Michigan; in 1920 the state contained 32 towns in the 2,500 to 4,999 class, with an aggregate population of 117,178. By 1930 the combined population of these 32 places was 153,538, an increase of 36,360 or 31 percent in the decade. But of the 32 places 4 were suburbs of Detroit, the combined gain of which was 34,009 or 93.5 percent of the gross increase.

The location of places incorporated for the first time during the decade 1920–1930, shows the same trend. The 1930 census records 38 incorporations in Illinois, 26 of which are suburbs of Chicago or St. Louis; the same census lists 33 new incorporations in Michigan, 22 of which are suburbs of Detroit; Ohio is credited with 55 incorporations, 29 of which are suburbs of Cleveland. When the new incorporations suburban to other large cities in these three states are included, practically all the incorporations during the decade are accounted for.

These are random samplings and may not represent conditions everywhere throughout the country. They indicate, however, the tendency toward concentration in certain areas and suggest the importance of taking location into account when interpreting urban statistics.

The Metropolitan Unit.—The essential unity of the central city and surrounding settlement is generally recognized. For the last three decades the Bureau of the Census has published population statistics for the larger cities and their “adjacent territory.” No attempt has been made to analyze the relationship existing between the smaller centers and the main city but from data furnished in the 1930 Census of Distribution, it is possible to show certain aspects of commercial interdependence within a metropolitan region. The 37 communities around Chicago, having a population of 10,000 or more, make an excellent illustration.


7 See table and fuller discussion of this subject in the monograph in this series entitled The Metropolitan Community.
RECENT SOCIAL TREND

Twenty-one of these cities are located within a zone scarcely ten miles wide lying between the outer limits of the political city and a circle with a 20-mile radius drawn from the Loop, or business center. Six fall within the second concentric zone, lying from 20 to 40 miles distant from the Loop. The remaining ten are located in a third zone, lying from 40 to 80 miles distant from the Loop. An analysis of the average number of persons to a store and the average expenditure for food, wearing apparel and general merchandise in each zone, shows that the central city’s influence gradually tapers off. In the first zone stores are relatively few in proportion to population, with an average of 102 persons each. In the second zone this average falls to 69 and in the third to 65. This is a statistical illustration of the common fact of experience, that the nearer one lives to a city’s shopping center the more likely one is to shop there.

Other data show that the shopping done in the city by residents of the outlying communities is somewhat specialized. Food makes up 34.1 percent of all retail purchases in the first zone, 26.8 percent in the second zone, 26.4 percent in the third zone. Residents of the first zone spend an average of $26.96 on general merchandise and $25.98 on wearing apparel yearly on their local stores; residents of the second zone, $81.86 and $52.90 respectively; residents of the third zone, $70.93 and $58.38. For other things than food Zone I depends to a marked extent on the shopping area of the central city, whereas Zones II and III, though obviously not independent of the main shopping center, have gone further in developing local shopping districts.8

The same tapering off of the metropolitan influence may be shown by analyses of newspaper circulations, of wholesale selling districts and of the relations of banks with their correspondents. The financial functions of a great city may extend for hundreds of miles, or even be nation wide. More than 60 percent of Chicago’s wholesale merchandise buyers come from distances of 200 miles or less, but more than 12 percent come 600 miles or more.9 Sometimes the metropolitan influence seems to jump an intermediate territory and to be strong at a remote periphery. Thus the banks of Chicago have more than three times as many correspondents among banks between the 1,600-mile radius and the Pacific Coast as they have in the 800-1,200-mile zone.10 This and other evidence shows that the Pacific Coast cities are more closely integrated with New York and Chicago than are smaller points in intervening zones.

8 See discussion of shopping districts in Chap. XVII.
9 "Merchandise Buyers Visits to Chicago" listed in the Chicago Tribune, January 1 to October 1, 1930, Bulletin from the Business Survey, No. 293, December, 1930 (mimeographed sheets for the use of Tribune staff).
METROPOLITAN COMMUNITIES

Factors in Metropolitanization.—The tendency of population to concentrate in large metropolitan communities is not wholly due to industrial development. The processes of concentration have been even more rapid during the last decade than formerly, although the total number of industrial wage earners in the country was actually less in 1929 than in 1919. 11

The economic and social advantages of specialization and division of labor seem to apply not only to the production of goods but to most of our institutions and services as well. The larger the population with daily access to a common center of institutions and services, the more specialized and differentiated these tend to become. The individual has a wider range of selection, the institution or service a basis for increased efficiency. The great cities draw to themselves the leaders in business, the professions, the sciences and the arts. Concentration breeds concentration. Functions that require access to numerous or highly selected customers are possible only in cities. As population concentrates spatially a hitherto unparalleled degree of economic and social specialization and diversification becomes feasible. Herein seem to lie the main “attractions” of the city—attractions which evidently outweigh the discomforts and wastes of congestion.

The city dweller may not like crowds. He may, however, find it hard to dispense with the goods and services which crowds make possible. The dispersion of population toward the outer zones of metropolitan regions is obviously an attempt on the part of the city man to have his cake and eat it too.

II. METROPOLITAN REGIONALISM

The larger cities of the country are becoming what might be termed regionally conscious. The mapping of metropolitan regions thus becomes important. Practically every city of more than 50,000 inhabitants has sought to delimit the territory which it considers belongs to it by virtue of proximity and functional relationship. While much of the mapping is still of a rather arbitrary nature—a sort of random staking out of territorial claims for advertising purposes—nevertheless there is a definite trend toward a more careful delineation of regional boundaries for commercial and administrative purposes. In addition to the efforts of the cities themselves to define their primary areas of function, numerous national organizations, including the United States Bureau of Foreign and Domestic Commerce, have sought to divide the country into logical trading areas and sales territories for different types of economic service. 12

11 United States Bureau of the Census, Census of Manufactures.
12 The Atlas of Wholesale Grocery Territories, Domestic Commerce Series, no. 7, 1927, was the first attempt of the U. S. Bureau of Foreign and Domestic Commerce to delineate trade areas. Since then the Bureau has conducted a number of important regional com-
RECENT SOCIAL TRENDS

In the preparation of such maps a city is always taken as the starting point and its primary marketing territory is defined in terms of newspaper circulation, delivery zones, freight differentials, and the like.

A general though obviously imperfect picture of metropolitan regionalism in the United States may be sketched by mapping the areas dominated by the daily newspapers of the larger cities. This is done in Figure 1. The cities selected are the Federal Reserve Banking centers, main and branch, together with a few additional cities included to complete the picture. The territory assigned to each of the selected cities is simply the area in which 50 percent or more of the circulation of competing metropolitan papers comes from that particular metropolis. For example, if a marginal town, A, takes papers from two or more of the cities under consideration, it is assigned to the metropolitan territory of the city from which it receives over 50 percent of its total outside circulation. Only one paper, the leading morning daily, of each metropolis was considered and the circulation data were taken directly from the Audit Bureau of Circulations. Parenthetically it may be added that only towns receiving 25 or more copies of a paper are recorded by the Audit Bureau of Circulations. In order to ascertain change in boundaries the data were computed for two years, 1920 and 1929.

Figure 1 is presented merely to illustrate a method of determining zones of metropolitan influence. It goes without saying that the districts indicated are by no means of equal importance. Moreover, within each of these so-called metropolitan regions there are numerous smaller cities possessing daily papers that circulate in surrounding trade areas. Had the circulation territory of local papers been plotted there would be a series of irregular figures appearing like islands within the present regions or cutting across their boundaries. The pattern of relationship of the smaller city to its trading area and to its metropolitan center as shown by newspaper circulation is too complicated to be dealt with here but is shown in some detail in an accompanying monograph.

It will be observed that in the mountain region there is an area lying between Helena on the north and Denver on the south that is labeled "Chicago." In plotting the newspaper circulation of the cities surrounding this area it was found that there was a considerable territory which...
received no papers from any of the surrounding metropolitan centers, at least not in sufficient numbers to be listed by the Audit Bureau of Circulations. On further examination it was found that the towns in this region received the Chicago Tribune more than any other outside newspaper, due, perhaps, to the resort character of part of the area and to a carry over from mail-order days. Consequently this territory was credited to Chicago.

![Map of Metropolitan Regions in the United States](image)

**Fig. 1.**

Metropolitan consciousness was recognized, and undoubtedly stimulated as well, by the procedure of the Bureau of the Census in its preparation for the 1930 enumeration of metropolitan districts. About a year prior to the taking of the Fifteenth Census, the Bureau, through the cooperation of the United States Chamber of Commerce, invited each city of 50,000 or more to prepare a map of its own metropolitan district according to specific instructions. Among the factors proposed for the delineation of metropolitan territory were the following:

- Commuting distance, including only suburbs from which not less than 10 percent of the working population commute daily to the central city; power and light territory served from the central city; the phone service area of the central city; the territory served by the central city’s water supply; the area in which the daily newspapers of the central city are delivered by the paper’s own carrier; the area served by house connections with the city’s sewer system; the residential membership area of social and athletic clubs located within the central city; the area of operation of local real estate companies in the surrounding region;
the area covered by daily routes of solicitors, inspectors, and collectors, operating out of the central city as their headquarters.16

This worthy attempt to recognize the functional area as the appropriate unit for recording metropolitan statistics did not meet with complete success. The maps prepared by the different cities failed to reflect due care in following the Bureau's instructions and the factors suggested for the construction of maps represented too wide a range of metropolitan services to insure the necessary uniformity required for statistical purposes. Consequently in the final tabulation of metropolitan statistics the Census Bureau was compelled to resort to a more standardized and on the whole less satisfactory procedure.17

In the 1930 Census the Bureau publishes figures for 96 metropolitan districts, the aggregate population of which is 54,753,645 or 44.6 percent of the total population of the nation and 79.4 percent of the total urban population. The combined area of the 96 districts is 36,577.87 square miles, the range varying from 2,514.11 square miles for the New York-Northeastern New Jersey district to 52.77 square miles for the Atlantic City district.

An interesting feature of the 1930 enumeration is the number of hyphenated names appearing in the list of metropolitan districts; sixteen of the districts represent combinations of two or more central cities. About a third of these combinations were made at the request of the cities concerned.

The rising consciousness of cities as centers of commercial provinces is further indicated by the attention given to community advertising. In 1928 the Bureau of Foreign and Domestic Commerce made a nation wide survey of this subject and on the basis of its findings estimated "that the national bill for community advertising in that year totaled nearly $6,000,000."18 Cities advertise to attract tourists, industries and popula-

16 Abstracted from Methods of Procedure in Defining Metropolitan Districts, a mimeographed circular prepared by the Civic Development Department of the United States Chamber of Commerce.

17 "The metropolitan districts for the census of 1930 . . . include in addition to the central city or cities, all adjacent and contiguous civil divisions having a density of not less than 150 inhabitants per square mile, and usually any civil divisions of less density that are directly adjacent to the central cities, or are entirely or nearly surrounded by minor civil divisions that have the required density. This is essentially the same principle as was applied in determining the metropolitan districts for cities of over 200,000 inhabitants at the censuses of 1910 and 1920, except that the area which might be included within the metropolitan district was then limited to the territory within 10 miles of the city boundary. At this present census no such limit has been applied, the distance to which the metropolitan district extends in any direction beyond the city boundaries being unlimited so long as the population density of the area meets the requirement of 150 per square mile." U. S. Bureau of the Census, Fifteenth Census of the United States, 1930, Metropolitan Districts, Advance Summary, p. 1.

18 U. S. Bureau of Foreign and Domestic Commerce, Advertising for Community Promotion, Domestic Commerce Series, no. 21, 1928, p. 5.
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tion in general. In a community advertising campaign it is customary for a number of neighboring centers to unite forces and pool budgets. In such cases it is the regional attractions and resources that are emphasized.

The emergence of regional consciousness seems to be a natural outcome of recent developments in transportation and communication coupled with their effect upon interregional competition. The expansion of the facilities of contact in the form of the motor vehicle, the metropolitan press, the telephone, and even the radio has tended to intensify movement and communication within the local area to an even greater extent than between distant sections. On the other hand the increasing fluidity of commodities and people is exposing cities to new conditions making for growth or decline. Unlike the nation as a whole, which may build tariff walls and set up immigration restrictions to meet foreign competition, the individual city, so far as the domestic economy is concerned, has to meet competition in an open market. In intercity or interregional competition the larger the population group, or in commercial terms the larger the local market, the greater its competitive advantage. It is not surprising, therefore, that cities are devoting increasing attention to questions of transportation rates and routes, which in a sense are to cities what tariffs are to nations. In the recent hearings conducted by the Interstate Commerce Commission with respect to suggested modifications of the freight rate structure in the middle western states—Western Trunk Line Territory—no less than “12,500 pages of testimony were taken and approximately 1,200 exhibits containing more than 12,000 pages were received.”

Margins of the Metropolitan Community.—The central city casts its influence over surrounding settlements in the form of traffic zones. This influence goes as far as distance and competition will let it. The boundaries, of course, are seldom definite stable lines which can be graphically shown on a map. They are rather, as has already been shown, tapering zones of influence which vary with changing conditions of transportation and competition.

Two terms have come into common usage to designate areas of community influence: “metropolitan district” and “trade area.” The term metropolitan district has come to signify the territory in which the daily economic and social activities of the local population are carried on through a common system of local institutions and services. It is essentially the commutation area of the central city and tends to correspond with the “built-up” area in which public services such as water, light, sanitation and power become common problems.

19 See Chap. IV.
The second concept, trade area, is used to designate a more extended territory of city influence. The term does not lend itself to precise definition, for different economic functions have different zones of influence. For practical purposes, however, a city's trade area may be defined in the words of John W. Pole, Comptroller of the Currency, as "The surrounding geographical territory economically tributary to a city and for which such city provides the chief market and financial center."

**Trends in the Size of the Commutation Area.**—For the few cities having railroad commutation service it is possible to gain some conception of the trend in the volume and range of commutation traffic. According to the statistics published by the Interstate Commerce Commission there has been relatively little change in the total commutation traffic on Class I railroads during the nine-year period, 1922-1930, the time interval for which statistics are available. The volume of traffic, measured in terms of revenue passenger miles, increased about 8 percent in this interim and the average length of journey, as indicated by miles per passenger per road, increased from 14.28 to 15.20 miles.

Of course the recent expansion of the metropolitan community is primarily a product of motor transportation. With the exception of a few cities of over a million population there has been a persistent decrease since 1920 in the number of revenue passengers carried by street railways and a correspondingly rapid increase in the use of buses and private automobiles. Statistics prepared by the American Electric Railway Association show that in seven cities between 500,000 and 1,000,000 there was a decline of 10.4 percent in the number of revenue passengers carried on street railways from 1920 to 1929, and in the cities in the 100,000 to 500,000 class the decline was 27.6 percent. The data are not available for cities under 100,000 but it is reasonable to suppose that the decline in the use of the street railway would be even greater in these small places. According to figures published by the National Association of Motor Bus Operators there were in December, 1930, 222 cities of over 10,000 entirely dependent upon motor transportation.

It is difficult to measure the radius of the motor city. Extensive studies of motor traffic made by the United States Bureau of Public Roads, though not pertaining directly to cities, suggest that the average distance of the local motor trip is relatively short. Various cities have prepared maps showing the flow of motor traffic at different points along arterial highways. Such maps invariably show a rapid tapering

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22 Compiled for Miller McClintock, Director, The Albert Russel Erskine Bureau, Harvard University, for a chapter on Trends in Urban Traffic which will appear in the monograph relating to this report.
23 *Bus Facts for 1931*.
24 For additional data, see Chap. IV.
off of traffic beyond a ten or fifteen mile radius from the central business district. Certain cities, however, claim a considerable group of daily commuters coming distances ranging between 20 and 40 miles.

The small cities of the nation are tending either to become suburban to nearby larger centers or, if remote from large cities, to assume the role of embryonic metropolises to surrounding villages. The comparatively high rates of population increase in the small cities of the agricultural states in the west north central division suggest the influence of the motor car and paved highway on the extension of their tributary territory. In the seven states comprising this census division there were, in 1920, 55 cities in the 10,000 to 50,000 class. The combined increase of these cities by 1930 was 17.6 percent as against only 6 percent for the region as a whole.

**Trends in the Size of the Trade Area.**—Important changes are taking place in the marketing territories of most cities. The retail shopping areas of the larger cities, as measured by the daily free delivery service of central stores, have expanded greatly in recent years. It has become common practice for the larger stores throughout the nation to deliver their merchandise regularly within a radius of 30 to 50 miles. City department stores report not only an extension of their delivery systems since 1920 but also an increasing volume of trade from outlying territory. Some stores provide free telephone service to their suburban customers and some rebate fares, depending on distance traveled and volume of purchases. The outward movement of the higher economic elements of the population has been an important factor in the extension of the market areas of department stores. Several stores report a falling off of business within the inner zones; others report that the volume of the close-in business has been maintained largely as a result of the increase in the hotel and large apartment trade.

Counter to the tendency toward increasing centralization as indicated by department store delivery practice is the rise of the chain store system of retailing, characterized by the centralization of management and warehousing functions in the regional city and the delivery of merchandise to towns and villages located within convenient trucking distance. In either case the city casts its dominance over surrounding settlement and changes the interrelationships of nearby centers.

The enlargement of the marketing territory of the larger cities does not imply that the city’s trade area is merely a magnified reproduction of that of the small town. It represents rather the tendency toward greater specialization and division of labor among the different centers

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25 Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.
26 Data supplied by P. K. Whelpton, Scripps Foundation.
27 Based on replies to a questionnaire sent to a selected list of department stores.
28 On chain stores see Chaps. V and XVII.
located within easy access of a large city. The increasing economic unity of the metropolitan region is chiefly the result of a transformation that is taking place in the field of marketing. The small town is yielding many of its more specialized services to the city, while in turn it is acquiring new services such as the chain store and the motion picture theater. The role of the small center in the retail marketing complex is summarized in *Domestic Commerce* thus:

The Census of Retail Distribution offers, for the first time, a means of accurately determining the position of the small town and the country store as outlets for various types of goods as compared with larger cities. By studying the figures for the state of California, the only complete state released to date, we find 37 percent of the population located outside of the cities of over 10,000 population, but only 32.7 percent of the State’s stores and 21.8 percent of total sales.

The extent to which residents of small towns go to the larger cities for apparel, furniture and household goods, and items sold through department or general merchandise stores is evident in that such outlets in the small towns do only 7.7 percent, 11.65 percent and 15.2 percent respectively of the total business done by these types of stores in the state.²⁹

The general trend in wholesaling seems to be toward concentration and specialization. The small wholesaling center is surrendering most of its specialized trade to the regional city. The regional city in turn depends upon the larger metropolis for much of its specialized merchandise. The tendency toward hand to mouth buying works in favor of the regional city as against the larger but more distant metropolis especially with reference to staples. On the other hand, the large city, by giving increasing attention to overnight delivery by fast trucks and package rail freight, is succeeding in maintaining its wholesale function over a wide range of territory. In general, however, the tendency for regional cities seems to be toward smaller wholesale territories and more intensive coverage. This doubtless reflects the concentration and regional organization of population. An analysis of reports from 39 wholesale dry goods houses in the Gulf Southwest during the period from 1924 to 1928 showed a decrease in territory covered in the cases of 28 firms, while 11 reported increases. Of the firms doing over $1,000,000 worth of business a year, six were covering more territory in 1928 than they had covered in 1924 and 12 were covering less.³⁰

**The Motor Truck as a Factor in Economic Regionalism.**—Modern economic regionalism is basically a product of motor transportation. As the passenger car determines the scope of the social community, so the truck is becoming the chief factor in determining the dimensions of the economic region. The truck is rapidly assuming a major role as a con-

²⁹ June 20, 1931, vol. VII, no. 18, p. 199.
vveyor of local freight. Being a more flexible carrier than the railway as regards unit load, service and routes, the motor truck tends to stimu-
late more intensive exploitation of regional resources and to establish a more direct and immediate relationship between the central city and surrounding settlements.\textsuperscript{31}

It is difficult to get reliable information regarding the trucking radius of a metropolitan center. Many factors are involved such as the location of cities, the character and volume of freight, the condition of the highways and the like. It is generally conceded, however, that the motor truck is still primarily a short haul agency of transportation. “Truck traffic on rural highways,” reports the United States Bureau of Public Roads, “is predominately a short haul movement. While only about 6 percent of all trucks travel less than 20 miles per day; 15.5 percent travel from 40 to 59 miles; and 18.8 percent from 60 to 79 miles per day. Nearly 50 percent of all trucks, therefore, travel less than 80 miles per day, while 58.3 percent travel less than 100 . . . While 80 miles is not usually considered a short distance, it must be remembered that this distance is the mileage per day on rural highways, and that it usually represents one or more round trips from origin to destination.”\textsuperscript{32}

The truck is still basically a private rather than a common carrier and as such the practice is to operate within a radius that may be served conveniently within a working day including return to point of origin. “One large cartage company in Chicago, for example, offers a daily delivery to retailers in 125 cities or towns on 8 routes within a radius of 30 or 40 miles. Its delivery zone is limited by the distance a driver can cover and still get back to the Chicago headquarters within a normal working day.”\textsuperscript{33} This may be taken as typical of the trucking radius within the metropolitan area especially with reference to merchandise.

But the motor truck plays a dominant role not only in the distribution of merchandise in the metropolitan region but also in the marketing of agricultural products. Los Angeles, according to a bulletin of the Bureau of Railway Economics, affords a glimpse of the division of labor between railroad and truck:

All of the lemons unloaded at Los Angeles were received by truck. Of the oranges unloaded, 98.6 percent were received by truck; of the strawberries, 98.4 percent; tomatoes, 98.3 percent; grapes, 97.9 percent; celery, 94.4 percent; plums and prunes, 90.8 percent; cabbage, 87.1 percent; grapefruit, 79.1 percent;

\textsuperscript{31} See also Chaps. II and III.
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peaches, 74.4 percent; cantaloupes, 69.5 percent; lettuce, 60.4 percent; and sweet potatoes, 53.3 percent.

Rail unloads exceeded truck unloads at Los Angeles for 5 of the 18 commodities. Of the combined rail and truck receipts of apples, 94.4 percent were received by rail; white potatoes, 85.9 percent; watermelons, 71.7 percent; pears, 60.4 percent; and onions, 55.9 percent.\footnote{U. S. Bureau of Railway Economics, \textit{Unloads of Fresh Fruits and Vegetables at Sixty-six Important Consuming Markets in the United States}, 1929, Bulletin no. 39, October, 1930, p. 11.}

It will be observed that local products are transported to market almost exclusively by motor truck, while products coming from a distance, such as apples and sweet potatoes, are transported by rail.

\textbf{The Metropolitan Region Comes of Age.}—Large cities throughout the nation are gradually maturing in their commercial and industrial structure; in other words, they are "coming of age." As frontier conditions pass there is a tendency for each metropolitan area to become more nearly complete in its economic and institutional structure. In ten out of sixteen cities listed by Glenn E. McLaughlin\footnote{McLaughlin, Glenn E., "Industrial Diversification in American Cities," \textit{Quarterly Journal of Economics}, November, 1930, vol. 45, no. 1, p. 187.} the number of industries increased between 1921 and 1927. The decline in certain cities, notably San Francisco and Pittsburgh, is in all probability due to the migration of industries into the suburban districts of the region. Diversification is no longer a characteristic of the larger cities alone but is spreading to the outlying regional communities. So far as local conditions permit there is a tendency in each case toward a complete industrial set up. This tendency is, of course, subject to the limitations of accessible raw materials and markets as well as the more subtle ones of commercial and industrial traditions.

Within these limits, however, each large center of population tends to duplicate the occupational structure of similar centers elsewhere. This is particularly noticeable with respect to the manufacturing and mechanical industries. An exception to this rule seems to be the tendency for persons in highly specialized occupations, such as designers, artists, stock brokers, to concentrate in New York City. The New York region, so far as some of these services are concerned, is apparently almost nation wide.

The proportion of the nation's total bank business which it handles is perhaps the best single index of a growing city's maturity. Tables published by \textit{The American Banker}\footnote{January 21, 1924 and January 20, 1931.} show some striking changes in this respect between 1923 and 1930. An outstanding feature of these tables is that whereas New York City had 48.81 percent of the country's bank deposits in 1923 it had only 32 percent in 1930. Whether the latter
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figure reflects in part the unusual conditions prevailing in 1930 can only be surmised. It undoubtedly points to an increase in the financial maturity of the outlying regional cities. Chicago, Philadelphia, Boston, Cleveland, Los Angeles, Detroit and Pittsburgh all gained during the period and San Francisco climbed from 5.94 percent to 10.50 percent. Oakland, across the bay from San Francisco, disappeared from the tables between 1923 and 1930, as did Brooklyn and Hoboken, satellites of the New York financial district. Eight cities—Atlanta, Dallas, Oklahoma City, Portland (Oregon), Cincinnati, Seattle, Syracuse and Tulsa—made a showing in 1930, though they were not recorded in 1923.

The economic coming of the age of the metropolitan centers of the nation, particularly those on the economic frontiers of the south and west, is unquestionably an important factor in intercity competition and in the development of regional consciousness. Cities, like nations, are seeking to develop balanced economies and to protect home industries and regional markets. There are natural limits, obviously, to this sort of development. The major industries of the country are still highly concentrated and, considered from the standpoint of total output, there seems to be but a slight tendency toward industrial decentralization.

But in spite of this concentration of certain industries, the facts indicate that there will continue to be more intensive exploitation of local resources and more effort to build diversified economies on a regional basis. Thus there is the seeming paradox of regional communities growing more alike, yet growing also in independence and self-reliance.

III. THE PROCESS OF METROPOLITAN GROWTH

The preceding sections have dealt with the rise of the metropolitan community as a population group and an economic entity, and with the interrelationships among such great communities. But certain changes are going on within the metropolitan community which have to be dealt with in order to present a rounded picture. Populations as well as individuals move about within the region, grow old, behave better or worse, become richer or poorer. The age distribution and sex ratio may change. The shifts of population from one locality to another within the city and its surrounding territory have economic and social consequences perhaps as significant as those of the more widely heralded rural-urban migrations.

The most conspicuous form of population shift within the metropolitan area is the so-called suburban or "outgoing" movement. This can be measured in terms of the proportion between the population of the central city or cities of a metropolitan district, as defined by the federal census, and the total population of the district. For the last three decades the Bureau of the Census has published figures for the metropolitan
RECENT SOCIAL TRENDS

districts of the large cities. The change in procedure, already alluded to, in defining the 1930 districts would make strict comparisons over the twenty-year period impossible for the whole 96 districts. Fortunately the Bureau has adjusted the 1920 data for 85 districts to make comparison valid. Table 6 shows the results.

Table 6.—Population and Percentage Increase of 85 Metropolitan Districts for Central Cities and Outside Territory, 1920–1930, by Size Groups

<table>
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<th>Population in thousands</th>
<th>Percentage increase, 1920–1930</th>
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<td>All districts of 100,000 and over</td>
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<td>40,057</td>
<td>50,043</td>
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<td>In central cities</td>
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<tr>
<td>Outside central cities</td>
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</tr>
<tr>
<td>In central cities</td>
<td></td>
<td>3,919</td>
<td>4,877</td>
</tr>
<tr>
<td>Outside central cities</td>
<td></td>
<td>1,489</td>
<td>1,897</td>
</tr>
<tr>
<td>Districts of 250,000–500,000</td>
<td>23</td>
<td>6,665</td>
<td>8,061</td>
</tr>
<tr>
<td>In central cities</td>
<td></td>
<td>4,839</td>
<td>5,743</td>
</tr>
<tr>
<td>Outside central cities</td>
<td></td>
<td>1,825</td>
<td>2,317</td>
</tr>
<tr>
<td>Districts of 500,000–1,000,000</td>
<td>9</td>
<td>5,827</td>
<td>6,950</td>
</tr>
<tr>
<td>In central cities</td>
<td></td>
<td>4,940</td>
<td>4,938</td>
</tr>
<tr>
<td>Outside central cities</td>
<td></td>
<td>1,887</td>
<td>2,012</td>
</tr>
<tr>
<td>Districts of 1,000,000–2,000,000</td>
<td>4</td>
<td>4,669</td>
<td>5,733</td>
</tr>
<tr>
<td>In central cities</td>
<td></td>
<td>2,993</td>
<td>3,385</td>
</tr>
<tr>
<td>Outside central cities</td>
<td></td>
<td>1,675</td>
<td>2,347</td>
</tr>
<tr>
<td>Districts of 3,000,000 and over</td>
<td>5</td>
<td>17,480</td>
<td>24,526</td>
</tr>
<tr>
<td>In central cities</td>
<td></td>
<td>12,834</td>
<td>15,620</td>
</tr>
<tr>
<td>Outside central cities</td>
<td></td>
<td>4,645</td>
<td>8,906</td>
</tr>
</tbody>
</table>

* Fifteenth Census of the United States, 1930, Metropolitan Districts.
* Does not include 11 metropolitan districts for which comparable figures are not available. These districts with their 1930 populations are: Chattanooga, 168,589; Houston, 359,216; Jacksonville, 148,713; Los Angeles, 2,318,526; Memphis, 276,126; Miami, 192,189; New Orleans, 404,877; Portland, Ore., 378,728; San Diego, 181,020; San Jose, 103,428; Tampa-St. Petersburg, 169,010.

It will be observed that the rate of increase in the outside territory of these 85 metropolitan districts is a little more than twice as great as that in the central cities, and, as would be expected, the rate differentials tend to increase with the size of the districts. To be sure wide variations are found in the relative rates of change for different districts, depending largely upon the practice of annexation. For instance, six of the 1930 districts show an actual decrease in population since 1920 in the territory outside their central cities; but in all save two, Duluth and Evansville, the decreases were due to recent annexations.37

37 When a city annexed a complete civil division between the two census periods, the Bureau of the Census added to the city's 1920 population the population of the annexed division at that date; but in most cases the annexed territory cut across civil divisions and therefore was not adjusted by the Bureau. The general effect of this is to reduce somewhat the actual rates of increase of outside territory.

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The outside population in these 85 metropolitan districts constitutes 30.9 percent of the total and is growing faster than the city proper. In eleven of the districts the population residing outside the central cities is greater than that within central cities. In the Boston district it is over twice as great; in the Pittsburgh district almost twice that of the central city. Of course it is not claimed that the proportion of the population of a census metropolitan district that is found outside the central city or cities is a measure of the suburban drift. The metropolitan district, as defined by the federal census, usually represents a cluster or constellation of communities—villages, towns and cities—with varying degrees of dependency upon the central city. Some "satellites" are primarily agglomerations of commuters' dwellings while others are almost independent cities. Obviously the growth crests in the outer zones of metropolitan districts, in so far as they are the result of migration rather than of natural increase, represent the meeting of two opposite waves of movement—the outflow from the inner zones of the city and the inflow from outside territory. In a recent survey of Evanston, a suburb of Chicago, conducted under the auspices of the United Churches, it was discovered that of the 3,800 families giving information regarding last place of residence before entering Evanston, 47 percent had come from Chicago, 7 percent from communities just north of Evanston, and 46 percent from places outside the general region.38

A clearer picture of the drift from the center may be obtained by a study of the movement of population within the city itself. This may be done only for those few cities in which enumerations have been made on the basis of census tracts, or small constant territorial units. By means of these tracts it is possible to measure the changes of population in "zones" or belts of territory created by drawing concentric circles from the city's center. These data are given in Table 7 for New York, Chicago, Cleveland and Pittsburgh.

Obviously the arbitrary concentric circle is useful only for purposes of comparison. It does not show the details of expansion, as growth is usually very uneven in different parts of the territory falling within a zone. This is particularly true in the outlying sections of the city, where growth is likely to follow radial lines.

Table 7 shows unmistakably the tendency of the large city to lose population in its inner zones. It would seem that the outgoing tendency became somewhat accelerated during the past decade. Each of the four cities analyzed shows a widening range in which population is declining. Similar data for other cities, notably Philadelphia, Boston, St. Louis and Detroit, though not directly comparable, tell a similar story. The

## Recent Social Trends

### Table 7.—Population Change by Concentric Zones from the Center of the City Outward, 1910–1930

(New York, Chicago, Cleveland, Pittsburgh)

<table>
<thead>
<tr>
<th>City</th>
<th>Population in thousands</th>
<th>Percent change</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-mile zones—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>2,200.5</td>
<td>2,054.2</td>
</tr>
<tr>
<td>II</td>
<td>1,925.4</td>
<td>2,412.9</td>
</tr>
<tr>
<td>III</td>
<td>567.8</td>
<td>1,090.9</td>
</tr>
<tr>
<td>IV</td>
<td>64.5</td>
<td>102.2</td>
</tr>
<tr>
<td>V</td>
<td>8.7</td>
<td>9.7</td>
</tr>
<tr>
<td>Adjacent territory*</td>
<td>1,800.0</td>
<td>2,390.4</td>
</tr>
<tr>
<td>Chicago</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-mile zones—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>359.5</td>
<td>276.4</td>
</tr>
<tr>
<td>II</td>
<td>728.3</td>
<td>736.7</td>
</tr>
<tr>
<td>III</td>
<td>616.8</td>
<td>861.0</td>
</tr>
<tr>
<td>IV</td>
<td>281.7</td>
<td>496.2</td>
</tr>
<tr>
<td>V</td>
<td>199.6</td>
<td>355.8</td>
</tr>
<tr>
<td>Adjacent territory*</td>
<td>266.4</td>
<td>477.2</td>
</tr>
<tr>
<td>Cleveland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-mile zones—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>162.7</td>
<td>162.8</td>
</tr>
<tr>
<td>II</td>
<td>300.1</td>
<td>388.5</td>
</tr>
<tr>
<td>III</td>
<td>88.8</td>
<td>192.5</td>
</tr>
<tr>
<td>IV</td>
<td>11.6</td>
<td>45.4</td>
</tr>
<tr>
<td>V</td>
<td>8.7</td>
<td>14.7</td>
</tr>
<tr>
<td>Adjacent territory*</td>
<td>55.7</td>
<td>128.9</td>
</tr>
<tr>
<td>Pittsburgh*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-mile zones—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>257.9</td>
<td>271.9</td>
</tr>
<tr>
<td>II</td>
<td>235.4</td>
<td>278.2</td>
</tr>
<tr>
<td>III</td>
<td>186.0</td>
<td>220.2</td>
</tr>
<tr>
<td>Adjacent territory*</td>
<td>507.5</td>
<td>582.4</td>
</tr>
</tbody>
</table>

*a Compiled from U.S. Census data.


*d Data for Pittsburgh compiled by Philip E. Keller, Bureau of Social Research, Pittsburgh.

Economic depression seems to be causing considerable backwash to these lower rental areas, but in all probability this is but a temporary cessation of a general centrifugal process.

The motor car, bringing the country nearer in time, has caused an unprecedented development of outlying and suburban residential subdivisions. While this development pertains to families of a wide range of income, special attention has been given in the past decade to the promotion of exclusive residential districts designed for occupancy by
the higher income classes. The lure of rural scenery is indicated by the extremely high rates of increase in suburbs bearing names denoting attractive physical features, such as heights, vistas, parks, and water frontage. Space does not permit a detailed analysis of this development but a few examples will illustrate the point. Here are some rather well-known suburbs with their percentage increases from 1920 to 1930: Beverly Hills, 2485.9; Glendale, 363.5; Inglewood, 492.8; Huntington Park, 444.9 (suburbs of Los Angeles); Cleveland Heights, 234.4; Shaker Heights, 1000.4; Garfield Heights, 511.3 (suburbs of Cleveland); Grosse Point Park, 724.6; Ferndale, 689.9 (suburbs of Detroit); Webster Groves, 74.0; Maplewood, 70.3; Richmond Heights, 328.3 (suburbs of St. Louis); Elmwood Park, 716.7; Oak Park, 60.5; Park Ridge, 207.9 (suburbs of Chicago).

Table 8.—Change in Land Values, 1917 to 1930, at Important Intersections Along Euclid Avenue, a Cleveland
(From the Public Square to Wade Park, a distance of approximately 5 miles)

<table>
<thead>
<tr>
<th>Locations on Euclid Avenue</th>
<th>Land values</th>
<th>Change 1917–1930</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1917</td>
<td>1930</td>
</tr>
<tr>
<td>0 TO 1 MILE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At Public Square</td>
<td>$6,000</td>
<td>$11,500</td>
</tr>
<tr>
<td>At East 4th Street</td>
<td>6,200</td>
<td>12,500</td>
</tr>
<tr>
<td>East of East 9th Street</td>
<td>5,000</td>
<td>10,500</td>
</tr>
<tr>
<td>At East 14th Street</td>
<td>4,300</td>
<td>8,000</td>
</tr>
<tr>
<td>East of East 14th Street</td>
<td>2,700</td>
<td>6,500</td>
</tr>
<tr>
<td>East of East 18th Street</td>
<td>2,000</td>
<td>2,700</td>
</tr>
<tr>
<td>At East 23rd Street</td>
<td>1,800</td>
<td>1,600</td>
</tr>
<tr>
<td>1 TO 2 MILES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At East 30th Street</td>
<td>900</td>
<td>800</td>
</tr>
<tr>
<td>At East 40th Street</td>
<td>800</td>
<td>700</td>
</tr>
<tr>
<td>2 TO 3 MILES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At East 58th Street</td>
<td>1,400</td>
<td>1,200</td>
</tr>
<tr>
<td>At East 63rd Street</td>
<td>900</td>
<td>525</td>
</tr>
<tr>
<td>At East 71st Street</td>
<td>900</td>
<td>550</td>
</tr>
<tr>
<td>3 TO 4 MILES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>East of East 79th Street</td>
<td>800</td>
<td>900</td>
</tr>
<tr>
<td>At East 89th Street</td>
<td>450</td>
<td>450</td>
</tr>
<tr>
<td>At East 93rd Street</td>
<td>800</td>
<td>750</td>
</tr>
<tr>
<td>4 TO 5 MILES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At East 97th Street</td>
<td>550</td>
<td>1,000</td>
</tr>
<tr>
<td>At East 101st Street</td>
<td>1,000</td>
<td>2,300</td>
</tr>
<tr>
<td>At East 102nd Street</td>
<td>1,000</td>
<td>3,000</td>
</tr>
<tr>
<td>East of East 105th Street</td>
<td>2,000</td>
<td>4,075</td>
</tr>
<tr>
<td>At East 107th Street</td>
<td>1,000</td>
<td>1,400</td>
</tr>
</tbody>
</table>

a The highest land value side of the street is taken at each intersection.

b Assessed valuations, compiled by John A. Zangerle, auditor of Cuyahoga County.

Too frequently in name only.

See discussion of effect of motor car on school and highway taxation problems in Chap. XXVI.
RECENT SOCIAL TRENDS

The movement, of course, is not always to sections outside of the city. This is indicated by the shift of the fashionable residence district in Manhattan from Riverside Drive to Park Avenue and by the rapid development of Chicago's Gold Coast and South Lake Shore territory. The famous Back Bay and Beacon Hill districts of Boston are losing many of their wealthy families to West Roxbury and Brighton, sections that have developed rapidly in recent years as high class residential areas. The movement of the wealthy class in Philadelphia has been largely to the northern part of the city, particularly to the Chestnut Hill and Germantown section; notable developments have also occurred in the northeast section. While 34 of Philadelphia's 48 wards showed an actual decline in population between 1920 and 1930, Ward 35 in the northeast corner of the city increased 314.4 percent.

The general exodus of the upper economic classes from the inner sections of the city is creating serious problems by lowering land values and depriving the city of taxable wealth. The situation is well illustrated in the changes that have occurred in land values along Euclid Avenue, Cleveland, following the recent exodus of the wealthy residents from that street. Table 8 and Figure 2 show in part the effect of this migration.

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These changing land values reflect the division of Euclid Avenue into three definite sections. First, extending from Public Square to East 22nd Street, a distance of about a mile, is the expanded downtown business area. The second section, running from East 22nd Street to East 71st Street, was once occupied by some of the wealthiest families of Cleveland, as a number of surviving mansions, put to various uses, testify. It is now a zone of decline. In the third division of the Avenue, from East 71st Street to East 107th Street, a secondary business center has sprung up around University Circle and values are rising. Here are to be found some of the best of Cleveland’s theatres and shops. Going still further east one comes to some of the city’s most exclusive suburbs.

The history of land value movements along Euclid Avenue could be duplicated in many radial thoroughfares in other cities in the United States. The higher income levels of the city’s population seek the more attractive outlying sections; the chain store, the branch bank and the motion picture theatre follow them, and in the intermediate zones, of relatively little use to either the downtown section or the outlying neighborhoods, a trough in land values is created. Motor transportation and suburban development have accentuated this more or less natural aspect of city growth. Large cities everywhere are becoming keenly aware of the problem of the “blighted area” but little has been done as yet to cope with it. It is a complex problem involving factors of transportation, legal rights to property, power of condemnation, and questions of finance.41

Age and Sex Selection.—Wide differences exist in the age-sex composition of the population in different sections of the city and in its various suburbs. As the city increases in size segregation in its various forms—economic, cultural, biological—seems to become increasingly pronounced. Attention has frequently been called to the divergent character of suburban communities surrounding a common metropolitan center. It is commonly recognized that exclusive residential suburbs tend to have more females than males and less than the average number of children per family, while in most industrial suburbs the conditions are reversed. By the use of census tract materials it is now possible to ascertain the makeup of the population as to age and sex by districts within the city itself.

An illustration of such a study is shown in Figure 3 prepared by Charles Newcomb, of the University of Chicago. Newcomb measured the age and sex distribution for three successive decades in Oak Park, Illinois, and in six census tracts lying along Madison Street between Oak Park and the Loop district of Chicago, a distance of nine miles. The

41 See also discussion of blighted area in President’s Conference on Home Building and Home Ownership, Preliminary Reports, VIII, 7, XXI, XXIII.

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RECENT SOCIAL TRENDS

tracts selected are approximately 1.5 miles apart. Inasmuch as the population of a large part of this area is characterized by a high degree of mobility it is safe to assume that it has changed many times in the twenty-year interval shown. Yet the age-sex composition of the respective tracts has altered only slightly. In each decade an excessive proportion of adult males is found in the area lying close to the Loop, the main business center, with a tendency toward a more even age-sex distribution as one proceeds outward toward the fringe of the metropolitan area. The general tendency of women and children to withdraw from the central section of the city is quite apparent. So, too, is the decline in the proportion of children in the outlying tracts, although in interpreting this fact consideration must be given to the general decline throughout the city in the proportion of children to adults during the past two decades. Research on a more extended scale and in other cities may well show that this age-sex pattern is somewhat typical of metropolitan communities.

Delinquency Patterns.—The general wholesomeness of a city’s environment, as measured by delinquency rates, seems to improve with distance from the main business center. In his extensive studies of juvenile delinquency, Clifford R. Shaw, of the Chicago Institute for Juvenile Research, found a definite tendency for rates to decline with distance from the center of the city.42

Nationality and Race.—American cities have long been conspicuous for their concentrated colonies of nationality and racial groups. As immigrants have poured in from foreign countries and Negroes have migrated

42 See further data on juvenile delinquency in Chaps. XV and XXII.
from the rural south the newcomers have formed colonies within the cities where they have maintained, as far as possible, their traditional ways of living. Now that immigration has receded almost to the zero point the question arises as to what will happen to the older immigrant districts found in almost every city. Not enough time has elapsed since immigration slackened to give a final answer to this question. A study of census tract statistics, in the few cities for which data are available for successive periods, indicates, however, a pronounced tendency for immigrants to abandon their colonies and disperse among the general population. Intensive studies made in the University of Chicago suggest that this process tends to occur in a successional manner. First there are the areas of initial settlement, usually located in the run down tenement sections near the center of the city and around the plants of the heavy basic industries; next there are the areas of second settlement, lying just beyond the zones of the first. In these areas the number of children per family is higher than is found in most other sections of the city. Finally there are the areas of third and subsequent settlement, as a rule too generally scattered to constitute colonies. As the immigrant moves up the economic ladder he moves out toward the periphery of the community. In this respect he is not unlike the native Bostonian, who has been described as a person who was born in the North End, lived in the South End and died in the Back Bay.

Negro colonies have a somewhat different history. Instead of scattering they tend with time to become more compact and racially more

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Table 9.—Juvenile Delinquency Rates by Zones from Center of City Outward

<table>
<thead>
<tr>
<th>City</th>
<th>Number of cases</th>
<th>Width of zones (miles)</th>
<th>Rates by zones*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>Chicago..................</td>
<td>8,141</td>
<td>2</td>
<td>10.3</td>
</tr>
<tr>
<td>Philadelphia ............</td>
<td>5,856</td>
<td>1.5</td>
<td>11.6</td>
</tr>
<tr>
<td>Cleveland ...............</td>
<td>4,078</td>
<td>1.5</td>
<td>18.8</td>
</tr>
<tr>
<td>Richmond, Va...........</td>
<td>1298</td>
<td>1</td>
<td>19.7</td>
</tr>
<tr>
<td>Birmingham, Ala. .......</td>
<td>990</td>
<td>1</td>
<td>14.1</td>
</tr>
<tr>
<td>Denver..................</td>
<td>1,291</td>
<td>1</td>
<td>9.4</td>
</tr>
<tr>
<td>Seattle..................</td>
<td>1,040</td>
<td>1</td>
<td>19.1</td>
</tr>
</tbody>
</table>


b The juvenile court records from which the above cases were taken are for the following years: Chicago, 1917–1928; Philadelphia, 1927; Richmond, 1927–1930; Cleveland, 1919–1921; Birmingham, 1927–1930; Denver, 1924–1929; Seattle, 1928–1939.

c Percentage of boys 10 to 15 years of age in each area brought to the juvenile court on petitions alleging delinquency.

d No data.

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43 Emigration exceeded immigration in 1931. See Chap. I.
homogeneous. The pattern of Negro concentration varies too much to be considered here in detail. In some cities, notably New York and Chicago, the Negroes congregate largely in a single district; in others, such as Philadelphia and Washington, small colonies are scattered widely throughout the city. Local attitudes toward the Negro and local conditions of employment probably have something to do with these differences.

Ward lines too often cut across racial boundaries to make them satisfactory statistical units for our present purposes; nevertheless Table 10 gives some conception of how the colored people are distributed within six large northern cities.

Table 10.—Concentration of Negroes by Selected Wards and Statistical Areas in Six Northern Cities, 1930

<table>
<thead>
<tr>
<th>City</th>
<th>Total Negro population, 1930</th>
<th>Percent increase in Negro population, 1920-1930</th>
<th>Concentration by wards and statistical areas</th>
<th>Percent of Negroes to total population in each of the first four areas of highest Negro concentration</th>
<th>Percent of total Negro population of city in the four leading areas of Negroes</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York (Manhattan)</td>
<td>224,670</td>
<td>110.9</td>
<td>21</td>
<td>94.1</td>
<td>44.6</td>
</tr>
<tr>
<td>Chicago</td>
<td>233,903</td>
<td>115.7</td>
<td>75</td>
<td>94.6</td>
<td>91.9</td>
</tr>
<tr>
<td>Cleveland</td>
<td>71,899</td>
<td>108.7</td>
<td>40</td>
<td>72.4</td>
<td>70.2</td>
</tr>
<tr>
<td>Detroit</td>
<td>120,066</td>
<td>107.7</td>
<td>22</td>
<td>54.7</td>
<td>54.6</td>
</tr>
<tr>
<td>Pittsburgh</td>
<td>54,983</td>
<td>45.8</td>
<td>32</td>
<td>54.0</td>
<td>40.1</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>210,599</td>
<td>63.6</td>
<td>48</td>
<td>70.3</td>
<td>55.9</td>
</tr>
</tbody>
</table>

* Compiled from U. S. Census data.

The rapid growth of Negro population since the World War in many of the northern cities has naturally enlarged the colonies. Expansion usually takes the form of movement out along radial streets from the older centers of concentration. For instance, in Chicago where the Negro population has increased from 109,458 to 233,903 during the last decade, the “Black Belt” has extended southward from the Loop district to 69th Street, a distance of nearly eight miles. In this expansion all other elements of the population have been displaced, the Negroes taking possession not merely of the apartments but of the churches, theaters, parks and other institutions.

The Negro and the Oriental tend to build up cities within the city. They establish their own institutions—theaters, churches, stores, clubs and dance halls. They come into contact with the general community life chiefly as employees and through their participation in politics. It does not appear, however, that the recent Negro migration has greatly disturbed the natural evolution of the northern cities. They came at a
time when the outward drift of whites was at its height and though they may have accelerated the movement in some localities, in many places they merely took over declining areas.  

Segregation a Characteristic of City Life.—The significance of segregation within the city has long been recognized by social workers and others dealing with welfare problems. It is being increasingly recognized by business men and administrative officials as a factor to be dealt with. More and more it is being realized that a city cannot be satisfactorily administered as a single population entity. More and more commercial firms and advertising agencies are beginning to analyze the economic and racial differences that exist in various sections of the cities and to deal with each district according to its particular characteristics.

IV. STRUCTURAL CHANGE

As the population distribution within the metropolitan region changes, so does the physical structure of the community and the way in which its various institutions function. As motor transportation permits the population to spread outward, the basic services follow it. All the public utilities—streets, water mains, sewerage facilities, electric lighting, gas and telephone services—show rapid rates of expansion in metropolitan regions within the past decade. This factor may be indicated by the expanding area of street pavement, which generally carries with it the services mentioned. In 201 cities studied by Arthur H. Redfield during the years 1925 to 1929 inclusive a total of 261,133,000 square yards of pavement were laid, the average laid each year increasing until 1927 and declining somewhat in 1928 and 1929. The rate of increase was greatest in cities of over 1,000,000 and next greatest in those of 500,000 or more, though perhaps too much significance need not be attached to this fact.

Redfield's figures applied only to pavement within the corporate limits of cities. But a city's street system actually reaches far beyond its political boundaries. The paved motor highway net encircling every city is really an extended street system. The physical base of the city, in the form of streets and other utilities, is no longer adequately described by statistics compiled for corporate areas.

This extension of city utilities has the effect of erasing many of the former boundary lines between urban and rural territory and of bringing within a single communal mechanism, with common problems of administration and finance, entire constellations of politically independent centers

44 For other problems relating to Negro migration to northern cities, see Chap. XI. See also Preliminary Report XXI of President's Conference on Home Building and Home Ownership for study of Negro housing.

that were previously separated from one another by strips of rural or undeveloped territory.

Building Statistics as Indexes of Community Change.—Trends in building construction are here considered only as they indicate change in the organization and life of the community, not as they affect the building industry itself.\textsuperscript{46} Inasmuch as an increasing proportion of all buildings constructed in cities represents construction for sale or rent rather than for use by the owner, tendencies in construction are good barometers of the changing organization of the city. Buildings, like motor cars or household furniture, are made for profit and, therefore, are responsive to the demands of the consumer. But the building differs from most other forms of consumers' goods in that it has a fixed location. Consequently, new developments in architecture and building equipment and in the platting and promotion of new districts and subdivisions tend to shift a city's population. If the consumer desires a new kind of motor car or living room furniture, he need not change his location to secure it. But if he wishes to live or carry on business in a new kind of building, he must go where that kind of building is. Building statistics reflect the relative shifts of emphasis from one class of construction to another, and thereby

<table>
<thead>
<tr>
<th>Year</th>
<th>Total floor space (thousands of square feet)</th>
<th>Residential</th>
<th>Commercial</th>
<th>Factories</th>
<th>Educational</th>
<th>Hospitals and institutions</th>
<th>Public buildings</th>
<th>Religious and memorial</th>
<th>Social and recreational</th>
</tr>
</thead>
<tbody>
<tr>
<td>1919</td>
<td>557,488</td>
<td>43.4</td>
<td>19.7</td>
<td>27.2</td>
<td>4.1</td>
<td>1.2</td>
<td>.7</td>
<td>1.0</td>
<td>2.7</td>
</tr>
<tr>
<td>1920</td>
<td>601,901</td>
<td>33.4</td>
<td>20.0</td>
<td>31.2</td>
<td>6.5</td>
<td>1.2</td>
<td>1.0</td>
<td>1.8</td>
<td>3.1</td>
</tr>
<tr>
<td>1921</td>
<td>624,906</td>
<td>35.1</td>
<td>16.8</td>
<td>9.9</td>
<td>10.4</td>
<td>2.2</td>
<td>1.5</td>
<td>1.6</td>
<td>2.4</td>
</tr>
<tr>
<td>1922</td>
<td>570,076</td>
<td>6.6</td>
<td>16.7</td>
<td>10.9</td>
<td>9.5</td>
<td>2.1</td>
<td>1.7</td>
<td>1.6</td>
<td>2.6</td>
</tr>
<tr>
<td>1923</td>
<td>588,016</td>
<td>5.0</td>
<td>15.9</td>
<td>9.8</td>
<td>7.5</td>
<td>1.7</td>
<td>1.6</td>
<td>2.0</td>
<td>2.5</td>
</tr>
<tr>
<td>1924</td>
<td>597,541</td>
<td>6.0</td>
<td>15.9</td>
<td>6.6</td>
<td>7.8</td>
<td>2.1</td>
<td>2.9</td>
<td>2.0</td>
<td>2.8</td>
</tr>
<tr>
<td>1925</td>
<td>759,728</td>
<td>61.9</td>
<td>16.8</td>
<td>7.4</td>
<td>6.7</td>
<td>1.6</td>
<td>1.7</td>
<td>2.1</td>
<td>2.6</td>
</tr>
<tr>
<td>1926</td>
<td>737,424</td>
<td>61.1</td>
<td>16.5</td>
<td>8.6</td>
<td>6.0</td>
<td>1.8</td>
<td>1.8</td>
<td>2.1</td>
<td>2.6</td>
</tr>
<tr>
<td>1927</td>
<td>721,706</td>
<td>60.3</td>
<td>16.5</td>
<td>7.8</td>
<td>6.3</td>
<td>2.4</td>
<td>1.8</td>
<td>2.1</td>
<td>2.6</td>
</tr>
<tr>
<td>1928</td>
<td>822,016</td>
<td>61.1</td>
<td>16.1</td>
<td>9.0</td>
<td>6.3</td>
<td>2.2</td>
<td>1.7</td>
<td>1.5</td>
<td>2.5</td>
</tr>
<tr>
<td>1929</td>
<td>672,648</td>
<td>50.8</td>
<td>20.3</td>
<td>13.2</td>
<td>7.7</td>
<td>2.6</td>
<td>1.5</td>
<td>1.4</td>
<td>2.5</td>
</tr>
<tr>
<td>1930</td>
<td>424,424</td>
<td>47.5</td>
<td>19.4</td>
<td>9.4</td>
<td>11.4</td>
<td>4.1</td>
<td>3.1</td>
<td>2.0</td>
<td>3.0</td>
</tr>
</tbody>
</table>

\textsuperscript{46} For index numbers of construction, see Chap. V.
METROPOLITAN COMMUNITIES

indicate, in a broad way, some of the major changes that are taking place in the physical structure and internal organization of the city.\(^{47}\)

While the time interval is too brief and the territory for which comparable statistics are available is too small (27 states) to reveal a true picture of the trend in construction for the nation as a whole, still the figures presented in Table 11 have considerable significance. Residential construction constituted more than half of the total floor space added to American cities in nine of the twelve years for which data are available. It gained in relative importance from 1921 to 1924, and held a position of over 60 percent of the total through 1928, only to drop off sharply in 1929. Commercial construction, of which the chief subclass is office buildings, maintained about a uniform position throughout the twelve-year period. Factories dropped suddenly in relative importance after 1920, with a slight upward trend between 1924 and 1929 and a pronounced sag in 1930. It is particularly significant that from 1921 onward the construction of educational buildings runs very close to that of factories. The effect of the depression is seen in the changing ratios of construction in the several classes of buildings in the 1930 figures when non-commercial classes—hospitals and institutions, educational and public buildings—gain in relative importance in the construction program. The shift will undoubtedly be much more pronounced in the 1931 figures.

Residential Construction.—In residential construction there are at least two general trends that are worthy of special attention. The first is the recent tendency for new residential space to increase faster than population; and the second is the tendency toward multiple dwellings. In regard to the former, the report on Recent Economic Changes contains the following summary statement:

In the four years prior to the American entry into the World War, there was an average construction of 209 square feet per person added to the population. When the war years are included, this average drops to 205 square feet. The post-war boom of 1919 not only wiped out all the shortage created during the war but raised the average to nearly 221 square feet. Then followed another two years with a low construction record, which again brought the average below the level established in the four years from 1913 to 1916. But, beginning with 1922, construction began a consistent upward movement, and by the end of 1927 the average residential construction per person added to the population was more than 286 square feet.\(^{48}\)

The amount of residential floor space allotted each new inhabitant varies considerably, however, in different localities. Table 12 shows the relation between the amount of residential construction and the increase

\(^{47}\) See President's Conference on Home Building and Home Ownership, Preliminary Reports, I, VI, VII, XII, XXI.

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in urban population in the F. W. Dodge territories for the ten-year period, 1920–1930. In order to make the recent records comparable with those of earlier years, it was necessary to combine a number of the territories. Consequently, the regions for which the data are assembled are somewhat larger than the present Dodge territories. It will be noted that the sparsely settled regions, on the whole, provided less new residential floor space than the more congested territories.

Table 12.—Relation of New Residential Construction (All Types) to Urban Population Increase, by Regions, 1920–1930

(Contracts Awarded in 37 States)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Percent</td>
<td></td>
</tr>
<tr>
<td>1. New England</td>
<td>352,411</td>
<td>733,554</td>
<td>19.5</td>
</tr>
<tr>
<td>2. New York and northern New Jersey</td>
<td>1,250,078</td>
<td>2,677,485</td>
<td>25.2</td>
</tr>
<tr>
<td>3. Middle Atlantic</td>
<td>465,759</td>
<td>979,945</td>
<td>15.8</td>
</tr>
<tr>
<td>4. Pittsburgh</td>
<td>385,922</td>
<td>1,451,504</td>
<td>21.9</td>
</tr>
<tr>
<td>5. Central west</td>
<td>908,177</td>
<td>3,908,359</td>
<td>28.9</td>
</tr>
<tr>
<td>6. Northwest</td>
<td>67,679</td>
<td>270,291</td>
<td>17.4</td>
</tr>
<tr>
<td>7. Southeast</td>
<td>427,324</td>
<td>1,738,734</td>
<td>46.3</td>
</tr>
<tr>
<td>8. Texas</td>
<td>430,080</td>
<td>876,659</td>
<td>57.9</td>
</tr>
</tbody>
</table>

* F. W. Dodge Corporation, special tabulation.

b These are the F. W. Dodge Corporation statistical divisions as of 1939. A number of the districts intersect state boundaries and can be accurately described only by reference to county units. The territory included in each district is roughly as follows: (1) The six New England states; (2) New York state and northern New Jersey; (3) eastern half of Pennsylvania, rest of New Jersey, Maryland, Delaware, District of Columbia, Virginia; (4) western half of Pennsylvania, states of West Virginia, Kentucky, Ohio; (5) southern peninsula of Michigan, the states of Indiana, Illinois, Missouri, Oklahoma, Kansas, Nebraska, Iowa, most of Wisconsin, parts of Arkansas, Tennessee and Mississippi; (6) states of Minnesota, North and South Dakota, western Wisconsin and the upper peninsula of Michigan; (7) states of North and South Carolina, Georgia, Florida, Alabama, Louisiana, parts of Mississippi, Tennessee and Arkansas; (8) state of Texas. Precise boundaries of these districts may be obtained from the F. W. Dodge Corporation or from the author.


d Data are available for only 7 years for the southeast region and for 5 years for the Texas region.

e Adjusted to number of years for which construction data are available.

The Trend Toward Multiple Dwellings.—The rapid increase in the proportion of families provided for in apartments is strikingly shown in a compilation of building permits for 257 cities of 25,000 population or over published by the Bureau of Labor Statistics. Between 1921 and 1928 the percentage of one-family dwellings, as indicated by the building permits, dropped from 58.3 to 35.2; the number of two-family dwellings rose from 17.3 in 1921 to over 21 percent of the whole for 1922, 1923 and 1924, then declined to 11.1 percent in 1928; and the percentage of multi-family dwellings climbed from 24.4 in 1921 to 53.7 in 1928. In 1929 and 1930 the...
percentage of one-family dwellings increased again, reaching 45.7 percent in the last named year; and 1930 also saw the percentage of two-family dwellings climb to 12.1 and the percentage of multi-family dwellings fall to 42.2. But this interruption of the trend noted between 1921 and 1928 is probably only a temporary reaction caused by the economic depression. Despite fluctuations of varying degree the general long time tendency in residential construction is definitely toward the multi-family dwelling.

A closer analysis of the building permit data, however, indicates that this tendency is a product of metropolitanism and is not characteristic of the housing movement in the smaller independent cities of the nation. Robert Whitten, analyzing the building permit data of the Bureau of Labor Statistics for 1921 and 1929 in connection with the President's Conference on Home Building and Home Ownership,\(^{50}\) brings out this distinction clearly. In the fourteen largest cities, with populations of 500,000 or more, the permits for multi-family dwellings increased from 34 to 64.4 percent of the whole. Increases for other urban communities were as shown in the following statement:

<table>
<thead>
<tr>
<th>City Type</th>
<th>1921</th>
<th>1929</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central metropolitan cities</td>
<td>30.3</td>
<td>58.4</td>
</tr>
<tr>
<td>Suburban cities (population 25,000 or more)</td>
<td>25.3</td>
<td>47.5</td>
</tr>
<tr>
<td>Independent cities (population 100,000 or more)</td>
<td>11.2</td>
<td>19.9</td>
</tr>
<tr>
<td>Independent cities (population 50,000 to 100,000)</td>
<td>8.8</td>
<td>15.9</td>
</tr>
<tr>
<td>Independent cities (population 25,000 to 50,000)</td>
<td>10.1</td>
<td>10.4</td>
</tr>
</tbody>
</table>

In all the cities studied, except those in the third category, which were communities of 100,000 population or more outside of metropolitan regions, the percentage of two-family dwellings declined; in cities of that category it increased from 9.5 in 1921 to 13.4 in 1929. In general these figures reveal a much smaller percentage of apartments both at the beginning and at the end of the period in the smaller and independent cities than in larger cities or those included in metropolitan areas. Only within the metropolitan regions does the apartment seem rapidly to be changing the manner of life of the people.

The Increasing Size of the Structural Unit.—"Large buildings," writes John M. Gries,\(^{51}\) "have been the most distinctive feature of post-war non-residential construction . . . Office buildings, department stores, hotels, apartment houses, and schools have tended toward larger units." Not only do a larger proportion of metropolitan residents live in multiple houses but the average size of structures both for dwelling and for working has increased. The growth of large apartment buildings, however,

\(^{50}\) From an unpublished Appendix, prepared for the report of the Committee on Family Types and Community Relations as Determining Housing Needs. See also Preliminary Report, I.

\(^{51}\) In Recent Economic Changes, op. cit., vol. I, p. 240.
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has been more conspicuous in the metropolitan regions than in the more scattered urban centers, as is indicated by Table 13.

Table 13.—Floor Space per Apartment, by Regions, 1920–1929

(Figures represent the average number of square feet of floor space per apartment house of the new construction for each year, as indicated by contracts awarded in 37 states)*

<table>
<thead>
<tr>
<th>Year</th>
<th>New England</th>
<th>New York and northern New Jersey</th>
<th>Middle Atlantic</th>
<th>Pittsburgh</th>
<th>Central West</th>
<th>Northwest</th>
<th>Southeast</th>
<th>Texas</th>
<th>Average for all regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1920</td>
<td>4,797</td>
<td>10,670</td>
<td>6,623</td>
<td>7,773</td>
<td>7,897</td>
<td>14,711b</td>
<td>c</td>
<td>7,071</td>
<td></td>
</tr>
<tr>
<td>1921</td>
<td>5,428</td>
<td>11,090</td>
<td>6,747</td>
<td>5,953</td>
<td>7,924</td>
<td>7,900</td>
<td>c</td>
<td>8,328</td>
<td></td>
</tr>
<tr>
<td>1922</td>
<td>3,848</td>
<td>13,313</td>
<td>8,856</td>
<td>5,602</td>
<td>6,008</td>
<td>4,729</td>
<td>c</td>
<td>7,005</td>
<td></td>
</tr>
<tr>
<td>1923</td>
<td>4,110</td>
<td>14,556</td>
<td>6,084</td>
<td>4,883</td>
<td>6,417</td>
<td>5,561</td>
<td>c</td>
<td>8,021</td>
<td></td>
</tr>
<tr>
<td>1924</td>
<td>4,509</td>
<td>13,886</td>
<td>6,962</td>
<td>4,336</td>
<td>5,716</td>
<td>3,949</td>
<td>4,319</td>
<td>7,067</td>
<td></td>
</tr>
<tr>
<td>1925</td>
<td>4,099</td>
<td>17,041</td>
<td>7,003</td>
<td>4,205</td>
<td>7,579</td>
<td>3,978</td>
<td>5,875</td>
<td>4,648</td>
<td>8,327</td>
</tr>
<tr>
<td>1926</td>
<td>4,138</td>
<td>18,049</td>
<td>7,008</td>
<td>4,319</td>
<td>8,057</td>
<td>4,800</td>
<td>6,147</td>
<td>8,434</td>
<td>9,486</td>
</tr>
<tr>
<td>1927</td>
<td>4,093</td>
<td>16,361</td>
<td>8,002</td>
<td>5,137</td>
<td>9,142</td>
<td>4,179</td>
<td>4,192</td>
<td>2,094</td>
<td>9,045</td>
</tr>
<tr>
<td>1928</td>
<td>7,809</td>
<td>20,248</td>
<td>14,207</td>
<td>8,991</td>
<td>11,011</td>
<td>6,877</td>
<td>6,255</td>
<td>4,877</td>
<td>13,343</td>
</tr>
<tr>
<td>1929</td>
<td>9,431</td>
<td>22,107</td>
<td>16,370</td>
<td>7,596</td>
<td>10,478</td>
<td>4,053</td>
<td>6,755</td>
<td>5,008</td>
<td>13,199</td>
</tr>
</tbody>
</table>

* F. W. Dodge Corporation, special compilation. Regions same as those in Table 12.

b Due to the relatively small number of apartments constructed in the Northwest district—only 71 in 1920—the average is unduly influenced by a few large buildings.

c No data.

Decreasing Size of the Dwelling Unit.—Although the size of the metropolitan apartment building and the amount of floor space per individual tend to increase, the family dwelling unit is growing smaller. This may be explained by the diminishing size of the family itself. Evidence regarding the trend toward smaller apartments is fragmentary but nevertheless suggestive. A. G. Hinman has summarized the records of the Chicago City Health Department as follows:

Of 293,045 apartment units constructed in Chicago, the period 1913–1928, 6 percent have one room; 12 percent, two rooms; 14 percent, three rooms; 29 percent, four rooms; 24 percent, five rooms; and 15 percent, six or more rooms. The average size of apartment units in the buildings constructed in the period 1913–1919 is 4.6 rooms and in those built since 1924, 3.5 rooms.52

The statistics published by the Regional Survey of New York show a similar tendency toward the smaller apartment:

In 1913 the average number of rooms per apartment in new construction was 4.19; in 1925 it was 3.63; in 1926, 3.49; in 1927, 3.39; and in 1928, 3.34.53

Office Buildings.—The most conspicuous development in the large structural unit is the office building. Every year seems to establish a new


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record in the height and floor space of the office structure. According to the annual surveys of the National Association of Building Owners and Managers, which cover old as well as new construction, the average rentable floor space per office building reported increased from 61,473 square feet in 1924 (23 cities—1,105 buildings) to 85,203 square feet in 1930 (43 cities—1,960 buildings). The Chicago Real Estate Board has compiled data on office buildings constructed in the city of Chicago since 1871. The trend toward increasing size of the building unit is clearly indicated.

Table 14.—Change in the Size of New Office Buildings in the Chicago Loop District, 1871–1930*

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of buildings</th>
<th>Total floor space (square feet)</th>
<th>Floor space per building (square feet)</th>
<th>Year</th>
<th>Number of buildings</th>
<th>Total floor space (square feet)</th>
<th>Floor space per building (square feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1871–1880………</td>
<td>11</td>
<td>411,695</td>
<td>37,429</td>
<td>1901–1910………</td>
<td>29</td>
<td>4,001,822</td>
<td>137,993</td>
</tr>
<tr>
<td>1881–1899………</td>
<td>12</td>
<td>900,460</td>
<td>82,338</td>
<td>1911–1920………</td>
<td>38</td>
<td>5,530,572</td>
<td>145,541</td>
</tr>
<tr>
<td>1891–1900………</td>
<td>32</td>
<td>2,084,889</td>
<td>91,715</td>
<td>1921–1930………</td>
<td>80</td>
<td>13,283,380</td>
<td>166,041</td>
</tr>
</tbody>
</table>

* Unpublished material.

Vertical Expansion.—The increasing size of the structural unit is a result of vertical growth even more than expansion of the building site. American cities are reaching upward as well as outward. The vertical growth, like horizontal spread, is a natural structural response to the operation of economic forces under present conditions of technological culture. Recent developments in vertical transportation have been less conspicuous but almost as important as those in horizontal transportation. According to information furnished by the Otis Elevator Company, the total number of power elevators in the country increased from 138,756 in 1920 to 220,608 in 1929. But the increase in the number of elevators does not fully indicate the advance in vertical transportation. Although it cannot be shown statistically, the increase in the volume and mileage of vertical traffic has undoubtedly been very great in recent years.

According to Clarence T. Coley, operating manager of the Equitable Building, the 48 passenger elevators in that great structure carry on the average 96,000 people per day between the hours of 8 a.m. and 6 p.m. During the course of a year they travel 275,000 miles, or 11 times around the earth at the Equator, each car carrying 6 persons for every mile. The building has 40 stories, 1,320,088 square feet of net rentable area and a permanent population of 12,000. The people passing in and out of its various portals each day number 135,000. The real estate management firm of Cushman & Wakefield has had a count made of the number of passengers carried by the elevators in sixteen office buildings under its management in the Grand Central Zone of New York City. The sixteen buildings had a combined height of 303 stories and were serviced by 75 elevator cars. During the year 1928, including 305 working days between the hours of
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8 a.m. and 6 p.m., 36,089,850 persons were carried by the elevators. The 75 cars made a total of 4,960,170 trips equal to a total of 415,041 miles. These figures, inadequate as they are, give us some idea of the enormously heavy traffic carried by the "vertical streets" of New York City.54

While the tall building is still largely confined to a few of the great cities of the nation, it is beginning to appear in the smaller cities as well, where building regulations permit. In 1929 the Thompson Starrett Company, Inc., made a nation wide census of "skyscrapers," the results of which are summarized in the following table:

Table 15.—Census of Skyscrapers, by Size of Cities, 1929*  

<table>
<thead>
<tr>
<th>Size of cities</th>
<th>Number of cities</th>
<th>Number of buildings 10 to 20 stories</th>
<th>Number of buildings ≥1 stories or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000,000 and over</td>
<td>5</td>
<td>3,009</td>
<td>295</td>
</tr>
<tr>
<td>500,000 to 1,000,000</td>
<td>8</td>
<td>399</td>
<td>40</td>
</tr>
<tr>
<td>≥250,000 to 500,000</td>
<td>24</td>
<td>495</td>
<td>29</td>
</tr>
<tr>
<td>100,000 to ≥250,000</td>
<td>25</td>
<td>303</td>
<td>12</td>
</tr>
<tr>
<td>Under 100,000</td>
<td>12</td>
<td>80</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>74</td>
<td>4,286</td>
<td>377</td>
</tr>
</tbody>
</table>


This census, taken three years ago, does not depict the situation at the present time. New York City alone, according to its tax assessor's report which is summarized in the Chicago Sunday Tribune, March 13, 1932, has 493 buildings of over 20 stories, 93 of which have over 30 stories. "Four of the 93 tallest and a cluster of the lesser fry have been added to the total since the tax man was around last year."

The ratio between land area and rentable floor space is a determining factor in the economy of the skyscraper. The rentable floor space of the Empire State building is more than twenty-five times its ground area. In order to achieve this it had to be extended to 85 stories. For the Chrysler building the ratio is a little over twenty to one. For the Woolworth it is a little over sixteen to one. For the Metropolitan Tower it is under thirteen to one. But the ratio does not increase in direct proportion to height, largely because of the additional space that must be given to elevators in the higher buildings. There is, therefore, an economic limit to the height of city buildings and it is possible that that limit has been attained or even passed.55


55 Stewart Browne, President of the United Real Estate Owners' Association, is quoted in the New York Times, March 20, 1932, as predicting, "that during the present year [1932] all skyscraper buildings built during the past four years, except those owned by large financial institutions, will be foreclosed unless such buildings have already been foreclosed."
Skyscraper Apartments.—Although high buildings are predominately office and hotel structures, there are indications that the apartment has broken the tradition of the walk up height, and is about to join the ranks of the skyscraper class. Probably because of building restrictions the number of skyscraper apartments is still comparatively small. The high apartment, as yet, is distinctly a metropolitan institution. It is found only in a few of the larger cities where land values make living near the business section prohibitive for all except the very wealthy and the very poor—those who accept the remnants of a passing residential economy. The recent sudden appearance of skyscraper apartment buildings close to the main business centers of New York City and Chicago may mark the beginning of a new historical phase in the residential use of some of the blighted areas of our large cities. There seems to be a growing desire on the part of business executives and certain professional groups to live close to their places of employment and the skyscraper apartment is a structural accommodation to this interest. From an economic standpoint this type of building, designed for the use of the higher income brackets of the population, is able to compete with commercial services for high land value sites. And from the social standpoint the size and prestige of the building are usually sufficient to overcome any stigma that may be associated with living in an area that is basically commercial in character.

Furthermore, the introduction of the automatic control elevator into apartment buildings of medium height bids fair to initiate a new era in apartment living for a larger proportion of the city’s population. The increase in the number of automatic elevators, which elevator companies report are confined largely to apartments, has been rapid in recent years. In 1924 there were only 830 automatic control elevators in the country; by 1929 the number had increased to 6,447.

The Significance of the Larger Structural Unit.—The most obvious effect of the increasing size of the structural unit is the change produced in the physical contour of the city. There is no doubt that the American city is beginning to assume aesthetic qualities which formerly it sadly lacked. The great tower, built for beauty as well as utility, has initiated a new era in American architecture. But it is outside the field of this chapter to deal with the architectural aspects of community change.56

The large building is first of all a physical manifestation of the trend toward territorial concentration and functional differentiation of various types of economic and social activities within the city. It is generally known that as cities increase in size their different economic activities tend to group themselves, giving rise to financial, shopping, wholesale, amusement, and other kinds of districts. Locality specialization, whether in the form of districts or individual streets, has always been a distinctive

56 On trends in architecture, see Chap. XIX.
feature of large cities, even those without modern facilities for transportation. The old cities of the Orient are renowned for their specialized streets, along which rows of small shops display similar or complementary wares for sale. The financial districts of London and New York are examples of old and seemingly permanent grouping.

The recent tendency in American cities is for the building, rather than the street, to become the physical unit for such complementary groupings of activities. The tall building is like the old specialized street, stood on end. By housing competitive or related services under a common roof, and by substituting vertical for horizontal transportation, a great saving of time is effected. The situation is well illustrated in the Chicago Merchandise Mart. This great structure, covering 200,000 square feet of ground, but having 4,000,000 square feet of rentable floor space, had listed on its directory of tenants in July, 1931, 1,258 different names, representing wholesaling, manufacturing and advertising firms. Were these firms distributed on the old pattern they would require many times the ground space occupied by the Mart, and the customer would have to travel many miles of streets to obtain the selection of merchandise at present available in this single building.

The department store, which made its appearance in the 1890's, with the introduction of the electric street car, represented the beginning of the movement toward the large specialized building unit structurally designed to house a series of associated economic services. This type of building has now been widely imitated. Banks, theatres, hospitals, schools and even churches are assuming the department store pattern of organization and conducting their operations in fewer but larger buildings which are more systematically organized.

Of course the extreme expression of this tendency is the office building, the existence and the peculiarities of which can be partially explained by the fact that the managerial functions of a modern business can be carried on apart from its operative or productive functions. Management needs relatively small space and it is not tied down by problems of transportation. As R. M. Haig has said:57

The exercise of this managerial function of coordination and control is at first glance singularly independent of transportation. It does not require the transfer of huge quantities of materials. It deals almost exclusively with information. What is all-important is transportation of intelligence. The mail, the cable, the telegraph, and the telephone bring in its raw material and carry out its finished product. Internally easy contact of man with man is essential. The telephone is prodigally used, of course, but the personal conference remains, after all, the method by which most of the important work is done. Conferences with corporation officers, with bankers, with lawyers, and accountants, with partners,

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with fellow directors, fill the day. The work is facilitated when the time of the men whose time is most valuable is conserved. The district must be conveniently accessible and must be at the heart of the system of communication. It must be arranged so as to give the greatest possible ease of contact among men whose presence is desired in arriving at decisions.

V. CITY AND REGIONAL PLANNING AND ZONING

Up to this point attention has been focused on the natural processes of city growth as they find expression under prevailing conditions of direct competition or competitive cooperation. The two following sections, planning and government, deal with efforts to direct and control growth tendencies in the interest of the general welfare of the community.

While it is commonly recognized that the city is a sort of super-organism, which obtains its characteristic pattern from the interplay of competitive forces, still it is becoming increasingly apparent that unregulated competition may be destructive. It may distort the structural growth of the city and lead to waste, injustice and general inefficiency. In order to avoid these evils and direct the processes of city growth more in conformity with general welfare, the planning and zoning movement has developed throughout the nation.

The purpose of city planning and its more recent developments into regional planning is to make cities and regions convenient, healthful and attractive places in which people may work, play, learn, and otherwise express themselves in well rounded living. This is an aim shared also by other civic endeavors; the special province of city planning is comprehensive treatment of the wide range of problems relating to the physical aspects of the city or other unit—its streets, railroads, waterways, public services; its public buildings, schools and other cultural centers; parks, recreation grounds and other open spaces; and the development of housing, industry and other private property.

The city planning movement in the United States and its dependencies is dated from 1905. In that year three plans were made: for Manila, P. I., San Francisco, California, and Columbia, South Carolina. These are the earliest city planning reports of which there is any record. One of the next important plans to be completed was that for Chicago, which appeared in 1909. Significant trends from these beginnings are to be found in the legislation relating to city planning, in the setting up of planning commissions, and in the definite projects undertaken by cities, which resulted in well considered reports.

58 The material on planning in this section was prepared by Shelby M. Harrison (Director of Social Studies, Regional Plan of New York and Its Environs) and Flavel Shurtleff (Secretary of the National Conference on City Planning and the Planning Foundation of America).

59 For relation of municipal to general governmental problems, see Chap. XXIX.
**Recent Social Trends**

**Legislative Sanctions.**—The first recognition in state legislation in this country of city planning as a function of a city department is found in the special act of Connecticut for Hartford in 1907.

The planning commissions in Milwaukee, 1908, in Chicago, 1909, and in Detroit, 1910, were established under city ordinances. The Baltimore commission was appointed by authority of a special act of the Maryland legislature, passed in 1910. Most of the other early planning commissions were established under local ordinances.\(^6\)

The first planning laws of general application were passed in 1909 for Wisconsin and in 1911 for Pennsylvania (cities of the first class). In 1913 laws of this character were passed for all New York cities and incorporated villages. Massachusetts in the same year passed an act which made planning boards mandatory in all cities and towns over 10,000 population. The states (other than New York, New Jersey, Pennsylvania, Massachusetts and Wisconsin) which have since passed laws of general application authorizing the creation of planning boards are as follows: 1915, Nebraska, Ohio, California; 1918, Connecticut; 1919 Minnesota, North Carolina, Oregon; 1921, Indiana, Illinois, Kansas, Nevada, Tennessee, Vermont; 1923, Oklahoma; 1924, District of Columbia; 1925, Iowa; 1926, Louisiana; 1927, Maryland; 1928, Kentucky; 1929, Arkansas, Colorado, North Dakota.

Thus just two more than half of the states have enacted legislative sanctions or bases for planning in their cities. All sections of the country are represented, although the greatest activity was centered in the states along the Atlantic seaboard and in the middle west. The curve of developing interest during these two decades is fairly regular, with an indication of special activity around the year 1921. Many of these states have revised their first planning laws. Others have made them universally applicable where originally they applied only to cities of one class.

The following states have given legal sanction to a planning department or commission by special acts which apply only to certain-named cities or areas: 1917, Maine; 1921, South Carolina; 1923, Georgia, Florida; 1928, Virginia.

The earlier ordinances and acts set up advisory commissions or boards whose chief function was to study the needs of the city and secure a plan for its guidance. They had no authority to enforce their plans. Whether the plan was used or not depended largely on the character of the city's administration and its understanding of planning values. A more recent trend has been toward giving more power to the planning agency, culminating in the so-called master planning legislation passed by New York in 1926. This law and the *Standard City Planning Enabling Act*

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\(^6\) For special discussions of planning in relation to housing, see Conference on Home Building, Preliminary Reports, VI, VIII, XII, XXIV.
brought out by the Advisory Committee on City Planning and Zoning of the United States Department of Commerce in 1928, give a legal status to the master plan and a suspensive veto to the planning commission. California, Colorado and North Dakota, in 1929, and New Jersey in 1930, have enacted legislation rather closely following the Standard Act.

**City Planning Commissions or Boards.**—During the last two decades numerous official city planning commissions or boards have been established throughout the country. Their functions range from undertaking the preliminary survey work upon which later plans are based to drafting the plans and putting them into operation. Before 1914 there were 17 such official planning agencies. During the next few years the newly instituted agencies may be grouped as follows:

<table>
<thead>
<tr>
<th>Years</th>
<th>Number of official planning agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>1914 to 1922</td>
<td>207</td>
</tr>
<tr>
<td>1923 to 1926</td>
<td>161</td>
</tr>
<tr>
<td>1927 to (June) 1930</td>
<td>between 350 and 400</td>
</tr>
</tbody>
</table>

The total for the period of roughly twenty years is thus upwards of 735 official commissions or boards established as part of the local government machinery. In addition, numerous non-governmental city planning agencies have been instituted. The number of non-official agencies in recent years is proportionately less than formerly since the public has become somewhat better acquainted with city planning and it has seemed less necessary to get action started through an experimental venture. It is evident that the bulk of the development in official commissions has taken place during the last fifteen years, and that by far the most active period was from 1927 to 1930.

These official planning bodies may be grouped as to size of locality served. In the 13 cities with a population of over 500,000 in 1930 there were 11 governmental planning agencies. In the 80 cities between 100,000 and 500,000 there were 70 official planning agencies. In the 283 cities having a population between 25,000 and 100,000 there were 205 official agencies. The approximately 500 remaining agencies were about equally divided between cities under 5,000 and the cities between 5,000 and 25,000, of which latter there were 1,457.

The effectiveness of planning agencies varies extremely widely among the different cities depending on the composition of the commission, on the law or ordinance under which it operates, on the cooperation from other municipal agencies, and on other public support. Some indication of their place in the municipal scheme may be seen in the yearly appropriation received by the various commissions.⁶¹ In those cities where separate

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⁶¹ To secure exact statistics is extremely difficult, if not impossible, for some cities which are effectively carrying out planning programs make no separate appropriations, the plan-
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appropriations to the planning commissions have been made over a period of at least three years the following facts may be summarized:

Appropriations of $20,000 and upward were made in 14 of the 18 cities which have a population of over 400,000.

Of the 75 cities between 100,000 and 400,000 population, 13 made appropriations of $10,000 to $20,000, and 13 made appropriations of $5,000 to $10,000.

Of the 1,740 cities in the country under 100,000 and over 5,000 there were less than 20 with appropriations of over $5,000 a year.

In other words, of the 93 cities with a population of over 100,000, up to this writing 40 have specific appropriations for the planning commission's work ranging from $5,000 upwards. These appropriations are for the regular administrative work of the planning commission. They do not include amounts appropriated for specific planning projects, like the making of a topographical survey, a master plan, or the drafting of a zoning ordinance.

The experience of leading city planners points to the observation that the planning commission's work cannot be effectively carried out unless it has assigned to it a paid secretary-engineer. This official may have other duties; he may be the city engineer as he is in many cities. For the payment of his salary, or a part of it, and for other administrative expenses of the commission there will certainly be required not less than $1,000 a year in the smallest cities and not less than $5,000 a year where the executive officer of the planning commission gives his full time to that work. On this basis it is seen that a very large proportion of the planning commissions are as yet inadequately financed, less than 60 cities among the 1,833 with populations of 5,000 or over having been fit thus far to provide at least $5,000 per year for this work. It should be added, however, that funds secured by a number of private, non-governmental planning bodies would add considerably to this group of 60 cities. In a few such cases the total sums available have run into comparatively large figures, as in Philadelphia, where $500,000 has been raised for its Regional Plan and in New York, where the New York Regional Plan Committee has already spent more than a million dollars on its enterprises.

City Planning Reports.—Another indication of developments in planning is the number of cities which, through official or non-official agencies, have carried their planning projects to the point where a city plan report has been issued. Of the 93 largest cities of the United States, that is, those over 100,000 population in 1930, 77 have issued fairly comprehensive planning reports. Of the cities ranging between 25,000 and 100,000 population, reports have been prepared in 108; and of the cities under 25,000 about 150 have planning reports. In a few cases these are for the

commission being considered a division of the public works department or of the city engineer's office.

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cities and their surrounding regions. Thus, of 1,833 cities of 5,000 or more, only a little over one-sixth have carried their interest in planning through the stage where a report has been published.

Of the 335 cities which have planning reports, 60 were made before 1916. These would now be considered hardly more than preliminary or sketch plans. They were not based on comprehensive studies of population, traffic movement or other local conditions, and in most cases were hardly more than suggestions for improvements made by the planner after a brief visit to the city. More than half the cities which had these early plans have since either discarded them entirely for more thorough and comprehensive reports covering all the items in a city planning program, or have supplemented them by comprehensive reports in one or more fields, such as streets, parks or zoning. Even in the 300 new or revised plans which have been produced since 1916 there is a great difference in the thoroughness of the basic surveys, and consequently in the completeness of the final plan; but about 125 of them are known to be grounded on substantial data secured by careful surveys. They would probably serve as "master plans" as defined by the planning laws of New York, New Jersey, California, Colorado and North Dakota.

There is fairly general agreement now among city planners that planning programs cannot be effective unless they are based upon reasonably complete master plans; and that master plans cannot be effective unless the relative importance of the various projects recommended is at least outlined. In other words, it is becoming increasingly evident that the city plan must include a financial as well as a physical program, and also a capital budget outlining long term improvements as well as a budget for current expenses.

The last ten or twelve years have seen the rise of regional planning, in which the principles and experience gained in city planning have been applied to a certain extent to larger areas. These areas in a few instances have been counties but more often include the suburban territory, the so-called commuting districts, around the central city, more or less regardless of political or governmental boundary lines. By 1931 at least three states had enacted basic legislation providing for planning on such regional or county bases.

Zoning.—The zoning of cities and other local areas, sometimes undertaken as a separate project but now more often, and more properly, as a part of city or regional planning, is here treated separately because many cities have been zoned which do not have even a preliminary plan, and in some cases not even a planning commission. Zoning regulations supplement the city plan by controlling the use which may be made of private land and buildings. They provide for three or four classes of

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62 On zoning laws, see Chap. XXVIII.
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districts, usually residential, commercial, industrial and unclassified; and then exclude from each district all uses regarded as undesirable.

Zoning dates back less than twenty years in this country. Before 1916 there were only five zoned cities in the United States, but by the end of 1930 there were nearly one thousand. The action taken by cities by periods of years may be summed up as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Cities zoned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1916</td>
<td>5</td>
</tr>
<tr>
<td>1916 through 1920</td>
<td>30</td>
</tr>
<tr>
<td>1921 through 1925</td>
<td>438</td>
</tr>
<tr>
<td>1926 through 1927</td>
<td>210</td>
</tr>
<tr>
<td>1928 through 1929</td>
<td>221</td>
</tr>
<tr>
<td>1930</td>
<td>77</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>981</strong></td>
</tr>
</tbody>
</table>

It is evident from this summary that the period of greatest activity in zoning began in 1921. The annual increase in number of cities zoned since that date has been over 100, except from 1930 when the number dropped to 77.

Although there are about 200 more zoned cities than cities with planning commissions, the distribution in population groups is proportionately much the same, as will be seen in Table 16.

**Table 16.—Zoned Cities According to Size of Population, 1930**

<table>
<thead>
<tr>
<th>Size of city 1930 census</th>
<th>Number in this group</th>
<th>Number zoned</th>
<th>Size of city 1930 census</th>
<th>Number in this group</th>
<th>Number zoned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 500,000 population</td>
<td>13</td>
<td>11</td>
<td>Under 5,000</td>
<td>1,332</td>
<td>300</td>
</tr>
<tr>
<td>100,000 to 500,000</td>
<td>89</td>
<td>71</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25,000 to 100,000</td>
<td>283</td>
<td>180</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5,000 to 25,000</td>
<td>1,457</td>
<td>419b</td>
<td>Total</td>
<td>3,165</td>
<td>981</td>
</tr>
</tbody>
</table>

* U. S. Bureau of Standards, Division of Building and Housing, Survey of Zoning Laws and Ordinances Adopted During 1930, by Norman L. Knauss, May, 1931, pp 6-11; supplemented by data from the files of the National Conference on City Planning, New York. The Division of Building and Housing has received reports indicating that during 1931 some 68 additional municipalities have been zoned and that 101 other cities, towns and villages had been zoned prior to 1931 but not previously reported, thus making the number of communities in which zoning laws were in operation at the end of 1931 total 1,150. Of these, 83 had a population of over 100,000.

b The division between this and the next smaller group of cities, at this writing, is approximate, due to some uncertainty in the reporting. It is accurate within a negligible percentage, however.

During the period since zoning began, there has been marked advance in the scope of zoning legislation and improvement in the technique applied to the drafting of zoning ordinances, just as there has been advance in the scientific preparation of city plans. In some of the earlier ordinances cities were zoned for "use" only, that is, for the control of the uses to which the land should be put—commercial, industrial, residential, or other. Practically all of the ordinances since 1925 have been
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comprehensive, covering use to which land and buildings may be put, the height and bulk of buildings, or the area which may be covered.

A wide difference is to be seen in the administration of zoning ordinances. In some cities councils are easily prevailed upon to make amendments to the zoning ordinance, usually without referring the proposals to the planning commission or zoning board even for a report. In some cities the boards of adjustment or appeal, which are the quasi-judicial boards to hear zoning appeals, are very liberal in their interpretation of the ordinance or in permitting exceptions to them—too liberal in the judgment of leaders in this field for very effective community control of its land and building developments. In other cities, councils make no amendments without first getting the advice of the planning commission, and in the great majority of cases this advice is followed. In these latter cities, it is usually found that the zoning boards of appeal are strictly interpreting the ordinances and relaxing only in cases where decided hardship would otherwise result.

City Planning Instruction in Colleges.—Practically no attention was given to instruction in or training for city planning in any college or technical school in this country before 1909. The School of City Planning at Harvard University was established in the autumn of 1929. Twenty-five colleges or technical institutions are now giving either one or more city planning courses in connection with their departments of architecture, engineering, or landscape architecture. At least 50 additional colleges or technical schools give lectures on city planning in connection with courses in engineering, art, political economy, municipal government, political science or sociology.

VI. TRENDS IN METROPOLITAN GOVERNMENT

The spread of urban population over vast areas surrounding our great cities has inevitably raised serious governmental problems. This population movement has not only disregarded existing units of government but has taken place with a rapidity far outrunning the normal expansion of cities by annexation. The modern metropolitan region, as indicated earlier in this chapter, frequently includes scores of towns and cities as well as the whole or parts of numerous counties, and certain regions intersect two or more state boundaries.

The problems which such a situation occasions are many and difficult. Some are due to the fact that the character of certain services such as planning, water supply, and sewerage naturally requires action on a broad scale. Others spring primarily from the inability of some or all of the individual units to finance the services required by their situation, as

63 This section was prepared by Thomas H. Reed, Professor of Political Science, University of Michigan.
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education, transportation, the institutional care of the poor and sick, recreation, and the ownership and operation of public utilities. Still others are caused by the impossibility of making a service such as police protection or health really successful in a particular unit in the absence of service of similar quality in its neighbors. One or more of these causes is involved in all the peculiar problems of the metropolis. Park sites, for example, are usually to be found only in outlying districts quite incapable of dealing with the problem on a metropolitan scale.

The historic method of reconciling urban needs and urban powers has been by annexation. Metropolitan development in the last twenty years, however, has been too swift for annexation. Furthermore, there has developed a notable opposition to annexation in well established satellite communities. Brookline will not submit to annexation by Boston, nor will Webster Groves join St. Louis. The forcible annexation of such suburbs by fiat of the state legislature is no longer considered politically feasible. The last great forcible annexation was that of Allegheny to Pittsburgh in 1907 and its repercussions both in Pennsylvania and in the country at large have discouraged similar drastic action elsewhere.

Failing annexation, the one easily applicable remedy has been the establishment of special districts to provide particular services. There is nothing novel, of course, in this device. A metropolitan police district was established for New York as early as 1857, and the same method has since been used at intervals to meet special situations. The great majority of such authorities now in existence, however, date back no further than 1900, and in recent years they have been established at an average rate of more than one a year. Some are governed by commissions appointed by the governor (Massachusetts Metropolitan Commission). Other commissions are made up of delegates elected by the authorities of the constituent municipalities (Montreal Metropolitan Commission), while still others are elected directly by the people of the district (Chicago Sanitary District). Some districts are financed by state funds; others by taxes levied directly by the governing body; others by assessments apportioned to the constituent municipalities on the basis of population, assessed valuation, or services rendered; others by loans secured on the earnings of enterprises.

Successful as many of these districts have been in providing essential public works, recreational facilities, and so forth, there has been a steadily growing recognition of the fact that they do not solve the metro-

64 In this case the legislature provided for a vote in both cities jointly, the result of which was a foregone conclusion. Pittsburgh had more than twice the population of Allegheny.

65 Fourteen are listed for the years 1915–1929 in Committee on Metropolitan Government of the National Municipal League, The Government of Metropolitan Areas, New York, 1930, p. 27. The list does not even pretend to be complete.

[ 488 ]
TABLE 17.—Principal Special Districts in Existence in 1931

<table>
<thead>
<tr>
<th>Metropolitan area in which situated</th>
<th>Name of district</th>
<th>Date of establishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>Passaic Valley Sewerage District.</td>
<td>1902</td>
</tr>
<tr>
<td></td>
<td>Joint Sewerage District.</td>
<td>1899</td>
</tr>
<tr>
<td></td>
<td>New York and New Jersey Interstate Palisades Park Commissions.</td>
<td>1900</td>
</tr>
<tr>
<td></td>
<td>North Jersey Water Supply District.</td>
<td>1916</td>
</tr>
<tr>
<td></td>
<td>Port of New York Authority.</td>
<td>1921</td>
</tr>
<tr>
<td>Chicago</td>
<td>Chicago Sanitary District (sewerage).</td>
<td>1889</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>South Jersey Port Authority.</td>
<td>1926</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>Metropolitan Water District.</td>
<td>1930</td>
</tr>
<tr>
<td>Boston</td>
<td>Massachusetts Metropolitan District.</td>
<td>1919</td>
</tr>
<tr>
<td></td>
<td>Division of Metropolitan Planning.</td>
<td>1923</td>
</tr>
<tr>
<td></td>
<td>Metropolitan Transit District.</td>
<td>1929</td>
</tr>
<tr>
<td>Cleveland</td>
<td>Cleveland Metropolitan Park District.</td>
<td>1915</td>
</tr>
<tr>
<td>San Francisco-Oakland</td>
<td>East Bay Municipal Utility District (water supply)</td>
<td>1928</td>
</tr>
<tr>
<td>Baltimore</td>
<td>Baltimore County Metropolitan District (water supply and sewage)</td>
<td>1924</td>
</tr>
<tr>
<td>Milwaukee</td>
<td>Milwaukee County Metropolitan Sewerage District.</td>
<td>1921</td>
</tr>
<tr>
<td>Washington, D. C.</td>
<td>Washington Suburban District (water supply, sewage, plumbing</td>
<td>1918</td>
</tr>
<tr>
<td></td>
<td>inspection, control over planning).</td>
<td></td>
</tr>
<tr>
<td>Seattle</td>
<td>Port of Seattle Commission.</td>
<td>1911</td>
</tr>
<tr>
<td>Indianapolis</td>
<td>Indianapolis Sanitary District (sewage disposal, etc.).</td>
<td>1917</td>
</tr>
<tr>
<td>Portland, Oregon</td>
<td>Portland Port Commission.</td>
<td>1891</td>
</tr>
</tbody>
</table>

* Formed by consolidating the Metropolitan Park District (1893) and the Metropolitan Water and Sewerage District, which latter in turn had been formed in 1901 by consolidating the Metropolitan Sewerage District (1889) and the Metropolitan Water District (1895).

The metropolitan problem as a whole. To create enough of them to do so would inundate our urban centers beneath a flood of unrelated public authorities. Where, as in the case of the Massachusetts Metropolitan Commission, several functions are united under one board, we have something closely approximating a new unit of general local government. This indeed is what the situation seems to demand, and the last few years have seen deliberate attempts to solve the metropolitan problem by the establishment of new governmental units of metropolitan scope with specified powers, leaving all other functions to the existing municipalities within the area. What is more significant is that no other method has been prominently urged in any of the communities where vigorous campaigns have been conducted for the solution of the metropolitan problem. Though none of these attempts has been successful—and in one sense no trend of action established—they indicate the trend of thought upon which future solutions will probably depend. The first of these attempts was begun in Alameda County, California, in 1916. It was proposed to unite all the municipalities and some unincorporated territory on the eastern shore of San Francisco Bay in a single city and county of which the constituent municipalities were to be boroughs. In 1922 a proposal of this general tenor was rejected by the voters of the proposed city-county, actuated by fear of domination by Oakland. In 1923 the Pennsylvania legislature
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authorized the appointment of a Commission to study Municipal Consolidation in Allegheny County. This commission procured the adoption of an enabling constitutional amendment and after a thorough survey of conditions in the Pittsburgh area presented to the legislature of 1929 a charter which applied the name City of Pittsburgh to Allegheny County, gave the new unit additional powers and a modernized governmental structure, but left present Pittsburgh and all the other municipalities of the county as members of this great municipal federation. This charter, seriously and harmfully amended by the legislature, received at a special election on June 25, 1929, a large popular majority in Pittsburgh and Allegheny County. But, although it carried more than two-thirds of the 122 cities, boroughs and townships of the county, it failed of adoption because the constitution required a two-thirds vote in a majority of these units. The movement goes on and this year the legislature passed for the first time a constitutional amendment substituting a simple majority for the two-thirds provision.

After St. Louis had attempted unsuccessfully to annex St. Louis County in 1926, leading men in both city and county undertook to unite the two sections on a federated basis. An exhaustive study of local conditions prefaced the campaign, which had the support of prominent industrialists and business men. The enabling constitutional amendment, however, was defeated by the people of the state in November, 1930, in an election fatal to all proposals on the ballot.

In the meantime an organization was formed in Cleveland in the latter part of 1927 to study the metropolitan situation of that city, impelled largely by the realization that the best element of Cleveland’s electorate was rapidly being lost to the city by reason of the outward movement of population. Amendments to the Ohio constitution sponsored by this organization, opening the way to metropolitan consolidation on the federated pattern, have failed to pass the Ohio legislature due to rural misunderstanding and opposition.

The assignment of powers to the Greater City or metropolitan government in several of the recently proposed plans of consolidation appears in Table 18. All other powers in each case were left to the existing local governments.

These movements in several of our largest cities—so far unsuccessful but by no means extinguished—are a clear indication of the trend toward the federated city as a solution of the metropolitan problem. They have suffered defeat not because of opposition to the preservation of local autonomy but quite the contrary. The smaller units have feared that their autonomy was insufficiently protected. The office holders of the great city have objected to any diminution of their importance by the surrender of any of their functions to a greater city government. The only
### Table 18.—Principal Powers Assigned to Metropolitan or Greater City Government

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The real hope of metropolitan consolidation, however, is recognized to be along the general lines of the Pittsburgh, St. Louis, and Boston projects. Annexation, even if possible, cannot be profitably undertaken for whole metropolitan areas because of the extreme diversity of the districts involved. It cannot be wisely applied to the built up portions of the area alone, because the poor but extensive remainder would be left to sink under the weight of impossible financial burdens. Probably the best solution is a metropolitan government for metropolitan needs, leaving local problems to the minor units much as they are today.

An interesting variation of this plan is the proposal, favored by some leaders in Chicago, of separate statehood for that city and at least its Illinois environs. There is little reason to believe that the Illinois legislature would ever agree to give up the privilege of taxing Chicago property, but if it could be brought to pass, separate statehood would offer many advantages to the city itself. It would be relieved of taxation for down-
state purposes. The relation of the metropolitan state government to local units would be more commanding than that of the Greater City in the federated city plan. If it were possible to apply the principle of separate statehood to our three largest cities, giving them all their metropolitan extent regardless of existing state lines, a great task of simplification would be accomplished.

Short of a redressing of state lines, the only practical method of solving metropolitan problems where more than one state is concerned is by the method employed in the creation of the Port of New York Authority—a treaty approved by Congress. The success achieved by this Authority naturally leads to the query, cannot the same principle be applied to the creation of a joint metropolitan authority dealing with several functions of government? Cannot such a treaty be international as well as interstate, solving the problems of Detroit-Windsor or of the Niagara frontier as some of the problems of New York and New Jersey are now solved?

This dislocation of normal relationships between population and units of local government is not, strictly speaking, a new phenomenon. London had a metropolitan problem in the latter part of the eighteenth century and has never ceased to have one. Philadelphia had one in the second quarter of the nineteenth century, temporarily solved by consolidation with Philadelphia County in 1854. Boston had one partially taken care of by the Sewer and Water Districts established in 1889 and 1895. The creation of Greater New York in 1897 for the moment brought that metropolis under a single local government. But what was occasional has now become universal. At the same time the proportions of the problem have been enormously increased. Two decades have witnessed a revolution, and there is not a considerable city in the country today which has not its metropolitan problem. Annexation has failed as a remedy. The expedient of special districts has been increasingly invoked, but it is admittedly a mere expedient. The growing intensity of the evils of disjointed local government has forced the consideration of municipal expansion on an unprecedented scale, inevitably upon the federated pattern.

VII. SUMMARY AND CONCLUSIONS

It is now possible to take a bird’s eye view of population movements in the United States as far as they are reflected in the growth and expansion of the metropolitan community. Fully one-half of the people of this country now live within an hour’s motor journey of a city of 100,000 or more. Three-quarters of the national increase in population between 1920 and 1930 took place within the immediate orbits of these larger cities.
The census classification of all incorporated places of 2,500 or more as urban is increasingly less significant than a classification based upon whether population is or is not contained within the sphere of influence of a metropolitan center. The trend toward the metropolitan community and the reaching out of such communities over an increasingly large expanse of territory are the outstanding phases of the recent "drift to the cities."

The censuses of 1910 and 1920 showed a concentration of population based largely upon the centralization of industry. In other words the population followed the factories. The census of 1930, with supplementary evidence now available, indicates that the factors involved in metropolitan growth during the past decade were primarily commercial and institutional, with industry playing a relatively smaller role. The metropolitan community, at least until the advent of the depression of 1929, offered an increasing variety of jobs as well as more steady employment. It also offered a wider variety of economic and cultural services. It took on more and more the aspects of a coherent economic and cultural state, more realistic in many ways than the existing political states.

The super-community, or city region, is largely a product of modern means of communication, developed more extensively in local areas than throughout the nation as a whole. Assume that the boundaries of an ancient or medieval city were largely determined by the distance a man could walk in two hours. This would give a practicable radius of eight miles and a diameter of sixteen miles. The introduction of the motor car would at once multiply these limits at least six times, extending the practicable city radius to at least fifty miles. The case of the modern super-city is not quite so simple as this, since transportation by horse drawn stages, by steamboats where waterways were adjacent and by steam railways, extended the urban radius long before the coming of the automobile. But the illustration is pertinent. Measured in time rather than linear space the old boundaries of cities have shrunk and vast new areas have been brought within the city influence.

The super-community, therefore, absorbs varying numbers of separate local communities into its economic and cultural organization. Large cities everywhere are becoming conscious of themselves as centers of commercial provinces and are attempting to define and delineate their primary trade areas. The evidence at hand seems to indicate that the influence of the central city over these areas tends to diminish with distance outward. There is usually a line—not easy to determine since some influences of the central city are more potent and more far reaching than others—at which the territory of one center meets that of another. We can, in fact, draw a map tentatively allotting the entire territory of continental United States to a comparatively small number of super-cities.
These super-cities throughout the nation appear to be becoming more nearly uniform in their economic and institutional structure. The frontier type of city is gradually developing into a more mature type of metropolis. This is shown in physical structure—in the growth of skyscraper office buildings. It is shown also in the growing complexity of the industrial and occupational pattern of the larger cities throughout the nation—by the tendency toward wider distribution of talented or highly skilled persons in the more specialized occupations. This increasing diversity within the city and uniformity among the cities results in a higher degree of local autonomy. The regional city tends to become more self-sufficient. But this self-sufficiency is limited by the concentration of certain industries and of certain raw materials, and by a counter tendency toward a closer functional interrelationship of the metropolitan centers of the nation. Just as communities within a metropolitan region preserve a certain degree of independence and local identity, yet are closely bound within the economic and cultural network of the central city, so the regional communities themselves are independent in many things, yet are parts of a national urban system.

But while the role of the great city in the nation at large has been growing in importance and changing in nature, even more radical and important changes have taken place within the city itself. In the first place, every large city has experienced rapid shifts in its local population since the end of the World War. The suburban drift has not only increased in volume but has altered in character. The outward movement in recent years has been largely among the white collar classes, who have created a definite new problem by removing themselves to an increasing extent from the political city while remaining within the sphere of influence of the economic and cultural city. They have drawn after them a number of local institutions, business outlets and municipal services, creating a real rus in urbe in the suburban territories. Industry likewise has tended to migrate outward, not for the same reasons but because increasing congestion in the more central districts has hampered its activities and added to its production costs. The heavy industries go first and farthest; the lighter ones and those which are most dependent on proximity to their metropolitan customers do not go so soon or so far; but the tendency in nearly every case is centrifugal.

When individuals, businesses and industries move out in this way, at the rate which has recently marked these migrations, they leave a partial vacuum. The general effect of this drift, coupled with the more intensive use of land brought about by large structural units, is to hasten the obsolescence of much of the older pattern of the city. This applies to

66 The supporting data for this statement will be presented in the monograph.
67 Detailed studies on this point for the early post-war years are to be found in volumes IA and IB of the Regional Survey of New York and Its Environs, New York, 1928.
METROPOLITAN COMMUNITIES

practically every type of institution and service. Every large city is confronted on the one hand with the problem of increasing congestion in certain areas and, on the other, with that of revitalizing its blighted areas. The deteriorated districts are rarely rehabilitated by private enterprise, though in some cities, notably New York, blighted areas have been restored, at least partially, by the erection of high class apartment houses. But these areas are always in competition with newer subdivisions which offer a more inviting field for private enterprise. Usually lying close to the main business center of the city they become the habitats of the vicious and criminal elements of the population. Without the economic incentive toward repair or replacement, buildings are allowed to deteriorate. Land values decline, assessments are lost to the city, transportation problems are aggravated by the fact that residence is further removed from business. This actual misuse and underuse of land creates a difficult situation for the city planner, the city assessor, the health department, the police department, the transportation managers and the housing and welfare agencies.

While the deteriorated areas are largely allowed to go to waste there is an intensive exploitation of certain other areas within the city and toward its periphery. There result problems of transportation and traffic which are among the gravest that confront any modern city. In some cities the growth of private transportation by motor car has tended to disorganize the mass transportation facilities originally existing and has at the same time created a new traffic problem. There are many intricate details and differences among cities in this field, which cannot be dealt with adequately in this chapter but will find their rightful place in the accompanying monograph. It may be pointed out here, however, that the loss of business by rapid transit lines to motor transportation has not been universal. Nearly everywhere the surface street car line has lost ground. In New York City, however, in normal times, the rapid transit facilities of all kinds have never been adequate to the demands put upon them.

Nearly every one of the new problems of great cities comes home sooner or later to the governmental agencies. The last decade has witnessed an unprecedented expansion of all types of municipal utilities and services. At the same time many of the governmental functions have failed to keep pace with the economic and cultural expansion of urban life. The multiplicity of separate governmental and taxation bodies in every large metropolitan aggregation constitutes one of the most serious difficulties confronting the metropolitan community today. Because city planning is by definition limited to the obsolescent political city it is now being rapidly superseded by regional planning. But regional planning on a scale commensurate with actual needs is thwarted by the large number
of politically independent communities with which planning bodies have
to deal.

The development of the new super-city points, therefore, to the need
of some sort of super-metropolitan government. This problem and the
steps already taken to cope with it were presented in the preceding sec-
tion. It is quite apparent that the old procedure of annexation of surround-
ing territory by a central city is no longer a satisfactory solution. The
spread of population under the influence of motor transport is far too
rapid and too extensive to be dealt with adequately by annexation, even if
annexation were not vigorously resisted by most of the outlying communi-
ties of most cities. Some plan of coordination of governmental functions
must be developed before the political unity of the real functional metro-
politan community can be achieved.

To sum up, the past decade has definitely witnessed the emergence of
a new population and functional entity—the metropolitan community
or super-city. So far as can be seen this new entity will characterize our
national urban life for an indefinite time to come. The next decade may
be expected to bring about further efforts to digest it into the economic,
governmental and cultural pattern of the nation.
CHAPTER X

RURAL LIFE

By J. H. Kolb and Edmund de S. Brunner

If the problem of adapting metropolitan communities to the economic, governmental and cultural pattern of the nation is one which presses for attention, that of present and future trends in rural life raises many questions which need to be understood in formulating local or national policies.

Chapter X shows that open country areas are losing much of their former isolation and are acquiring a far greater interdependence with other sections of society while still maintaining an identity of their own. This interdependence is noted in relation to the village or small town which has gained in importance and in stability of population, specializing its services and becoming the center for much of rural social life. As a result of this union of open country and village, it appears that a larger and more modern community has emerged. Finally, the relationship of this rural community with the city is found to have assumed more importance than in the past and at the same time and for some of the same reasons the classifications “rural” and “urban” are losing much of their distinctiveness.

The principal sources of the data for this chapter are of two kinds: detailed field investigations and special analyses of census materials both published and unpublished. Field investigations were carried on by the Institute of Social and Religious Research in 1921 in 21 agricultural counties well distributed over the country, and in 1924 in 140 carefully selected agricultural villages in every region of the United States except New England. Field workers of the Institute restudied both the counties and the villages in 1930–1931. Intensive field restudies of five counties were made in cooperation with four colleges of agriculture, Cornell, Iowa, Missouri and Wisconsin, the periods between the earlier and the later studies ranging from eight to fifteen years.

An analysis was made of the 1930 census data for 177 agricultural villages, including the 140 mentioned above, and was compared with the results of a similar study of the 1920 census returns made by the Institute of Social and Religious Research. Practically all of these census data were unpublished. A study was also undertaken of certain published and unpublished census data for 349 counties lying in concentric tiers around
eighteen cities. This study covered comparisons of the years 1910, 1920 and 1930 for all censuses except that of distribution, which was undertaken for the first time in 1930.1

I. RECENT CHANGES IN AGRICULTURE

Before the turn of the century the American farmer was annually exporting 500,000,000 bushels of cereals, mostly to Europe; but in the early years of the century, spurred by the coming of the automobile and the expansion of the industries upon which it depended, the great growth of the city began, based in part on immigration from Europe. With a great increase in the number of mouths to feed at home cereal exports dropped by more than two-thirds in a little more than a decade, on the whole with financial gain to the farmer.

American Agriculture and the World War.—The World War brought a change. With millions of her agriculturists leaving their fields to fight, Europe began to call for food, and by the time the United States entered the struggle it became apparent, as was proclaimed throughout the countryside, that food would win the war. The reserve power of American agriculture was brought into play. Food was produced and sold almost on a monopoly basis, for competing areas (like Australia) were too far from submarine blockaded markets and speed in delivery was of paramount importance. The American farmer was back in the European market and back under the stimulus of the highest prices he had ever known, with higher still foretold. Self-interest and then patriotism stimulated the farmer to expand production by mechanizing his cultivation, by increasing his holdings and by bringing a larger acreage of less productive soil under cultivation.

The farmer, therefore, invested heavily in land and machinery. He invested also in social utilities: good roads, consolidated schools, better churches and to a lesser extent libraries, health services and the like. Much of his payment was in terms of mortgages on future profits, for with money easy to borrow and the ratio of the prices he received to those he paid more than 10 percent above 1910–1914 levels he was as unassailed by doubts about the future as were the urban prophets of perpetual prosperity in 1928–1929.

Post-war Prosperity and Perplexity.—Again the scene changed. Post-war prosperity seemed headed for dangerous inflation in city and country alike. The Federal Reserve Bank took action to stem the tide. War-ruined Europe found its purchasing power crippled. Australian and South American farm products began to compete with American once

1 The more detailed results of these various investigations are published in the monograph in this series entitled Rural Social Trends.
RURAL LIFE

more. Hungry and all but bankrupt countries began feverishly to raise their own food. From a war-stimulated peak of 533,000,000 bushels in 1921–1922 cereal exports dropped rapidly to 210,000,000 bushels in 1925–1926. Mounting unsold surpluses resulted.

The situation was complicated by other factors. Marginal and semi-marginal lands had been brought into cultivation and were not to be returned to grass or forest without a struggle. The dietary habits of the nation had changed. Within the present century per capita consumption of wheat, for instance, has declined forty-five pounds or more than 20 percent. Fashion dictated that women’s clothes should need less material and hence less cotton and related products. The displacement of draft animals by the machine meant a further curtailment in the demand for products of the soil. The machine increased the per man efficiency of the agriculturists more rapidly than workers migrated from farm to city. The main effort of tax supported agricultural extension service had been devoted to increasing production as an end in itself with little time or effort given to study of the consequences.2

The inevitable crash came. Farm incomes dropped more than 50 percent in one year, 1921, and in the export crop area 85 percent, while the wholesale price level of all commodities dropped only 37 percent. Farm bankruptcies rose from 1.5 per 10,000 farms, the average from 1905 to 1914, to 20 in 1920 and 21.51 in 1922 and have averaged about 100 since that time. Rural banks failed by the hundreds throughout the decade.

Values of farm land and buildings, which had risen from 16 billions in 1900 to 34 billions in 1910 and to an inflated peak of 66 billions in 1920, had dropped to less than 48 billions by 1930. Farm indebtedness rose rapidly, mortgage debt on owner operated farms alone increasing from 1.7 billions in 1910 to more than 4 billions in 1920 and to about 77 millions additional in 1930. In 1920, 54.8 percent of the farmers (full owners) were debt free; in 1930, 53.9 percent. Meanwhile the average farmer’s equity declined about one-half. In all these trends there were wide variations among census regions and crop areas, for agriculture is a group of highly diversified callings variously affected by a multitude of factors.

This was the first phase of the depression. It was coincident in part with an industrial depression of large proportions. In 1922 industry apparently recovered. Stimulated by orders from abroad, which were largely paid for by money borrowed from the United States, and accelerated by installment buying, industrial America, with but slight hesitation now and then, poured forth an ever increasing stream of goods accompanied by mounting profits. Mergers, stock dividends and extra dividends

2 On agricultural productivity, see Chap. II.

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that in with over, between percent received remained averaged. 

Agriculture lagged. Its depression continued save among a few specialized types. In part this was due to the continuance of causes already recounted. In part other causes operated. Industrial prosperity kept wages high, increasing the spread between the rural and the urban dollar, so that by 1927 the ratio of prices received to prices paid by the farmer stood at 85. The prices received by the farmer between 1922 and 1928 averaged 135 percent of the pre-war level, but during the same period industrial wages averaged 221 percent of that level. Freight rates, too, remained high or rose; handling and selling charges increased; the farmer received an ever smaller share of the consumer's dollar.

Moreover, taxes soared. Better schools and roads were built with borrowed money. Throughout this period taxes that had been but 130 percent of the pre-war level in 1919 went from 232 percent in 1922 to 266 percent in 1930. Furthermore, these taxes had to be paid for with products that had declined about 35 percent in value from the 1918–1920 levels between 1921 and 1930 and 60 percent in 1931. They were based, moreover, on the value of real property inexpertly assessed in accordance with a tax system devised when the United States was an agricultural nation not far removed from a barter economy, and of questionable value in a highly industrialized, money economy. Study after study by state colleges of agriculture has shown that the farmer pays a far higher share of income to the tax collector than the city man.

As with taxes, so with debt. Increasingly as the years passed and the dollar approached pre-war levels, the payment of principal and interest became oppressive. The change toward the much greater purchasing power of the dollar worked a hardship on the farmer with a debt in the same way that, as ex-Secretary Mellon pointed out, it has worked a hardship on America's European debtors.

Temporary Upward Trends.—But despite all these handicaps agriculture seemed to be working out of its difficulties in 1928, as Secretary Hyde stated in his annual report for 1929. Bank failures and bankruptcies had lessened in frequency. The farmer was beginning to adjust his production to the increased consumer demand for vegetables, fruit and dairy products. Taxes were at their highest but at least they had stopped rising. The ratio of prices received to prices paid by the farmer had reached 90.

2 On industrial expansion, see Chap. V.
3 Fifteen of these studies are summarized in Taxation on Farm Property by Whitney Coombs (United States Department of Agriculture, Technical Bulletin, 172, February 1930).
4 The indexes with reference to agriculture used throughout this chapter are those quoted or devised by the Bureau of Agricultural Economics of the United States Department of Agriculture; cf. the Bureau's monthly publication, The Agricultural Situation.

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Thousands of farmers, beaten in the struggle, and perhaps spurred by foreclosure, had answered the siren call of the factory whistle. Production costs had been reduced. The decline in land values seemed to have halted. Gross farm income reached 12 billions, a gain of one-fourth over the figures of a few years before. Then, coincident with Soviet Russia's return to the export market, came a whole series of misfortunes for the farmer: the industrial depression of 1929 with its attendant collapse of security and of commodity prices and its curtailment of urban buying power through unprecedented unemployment; the crisis in Europe, bringing exports to their lowest level since the World War; the failure of 4,000 rural banks; and the virtual bankruptcy of hundreds of municipalities unable to collect taxes. As always, raw materials fell first and most rapidly. The ratio of prices received by the farmers to prices paid declined to 80 in 1930, to 62 in 1931 and to 48 in June, 1932. The farmers' embryonic recovery of 1928 was stillborn. The general economic trend of the decade was downward. In 1932 the farmer faces a disturbed world grappling with problems similar to those he has contended with for a decade, a situation that in turn further depresses his own.

Rural Life and National Well Being.—The first third of the twentieth century has seen the old forms of social and community organization disappear or undergo considerable modification and new forms appear in their place. There has been improvement in institutions and social services, but an improvement which the farmer believes has not kept pace with urban institutional changes. These years have witnessed a gigantic shifting of population with all that involves for family and community life. On the economic side, the period has been characterized by the passing of the major source of finance for rural institutions and programs, namely the appreciation in land values.

For thirty years following 1890, whether prices were low or high, the growing demand for the land plus the improvements the farmer made netted him an average annual appreciation, in terms of rising land values, of 8 percent on his 1890 investment. Those days are gone. During the last decade $20,000,000,000 have been wrung out of the capital values of agriculture. Profits must now come by operating and sales efficiency. Only thus can the standards of family and community living achieved in part by these dividends be sustained. His market at home temporarily crippled, the farmer sees small hope of holding his own in the world market. He sees Russia pouring forth wheat upon the glutted world market. He finds the mills of Manchester seeking means to be freed from paying for American cotton in the gold that is demanded. He sees nearly every nation striving for agricultural self sufficiency. Can he under these conditions maintain his vaunted American standard of life? To him, as

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to the groups that sell him goods and services, to the railroads that carry his crops and to the investors who hold $10,000,000,000 worth of his promises to pay, the question of the future welfare of agriculture, in the light of conditions as they are, is of paramount importance.

II. OPEN COUNTRY AREAS LOSE ISOLATION AND GAIN INTERDEPENDENCE

The more general background necessary for an understanding of recent rural social changes has been sketched in the preceding pages. It is now proposed to view the changes and trends in rural life at closer range. The open country with its people and its farms becomes the logical point from which to start. Isolation is no longer a characteristic of this section of society. Its people, its occupations, its institutions and its organized group life have become interdependent with the rest of society, while still preserving an integrity of their own.

Rural Population Changes.7—During the period under consideration the United States has shifted from a rural to an urban nation. By 1920 urban dwellers were in a majority. The census of that year showed that the rural life which had dominated and characterized the nation for the first century of its history had yielded its primacy. Rural people had become a minority group for the first time. Similarly, manufacturing and mechanical industries had displaced agriculture as a chief source of gainful employment. By 1930 the shift was still more evident, owing in large part to the unprecedented migration of farm and village population to the cities. The seeming economic and social advantages of the city, expanding urban industries and the mechanization of agriculture, coupled with agricultural depression, swept approximately 15 millions of the farm population cityward in one decade, a number equal to more than two-fifths of those on the farms in 1920. This trend was only partly offset up to 1929 by the counter-movement of some 10 millions from the cities to the farms.8 The decade was thus characterized by a rapid turnover of the farm population, an amazing mobility. Migration from rural to urban America is, of course, no new thing. It is estimated that at least half of the rural born children went cityward in the half-century prior to 1920, but in the decade recently closed the migration was far more one of families and less one of individuals. Nevertheless it should be noted that rural America still has more than one-half the children of the nation, a fact of major importance to education and to the city.

The recent industrial distress has given renewed proof of the mobility of the population, for it has reversed its movement. Young as was the depression when the 1930 census was taken in April of that year, the

7 For further discussion, see Chaps. I and IX.
8 Based on estimates by Division of Rural Population and Rural Life of the United States Department of Agriculture.

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returns showed that in every state during the previous year about twice as many persons came to the farm from the city as left it for the city.\(^9\) Many of those leaving the cities were once farmers or sons of farmers who saw in rural life the security of at least a self-sufficient existence. Since that time reports of an unprecedented number of inquiries regarding farms received by federal and state departments of agriculture, by farm loan agencies and by some of the transcontinental railroads, indicate that thousands more have felt a similar urge. Farms at their present low prices are in larger demand than for some years past. Village homes are sheltering young people who have lost their employment. Some have come to ride out the storm; some aver that the crowded cities will not again take them from the freedom of the country. Time alone can tell whether the widely heralded trend toward a completely industrialized country, importing its non-perishable foods from frontier lands, has been stayed or only checked. It is quite likely that the number of farmers in 1932, despite low prices, was greater than ever before and that these urban emigres will make competition more severe in village and country.

**Occupational and Industrial Changes.**—Among the great occupational groupings listed by the census, agriculture alone between 1910 and 1930 showed a decrease in both the actual number of workers it supports and their proportion to all workers. The decrease in proportion has been continuous since 1820, while the proportion employed in every other major group has increased. The decline was measured by hundredths and tenths of percents at first, agriculture dropping from 32.14 to 30.18 percent of the population ten years of age and over between 1820 and 1850, during which time manufacturing rose from 5.43 to 7.67 percent and trade plus transportation from 1.12 to 2.52 percent. The burst of industrial activity and railroad building in the middle of the century carried the agriculturally employed down to 23.71 percent of the population ten years of age and over by 1870 and manufacturing up to 9.48 percent. The industrial depression of the 1870’s and the opening of the trans-Mississippi area through homesteading held agriculture steady for a decade, but by 1890 the decline had again set in. Barely a fifth of America’s inhabitants ten years of age and over were then employed in agriculture and by 1910 less than one-sixth, while industry claimed more than one-seventh and trade plus transportation nearly one-tenth. By 1920 the transition of the United States from an agricultural to an industrial nation was definitely marked by the passing of agriculture from first place as a means of livelihood. Between 1910 and 1920 the proportion of its employees to the total population ten years of age and over fell from 16.35 to 13.20 percent, while the industrially employed achieved first place by

\(^9\) It is possible that the number leaving the farm was under-estimated but hardly enough to account for the considerable and consistent difference shown.
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lifting their proportion from 14.85 to 15.49. By 1930 industry further increased its lead over agriculture, the respective proportions being 14.50 and 10.62 percent. During these 110 years since 1820, moreover, the proportion of the population gainfully employed rose from 44.7 to 49.5 percent.

During this century industry also expanded in the rural areas. Not only have many of the cities of today grown from meager beginnings such as saw mills and small iron furnaces set down in rustic surroundings, but at the present time some 4,000 small centers of industry hold a population of approximately 4,000,000 persons who are in the country but not of it. Such industrial villages are the mill towns of the south and mining and lumbering villages. These places, which are neither rural nor urban but are surrounded by a population of farmers and those who serve farmers, present peculiar problems of social organization, especially to school and church administrators.10

Thus it is that the rural non-farm element in the population, comprising largely dwellers in agricultural and industrial villages, has formed an ever larger part of the rural population, so that by 1930 the non-farm group made up more than 43 percent of the total rural population and the census presented for the first time separate analyses of rural-farm and rural non-farm population.

Even members of the farm population saw opportunity for gain in the growing variety of the economic life about them. In 1920 a special census study of eight carefully selected counties showed that 10.7 percent of the farm population was gainfully employed in other than agricultural pursuits, ranging from 4.7 in Ellis County, Texas to 24.1 percent in King County, Washington. This tendency seemed to be increasing up to 1929, if several studies by state colleges of agriculture are representative of the total situation.

Farms and Farming.—These occupational shifts were of course accompanied and indeed influenced, by changes in farm management and technique, changes registered in the number and size of farms, in the use of machinery, in products raised and in land tenure.11

Before summarizing these, however, it is important to emphasize the fact that conditions among the fruit growers of the Pacific Coast on their small but highly cultivated holdings vary sharply from those of the wheat growers with their hundreds and even thousands of acres, that the dairy farmer and the cotton grower, the truck farmer and the grower of corn and of hops have few conditions in common. In short, agriculture is a complex affair the conditions of which vary according to crop, climate,

11 On agricultural trends, see Chap. II.
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soil, region and even race, and these varying factors in turn variously affect the social structure and population. Thus many significant trends are concealed by national figures but none the less national totals do show certain main tendencies which have significance.

Thus it is clear that the number of farmers in the United States is approaching its maximum unless a self-sufficing agriculture returns as a result of a prolonged depression. In 1930 there were slightly fewer farms than in 1910. As reported by the census, the totals for the two years were 6,288,648 and 6,361,502 respectively. There were, however, more acres in farms, the 1930 total being 986.7 millions as against 878.8 in 1910. The aggregate acreage in crops however was 371.6 million acres in 1930 and 362 millions in 1931. Obviously the average size of farms has been increasing, the gain being from 146.2 to 156.9 acres between 1900 and 1930, most of which increase occurred after 1925. These data together with the very small increase in manager operated farms shown by the 1930 census indicate that large scale corporation farming as against the family managed farm has not made great progress. Despite this the number of small farms has been gaining. The ratio of farms under 100 acres to all farms went from 57.4 to 59.4 between 1900 and 1930. Near cities especially more farming is being done on plots of less than 50 acres. Nevertheless the number of large farms has also increased, the ratio of those over 500 acres having risen from 2.6 to 3.8 in this period. This gain has been marked chiefly west of the Mississippi River where the mechanized farm, whether operated by a corporation or not, has become a dominant factor. It follows from all this that it is the "medium sized" farms which are decreasing in relative importance.

Nationally, too, there has been a steady increase in the proportion of farms operated by tenants as compared to owners, though this tendency was markedly slowed down between 1900 and 1925. In 1890, 28.4 percent of the farms were tenant operated; in 1900, 35.3; in 1925, 38.7; in 1930, 42.4 percent.

These changes were accompanied by changes in the type of crop raised. The rise of cities is almost always correlated with an increase in truck, fruit and dairy farms of small acreage. Wheat growing has been pushed even further west, southwest and northwest. It is for the most part a crop of sparsely settled, not of densely settled areas. It calls for batteries of machines and wide open spaces. New varieties of drouth resistant plants and improvements in machinery and in dry farming methods made it possible for wheat to invade the semi-arid areas where cattle once ranged. Similarly cotton growing has declined in the old south and gained in the southwest where the waving wheat and the bobbing cotton ball meet.12

12 See maps given in Chap. II.
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The influence of the tractor on this conquest of millions of untilled acres for agriculture has been considerable. Its use increased more than ten-fold from 1918 to 1930 and more than three-fold from 1920 to 1930, in which year 920,021 tractors were in use on the farms of the United States. It is probable that there has been little expansion since then. Indeed in 1931 from many sources reports came of idle tractors on farms where animal power tilled fewer acres.

Certain it is, as the census returns show, that agriculture is growing more specialized as time goes on. Diversification in many areas means diversification within a general type, as truck farming, or a shift to meet the demands of nearby urban markets. And by these changes social life is inevitably influenced.

Organized Group Life.—The response of the farmer to the changes of the last twenty years as shown in his organized social life is the next point to be considered.

The Cooperatives.—On the business side the farmer has faced a corporate civilization not with corporation farming but with economic cooperation. Nevertheless he has adapted corporation techniques to his own ends, slowly at first and against opposition, but more rapidly of late and with government approval and assistance. The Division of Cooperative Marketing of the Federal Farm Board thus summarizes the growth of the cooperative marketing movement:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of associations</th>
<th>Volume of business</th>
<th>Membershipa</th>
<th>Year</th>
<th>Number of associations</th>
<th>Volume of business</th>
<th>Membershipa</th>
</tr>
</thead>
<tbody>
<tr>
<td>1915</td>
<td>5,424</td>
<td>635,839,060</td>
<td>651,186</td>
<td>1930</td>
<td>12,000</td>
<td>82,500,000,000</td>
<td>3,100,000</td>
</tr>
<tr>
<td>1925</td>
<td>10,903</td>
<td>2,400,000,000</td>
<td>2,700,000</td>
<td>1931</td>
<td>11,950</td>
<td>2,400,000,000</td>
<td>3,000,000</td>
</tr>
</tbody>
</table>

a Gross figures. It is generally thought that, correcting for duplications, about 4,000,000 individuals are members of cooperatives.

That such numbers of the individualistic American farmers, grandsons of the pioneers, should pool their resources within so short a time represents a dramatic change of attitude. That the farm cooperatives, despite mistakes in leadership and policy, despite the trying years of depression, despite the opposition of competitors, should hold their membership so nearly at its peak and with increased volume of business, denotes a significant trend. The active support of this movement by the Federal Farm Board ever since its organization in 1929 has been one sustaining factor in the situation.

The Extension Services.—An important influence in rural life is the work done by the extension services of state colleges of agriculture in cooperation with the federal department. This has grown to large pro-
portions in the last fifteen years. In 1915 about $3,500,000 was expended in this effort at adult education among farmers and their wives. By 1931 the budget for this work has grown more than seven-fold; the proportion of counties having agricultural agents, 77.2 percent, was more than double the 1915 figure, and similarly the counties having home demonstration agents increased from 11 to 43 percent of the total number.\textsuperscript{13} Much of this work is done by projects such as soil improvement, crops, animal husbandry, nutrition, clothing, home management, community activities and the like. Much of it is done through thousands of local groups of farmers or their wives directed by a quarter-million local lay leaders.

\textit{Farmers' Organizations}.—Another significant development of the last ten or fifteen years from the standpoint of social organization has been the formation of thousands of farm groups organized around technical agricultural interests such as breeders, dairymen's and poultrymen's associations and scores of others. Sometimes organized on a county basis, they are more often local or, if countrywide, a federation of locals. In addition there are among others such national organizations as the American Farm Bureau Federation, the Grange and the Farmers' Union. In the 140 village communities, located in every region of the country, visited in this investigation, there were 160 local units of these national bodies in the open country parts of the communities, an increase of 30 over 1924. These totals do not include the locals that meet in the village itself. The boys' and girls' clubs known as 4-H clubs, sponsored by the Agricultural Extension Service, which greatly increased in membership, were also frequently centered in the open country or in small hamlets outside the villages.

\textit{Country Church, School and Store}.—Almost from pioneer days the farmer has had the country church, school and store. In the last decade of change and increased facilities of communication thousands of these agencies have ceased to function, though tens of thousands of them still exist.

In the case of the schools, as is shown in greater detail later, there have been thousands of consolidations, but there are still about 151,000 one- and two-room rural schools. In many cases open country districts have joined enlarged high school districts but have kept their elementary schools. In 1930, in the 140 communities visited in field work, 225 of the 1,510 open country schools found in 1924 had closed, but the net decrease was not so large. Obviously the open country school is still a large part of the rural educational picture.

So, too, a surprising number of open country churches were found to have survived the inter-survey period, 1924–1930, especially in the south

\textsuperscript{13} Reports of the United States Department of Agriculture.
and middle west. The closer to a village the open country church is located the less is its chance of survival, but in the zones beyond direct village influence the open country churches still tend to flourish. Of the 64,000 open country and hamlet churches in existence in 1920 more than four-fifths were still functioning in 1930, and outside the immediate influence of villages and towns the number now appears to be holding constant.\(^\text{14}\)

Open country stores seem to be decreasing more rapidly than other institutions, if the survey of the 140 village communities and studies in Ohio, Minnesota, Illinois and Nebraska are representative, but the 1930 United States Census of Distribution\(^\text{15}\) showed that rural general stores still accounted for one-tenth of the retail trade in places of less than 10,000 population, and hence for about 3 percent of the total retail trade of the nation.

It would appear, therefore, that regardless of the evident villageward trend of rural life to be discussed later, the farmer is giving up the open country social organizations established during the last century only when it appears advantageous for him to do so. In some regions and in certain types of situations in all regions, the decline of these institutions has been, at least for the present, halted.

*Country Neighborhoods and Social Life.—* The neighborhood appears to show the same situation. It has been regarded as a small locality group, smaller than a village, often centering at a crossroads or other small center and characterized by the services of such institutions as school, church and store, or school, church and farm bureau local. Obviously such groups would be the first to feel the effects of the larger integration of community interests on a village-country basis. Five hundred and thirteen such groups were found in the 140 village centered communities studied in 1924. One hundred and eighteen had passed away by 1930 but 24 new groupings had been formed. The net loss, therefore, was less than one in five. The greatest loss was found where improved roads were relatively new. Where they had been enjoyed for some years the rate of neighborhood disintegration had slowed down. Moreover, where the old type rural neighborhood had gone special interest groups of neighbors had often been formed, each enlisting those interested by the particular objective of the group. Such groups are represented by the study classes in scores of subjects from music and art to auto mechanics that annually enlist thousands of persons in rural Delaware, by little theater groups in North Dakota, North Carolina, Colorado, New York, Ohio and Wisconsin and by hundreds of similar enterprises that have sprung up,

\(^{14}\) Compare with figures for the entire country in Chap. XX.

\(^{15}\) U. S. Bureau of the Census, *Fifteenth Census of The United States, Census of Distribution.*
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especially within the last half decade, in thousands of open country and hamlet localities.

A number of explanations for these changes could be noted, but certainly among the factors responsible, in the last analysis, for the steady but slow decline in neighborhoods and in neighborhood institutions such as schools, stores and churches, are the improved facilities for transportation and communication. Without these the enlarged type of village centered community with its expanded services and contacts could not have arisen. These facilities make possible not only the multiplication of contacts over a larger area than the farmers of the horse and buggy stage knew; they also make possible the multiplication of local contacts.\(^\text{16}\) Neighboring farms are only a few minutes distant, not an hour. The farmer is adjusting himself rapidly and willingly to the new and larger community. That is not to be questioned. He has sacrificed many of his old service institutions. In many places he seems also intent upon retaining something of the old social life. In others he is persistently building something to take the place of the old, something to fit the modern age, something that will express his new interests. It is this perhaps that makes the more important another aspect of rural social change, the increasing integration of the countryman into the village and town community. Like the urbanite who, utilizing what the city offers, shares more intimately in the life of a Greenwich Village, a Gold Coast or a Morningside Heights, the country man is experimenting with a social life with more than one center and with more than one set of interests. He is altering his immediate locality organization, recognizing himself all the while as a part of the village community.\(^\text{17}\)

III. VILLAGES ACQUIRE GREATER STABILITY AND ATTEMPT TO SPECIALIZE

Just as the open country has discovered a new interdependence with the rest of society, so villages or small towns find themselves in a changing situation. Highways and automobiles now make it possible for the farmer and his family to drive to or through several villages in the routine of a half day's shopping tour. In like fashion the village finds itself at the crossroads for city travelers and visitors from other villages. Therefore, in a real sense, it faces, Janus-like, both the country and the city, having and sharing the characteristics of each. Most important of all, the villages have come to occupy an enlarging place in the rural community during the last decade.

\(^{16}\) See Chap. IV.

\(^{17}\) Note special studies and discussion of housing in relation to community in the President's Conference on Home Building and Home Ownership, Preliminary Reports, XII and XX.

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The village has always played a part in American rural life. In the pioneering days it served as the focal point for the land settlement and development in New England. Even today it there continues to be the center for rural life and local government, content to share the common life of the community, unincorporated and undifferentiated. Elsewhere the situation has always been different. The impelling desire to acquire ownership of land quickly took the settlers out on the farms. The village or town centers came later and they were often made up of a more heterogeneous population. They frequently developed a certain independence; they confessed to dreams of becoming metropolises. Incorporation was freely resorted to and a basis was laid for certain town-country differences of understanding. Those concerned with agriculture and rural life were likely to pass villages by with too little regard.

**Wider Relations of Villages Recognized.**—It can be truly said, therefore, that a significant trend in the period under study has been the greater attention given to the village or small town by students of rural society. Galpin in 1914 first emphasized this village-country interdependence in his coinage of the term “rurbanism.” Brunner and Fry in 1925, both by special census analysis and by field work, set out in systematic fashion the characteristics of villages, that is, places between 250 and 2,500 population. In 1930 the United States Census recognized the importance of the village for the first time by giving certain details on the population of places between 1,000 and 2,500 population.

A study of the villages of the United States for the period 1910 to 1930 shows among other trends significant changes in population, in the structure of population, in the ways of earning a living and therefore in the functions that villages perform. These are the principal points to be discussed in this section.

Up to 1910 the population of incorporated villages and hamlets, i.e. places of less than 2,500 population, was a constantly increasing element of the rural population. Since 1910 the proportion which such incorporated places bear to total rural population has been nearly constant at about 17 percent (17.4 percent in 1920; 17.1 percent in 1930). In terms of the total population of the country, incorporated places of less than 2,500 represented 8.9 percent in 1910, 8.5 percent in 1920, and 7.5 percent in 1930. It is important to notice that more than nine million people lived in the incorporated places of less than 2,500 population in 1930. If the

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20 In this, as in the previous studies, a village is defined as a place of 250 to 2,500 population and a hamlet as a place of fewer than 250 people.
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unincorporated villages could be included, as they were counted by Fry in 1920, another five million or more people would be added.\footnote{Fry, \textit{American Villagers, op. cit.} There is every reason to believe that a 1930 count would show this increase, since the "rural: non-farm" population increased 18 percent over 1920.} This means that approximately one in every eight persons in the United States lives in a village. If small cities of less than 10,000 population were to be added to the total rural population—and they should be since their accessibility and their service to rural society have greatly increased in recent years—a total of 64,434,969, or 52 percent of the total population of the United States, would be reached. Of this number approximately 30 millions, or a little less than one-half, live on farms.

Do Villages Grow?—Attention must next be directed to that persisting question of whether or not villages or small towns are growing, dying or holding their own, for any attempt to study the changing place of the village in rural America must take this matter into consideration.

In considering village growth the caution suggested in the census report was observed, namely, that the same sample be used throughout the period of comparison.\footnote{Cf. U. S. Bureau of the Census, \textit{Fourteenth Census of the United States, 1920, Population, vol. I, p. 57.}} Therefore all of the 8,900 incorporated places falling within the "village" definition (250 to 2,500 population) in the year 1910 were followed through the 1920 and the 1930 enumerations, even though about 1,000 of them had so increased in size by 1930 that they came within the census definition of "urban." Conversely, all villages incorporated since 1910 are disregarded, as are urban places that declined into the village category, or places of less than 250 population in 1910 that grew into the village classification.

Measures of Growth.—On this basis, then, three measures of population growth or decline were employed, namely, the rate of growth, the amount of growth, and the number of villages growing or declining more or less than one percent a year. In so brief a discussion the results of these three measures cannot be presented in detail.\footnote{This will be done in detail in the monograph.} Suffice it to say that on all three counts incorporated villages were found to be gaining. The results of the first and the last of these measures are summarized in Tables 1 and 2.

From Table 1 it is evident that villages are growing at about the national rate of population growth, which was 14.9 percent from 1910 to 1920, 16.1 percent from 1920 to 1930, and 33.5 percent from 1910 to 1930. Regional variations are important to note, as are the differences in the two decades.

In Table 2 the points of special interest are the variations of growth according to size and the central core of villages that are relatively stationary, not losing or gaining more than 20 percent, i.e. 1 percent a year.
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When 1920 and 1930 figures are compared substantially the same trends are shown.

The third measure, amount of growth, was made by placing each village on a correlation plot representing its population in 1910 as compared with 1920, 1920 as compared with 1930, and 1910 as compared

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of villages</th>
<th>Average population</th>
<th>Rate of growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1910</td>
<td>1920</td>
<td>1930</td>
</tr>
<tr>
<td>All regions</td>
<td>8,900</td>
<td>833</td>
<td>960</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>1,018</td>
<td>1,023</td>
<td>1,208</td>
</tr>
<tr>
<td>South</td>
<td>2,676</td>
<td>889</td>
<td>1,091</td>
</tr>
<tr>
<td>Middle west</td>
<td>4,439</td>
<td>783</td>
<td>853</td>
</tr>
<tr>
<td>Far west</td>
<td>567</td>
<td>883</td>
<td>1,096</td>
</tr>
</tbody>
</table>

* Compiled throughout this discussion where the four region classification has been used, the following census divisions are included under each region: south—South Atlantic, East and West South Central; middle west—East and West North Central; far west—Mountain and Pacific; the middle Atlantic region is identical with the census division so named.

TABLE 2—INCORPORATED VILLAGES GROWING OR DECLINING 20 PERCENT OR MORE IN POPULATION BETWEEN 1910 AND 1930*

<table>
<thead>
<tr>
<th>Villages by size in 1910</th>
<th>Total villages</th>
<th>Growing (over 20 percent)</th>
<th>Stationary (from loss of 20 percent—gain of 20 percent)</th>
<th>Declining (over 20 percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percent</td>
<td>Number</td>
<td>Percent</td>
</tr>
<tr>
<td>Total</td>
<td>8,900</td>
<td>2,714</td>
<td>30.5</td>
<td>5,545</td>
</tr>
<tr>
<td>Small villages (250–1,000)</td>
<td>6,321</td>
<td>1,700</td>
<td>26.9</td>
<td>4,134</td>
</tr>
<tr>
<td>Medium villages (1,000–1,750)</td>
<td>1,724</td>
<td>639</td>
<td>37.1</td>
<td>988</td>
</tr>
<tr>
<td>Large villages</td>
<td>855</td>
<td>360</td>
<td>42.1</td>
<td>441</td>
</tr>
</tbody>
</table>

* Compiled from U. S. Bureau of the Census, Census of Population, 1910, 1920, 1930. Same villages used as in Table 1.

with 1930. The unit for comparison was 100 persons. The results of this analysis were interesting indeed. Taking for example the full twenty-year period, 1910 to 1930, one-fourth (24.7 percent) of the villages failed to change status, that is to move from one 100 category to another. More than one-half (51.9 percent) advanced one or more hundreds, some ex-
treme cases showing increases into the thousands. A scant quarter (23.4 percent) lost, a considerable majority of them dropping into the 100 group immediately below.

It was felt that the twenty-year period should register the effect, if any, of those disintegrating forces which were thought by some to be working against the village. The results show beyond a doubt that the trend is clearly one of growth. Lest the computation, including as it did the period of World War prosperity, might overweight the results in favor of growth, a similar analysis was made for the 1920-1930 period. Moreover, all villages that had passed the 2,500 mark between 1910 and 1920 were eliminated, since to include them might have weighted the sample in favor of showing growth. Newly incorporated places were also eliminated. Of the 8,205 villages thus remaining more than two-fifths (42.6 percent) advanced one or more categories or hundreds. Fewer than one-fourth (23.3 percent) dropped, while the remaining one-third (34.1 percent) finished the decade in the same category in which they began it. It appears quite clear, therefore, that whether the period considered be 1910 to 1930 or 1920 to 1930, more than three-fourths of the villages gained or held their own.

Stability of Village Population Growth Acquired.—The corollary running all through this story of village growth and decline is the record of relative stability. It was Pareto who suggested that the best measure of change is stability. From 1900 to 1920 two-fifths of the villages showed very little variation in size. From 1910 to 1930 nearly two-thirds of the small villages and over one-half of the others remained relatively unchanged. Comparing the 1900 to 1920 trends with those from 1910 to 1930, it is clear that the proportion of villages with tendencies to rapid growth or decline is on the decrease and that of more stabilized character is on the increase.

It is noticeable from the census analysis, as well as from the field work in 140 agricultural village communities, that the largest proportion of villages with a relatively unchanged total population is in regions where agriculture itself has become stabilized and where no other factors are making for any sharp changes in the population as a whole. Associated with this flattening curve of population growth is to be found a tendency toward specialization of the services and functions performed by the villages, including of course the various institutions concerned. It may well be, in fact, that the village in such areas is beginning to reflect, even before other sections of the country, the stabilization of the national population forecasted for two or three decades hence. If this major trend be true, the analysis of the age and sex characteristics in their effect upon the whole social and institutional life of the village and its rural community takes on an added importance.

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Characteristics of Agricultural Village Population. In the analysis of changes in the characteristics of the village population attention must be called to the fact that the 1930 census presents data on age, sex and nativity for the minor civil divisions for the first time. Since such data did not appear previously, the only method for a study of change is a comparison of the special analysis of unpublished 1920 census materials for 177 selected agricultural villages made in 1925 with the 1930 census reports for the same places.

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24 Compare with characteristics of total population given in Chap. I.
25 See Fry, American Villagers, op. cit., for the report of the study of the 1920 census data for these 177 villages.
Chief among the changes in the composition of village population are those relating to age and sex distributions, which are particularly important in view of the changes in the birth rate. The age-sex pyramids are shown in Figure 1.

One looks at once to the children’s groups. The proportion of children under ten years of age declined in every region. Furthermore this trend seems likely to continue, for in every region when those under ten are divided into two groups (under five and five to nine) it is found that the younger was numerically the smaller. For the whole group of agricultural villages 9.8 percent of the population is between the ages of five and nine, inclusive, while only 8.4 percent is under five years of age. Both because of the increasing age of villagers and because of the decreasing birth rate the number and proportion of children in villages is on a decline as yet unchecked. This fact has important implications for schools and churches and indicates that only the influx of pupils from the open country, characteristic of the last six years, can continue to sustain the school enrollment.

The declining village birth rate is further proved by the changes in the ratio of children under ten years of age to all females twenty to forty-five years of age in the sample villages. The ratio has declined from 99.6 in 1920 to 95.7 in 1930, all regions sharing in this decline except the middle Atlantic.

Table 3.—Ratio of Children under 10 Years of Age to Women 20 to 45 Years of Age in the 177 Agricultural Villages, 1920 and 1930* 

<table>
<thead>
<tr>
<th>Region</th>
<th>Ratio of children to 100 women 1920</th>
<th>Ratio of children to 100 women 1930</th>
<th>Region</th>
<th>Ratio of children to 100 women 1920</th>
<th>Ratio of children to 100 women 1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>All regions</td>
<td>99.6</td>
<td>95.7</td>
<td>South</td>
<td>107.0</td>
<td>99.7</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>84.5</td>
<td>88.4</td>
<td>Middle west</td>
<td>97.3</td>
<td>94.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Far west</td>
<td>105.9</td>
<td>98.4</td>
</tr>
</tbody>
</table>

* Special tabulation of U. S. Census data.

Quite as significant as the decline in the proportion of children in the agricultural villages is the increase in the number and proportion of older people. In every region the proportion of women between sixty and seventy years of age and of men and women seventy years and over not only increased but grew more rapidly than did the total village population. In all regions but the middle west the proportion of men sixty to seventy years of age also gained. The largest increases in the upper age group are found in the south and especially in the far west. This would
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seem to indicate that agricultural villages even in these areas are tending to conform more and more to the type of villages in the rest of the country.

The sex ratios have changed in every region, the net result being a greater variation among the regions, though the total figure for 1930 is not greatly different than for 1920. For the 177 villages as a group the 1930 ratio of males to females was 95.1 as against 95.5 in 1920, which compares to a ratio of 105 for the rural non-farm population of the United States as a whole, a figure 1.5 points lower than in 1920. This category of rural non-farm includes of course all villages, both incorporated and unincorporated. The great difference between the agricultural villages and the rural non-farm population in the ratio of males to females is only one of the many indications of the sharp differences between these two groups in the makeup of their population, and it shows the necessity, for an adequate understanding of the agricultural village, of making a separate analysis of its population structure. The total rural non-farm group includes of course all suburban villages and the approximately 4,000 industrial villages, most of them unincorporated. However, the decline in the number of males as compared with females between 1920 and 1930 was less in the agricultural villages than it was in the total rural non-farm group.

City, Country Comparisons Show the Village at Mid-point.—All of these trends, important as they are in themselves, point again to greater homogeneity in agricultural villages and to their approaching population stability. The question now arises as to how these various population characteristics compare with those in city and in country. To answer from the city angle, a group of thirty-eight medium sized cities, ranging from 25,585 to 104,437 in population, was chosen. They were scattered geographically throughout all the regions in which the sample of 177 villages is located and all of them have diversified industries. The country comparison was made directly on the basis of the rural-farm census classification.

The comparisons of population characteristics as they were first made in 1920 showed clearly that agricultural villagers were more like city dwellers than they were like farm people. The 1930 figures show that the village population continues to be more like that of the city than that of the farm with respect to school attendance, the ratio of males to females, the ratio of children under ten years of age to women twenty to forty-five years of age, the proportion of the population under ten years of age, the proportion between ten and twenty years and the proportion of females forty-five years and over.

Direct comparisons of the two periods, however, reveal that city and village populations are more alike in 1930 than they were in 1920 in the following particulars: school attendance, the proportion of native white
population, the ratio of males to females, the ratio of children under ten to women twenty to forty-five years of age, the proportion of both males and females under ten, twenty to forty-five, and forty-five to sixty-five years of age. Similarly the comparisons indicate that the farm and village are also more alike in 1930 than in 1920 in some of the same characteristics, namely, the ratio of children under ten to women twenty to forty-five years of age, the proportion of children under ten years of age, both males and females, and the proportion of males and females forty-five to sixty-five years of age.

In various particulars, then, the village is tending to become the mid-point toward which both city and farm are approaching. In these same particulars, therefore, all groups in society are nearer together and in fact nearer to the national pattern. Consequently, may it not be said that the characteristics of agricultural village population are a prophecy of national population to be?

Occupations Reveal Village Role.—In agricultural villages 75 percent of the men and 20 percent of the women over ten years of age are gainfully employed. The character of this employment becomes the important clue to understanding the role of such villages in society, more particularly in rural society. Measured in terms of total number of employed, four occupations top the list, representing 78 percent of those occupied. They come in this order: manufacturing, trade, agriculture and transportation. The last two are nearly equal; the first constitutes about one-third of the total.

The proportion of persons employed in manufacturing and agriculture declined, while the proportion engaged in trade, transportation and professional service increased, over the ten-year period 1920 to 1930. Table 4 gives the details by sex groups. The south shows very slight changes in any particular. Among the females these trends, although apparent, are not as definite as among the males. With them also the occupations that increased their proportional strength included personal and domestic service in all regions and clerical work in the middle Atlantic and the middle west.

Changes in ages of those employed are important. Every region shows a sharp decline for both sexes in the high school period, 15 to 19 years. The school enrollment figures to be presented later show that a greater proportion of this age group were in school in 1930 than in 1920. It is in the upper age groups that the proportions of employment have increased, beginning at 45 and extending beyond the 65-year age groups.

But what do the occupations indicate regarding the functions of the village? First of all, it may surprise one to find manufacturing so important. This is accounted for in part by the census definition which includes artisans such as carpenters, painters and masons along with persons
employed in the industries. Nevertheless, manufacturing does become a striking indication of the part played by villages in rural industrial affairs. More detailed examination of the types of industries in the villages studied shows that when the food group, including as it does such processing plants as creameries and canneries, is combined with the lumber, textile and tobacco group, a total of 70 percent will be accounted for, and the intimate connection with agriculture and forestry will be established. The relative importance of each group was maintained during the decade, with the food group showing some increase in each region. A considerable minority of village industrial plants are relatively short-lived, one in four

Table 4.—Occupations of Gainfully Employed Males and Females 10 Years of Age and Over in the 177 Agricultural Villages, 1920 and 1930

<table>
<thead>
<tr>
<th>Occupations</th>
<th>Distribution, males</th>
<th>Distribution, females</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1920 (percent)</td>
<td>1930 (percent)</td>
</tr>
<tr>
<td>Agriculture</td>
<td>15.8</td>
<td>12.9</td>
</tr>
<tr>
<td>Extraction of minerals</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>34.8</td>
<td>34.1</td>
</tr>
<tr>
<td>Transportation</td>
<td>11.8</td>
<td>15.6</td>
</tr>
<tr>
<td>Trade</td>
<td>20.1</td>
<td>21.5</td>
</tr>
<tr>
<td>Public service</td>
<td>1.8</td>
<td>1.9</td>
</tr>
<tr>
<td>Professional service</td>
<td>6.3</td>
<td>6.8</td>
</tr>
<tr>
<td>Domestic and personal service</td>
<td>4.9</td>
<td>5.6</td>
</tr>
<tr>
<td>Clerical</td>
<td>3.5</td>
<td>3.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1920 (percent)</th>
<th>1930 (percent)</th>
</tr>
</thead>
</table>

* Special tabulation of U. S. Census data.
  b Less than one-tenth of one percent.

having closed its doors during the ten-year period, but enough new ventures were started to increase the total slightly in the end. Field work reports indicate that the pay rolls carry fewer names and that fewer persons come in from the country than in 1924.

Second, there is trade. This function of the village or small town is usually recognized, but its importance is on the increase both in terms of total number and proportion of people thus employed. Village commerce is apparently not giving way before urban competition. Manufacturing, i.e. processing, and trade, i.e. retailing, both require transportation. Transportation has held a steady place in the village throughout the period with tendencies to increase in the middle Atlantic and middle west regions.

Size Variations Point Toward Specialization.—Variations in the functions of villages due to their size are important when one is considering adjustment tendencies and problems of the future. In the smaller centers of
less than 1,000, proportionately more people are employed in agriculture, fewer in manufacturing. Likewise there are fewer in industrial plants and more in the artisan classes. When compared with the thirty-eight medium sized cities, region by region, the 177 agricultural villages have decidedly fewer manufacturing plants per unit of population. This points in the direction of the increasing importance of the second function of the village, namely, trade. And in trade, the tendency toward specialization is even more pronounced. Local retail outlets, not including those chain owned, increased 30 percent from 1910 to 1930, the rate being greater in the last ten years of the period. Population meanwhile increased 17.2 percent. The number of grocery and other food stores per village increased, while the number of general stores decreased. The large village (1,750 to 2,500 population) averaged 6.5 apparel stores compared with 1.5 for the small center (250 to 1,000 population). Two-fifths of the small villages had no furniture store in 1930.

Problems in Readjustment.—Many trade centers were needed in the dirt road, horse and buggy age and in some regions they were deliberately laid out at five-mile intervals along the course of a railroad. They strove to serve most of the local manufacturing, trade, transportation and financing needs of their country communities. Now that the tendencies are reversed, the trend being away from self-sufficiency to specialization, many centers are encountering difficulties in adjusting themselves to this movement.

When examined from the viewpoint of social institutions and relationships the problems in readjustment are even more acute. In their social, educational and civic affairs many villages followed a policy in which the interests of their tributary trade areas were not taken into account. They built their own schools, churches, libraries and playgrounds or parks. They staked out their village boundaries and incorporated as municipalities. In order to make the village attractive as a place in which to live, improvements involving the utilities, surfaced streets, public buildings and social services were made. Bonds had to be issued and debts incurred.

Necessity for social adjustment is illustrated by the case of the high school. With the population tendencies such as they have been, many villages have found, during the past five years at least, that enrollment in the high schools could be maintained only by drawing pupils from the country. There is every indication that this condition will continue for some time. In many cases, however, the country is not included within the village legal school district; consequently there must be some arrangement as to tuition charges. Village and country relations of many kinds

26 Bradstreet's, Book of Commercial Ratings, which does not list local units of chain stores separately.
are immediately and intimately involved. These are discussed in the next section of the chapter.

IV. LARGER RURAL COMMUNITIES EMERGE

It is clear from what has been said that a larger and more modern rural community is emerging, consisting of the village or town as its center and the open country as its tributary territory. The data here presented regarding this community and the changes going on in it were, for the most part, obtained by extensive field work.\(^{27}\)

In anticipation of more detailed conclusions, it may be said that rural life is tending to become more and more organized about the village. Village schools, churches and certain types of social organizations all show this tendency in the increased proportion of their membership coming from the country. The same can be said for trade when the principle of specialization with regard to size of village as outlined in the preceding section is taken into account. The strength of the villageward tide varies considerably according to region and to type of village, but regarding the direction of the main current there can be little doubt. More and more the village or small town is becoming of supreme importance in rural America.

Changes in the Extent of Community Areas.—In an attempt to measure the territory tributary to a village center, a general boundary line was drawn. It was aimed to delimit that area within which the village furnished a majority of the country people with a majority of their social, religious and economic needs or services.\(^{28}\) The line so drawn might or might not represent the extent of any one particular service or institution. In effect it was a fused line delineating the hinterland of the village. It represented a general or modal area with which any particular service areas could be compared. In the present discussion this area is regarded as the community area.

Thirty-nine of the 140 villages studied enlarged their community areas between 1924 and 1930. Of the small villages (250 to 1,000 population), one-fifth of the community areas were enlarged; of the medium villages (1,000 to 1,750 population), over one-fourth; and of the large villages (1,750 to 2,500 population), one-third. Eleven villages lost territory; but most significantly, the majority, a two-thirds majority indeed, remained about the same. That is, they did not vary by as much

\(^{27}\) This field work was of three kinds. First, 140 agricultural villages (included in the sample of 177 villages described in the village section above) and their country communities in twenty-eight states were studied intensively in 1924 and again in 1930. Second, twenty-one counties in seventeen states containing 292 hamlets and 96 villages were studied in less detail in 1920 and again in 1930. Third, five counties in four states were studied by the intensive case method, the interval being fifteen years in two instances and ten years in three.

\(^{28}\) For an attempt to do this for the metropolitan community, see Chap. IX.
as two square miles. The averages of the areas in 1930 in square miles were as follows: middle Atlantic, 50; south, 108; middle west, 114; far west, 251.

*Variations According to Size of Center.*—As one attempts to follow the variations by size and character of the center and by differing types of service institutions, many baffling complexities are encountered, yet fairly regular connections can be seen and fairly discernible trends can be followed. It is evident that many of the smaller villages and virtually all of the hamlets (less than 250 population) cannot have tributary areas that are comparable in character with those adjacent to larger centers, for the simple reason that their service institutions are too few in number and too limited in kind. Moreover, a whole small village-country area may lie within the sphere of influence of some larger center because the distances between them are too short when measured in terms of time of travel.

Village and town centers may therefore be classified upon the basis of the character of the relationships they maintain with their country constituencies; and these relationships will be correlated with the size of the center, its type of institutions and the distances to other centers of the same and differing sizes. Thus from another point of view the trend is seen to be from community self-sufficiency to service specialization which was briefly outlined in the previous section on the village.

*Variations According to Types of Service.*—When it comes to measuring variations associated with different types of services for which the country looks to the village and town, it must be admitted at once that in many cases trade area boundaries were more difficult to locate with definiteness in 1930 than they were in 1920 and 1924. "Farmers, and especially their wives, shop around more than they used to," was the frequent explanation heard when maps were being checked by business men in the villages.

In one community out of four, on the other hand, the general community boundaries and the various service lines were easier to trace than in 1924. In these places the villages were receiving a larger amount of farmer patronage than formerly. Progressive merchandising policies and more adequate specialization of functions seemed to account for this condition. "The farmer doesn't want to burn up gas shopping around if he can be satisfied at home," was the argument given by this group. In other words, these latter centers were apparently making a successful adjustment to the changing situations. Whether these villages or the others represent the future trend, time alone can tell.

The restudy of a midwestern county after fifteen years indicates the percentage of net expansion of area for four services to be as follows: marketing, 64 percent; groceries, 22 percent; dry goods, 6 percent; and
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banking 3 percent. Further evidence from the same source indicates that the farmer tends to patronize several villages or towns, but that he also tends to specialize in certain places for certain types of service. This study, covering a much longer period of time, shows interesting variations by types of services. It also indicates more changes in the regions of the county having smaller farms and greater highway improvements.

It is altogether probable that in the future less importance will be attached and, therefore, less attention given to the question of size of “trade areas,” and more to the matter of character, volume and regularity of the services rendered. One is more and more impressed with the influence exerted by the service institutions found at any village center upon the standards of living existing in its community and likewise by the influence of standards and buying power of the community upon the institutions of the center.

Just as the various trade boundaries seem to become less significant, the various “social” lines seem to become more important. Perhaps this is owing in part to the fact that in 1920 and 1924 villages and towns, at least the medium and the large, had not been fully accepted as “social” centers by country people. Although country people are building up and maintaining many of their own social organizations and activities, as was pointed out in the section on the country, they have gained a new measure of interdependence or interplay with the village folk in social, educational and religious matters. This is especially evident in the high school and its area. From every region whatever the type and method of restudy came the word that the high school was the most important single factor in gauging village-country community relations and areas. This was one of the outstanding findings of the whole study and further reference will be made to it.

Development of an Equilibrium in Community Areas.—Finally, the reexamination of community areas discloses what may be the most meaningful trend. It will be recalled that about two-thirds of the 140 community areas did not vary by as much as two square miles. This proportion holds fairly regularly throughout all the major areas of field work, which points to an apparent equilibrium, or state of balance, between village and country. Thus, even in the case of the 292 hamlets in the 21 counties, the losses in area outnumbered the gains by only about 4 percent and the relatively unchanged areas represented 52 percent of the cases. In the large villages the percentage of areas unchanged rose to 60.

The Trade Services.29—The next step is a brief description of the changes that have taken place within the community areas, for an equilibrium in areas does not imply lack of change in the character of trade services and institutions. The occupational study of villages indicated

29 On trade areas and consumption, see Chap. XVII.
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that one-fifth of the gainfully employed males and one-tenth of the females are engaged in trade, that is retailing, and likewise that this occupation is becoming relatively more important as the years pass. The increase in the number of enterprises, as reported by Bradstreet’s Book of Commercial Ratings, for the 140 villages is further evidence of the importance of these trade services. The increase between 1920 and 1930 was more rapid than between 1910 and 1920, the total number of retail outlets for the average village being 27.7 in 1910, 32.1 in 1920, and 39.6 in 1930, an increase of over 40 percent in the two decades, a considerable part of which increase is due to the changes arising from the greater use of the automobile. The tendency held for villages of every size and for every region. This increase, which is exclusive of gains in chain stores (Bradstreet does not record individual units within such organizations), would seem to contradict any popular supposition that the small town merchant is losing his trade to cities and mail order houses. It would seem on the other hand, to bear witness to the adjustments being made to hold the farmer trade and to a degree of specialization already acquired.

Retail Outlets More Specialized.—In the first place, it is clear from an examination of the different types of stores as shown in Table 5 that the specialization tendency emphasized previously has set in. Grocery and other food stores have increased and general stores have declined in number. Many more places are now selling automobiles and their accessories. The table indicates with equal clarity the tendency towards stability and persistence on the part of certain types of enterprises, as hardware, furniture, feed and supply stores.

Table 5.—Retail Stores per Village for 140 Agricultural Villages, 1910–1930*

<table>
<thead>
<tr>
<th>Type of store</th>
<th>Number of stores per village</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1910</td>
</tr>
<tr>
<td>Total retail</td>
<td>29.1</td>
</tr>
<tr>
<td>Grocery</td>
<td>2.4</td>
</tr>
<tr>
<td>All other food</td>
<td>2.5</td>
</tr>
<tr>
<td>General</td>
<td>2.5</td>
</tr>
<tr>
<td>Apparel</td>
<td>3.7</td>
</tr>
<tr>
<td>Automobile accessories</td>
<td>0.2</td>
</tr>
<tr>
<td>Furniture</td>
<td>1.0</td>
</tr>
<tr>
<td>Lumber and building</td>
<td>1.2</td>
</tr>
<tr>
<td>Hardware</td>
<td>1.6</td>
</tr>
<tr>
<td>Feed and farm supplies</td>
<td>1.4</td>
</tr>
<tr>
<td>Restaurants and soft drinks</td>
<td>1.2</td>
</tr>
<tr>
<td>All other retail</td>
<td>7.0</td>
</tr>
</tbody>
</table>

* Bradstreet’s Book of Commercial Ratings. Table does not include chain stores, as separate units are not listed.
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Volume of Village Retail Merchandising Large.—Even though comparable data do not exist for the earlier period, it is important to scrutinize the reports of the 1930 Census of Distribution, which make possible for the first time a statement of the relative importance of village and small town retailing. Average retail sales for the 47 small villages in the sample of 140 villages were slightly in excess of $500,000. The medium sized villages averaged almost twice as much and the large villages nearly doubled the average of the medium villages. Altogether, the retail stores in these agricultural centers rang up $145,330,500 on their cash registers in 1929, or about 1 percent of the total retail trade for all places of less than 10,000 population, which amounted to about 15.4 billions. This is, in turn, about 30 percent of the national total of 50 billions.

Per Capita Sales on the Community Basis.—The per capita sales by region for 140 village communities are shown in Table 6.

Table 6.—Per Capita Retail Sales in the 140 Village Communities, by Region and by Size, in 1930a

<table>
<thead>
<tr>
<th>Region</th>
<th>Per capita sales in communities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All villages</td>
</tr>
<tr>
<td>All regions</td>
<td>$301</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>316</td>
</tr>
<tr>
<td>South</td>
<td>208</td>
</tr>
<tr>
<td>Middle West</td>
<td>345</td>
</tr>
<tr>
<td>Far West</td>
<td>356</td>
</tr>
</tbody>
</table>

a Computed from field work population data and U. S. Bureau of the Census, Fifteenth Census of the United States, 1930, Census of Distribution figures on retail store sales within the incorporated villages, including all stores.

It should be especially noted that the sales are figured on the basis of the total community population, including both farm and village. The general per capita figure is $301, each region except the south exceeding this average. The low average in the southern region is due in part to the high proportion of Negroes with their relatively low purchasing power. When it is considered that these figures do not take into account sales in open country or hamlet stores, nor purchases by rural people in city centers and that farmers and villagers raise a larger proportion of their own food than urban dwellers, it is quite evident that rural communities offer an opportunity for marketing goods, other than certain food stuffs, little if any poorer than the urban places of over 10,000 people, with their average per capita figure of $588.
Chain Store Influences.—Three hundred chain store units, handling for the most part groceries, clothing, drugs, tobacco or glassware, were operating in 107 of the 140 villages. Two-thirds of the 33 places without such units were villages of less than 1,000 population. The issue of chain store competition was acute in some of the regions visited. In many places, however, chain competition was being met quite successfully by local stores through modern merchandising methods and particularly through membership in cooperative associations. One of the serious effects in some places was the loss in local leadership that followed the displacement of a local merchant by a chain store man, especially where chain stores kept their managers from participation in the life of the community.30

Communities Respond Differently to Changes.—There is a great difference in the extent to which communities have recognized shifting tendencies of trade relations and have made their adjustments accordingly. Many stories of success and failure were heard in the course of the field work. Some community leaders take the whole problem of adjustments with fatalistic resignation and do nothing; others set about investigating local consumption needs and try to determine “optimum number of agencies” required, conferring with farm and city representatives to the end that there may be better planning. This is a problem the solution of which will be of much more than local significance and which not only concerns trade but has important bearing on the social services, such as those of the schools and churches.

Community Services of the Schools.31—Judged by capital investment, budget and numbers of persons employed, the school system is the most important function of government in rural America; judged also by the increasing proportion of country pupils enrolled, the village or small town is becoming the center of rural education. Naturally the increase has been greater in the secondary than in the elementary schools. In 1924, 45.6 percent of the pupils in village high schools came from the country. In 1930 the proportion was practically one-half, 49.5 percent. For two regions, the middle Atlantic and the south, it was even greater, as is shown by Table 7. There are relatively more country pupils in the smaller villages than in the medium or large ones, just as the ratio of open country to village population is highest in the small village communities. The increase in the proportion of country children in village elementary schools is 7 percent, not a large change but a significant one. Only in the south does the proportion approach that of the high school. The decline in the far west is due to a combination of many factors

30 For a full discussion of the chain store and its effect, and of the retail merchandising situation see the monograph. See also Chaps. V and XVII.
31 Compare with educational trends in the entire United States as given in Chap. VII. See also extended discussion of rural education in the monograph.
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including especially changes in school administration and in population groups, particularly migrant labor.

Table 7.—Proportion of Country Pupils in the 140 Agricultural Village Schools, 1924 and 1930*

<table>
<thead>
<tr>
<th>Region</th>
<th>Percent of country pupils</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High school</td>
</tr>
<tr>
<td></td>
<td>1924</td>
</tr>
<tr>
<td>All regions</td>
<td>45.6</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>41.2</td>
</tr>
<tr>
<td>South</td>
<td>41.6</td>
</tr>
<tr>
<td>Middle west</td>
<td>45.2</td>
</tr>
<tr>
<td>Far west</td>
<td>49.1</td>
</tr>
</tbody>
</table>

* Calculated from field survey data.

Definite Trends Toward Consolidation.—This trend toward the greater use of village schools by open country children raises the problem of school consolidation, one of the most significant phases of rural community development. The number of village schools with which country schools had consolidated increased from 50 to 61 in the six years’ time in the 140 village communities. Some of the systems already operating under the consolidated plan in 1924 added new districts, so that all told 225 open country schools became parts of systems centered in the villages. The trend was most noticeable in the south. Only eight of the thirty southern villages did not have consolidated districts and these were for the most part in areas of unimproved roads. In some communities the number of open country schools had been reduced by one-half.

The road to consolidation, however, has frequently been rough and rocky and fraught with possibilities of much village and country misunderstanding. This has been especially true in states where there has been little or no general state planning. In some cases the influx of country pupils overtaxed limited village school facilities and if a consolidated district could not be effected some plan of excluding such pupils was resorted to, because tuition charges had not been calculated to include capital costs. In some cases village boards built new buildings on their own account, as the next paragraphs will show, only to find themselves in real financial difficulties when trying to pay for them. In other cases state legislation has been forced through whereby rural territory may withdraw from consolidated or joint village-country school districts. The village schools deprived of country support for capital outlay are
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facing bankruptcy. Country families are forced to patronize an educational system on a commercial basis of tuition in which they have no voice in management or in policy making.

Under consolidated high school arrangements 51.4 percent of the pupils came from outside the villages. Under non-consolidated plans the proportion was only slightly less, 47.2 percent. In other words, what is in effect consolidation is taking place by social action, whether or not it has been accomplished by legal enactment. The social practice frequently precedes the legal decree. This story, revealed by the study of the 140 agricultural village communities, is in line with national trends, for the federal Office of Education reports a gain in consolidated units of 26.7 percent between 1923 and 1928, compared with a gain of 22.2 percent in the village communities between 1924 and 1930. This office estimates that by 1938 there will be fewer than 110,000 one-room schools as against the present 151,000.

Many New Buildings Since 1924.—Another trend of note in the village communities is the increase in the number of new school buildings and in equipment. Sixty-four villages put up sixty-five new buildings; twenty-one made additions to existing buildings; three purchased land preparatory to building operations. Thus eighty-eight, or 63 percent of the villages made capital outlay for buildings in the inter-study period. Another 15 percent made important repairs. For the most part this new construction housed grade or high schools or both and the majority embodied modern plans with laboratories, auditoriums and gymnasiums. Others included just a gymnasium, an auditorium or a combination, and in such cases the larger public use as a community center was always stressed. Time alone can tell how and when the nine million dollar outlay will finally be paid. It seems rather certain, however, that it will require other taxation systems and other kinds of agricultural and village prosperity than were characteristic in the period between 1924 and 1932. Various causes or factors operated to create this great expansion and they are not easy to specify. There was need, to be sure, yet the study in 1924 indicated that about nine-tenths of the existing buildings rated fair or better; there was civic pride; and, not the least, there was effective pressure from state Boards of Education.

Greater State Control and More State Aid.32—This leads to the next noticeable trend, namely, the growth of state control and state aid. State control is exerted directly or indirectly over such things as buildings, teacher certifications, finances, curricula and in granting various kinds of aids upon condition that certain requirements are met locally. The increased exercise of these various powers and activities was attested to by local school administrators and board members in every region.

32 Compare with Chap. VII.
Obviously the importance of an adequate understanding of local situations and of possessing helpful philosophies regarding the whole function and practice of education on the part of state authorities can scarcely be over-emphasized.

The granting of state aid becomes an important control device, but its use varies from state to state. State grants were 55.5 percent of the school budgets in the New York villages, but less than one percent in Kansas.

Results secured turn upon the degree to which local situations are analyzed. If, as is the case in some states, poor and small districts may thus avoid consolidations, make unnecessary physical improvements or reduce standards of local instruction as well as of local support, then pointed questions may be raised concerning the rising tide of such state distributed funds. Much remains to be done in this regard and a clearer understanding of what are desirable local community units for educational purposes is especially important. Some states, by the admission of their own school officials, have gone too far in the creating of large consolidated districts. Conversely some districts have proved to be too small. If it be true, as has been suggested, that education is one of the chief functions of rural government and that the high school is the main factor in determining the modern rural community, then another first-rate problem is raised.

Instruction Costs as Measure of Budget Changes.—Only one index of change in budgets or finances will be used. It is that of teaching-cost per pupil. Teachers’ salaries represented 70.1 percent of the entire budget in 1924 and 66.2 percent in 1930. Table 8 gives the comparisons on this point for village high and grade schools and country grade schools.

**Table 8.—Teaching-cost per Pupil in Village and Country Schools, 1924 and 1930**

<table>
<thead>
<tr>
<th>Region</th>
<th>Village high schools</th>
<th>Village grade schools</th>
<th>Country grade schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1924</td>
<td>1930</td>
<td>1924</td>
</tr>
<tr>
<td>All regions</td>
<td>$80.17</td>
<td>$81.96</td>
<td>$80.08</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>78.15</td>
<td>82.72</td>
<td>26.95</td>
</tr>
<tr>
<td>South</td>
<td>64.53</td>
<td>60.84</td>
<td>18.22</td>
</tr>
<tr>
<td>Middle west</td>
<td>98.69</td>
<td>83.20</td>
<td>31.15</td>
</tr>
<tr>
<td>Far west</td>
<td>112.98</td>
<td>98.37</td>
<td>40.82</td>
</tr>
</tbody>
</table>

* Field work in the 140 agricultural village communities.

Despite a slight decline in the average salaries of teachers, a decline that was accelerated in the school year 1931–32 as shown by correspond-
ence with the 140 villages, there was a decided advance in professional qualifications and there was every indication that the movement would continue. The proportion of village teachers with less than a normal-school training dropped from one-fifth to one-thirteenth of the total number in the six years. The proportion of college graduates rose from two-fifths to well over one-half. The country teacher continues to be the less well trained but in a shrinking degree.

Curricula Changes.—No attempt was made to examine the curricula from the technical point of view, or to study content of courses, but rather to count changes. Two hundred changes in curricula were reported by the 140 school superintendents. Of these, 164 represented additions of courses or departments between 1924 and 1930, and 36, discontinuances. One-third added commercial departments or courses. Twenty-three introduced domestic science and seven dropped it, bringing the total to 106, compared with 90 in 1924. Seventeen added agriculture and sixteen dropped it, making the total eighty-seven. Eight introduced manual training and three dropped it. Thus half of the new courses or departments added and over two-thirds of those dropped were of the vocational or "practical" type. It is apparent that agriculture and domestic science have not found their places in these agricultural communities.  

Relations of School with Community.—With the influx of country youth into schools of the village, the question is not simply one of adding or subtracting courses or even of introducing departments of agriculture or home economics, but rather of adapting entire curricula to the cultural backgrounds of two sets of pupils, farm and village, and then of adjusting them to the requirements of adult life. It is not an easy task. It will have to take into account the fact that about half of those graduating—and the proportion is increasing—will want to go on to other educational institutions, showing that in a real sense the rural community high school is also a preparatory school. And finally, it will consider that this school must carry on in the midst of a community where people are sorely tax ridden, though they but vaguely recognize what the fundamental problem really is. Many of them are by no means fully decided to remain in the community, as the great ebb and flow from country and village to city and back again clearly shows. Adult education in this background takes on new significance with its instruments of library, newspaper, extension course, bulletin, motion picture and not least, the local school itself; but these cannot be enlarged upon here.

33 A mail study in March, 1932, a year after the field work, showed more than 100 further changes. Nearly one-third of these were additions of courses in social sciences, especially economics and civics. Twelve schools added vocational guidance. Many courses were dropped or put on an every other year basis, especially higher mathematics, Latin and certain of the sciences.
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Community Services of the Churches. In modern rural communities churches are the most numerous of all the social organizations and institutions. Their total building investment and their income exceed all other types combined, except the school which they rival when they do not exceed it. They employ more people than any other social agency except the school and they receive several times as much in contributions as all other social organizations combined. Judging by these as well as other measures, the importance of churches in rural life is very real.

The rural church, however, has changed less than almost any other rural institution in the last decade. In many places it failed to adjust itself to changing conditions. Churches are slightly fewer in number and larger in membership but a smaller proportion of the population is enrolled in that membership. Buildings are better, but budgets, programs and quality of leadership have changed very little. There is a trend for open country members to join churches in villages.

Villageward Trend.—The trend toward the village already noted is clearly seen in the case of the churches in the twenty-one counties. In 1920, but 22.6 percent of the Protestant village church membership came from the open country. In 1930 the proportion was 39.3 percent in these counties. This trend has not developed nearly so rapidly in the south as in the other regions. In the 140 villages, the years from 1924–1930 did not show quite so rapid an increase in the proportion of country members in village churches. Approximately the same proportions as found in the 21 counties were finally reached, however. Therefore, with two-fifths of its membership, in regions other than the south, coming from the open country the dependence of the village church upon its country territory is evident.

Churches Fewer but Larger.—While this movement has added members and strength to village churches there is no evidence that as a whole rural religion in terms of membership strength has increased. True, the average memberships of the churches increased, from 72 to 76 in the open country and from 140 to 149 in the villages, but this increase in average membership was owing in part to the death of weaker churches. On the average, one in twenty of the open country churches died each year during the inter-survey periods. Some new churches were organized. In the villages the death rates and birth rates of churches balanced, but in the open country there proved to be a slow, steady, net decline.

Measured in terms of the ratio of church membership to total population, the figures show a loss. In the twenty-one counties in 1920 one-fifth of the population was in Protestant churches; in 1930 one-eighth. In

34 Compare with discussion of churches in the entire United States in Chap. XX. See also Chap. VIII of the monograph.

35 No 1920 data for Roman Catholic churches in the 21 counties are available.
the 140 villages the proportion of the population in all churches dropped from 35.3 to 32.9 percent between 1924 and 1930. This decline was not caused by the loss of any particular group, such as men or young people, as the age and sex structure of the church membership remained almost unchanged.

Buildings Improved; Budgets Show Little Variation.—In most other aspects of rural church work there has been little measureable change. The story is rather one of stability or advance. But in the matter of buildings the 1,336 churches in the 140 village communities, like the schools, greatly increased their capital investment. The 1930 total of $15,111,000 represents an increase of 20 percent over 1924. In the counties between 1920 and 1930, village church valuations doubled and those in the country increased one-third. Like the schools these buildings were not fully paid for and in some centers the obligations were proving a heavy burden on the people of the community, especially in centers in which both church and school buildings had been built or improved. These trends are similar to those indicated in the chapter on organized religion.36

Average expenditure budgets increased one-fourth between 1920 and 1930, though only about one-twentieth between 1924 and 1930, and for Protestant churches amounted to about $2,400 per church in the villages in the latter year and to $709 for open country churches. Roman Catholic figures for 1930 were $3,355 and $1,318 for village and country churches respectively, the totals representing almost no change during the period. The per capita expenditures remained practically unchanged in every region, averaging $16.38 in the village Protestant churches, $8.57 in the open country and $12.03 among the Catholics of villages and open country combined. In 1926 the United States Census of Religious Bodies showed a per member contribution of $13.27 for all rural churches.

Member contributions, while almost stationary, showed marked variations as to their use and distribution. In 1920 and 1924 between three-tenths and one-third of the contributor's dollar went to missionary and other benevolent causes. In 1930 this phase of the church budget claimed less than one-fourth. Conversely, the minister and upkeep received higher proportions. So sharp a fluctuation with a practically unchanged per member contribution would seem to indicate a significant change in thinking on the part of the membership as to the benevolent work of the church.

The Clergy, Their Training and Compensation.—In the main there has been a slight increase in the relative number of college graduates in the ministry of village and country churches. The proportion of those who have completed both college and seminary, however, has declined slightly.

36 Chap. XX, p. 1009 f.
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This is significant when compared with the marked advance in the training of the school teachers in these same communities. The exception to this trend is the Catholic church with 88 percent of the clergy college and seminary trained, compared with a bare 33 percent of the Protestant clergy.

Salaries increased rather sharply between 1920 and 1925 but subsequently the general averages reached lower levels, with $1,433 as the figure for 1930. Many variations are in evidence. Resident clergy of village churches averaged $1,653, compared with $1,063 for country churches. Such salaries, though usually supplemented by dwellings rent free, apparently were not considered adequate, since 25 percent of the men added to their incomes by working in other occupations of a widely diverse character. This practice appears to be on the increase.

Relations of Church with Community.—Only general changes in the institutional phases of village and open country churches, as illustrated from 2,238 congregations restudied in both the 21 counties and the 140 village communities, have been sketched. The broader aspects of religion are described in another chapter of this work. It may be fitting, however, to list a few general changes evident in these local communities. A considerable number of villages outside the south were having Sunday moving picture shows without opposition from the churches, a situation impossible in 1920 or 1924. Local testimony and field workers’ notes indicate some slight change, especially among the younger clergy, in the content of sermons. More attention is being paid to the social implications of Christianity, the applications of religion to daily life and the religious implications of community problems.

There was also detectable a growing concern with problems of church competition and cooperation. As recorded in the chapter on organized religion, Protestant denominations have made some advances in the last decade in avoiding direct competition, especially in new fields. This cooperation usually takes the form of comity agreements, allocations of exclusive responsibility for particular communities or districts and avoidance of competitive grants in aid to churches in the same community.

The results of the study in village communities show a measurable decrease in competition among denominations of similar polity and doctrine and in areas administered by national as against state or other district officers. However, competition is still present. The proportion of churches aided by grants from national or district headquarters remained about the same in the villages, but increased sharply for open country churches. The average amount of the grant to village churches increased by 13 percent, however, to nearly $400, so that the total amount of outside aid received by this group of churches actually increased. This was owing in large part to liberal grants made in competitive situations by
the less cooperative groups, which in turn called for increased grants by
the others. Thus the average grant in competitive situations, $421, was
almost $50 more than grants in communities where but one church was
aided. The need of the church for help in order to survive seemed to be
the sole criterion on which grants were made. No correlation could be
discovered between this so-called "home mission aid" and religious or
social needs determined on a community basis.

But apart from this condition there was less competition than at the
time of the former studies. The number of churches per community de-
clined from 10 to 9.5 and the number of churches for each 1,000 of the
population dropped from 3.3 to 2.8, a decline in which every region and
every size of village shared.

It appears from the analysis, therefore, that the churches still have
many unsolved problems. The villageward trend has weakened open
country churches and resulted in unfortunate competition between
churches of the same denomination, a situation for which no adequate
solution has been advanced. Moreover, the villageward trend is not
strong enough to bring in country members as rapidly as country churches
close. Consequently questions of both village and country adjustments
are raised. Cooperation among churches of similar backgrounds has
increased and direct competition has accordingly been reduced, but
inter-denominational, in terms of inter-faith, relationships still bristle
with many problems. Churches in country communities have not
held their members, as measured by attendance, nor increased their
membership proportionately to population gains. They have appar-
ently reached the maximum of support from individual members. Their
basis of using the income for programs of work is shifting, thereby reduc-
ing expenditures for benevolent and missionary purposes. The local pro-
gram in a rapidly changing social environment has remained all but
unchanged.

Social Life and Organizations.—The varied social interests of people
in the communities studied expressed themselves in nearly 3,000 organ-
izations which may be classified into ten general types: fraternal, civic,
economic, social, patriotic, educational, athletic, musical, youth serving
and socio-religious. The shifting fortunes of these organizations show the
changing tendencies in the social activities of village-country communi-
ties. Instability characterizes these groups. Many of them have short
life cycles. Nearly one-third of those found in 1924 had died, but a slightly
larger number took their places, so that there were 20.8 organizations per
community in 1930 compared with 20.3 in 1924.

The period under review was characterized by several changes in
these types. For example, youth serving agencies, largely 4-H clubs,
under the auspices of the federal and state Agricultural Extension Serv-
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ices, and therefore promoted by salaried workers, have more than doubled in number, so that in 1930 there were 358 groups. Exclusively adult organizations declined more than 4 percent, the bulk of the decline occurring in the fraternal or lodge group, where the number fell from 958 to 837.\(^{27}\) Purely civic organizations also lost, largely because so many other types added civic activities to their programs. Athletic, musical and patriotic groups also registered losses in the small communities, while there was an increase in economic and strictly social organizations. In the other types gains and losses were practically equal.

*Village and Country Affiliations Increase.*—The changes in the village and country proportions of the membership and activities of the social organizations in the community are not decisive. The country proportion of affiliations remains at between 33 and 34 percent. An average may easily conceal interesting differences, as it does in this case, because of the variety of types of organizations and the great instability due to rapid rise and decline. There was a decrease in the proportion of country members in the lodges, civic and relatively informal social organizations which reflects the general decline of fraternal organizations and likewise the maintenance or increase of various forms of social activities on the part of country people themselves, as has been pointed out in an earlier section. There was an increase of country participation in athletic, musical, patriotic and youth serving groups which is indicative of the increasing part played by country people in the special interests of the community, in which both village and country may now join. Increased affiliations in educational organizations, as parent teacher associations, is directly related to the increased use of the village schools by country families. There is likewise wide variation, region by region, in the extent to which country people join these organizations.

*Memberships Decline, Activities More Varied.*—With the general decline of the adult groups average membership also dropped from 65 to 62, despite an increase in the population of the community, a tendency noted in the case of the church membership. In contrast with the churches, however, average attendance of the membership shows a small average gain, from 35 in 1924 to 37 in 1930. There are many regional differences in both conditions. Losses in membership and in number of organizations were greatest in regions that had the largest number of organizations per community in 1924, notably the far west, and gains were greatest in regions with fewer organizations previously, especially the middle Atlantic. Apparently the total number of social organizations per community in all regions is tending to stabilize at about 20.

\(^{27}\) Compare with discussion of national organizations in Chap. XVIII. See also Chap. IX of the monograph.
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Changes in activities in most communities were from the fellowship of purely social and fraternal groups to those of a civic or educational character, from entertainment objectives to those considered socially more desirable.

The costs of social organizations to their membership declined both in gross totals and per capita. In 1924 in the 140 communities these organizations spent nearly a million dollars, or $5.13 per member. In 1930 the total figure had declined about 13 percent and the per member figure to $4.57. The average decline, however, conceals some interesting increases, as, for example, among economic groups, and likewise many variations according to region and size of centers. Small communities showed the sharpest per member decrease of expenditures.

More County-wide Organizations Appear.—A development of the decade since 1920 is the rapid growth of county-wide social organizations. Sometimes they are the results of federations of local groups and sometimes they come on the promotion plan of a county setup. In the main, the growth was among such official or semi-official organizations as 4-H clubs, Farm and Home Bureaus, libraries, health units or social welfare agencies. Thirty different kinds of county-wide organizations were encountered in 1930. The situation is illustrated by two counties, each with fifteen such organizations and each with nine agencies having one or more paid executives and annual budgets totaling as high as $50,000. All this expansion of local organization activity to larger county proportions is a part of the expansion movement taking the form of capital outlay in the cases of church and school. Its future is now in jeopardy, owing to distress in agriculture and in rural industries. But this kind of expanded social life and organization has at least brought villagers, countrymen and county seat dwellers into increasingly intimate contacts and has led to joint concern for the general welfare.

Village-country Cooperation and Conflict.—The final question to be raised in this section is the extent and character of cooperation or conflict within the social fabric. Measures are difficult to apply, yet the sum total of the field work analysis does indicate progress in the direction of cooperation, both among the various groups and between the village and the country elements of the community. The evidence takes diverse forms.

Perhaps one of the most important reasons for the improvement in the village and country relations was voiced by a number of villagers when they said that in times of agricultural distress, owing either to economic difficulties or to drought, "villages have been shocked into a realization that their greatest hope lies in agriculture rather than industry." An increased number of villagers have become farm owners, managers or operators through mortgage foreclosures or other forced

38 See discussion of the county as a unit of public welfare in Chap. XXIV.
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business arrangements. Some are retired farmers and some are bankers or other creditors. Many farmers likewise testified to an increasing appreciation of the businessman's problem, especially in periods of declining prices and shrinking credit.

Many joint enterprises have been undertaken. Only a few can be enumerated. In some of the middle Atlantic states rural fire districts surrounding the villages have been organized and additional equipment purchased. In the middle and far west, the community fair has become a favorite project, the high school with its agricultural and home economics departments taking leadership. Buildings, both privately and publicly owned, have been remodeled or opened for a larger community use and in a few cases new buildings actually constructed for the purpose. In two out of five communities, villagers and farmers cooperated in such things as institutes, athletic contests, 4-H club work or musical and dramatic activities.

In fine, local issues regarding village and country relations since 1924 can be rather surely placed in the improved and the cooperative columns. One can easily become too sanguine, however, regarding the future of the more general issues. More frequent and more varied contacts have bridged many differences inherited from a former generation of farmers and merchants. Yet the conflict may be none the less real. It is once removed, more impersonal, centered in larger groups. As has been noted, control of financial, credit and service policies has passed out of the hands of local units such as banks, stores, cooperative marketing associations and even schools and churches. It has passed to larger, more centralized agencies and to interests motivated by considerations other than those dictated by local community affairs. In the future it may be more appropriate to discuss the issues of rural-urban cooperation or conflict instead of local village-country cooperation or conflict.

V. RURAL-URBAN RELATIONS ASSUME MORE IMPORTANCE

It has been seen that the development of the United States has inevitably exposed rural people to an ever increasing number of non-rural influences and contacts. Conversely, city people have been brought into closer touch with rural life. Just as the farmer and the villager now find themselves more closely associated in a stronger village-country community, so also, for many of the same reasons, they both find themselves coming more and more into contact with the city.

Indirect Contacts Multiply.—These multiplied contacts are not only direct but are also of the more subtle, indirect type hinted at in the conclusion of the previous section. The invasion of rural banking by the city has been marked in the last few years. In 1924 almost all the rural banks in the 140 villages were entirely under local control. In 1930 one-eighth of
RURAL LIFE

the banks were urban managed. The field study revealed many instances of real hardship resulting from the urban management of these rural banks because of lack of information and understanding in regard to agriculture and farmers.

A similar tendency was noted in regard to village industry. The proportion of industries in the 140 villages wholly controlled by non-local capital rose one-third, from 15.4 to 20.7 percent. This tendency was especially noticeable in the food group, while the chain store offers another example. Nor are the social institutions immune. The outside influences playing upon the school have already been noted. In the case of the church, administrative and denominational policies are increasingly influenced and usually determined by boards and judicatories in which urban points of view predominate. Similarly other agencies, such as luncheon clubs, parent teacher associations and women's clubs, more and more receive suggestions from outside through regional, state or national offices.

Nor are such indirect influences limited to institutional and organizational contacts. Wherever tests were made, rural people were found to be subscribing to city newspapers twice as frequently in 1930 as in 1925. The radio too is exerting an immeasurable influence. In 1925, 43 percent of the farmers had radios; in 1930 a sample of twenty-five states shows that 18.1 percent of farm families own instruments. In the latter year two-fifths of the villagers possessed them.

Direct Contacts Greatly Increased.—Direct contacts, on the other hand, occur where the farmer and villager directly and individually avail themselves of the services and institutions of the city. Often the city makes the adjustment necessary to attract and multiply these direct contacts, though their frequency varies regionally and according to the type of institution and service offered.

The clearest evidences of these direct contacts of the ruralite with the city are found in the commercial field, largely because numerous studies have been made in this field. A few of them will be summarized.

Among 1,328 farm families in the middle west, surveyed in August 1930 by Successful Farming, of Des Moines, it was found that the average number of miles traveled to make purchases of hardware, farm machinery, groceries and automobile accessories varied from 5.9 to 7.8. Two-fifths of the families purchased their groceries in places of less than 1,000 and almost half went to such places for hardware and farm machinery. About one-fourth made the purchases in places of from 1,000 to 2,500 and another one-fourth in places of from 2,500 to 10,000 population. The average distance traveled for furniture, however, was 14 miles and for women's ready to wear clothes 19.5 miles. These two items were procured by the greatest number of families (31 and 47 percent) in the places of
from 2,500 to 10,000. The city of more than 10,000 secured the trade of one-eighth and one-sixth, respectively, for these items, though it attracted but one-twentieth of the families for the other goods. In other words, the centers of various sizes attracted to their stores only about the proportion of the total sample of families that lived within their primary sphere of influence; and the goods which they bought at such local centers were related to the farm or to daily living. But the large places had far greater attraction when the articles purchased were those seldom needed and requiring a greater unit outlay.

This conclusion is substantiated by other and similar studies. An intensive investigation made of 1,034 farm families in a Wisconsin county found that every family used the places of from 500 to 4,000 population for some purchase or service. One-half also used cities of more than 15,000, two-fifths utilized hamlets and three-fifths used mail order houses. The majority of these families went from 4 to 6 miles to their “home town” for groceries, machinery, furniture, dry goods, banking, marketing their products, high school, movies, church, social affairs and library service. The majority used mail order houses for automobile tires, hardware, ready to wear clothes, and many for dry goods. The families trading in the city went from 20 to 80 miles for men’s and women’s clothing, furniture, medical services, dry goods and certain types of recreation.

In 1929, the Woman’s World, of Chicago, obtained elaborate information on the trading habits of 23,504 families, largely in the middle western and middle Atlantic states. It discovered that two-fifths of the farm families, one-third of the families in villages of less than 1,000, one-fifth of those in places of from 1,000 to 2,500, and one-sixth of those in towns of from 2,500 to 10,000 did most of their trading outside their home town. Regardless of residence the larger proportion of all purchasing was in the home town. This study also showed the clear tendency for clothing and other specialty items infrequently purchased to be obtained in larger centers.

Reasons for Continuing or Changing Trade Centers.39—In the Wisconsin county during the fifteen-year period since the previous study 35 percent of the families had changed their shopping centers. The chief changes involved clothing, especially women’s ready to wear, and dry goods, for which the purchaser had gone cityward. The reasons for the continuing or changing of patronage, with resulting multiplication of contacts, are quite clear to the farmers and villagers, as their statements indicated. The hamlet or crossroads institutions are patronized because of their convenience. Habit, convenience and improved service all play a part in the ability of the village to hold its constituency. The city offers a wider

39 Note data on shopping centers in Chap. XVII.
selection of goods from which to choose and on some items is thought to be cheaper. Price is the only factor apparently influencing mail order buying. These direct contacts have multiplied, but, unlike many of the indirect contacts, they are determined by the rural people themselves.

**Pattern of Rural-urban Relations Forming.**—Just as surrounding the village is the country community, so around the city center are concentric zones of influence. Even a cursory examination of these zones indicates that the old and arbitrary bifocal division of "urban" and "rural" does not have much meaning. The city does not end at its legal limits; its influence and even the characteristics of its people carry over into the territory beyond. The reactions appear to be mutual, the urban center adapting its functions to a wider sphere and both village and country adjusting their life and affairs to greater conformity with the city. A pattern of rural-urban relationships is therefore finally formed which can be examined and mapped or charted. As a simple technique for doing this, eighteen cities scattered throughout the nation were selected. Counties contiguous to these cities were then chosen to represent tributary territory. The wholesale grocery areas, published as a map supplement to the Market Data Handbook were used as a guide in determining how far out to go. In this way tentative boundaries for the cities in question were determined and the points where the influence of other cities might appear were forecast.

To measure the concentric character of the design all counties bordering the county in which the city was located were designated as Tier 1 counties. All counties bordering on the first tier counties were called Tier 2 counties and so on. The county containing the city and the various tiers of counties surrounding were then studied separately for various relationships, and in order to observe possible trends, data for the three decades 1910, 1920 and 1930 were obtained when possible. Only the briefest summaries can be given here and those for only a very few of the indexes that were used. The caution should be given that some of the results secured are tentative and will require further verification. In a few instances it was even necessary to select only one or two cases within the sample of eighteen cities and their counties, because data, especially census data for 1930, were not available. This type of inquiry gives

40 Compare with Chap. IX.
41 Binghamton, New York; Columbia, South Carolina; Des Moines, Iowa; Fargo, North Dakota; Fort Worth, Texas; Harrisburg, Pennsylvania; Lincoln, Nebraska; Milwaukee, Wisconsin; Montgomery, Alabama; Nashville, Tennessee; Pine Bluff, Arkansas; Portland, Oregon; Richmond, Virginia; San Francisco, California; Springfield, Illinois; Toledo, Ohio; Wichita, Kansas; Williamsport, Pennsylvania.
42 U. S. Bureau of Foreign and Domestic Commerce, Domestic Commerce Series, no. 30, 1929.
43 For a fuller discussion of these results and their regional variations and their meaning, see Chap. V of the monograph.
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interesting indications of trends in a series of relations that have been all too frequently neglected but which are increasingly important.

Agricultural Relations.—The gradations of rural and urban relations are seen most clearly in a comparison of the field crop and live stock values in the succeeding tiers of counties proceeding outward from the city county. The per acre value (in terms of current dollars) for all field crops decreases consistently for the four tiers of counties and in each decade when going out from the city county, as is shown in Table 9.

Table 9.—Value per Acre of All Field Crops on Farms in Counties Surrounding City Centers, 1910–1930

<table>
<thead>
<tr>
<th>Year</th>
<th>City county</th>
<th>Tiers of counties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>First</td>
</tr>
<tr>
<td>1910</td>
<td>$10.78</td>
<td>$8.56</td>
</tr>
<tr>
<td>1920</td>
<td>24.68</td>
<td>24.18</td>
</tr>
<tr>
<td>1930</td>
<td>14.42</td>
<td>12.41</td>
</tr>
</tbody>
</table>

a Special analysis of census materials for 349 counties, by tiers, surrounding eighteen city centers.

Even more significant is the fact that the proportionate value of cereals is low in the city county and increases with the distance from the urban center, whereas the proportionate yield for vegetables is high in the city county and diminishes steadily as the tiers of counties are followed outward. The proportion of all farm property in live stock such as animals, poultry and so on, tends to increase with the successive tiers but since total farm values per acre decrease sharply with the distances from the urban center, the actual per acre investment in live stock decreases regularly tier by tier.

When it comes to the per acre value of all farm property the story is very significant both from the viewpoint of the successive tiers of counties and also in the decade to decade comparison. The values per acre decrease consistently and sharply with the outlying tiers, as Table 10 shows.

Table 10.—Value per Acre of Farm Property in Counties Surrounding City Centers, 1910–1930

<table>
<thead>
<tr>
<th>Year</th>
<th>City county</th>
<th>Tiers of counties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>First</td>
</tr>
<tr>
<td>1910</td>
<td>$99.90</td>
<td>$66.82</td>
</tr>
<tr>
<td>1920</td>
<td>154.73</td>
<td>122.75</td>
</tr>
<tr>
<td>1930</td>
<td>142.37</td>
<td>94.36</td>
</tr>
</tbody>
</table>

a Same as for Table 9.

44 By city county is meant the county in which the city is located. The figures given are for the entire county, including the city.
RURAL LIFE

The percentages of increase in per acre values of 1920 over 1910, compared by the tiering method, are 55 percent, 84 percent, 82 percent, 91 percent, and 107 percent for the city county and tiers 1, 2, 3, and 4, respectively. For all of the counties taken together the increase was 83 percent. The percentages of decrease for 1930 compared with 1920 are 8 percent, 23 percent, 30 percent, 30 percent, and 20 percent respectively, for the city counties and the four tiers. For all of the counties the decrease was 28 percent. Reference to Table 9 will show that the per acre values of all field crops shared in both the up and the down movements and in accordance with the tiering arrangements. Surely the fact of such differential inflation and differential deflation of both land and crop values on the basis of rural-urban relations in the location of farms deserves consideration in any plans designed to alleviate the farmers’ distress.

Comparisons of the farm mortgage situation give further evidence of the differential influence of location with respect to urban centers. The percentage of farms mortgaged increases with the distance out from the city county as Table 11 indicates.

Table 11.—Proportion of Farms Mortgaged in Counties Surrounding City Centers, 1910–1930*

<table>
<thead>
<tr>
<th>Year</th>
<th>City county</th>
<th>Tiers of counties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>First</td>
</tr>
<tr>
<td>1910</td>
<td>33.2</td>
<td>36.3</td>
</tr>
<tr>
<td>1920</td>
<td>36.7</td>
<td>38.4</td>
</tr>
<tr>
<td>1930</td>
<td>41.1</td>
<td>43.8</td>
</tr>
</tbody>
</table>

* Same as for Table 9.

Table 12.—Proportion of Farms Operated by Owners in Counties Surrounding City Centers, 1910–1930*

<table>
<thead>
<tr>
<th>Year</th>
<th>City county</th>
<th>Tiers of counties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>First</td>
</tr>
<tr>
<td>1910</td>
<td>57.7</td>
<td>62.1</td>
</tr>
<tr>
<td>1920</td>
<td>57.6</td>
<td>60.8</td>
</tr>
<tr>
<td>1930</td>
<td>60.8</td>
<td>60.4</td>
</tr>
</tbody>
</table>

* Same as for Table 9.

The ratio of mortgage indebtedness to farm values increased from 29.9 percent in 1910, to 30.4 in 1920, and to 40.3 percent in 1930 for all counties. There is also a slight tendency for the percentages to increase
as one proceeds out from the city county. This condition, together with the fact of a greater proportion of farms mortgaged, can hardly indicate a difference in practice of banks or loan companies but rather that the farmers in the outer tiers of counties are faced with a larger problem in writing off the effects of a boom inspired inflation.

When consideration is given to the value of crop yields per acre as compared to the value of all farm property per acre, there is evidence that the farmer may not be getting less of current gross return on his investment than in 1910, but that his taxes, interest, mortgage payments or other operating expenses are taking a larger toll from his total returns. For example, in 1910 the ratio of crop values to all farm property per acre was 13.2 percent, in 1920 it was 19.4 percent and in 1930 it was 13.6 percent. Other evidence of overhead costs is reflected in the proportion of all farms operated by owners. Singularly enough there is a tendency for the percentage of ownership to increase from the city county out to the fourth tier of counties for both the years 1910 and 1920, whereas the tendency is reversed in 1930, evidently reflecting the difficulties to which reference has just been made, as experienced by the farmers in the outer tiers. Table 12 gives the details for this reversed tendency.

Retail Merchandising.—From an examination of the Des Moines area alone, the story of retail trade, as taken from the 1930 United States Census of Distribution, is likewise consistent. The average of all retail sales per capita in the Des Moines city county is $570.25. The corresponding averages for tiers 1, 2, 3 and 4 are $347.32, $357.14, $319.80 and $315.54 respectively. It is clear that the city is different from the country, but it is also plain that the variation takes place with the distance from the city center and reflects, partially at least, the increased rural purchases in the city center, since by census procedure these are credited to the city of sale. Of the total retail sales the percentage for food varies likewise; the percentages, starting with the city county, are 18.1, 18.2, 17.4, 13.3 and 14.2. This may be an indication of the greater self-sufficiency of rural families beyond the first tier of counties. Similarly, the average sales per capita of clothing in the city county are $59.02 and for the successive tiers, $20.25, $21.83, $13.06 and $18.36, indicating an abrupt change after the second tier of counties is reached. For automobiles and automobile equipment an exception is found. Although the city county has a higher per capita expenditure, $123.24, the amounts tend to be about constant for all tiers, with $86.15, $89.00, $82.29 and $82.50.

Or take the case of Milwaukee and its tiers of counties examined from the point of view of population per business establishment in open country and in places of 2,500 or less population. This study was made from
Bradstreet's *Book of Commercial Ratings* for the years 1910, 1920 and 1930. The results, showing average population per business establishment by the tiers of counties, are given in Table 13. There is quite a sharp decline in the first tier when compared with the Milwaukee city county but the figures begin to build up as the fourth tier is passed, indicating an approach to another city center.

**Table 13.—Population per Business Establishment in Milwaukee and Surrounding Counties, 1910–1930**

<table>
<thead>
<tr>
<th>Year</th>
<th>City county</th>
<th>Tiers of counties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>First</td>
</tr>
<tr>
<td>1910</td>
<td>140</td>
<td>60</td>
</tr>
<tr>
<td>1920</td>
<td>182</td>
<td>56</td>
</tr>
<tr>
<td>1930</td>
<td>217</td>
<td>58</td>
</tr>
</tbody>
</table>

*Compiled from Bradstreet’s *Book of Commercial Ratings*, 1910, 1920, and 1930.*

Manufacturing and Those Gainfully Employed.—It may have been assumed that manufacturing was a function solely of the city but even here the gradual variation is apparent when the Des Moines area is studied as a single case. The average amount of sales of all products produced by manufacturing was $600.58 per capita for the Des Moines city county area, but $122.38, $128.92, $44.96 and $74.79 represent the values for the four surrounding tiers.

The proportions of gainfully employed likewise are highest in the Des Moines city county, 42.6 percent, and then decline gradually as one goes out, the percentages being 35.7, 35.7, 34.3 and 34.6, which again indicates from quite a different angle that the productive ages tend to be in greater proportion in the more urban areas.

Population Characteristics.45—The trade and agricultural relations might seem rather obvious, but when population factors are examined the extent and the character of the rural-urban adjustments become much more striking. One finds that the percentage of the rural population, as defined by the census, in the 0 to 10 years age group decreased but slightly from 1910 to 1920, but that between 1920 and 1930 there was a marked decrease. When these changes are observed in the tiering arrangement out from the cities, it is significant to find that between 1910 and 1920 the percentage rose steadily from the near to the outer tiers, but that between 1920 and 1930 there was a tendency toward greater uniformity in all tiers. It is as though the percentage of ages 0 to 10 years to the total rural population was approaching a constant and

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45 Compare with figures for the entire United States given in Chap. I.
that this proportion was adjusting itself to the low proportion already existing in the city center and its own county.

At the other end of the age groups important changes are also taking place. For example, the proportion of those 45 and over shows a decided increase from 1920 to 1930 but the variations from tier to tier for the total population are not significant. Moreover, if only the rural population is followed, there is an increase in the outer tiers, and in the middle west the proportion for the non-farm population is almost twice that for the farm population, indicating that the older farm people continue to retire to the village. In the middle and productive age groups, 21 to 45 years, there is a sharp decline from the city county to the first tier and then a gradual decrease on out to the outer tiers for all decades. For the strictly rural population the decrease toward the outer tiers is considerably sharper.

These sharp shifts in the age distribution can only mean that in another generation the entire constitution of our population will be significantly different from that of 1910 or even 1930. Prevailing health trends and lowered birth rates will make for an older and maturer population. The country will be less of a source of replenishment for the city than in the past.

Notwithstanding the fact that in all the areas the ratios for the under ten age group decrease from decade to decade, and the ratios from the 21 and over group increase, there seemed to be evidence to indicate that in age constitution the non-urban tiers tended to be less different from the urban center in 1930 than in 1920. The average of the absolute deviations between the urban ratio and the individual tier ratios of under ten was 4.7 percent in 1910, 3.9 in 1920 and 3.5 in 1930. The average deviation from the ratio of 21 and older in the total population was 7.0, 6.3 and 5.9 for 1910, 1920 and 1930, respectively. This method of studying tiers of counties shows that the ratios of under ten increase with distance from the urban county and that the ratios decrease for the 21 and older rates.

The proportion of children under 10 years of age in Tier 1 was 18 percent greater than in the city county in 1910, 16 percent greater in 1920 and 14 percent greater in 1930. Tier 2 had 22, 19 and 18 percent more than the city county in 1910, 1920 and 1930. The corresponding percentages in excess for Tier 3 were 25, 21 and 19 and for Tier 4 they were 33, 25 and 22. The proportions of people older than 21 were 9, 9 and 8 percent more in Tier 1 than in the city county in 1910, 1920 and 1930, respectively. In Tier 2, these proportions were 11, 10 and 9 percent more; in Tier 3, 12, 10 and 10 percent more; in Tier 4, 15, 12 and 11 percent more.
RURAL LIFE

It has long been recognized of course that fecundity of population is a characteristic of rurality but it has not been generally known that this is a matter of degree, measurable in terms of distances from urban centers.

_Cultural Relations: Education and Illiteracy._—Education is one index that was used to study the rural-urban cultural influences in the eighteen areas. Inspection of the proportions of children from 7 to 13 years, the compulsory school ages, attending school indicates that a greater proportion of children was attending school in 1930 than in 1920. There was a tendency in 1920 for the proportions to decrease with distance from the urban county. If the south is excluded, the ratios are 95.8, 94.8, 94.1, 94.6 and 91.2, respectively for the city county and the four tiers. By 1930 this tendency evened out so that in general the proportions attending school are tending towards a constant, the ratios being 98.1, 97.8, 97.9, 97.6 and 97.7. It is significant to point out that the south in both decades had a smaller proportion of its children in school than the rest of the United States.

Passing from the compulsory school ages to the proportions in school for the ages of 14 and 15, 16 and 17, and 18 to 20, Table 14 indicates the trends with the south included.

**Table 14.—Proportions of Specified Age-groups in School by Tiers of Counties Surrounding City Centers, 1910–1930**

<table>
<thead>
<tr>
<th>Year</th>
<th>City county</th>
<th>Tiers of counties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent</td>
<td>Percent</td>
</tr>
<tr>
<td><strong>AGE 14 AND 15</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td>85.2</td>
<td>88.1</td>
</tr>
<tr>
<td>1930</td>
<td>92.7</td>
<td>98.6</td>
</tr>
<tr>
<td><strong>AGE 16 AND 17</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td>46.8</td>
<td>49.1</td>
</tr>
<tr>
<td>1930</td>
<td>65.4</td>
<td>61.5</td>
</tr>
<tr>
<td><strong>AGE 18 TO 20</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1910</td>
<td>15.3</td>
<td>18.7</td>
</tr>
<tr>
<td>1920</td>
<td>17.2</td>
<td>17.8</td>
</tr>
<tr>
<td>1930</td>
<td>25.5</td>
<td>34.3</td>
</tr>
</tbody>
</table>

*Same as for Table 9. 1910 data not available for first two age groups.

The compulsory school age trend is maintained in the proportion of the 14 and 15 year old groups in school. The city county has a somewhat larger proportion in school but the difference is not great. The four tiers of counties maintain an almost constant ratio for both 1920 and 1930.
In 1920 the proportion of those 16 and 17 years of age in school for all areas was 49.2; by 1930 this ratio had increased to 62.2, indicating the marked increase in secondary education. In 1920, the city tier had a smaller proportion than the non-urban tiers. In fact there seemed to be a tendency for the proportions in school of these ages to increase from the urban tier. By 1930, however, the urban tier had changed its position. It then had the largest proportion in school, and this change despite increases in all tiers.

The ratio of persons of the age group 18 to 20 in school in all areas did not change from 1910 to 1920 but increased sharply from 1920 to 1930. The actual proportions were 18.0, 18.0 and 24.3 in 1910, 1920 and 1930, respectively. The city county had a significantly smaller percentage in school in 1910 than did the non-urban tiers, 15.3 percent, whereas the percentages were respectively 18.7, 19.8, 19.1 and 21.0 for Tiers 1 through 4. By 1920 the city county ratio had increased to 17.2. The non-urban tiers in general lost slightly between 1910 and 1920. All groups gained sharply from 1920 to 1930. The city county and the non-urban tiers became more alike in the proportion of the 18 to 20 age group in school. The average deviation from the urban proportion was 4.1 in 1910, which was reduced to 1.9 in 1920, and in 1930 was 2.1.

Another indication of the cultural relations is the illiteracy ratio as shown in Table 15 for all regions except the south. The tendency for

<table>
<thead>
<tr>
<th>Year</th>
<th>City county</th>
<th>Tiers of counties</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>First</td>
</tr>
<tr>
<td>1910</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1920</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Same as for Table 9.

the rate to decline is consistent as the outer tiers are reached, indicating the probable influence of the city’s foreign born to raise the percentage nearer the city. In the south the tendencies are irregular in the matter of the county tiers but show decreases in the twenty-year period, greater in the city county than in the tiers.

What of Adjustments and Accommodations?—From the brief sketch presented it is evident that the rural-urban relationships have increasing importance and follow a plan of gradual gradations. Moreover, these
relationships of the relatively smaller cities are merged into a larger plan of the great metropolitan centers and their tributary regions. This is discussed in the preceding chapter, but questions now arise regarding the adjustments which are necessary and the accommodations which are actually taking place in this newer phase of rural-urban life. Certain types of cooperation are seemingly being achieved between village and country in the larger rural community plan already discussed. The future will have to record the results of this larger coalition of the city, the village and the country. Certain it is that there is opportunity for much experimentation in the increasing use of the city by the villager and the farmer and that their growing acquaintance with it has not yet brought agreement on many fundamental points. The conflict of urban and rural interests, expressed in different philosophies of government sponsored by Hamilton and Jefferson, has surged to the fore more than once in the succeeding decades and has acquired new importance in this decade or more of agricultural depression. Its many aspects would make a study in themselves. Typical of them is the story of the fight for the McNary-Haugen bill, providing an equalization fee on exported farm products which its advocates declared "would do for American agriculture what the tariff had done for industry." In the final passage of this bill party lines were abandoned. West of the Mississippi River the only votes against the bill in the House of Representatives were cast by congressmen from the cities. Among the representatives east of the Mississippi and north of the Mason-Dixon line the only votes for the bill were by congressmen from the rural constituencies. This held true even of the delegation from as urban and industrial a state as Pennsylvania.

There are also issues more local in character which will require a great degree of rural and urban consent, if not of active cooperation. Only three can be simply enumerated here. First, there is the question of larger regional social planning. This can hardly come about without recognition of the wider rural-urban relationship which has been here discussed. A few of the items to be considered are: classification of land on the basis of its appropriate use; highway construction still focused at the city center, but likewise making more accessible those tiers of counties naturally tributary to the center and also taking account of natural scenery and the contour of the land; the restoration or the establishment of recreation places for rural and urban people alike; and the preservation of the water supply and, where possible, of the forests and wooded areas of the hinterlands.

47 On city and regional planning, see Chap. IX.
Second is the matter of equalizing various opportunities throughout the rural-urban area, as, for example, education. The tendency toward more state aid, made available through taxes collected in the cities and distributed to the rural districts, has been discussed. The problem is: Will this policy be continued and extended once the cities become more fully aware of what they are really doing, especially as their power tends to increase in legislative halls? The same situation prevails when it comes to extending into rural areas those agencies and facilities for health, social welfare or child development which are essential to a modern standard of living.

Third, circumstances surrounding the larger rural community, made up of village and country, raised the issue—and now the wider sphere of the rural-urban relations brings it into new relief—that local government in America no longer corresponds in any sense to social or economic reality. That is, governmental boundaries of counties, townships, or school districts and other taxing units are frequently not coincident with modern areas of service for such functions as education, health, administration of justice and protection of life and property.

VI. RURAL LIFE IN LOCAL AND NATIONAL POLICIES

This chapter has chronicled the passing of the traditional rural life as pictured in the literature of the nineteenth century, an era of our national life which closed with the World War. Since then changes have been rapid and the future trends of rural life have become uncertain. Proportionately fewer people are engaged in agriculture than ever before. Prior to the machine age this would have been counted a calamity but the improved technologies have multiplied per man production to such an extent that, in spite of increased specialization and because of shrinking markets, farmers today fear their very success will prove their undoing. Indeed in some areas many farm families have already given up their recently acquired standards of living and have been forced back toward a self-sufficing economy.

Direction of Readjustments Dependent Upon National Policy.—Readjustments are inevitable. The directions they may take for agriculture and rural life will depend upon the manner in which issues of national policy are settled. If America further reduces her international contacts by continuing various isolationist policies, then farmers who in other times supplied half the nation’s exports face the necessity of radical reorganizations of farming procedures, particularly in the specialized crop areas of cotton, livestock and the bread grains. Corresponding reductions in rural population and readjustments in standards of living will follow inevitably. Some of the implications for the nation

48 On county government, see Chap. XXV.
RURAL LIFE

of such a movement may be understood if one considers the facts presented regarding the volume and the value of rural retail purchasing reported by the 1930 Census of Distribution.

On the other hand, if world commerce is restored and city markets are revived, then agriculture and rural life will look for further changes in the general direction of the movements traced in this chapter. To be sure, many readjustments of other character will be required. For example, little improvement can be hoped for as long as the farmers' buying power is so far out of line with that of people of urban communities. Only an approximation to some such relationship as existed in 1910–1914 or in 1929 can prevent definite lowering of family and community standards in rural areas, for under present conditions the actual debt of the farmer has increased several fold in terms of the commodities by the sale of which he must pay his debts. Similarly, taxes have quadrupled and only scattered efforts have been made to change the outmoded base upon which they are assessed or the outgrown system by which they are levied. Testimony gathered throughout the study was emphatic as to the importance which farmers and villagers the nation over attach to these issues.

Issues Growing Out of Rural Population Changes.—Other issues seem to pale beside them, yet upon closer attention it is evident that there are important questions, not apart from, but related to, the central one of national policy. Take the matter of rural population, its increasing mobility and its changing characteristics. The pressures upon agriculture have produced a shift of population from country to city, which, though now reversed, raises the question of the attitude of the city and the country toward each other's problems. It has often been pointed out that the farmer's desire for high commodity prices and the city man's desire for cheap food create a fundamental cleavage. The issue is deeper than this. It involves the whole matter of equality of opportunity, not merely economically, but also in the wider and yet more intimate affairs of social life. Can a farm minority receive an understanding consideration of its needs and its place in the national life? Shall farm, village and small city, growing together as they have been shown to be, make common cause? Would urban well being suffer thereby?

Closely akin to population mobility is the changing structure and character of the population. Country and village society have, in recent years, by the very fact of their increased mobility been exposed to and influenced by the same forces that have been affecting urban society through the years. Rural society is losing, for instance, one of its distinguishing characteristics, its high ratio of children. The resulting future structure of the whole population may be forecast by the village of today, which, as this study has shown, is tending toward greater
stability in many respects, its growth being at about the national rate and its population characteristics becoming a mid-point which both country and city are tending to approach. Granting the continuance of this trend of the past twenty years, the nation can no longer count on most of rural America as the "seed bed" from which to replenish its population.

Adaptations Involving Country, Village, City.—In the plan of the chapter the village was considered second in order. From the preceding paragraphs it is evident that any sequence is difficult to maintain, for social life is marked by its interrelations and rural life today is no exception. It must not be suggested, therefore, that the village is immune from the necessity of making adaptations to new issues. Once socially a thing apart, little more than a trade center and often an exploiter of the countryside, it is now becoming the center for a larger and more integrated rural community. Its services, commercial and institutional, and its occupational distributions alike show a trend toward greater specialization with variations according to size and location. This specialization is seen to be working in three ways. First, there are some things which the villages can do better for the community than can either the city or the country. Second, there are some things the country can best accomplish for itself. Third, there are some things which only the city is large enough or strong enough to do, providing it is wise enough to be sensitive to the changing needs of farm and village. The problem is to determine what these various things really are and then to set about doing them in a systematic and cooperative way. For it is becoming evident that certain groups of these things to do, i.e., functions or services, tend to cumulate in centers of a certain type and size. For instance, places of less than 500 population, in many regions at least, are likely to fall back to the status of hamlets, while places of about 1,000 to 1,500 and also of about 2,500 to 3,000 appear to have achieved a degree of specialization. Their service areas have rather "settled down" to a working unit. Good roads have existed long enough to produce this result and the automobile is no longer a novelty. Places of 5,000, and again of 10,000, appear to follow much this same tendency. Similar tendencies appear to characterize metropolitan areas of various sizes, as is shown in the chapter on the city.49

In the case of the country, its isolation is seen to have been largely lost, but this does not imply that its identity is also lost, nor that it has been swept entirely into the village or the city, as some of the earlier prophets of the automobile age foretold. Many country groups and institutions have disappeared, it is true, but others persist. The crossroads school and the open country church are still to be found by the tens of thousands. Most tenacious of all are the units of local govern-

49 Chap. IX.
ment, practically unchanged in area or in function since the days of the pioneers. This is a real difficulty calling for statesmanlike consideration.

To be sure, many readjustments are being effected in the country. Tendencies toward consolidation of schools and cooperation of churches have been pointed out. New social and business groupings are being constructed to meet new needs or interests and old forms are being reconstructed. The cooperatives are the best illustration in point. Similarly, if other organizations are to survive, it would seem that they must likewise adapt themselves. If this be true, the implications for school, church and the agricultural extension service are many.

The larger rural community, consisting of country and village or small town constituencies, was considered next. The problem for the future here is to determine more adequately the various unit requirements, as number of people, tax base, abilities to pay, unit costs, or reasonable area for the various institutions and agencies needed in the community, and then to secure some semblance of coordination. There is a tendency in many quarters to develop different institutions or functions independently, resulting in over-lapping, ad hoc districts with separate administrations. The difficulties in such situations are obvious.

A further problem of building the larger community that will effectively unite country and village is excellently illustrated by the case of the high school. The day of the country school as an effective educational and social center is gone. May not the high school, with its agricultural, home economics and commercial departments serving both country and village, be considered as a possible center of the future for both the youths and the adults of the larger community? Conservative farmers, however, cling to old, small and expensive country districts as administration units, despite the facts that the number of children has decreased, that costs have increased and that the tax base is inadequate. Some states have begun to experiment with county and a few with state systems of administration.

Either there must be consolidation for at least the high school work, or else the country pupils must attend the village school on a cost of tuition plan. In the latter case, as was shown, the country parents have no voice in making the policies of the school, nor do they share in capital costs. Many other questions present themselves: how to secure a legal school district that will not cut across existing township lines, village corporate boundaries or other school districts; how to administer state aid and on what principles it can be justified to the city; how to coordinate elementary and high school grades, and so on. The ramifications of this or any other specific problem show how many issues in rural life extend through the whole gamut of society's affairs, from farm to village, to community, to city and to state and nation.

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Finally, while farmer and villager have united in building an enlarged community, the contacts of both with the city have increased both directly and indirectly. Naturally, therefore, as one observes the pattern of life in concentric zones around the city the old differences between urban and rural begin to fade. Rural and urban become only relative matters. If there has been urbanization of the country there has also been ruralization of the city by the urbanward migration of millions of rural people. In local as well as national issues the twentieth century is spinning a web in which city, village and country, no longer separate entities, are being brought together.

Thus far, then, have the social changes of the present period brought rural America. The trends which this chapter has discussed reached new high points during a period of prosperity. The levels attained were held to tenaciously during the earlier years of agricultural distress, and in the brief period of improvement of 1928–1929 the farmer dared to entertain hopes of maintaining them. Then came the general crash and the prospect seemed darker than ever. If and when the nation recovers and the farmer achieves the adjustment which seemed approaching in early 1929, these trends may be regarded as a prophecy. If, on the other hand, 1931–1932 shall prove to have ushered in a new and starker period than America has yet known, they represent a high water mark not soon to be reached again.
CHAPTER XI
THE STATUS OF RACIAL AND ETHNIC GROUPS

By T. J. Woofter, Jr.

The normal community in the United States is made up of people of various races and nationalities. Only the mountainous and isolated regions are peopled entirely by native born white persons. If the presence of at least 1,000 members of a race other than the white, or 1,000 persons born outside the United States may be taken as a standard of heterogeneity, there were in 1920 more than 2,000 heterogeneous counties—two thirds of the total number. Heterogeneity is greatest along the Atlantic and Pacific seabords and lowest in the mountain states and the southwest. From 1920 to 1930 there was little change on the seaboard but the heterogeneity of the interior was increased by the industrialization of the middle west and the increase in the number of Mexicans in the southwest.

It is impossible to imagine the trend of America's development without considering the contributions of people of other races and other nationalities. The expansion of agriculture and industry have required their labor; many have been leaders in their communities and have injected new ideas into the life of the nation; some have held high positions of trust in the state and national governments and in business. Over 9 percent of those listed in Who's Who in America for 1929 were foreign born. Even when reduced to about 8 percent by omitting the children of American parents born in foreign lands, this is a remarkable contribution for the foreign born group which constitute only 11 percent of the total population.

As long as land was free and the country was relatively underpopulated strangers were welcome. Political tradition made the United States an asylum for oppressed peoples, economic necessity created a demand

1 The author is indebted to his assistant, Hugh P. Brinton, for aid in gathering the materials and especially in preparing the sections on immigration and health, to Guy B. Johnson for the materials on Negro prejudice, to the Foreign Language Information Service and to Mark Villehur for material on the Foreign Language Press.

2 No treatment of the Jews is included in this chapter for the reason that separate statistics of this group are not available and for the further reason that the group is not homogeneous, including a number who are descended from many generations of native parents and others who are aliens of several nationalities.

for their services and as long as these factors influenced opinion there was no restriction on immigration. But the beginning of the twentieth century witnessed a radical change. The supply of free land was exhausted and the profits from extensive agriculture were declining. During the World War it was discovered that surplus labor on the farms in certain sections of the country could partially fill the places in industry which formerly had been held by immigrants. Organized labor, having increased its political strength, sponsored the policy of limited immigration. Agressive nationalistic agitation within various groups of European origin during the World War led many people to believe that the unity of the country was threatened. A shift of immigration from northwestern Europe to southeastern Europe and Russia emphasized the problems of assimilation. Finally the very magnitude of the movement and probability that its volume would increase with the disorganization of whole nations reenforced the demand for restrictions as a method of control. As a result immigration was placed on a quota basis, and the annual number admitted from Europe in 1929 was reduced to about 150,000 whereas net immigration from 1907 to 1914 had averaged over 650,000 per year, rising in some years to more than 1,200,000.\footnote{4}

This chapter is primarily concerned with recent changes and for the most part with those which have occurred since 1900.\footnote{5} The salient features of the situation in that year may be summarized as follows:

1. A growing immigrant population was divided between the older settlers on the farms of the middle west and the newer immigrants in the industrial cities of the east. The newer element in response to the pull of expanding industry was entering the country at a rate of between half a million and a million per year.

2. There was a relatively stable Negro population whose rapid rate of increase was on the decline and whose location was for the most part in the south.

3. A small and slowly increasing Indian population was segregated in reservations.

4. There was an Oriental population largely confined to the Pacific states whose increase by immigration had been greatly reduced by exclusion acts and agreements.

5. A small Mexican population was confined to the border counties.

The demand for the labor of these groups was slackening in most of the rural sections except in the Pacific and southwestern states and was increasing in the industrial sections of the east and middle west.

\footnote{4}The figures on net or annual immigration refer to excess of arrivals over departures as reported by the commissioner general of immigration. On the increase of population by immigration, see Chap. I.

\footnote{5}For a more detailed treatment of the topics discussed in this chapter, see the monograph in this series entitled \textit{Races and Ethnic Groups in American Life}. 

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RACIAL AND ETHNIC GROUPS

The political tradition of hospitality was quiescent or waning. Among the middle classes the tradition was one of disapproval socially and exploitation economically. Organized labor was antagonistic. The most fundamental changes in the relations of the immigrants to society were developing out of the growth of second and third generations which began to bridge the gap between the alien and the native culture. The most fundamental changes in relationships between Negroes and whites were developing from the stratification of the Negro population and the emergence of a Negro middle class.

The changes which have occurred in the relation of ethnic groups have been intimately interrelated and it is this interrelation which must be kept in mind in reading this chapter. For instance, immigration was no sooner restricted than the vacuum thus created drew hundreds of thousands of southern Negroes from the farm to the industrial cities, a movement with manifold repercussions upon the Negro population. Deficiency of European immigration also encouraged a flood from our northern and southern neighbors, Canada and Mexico. It also served to increase the movement from the territories, Porto Rico, Hawaii and the Philippines to the continental United States. Naturally, such radical changes in population have had wide ramifications which appear in other chapters of this report. The quality and the quantity of labor has been changed. Agriculture and industry have been affected. Problems of health, dependency and delinquency have been complicated in some communities. The reduction in the rate of increase in the population and the substitution of people with different standards of living has affected the quantity and quality of goods consumed.

I. INCREASE AND DISTRIBUTION

The various groups may be roughly divided as follows: first, those increasing principally by immigration—the foreign born (including the Mexicans) and the immigrating citizens of our own territories; second, those increasing principally by excess of births over deaths—the Indians, Negroes, and the children of the foreign born.

The relative weight of the two types of increase in each ethnic group is shown in Table 1. While the effects of immigration and natural increase will be separately discussed in the following pages, it is well to visualize the combined result as pictured by Table 1. The outstanding fact is that between 1920 and 1930 the white groups increased 15.7 percent and the colored 20.0.

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6 See also population figures given in Chap. I.
7 Even when a liberal allowance is made for an undercount of Negroes in 1920, this differential holds, especially for the last six years of the decade.
It is evident that the present trend is even more marked than the table indicates. In the first four years of the decade the whites were increasing about as fast as the colored. The shift has therefore taken place largely between 1924 and 1930, that is since the restriction of immigration went into effect. It is estimated that during the latter part of the decade the colored population formed about 11.3 percent of the total population and contributed about 15 percent of the total increase. As shown in Chapter I, the quota laws have decreased the proportion of foreign whites and will subsequently decrease the proportion of children of immigrant parents. As this was the most fertile segment of the white population, the white birth rate has declined. In becoming less foreign white the country has become more colored.

### Table 1.—Population of the Continental United States, by Race and Nativity, with Percent of Increase, 1910, 1930

<table>
<thead>
<tr>
<th>Race</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
<th>1910-1920</th>
<th>1920-1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>91,972</td>
<td>105,710</td>
<td>122,775</td>
<td>15.0</td>
<td>16.1</td>
</tr>
<tr>
<td>Total white</td>
<td>81,850</td>
<td>94,120</td>
<td>108,864</td>
<td>16.7</td>
<td>15.7</td>
</tr>
<tr>
<td>Native parentage</td>
<td>49,489</td>
<td>58,421</td>
<td>70,137</td>
<td>18.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Foreign or mixed parentage</td>
<td>18,735</td>
<td>22,435</td>
<td>25,361</td>
<td>19.7</td>
<td>13.0</td>
</tr>
<tr>
<td>Foreign born</td>
<td>13,126</td>
<td>13,364</td>
<td>15,306</td>
<td>1.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Total colored</td>
<td>10,622</td>
<td>11,590</td>
<td>13,911</td>
<td>9.1</td>
<td>20.0</td>
</tr>
<tr>
<td>Negro</td>
<td>9,826</td>
<td>10,463</td>
<td>11,691</td>
<td>6.5</td>
<td>13.6</td>
</tr>
<tr>
<td>Mexican</td>
<td>381</td>
<td>701</td>
<td>1,483</td>
<td>84.0</td>
<td>108.1</td>
</tr>
<tr>
<td>Indian</td>
<td>306</td>
<td>244</td>
<td>382</td>
<td>-13.1</td>
<td>38.0</td>
</tr>
<tr>
<td>Japanese</td>
<td>72</td>
<td>111</td>
<td>159</td>
<td>54.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Chinese</td>
<td>72</td>
<td>61</td>
<td>75</td>
<td>-15.0</td>
<td>21.0</td>
</tr>
<tr>
<td>Filipino</td>
<td>4</td>
<td>6</td>
<td>45</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


**Immigration.**—Fifteen magazines were examined in an effort to analyze public attitudes on immigration during the past thirty years. The study showed a growing popular interest in immigration up to 1925 at which time the magazines sampled were running an average of 34 articles a year. Since 1925 the volume of discussion has been cut in half, indicating a feeling that the policy of controlling immigration has been settled for the present at least.8

The discussion of immigration divides itself into several periods. The first period was from 1900 to the passage of the law of 1907. Selection
but not restriction was advocated. This end was to be secured by literacy and physical tests, by better enforcement of existing laws, by increasing the head tax and by examination in Europe. As for the immigrants already here, interest centered upon the necessity for their better distribution in order to prevent the congestion of foreigners in the slums of large cities. Purely descriptive studies of various racial groups were popular.

The second period, from 1907 to the beginning of the war in 1914, marked a drift in sentiment towards restriction by means of the literacy test. The undesirability of certain racial elements was beginning to be mentioned. Within the United States the protection of immigrants by private and governmental agencies was given important consideration.

The third or war period, extending from 1914 to 1918, included the first real restriction measure, the literacy test of 1917. At home all attention was focused upon the Americanization of aliens in order to present a unified front to the enemy.

The fourth period, from 1918 to 1924, saw the final realization of a restriction policy in the quota law of 1921 and the even more drastic law of 1924. Interest in Americanization was accompanied by anti-alien propaganda and both reached their greatest volume at this time.

In the fifth period, from 1924 to 1930, there was a rapidly decreasing interest in immigration. There was, however, discussion of the national origins provision and of the newer groups, Mexicans and Canadians, who were coming into this country.

Immigration Laws.—The restrictions placed upon European immigration before the World War were based entirely upon the defects of the individual immigrant. Beginning in 1882 the provisions included first a head tax (now eight dollars), exclusion of idiots, lunatics, persons likely to become a public charge, convicts (except those convicted of a political offense), contract laborers, convicts, epileptics, professional beggars, anarchists, polygamists, prostitutes, tubercular persons, feeble minded persons, and persons with chronic alcoholism, vagrants and stowaways.

All these provisions, however, applied to a bare fraction of the number seeking entrance and hence the volume of immigration was only slightly affected. In 1917 the much debated literacy test was added, the last attempt to shut out applicants on the basis of personal defects.

The quota laws enacted in 1921, 1924 and 1929 did not repeal any of the previous restrictions but added the principle of limiting to a specific annual quota the number eligible to entry from any nation regardless of the character of the persons applying after the quota has been used up. The law of 1921 limited the number of immigrants from each nation to three percent of the number of foreign born persons of such nationality resident in the United States in 1910, as recorded in the census. This number was still further limited in 1924 by restricting the entrants from the foreign born stock.
RECENT SOCIAL TRENDS

each nation to two percent of the population of that nationality as of the census of 1890. The national origins act of 1929 provided that the annual total of 150,000 quota immigrants be apportioned in accordance with the proportion of the various national stocks in the total population in 1920.9

The law of 1924 established preferential classes. The first preference was given to fathers, mothers or husbands of citizens of the United States (wives being non-quota immigrants). This preference tended to increase the age and balance the sex distribution of immigrants. The second preference was for quota immigrants who were skilled in agriculture.

Oriental immigration has always been on a different footing from European. Since the Chinese exclusion act of 1882 and the Gentlemen’s Agreement with Japan in 1907, the net immigration from these nations has been small. Notwithstanding this fact, the act of 1924 provided that no alien ineligible for citizenship shall be admitted to the United States. This is considered by Japan as a gratuitous insult, for the number of her nationals admitted annually would have been very small if they had been placed on the same quota basis as the others.

Along with the growth in the number of causes for which an alien may be excluded there has been an increase in the causes for which aliens may be deported and an extension of the period after entry during which they are subject to deportation. A law has also been enacted declaring that the return of a person who has been deported is a criminal offense. The administrative practice and the decision of the courts in deportation cases have considerably modified the causes of deportation as defined by law and have, in effect, become a criminal code.10

There has been a steady increase in deportations. The annual number has risen from 3,600 in 1923 to 16,600 in 1930. Before the World War professional beggars and vagrants and persons becoming public charges from causes prior to entry accounted for more than half the total deportations. The proportion of criminal and immoral persons to the total deportees has varied slightly from 18 percent in 1911 to 15 percent in 1930. Mental and physical defectives have never formed an important proportion, rarely exceeding 5 percent of the total. Since the passage of the quota acts the deportations have been predominantly for violation of the provisions of these laws.

Volume and Type of Immigration.—In 1911, 93 percent of our immigration was from other continents; in 1929 only 52 percent was from outside of North America. During the same period Mexico’s proportion increased from 3 percent to 16 percent and Canada’s from 3 percent to

9 For estimates as to the population by country of origin, see Chap. I.

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Racial and Ethnic Groups

32 percent. Immigration from the dependencies of the United States has also shown a rapid increase. Although these are in a sense citizens they create a racial problem when resident in continental United States. The immigration figures do not show the net immigration of these territorials but do show the movement back and forth between the territories and the continent and indicate that the greatest net gain has been from Porto Rico, with Hawaii second and the Philippine Islands third. However, a number of those arriving from Hawaii are Filipinos who come by that route. Thus there has been a definite tendency for immigration to start from new sources when the old are shut off.

From the passage of the quota acts to 1930 no country sent less than 90 percent of its allotted quota. In 1930 every country except Great Britain filled its national origins quota. Under quotas for 1924, 23,868 quota immigrants were admissible from countries of the so-called new immigration and 140,794 from the old. The net change provided by the national origins act was to increase the new country quotas from $2{,}400$ to $29{,}000$ and to decrease the old from $141{,}000$ to $112{,}000$. When the volume of immigration before the quota acts is compared to that since their passage it is evident that the proportion of immigrants from the newer and older sources has been reversed. In the period 1910-1914, 20 percent came from the older immigrant nationalities and 80 percent from the new. Under the quotas 1925-1929, 86 percent came from the old and 14 percent from the new.

The distribution of our foreign born population by country of birth at the successive censuses of 1910, 1920 and 1930 is shown in Table 2. The immigrants from the new sources constituted 45 percent of the European foreign born in this country in 1910. This proportion increased to 54 percent in 1920 and remained at that point in 1930. Of the children of foreign or mixed parents 18 percent were of newer immigrant parentage in 1910 and 33 percent in 1920, the increases between 1910 and 1920 and decreases from 1920 to 1930 chiefly affecting the groups from Italy, Russia and Poland.

Owing to the economic situation and the preferential admission of wives, the proportion of females among the immigrants has risen sharply in recent years. In 1900 immigration was 68 percent male; in 1922 it had dropped to 50 percent and it has remained slightly below 50 percent since that date. In 1920 there were 121 foreign born males for each 100 foreign born females, while in 1930 there were only 115 males for each 100 females.

Owing to the preference for members of families of citizens, a larger number of old people and children have been included in recent immigration. The percentage over 45 years of age has increased from 5 in 1900 to 9 in 1930. The exact increase in the number of children cannot be de-
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termined because of a change in the age classification. But the children under 14 years of age constituted only 12 percent of the aliens admitted from 1900 to 1910, while those under 16 constituted 18 percent of the admissions from 1910 to 1930.

Table 2.—Country of Birth of Foreign Population of the United States, 1910–1930
((N) indicates new immigrant nationality. (O) indicates old immigrant nationality.)

<table>
<thead>
<tr>
<th>Country</th>
<th>1910</th>
<th>1920</th>
<th>1930</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria (N)</td>
<td>845,555</td>
<td>575,687</td>
<td>370,914</td>
</tr>
<tr>
<td>Belgium (O)</td>
<td>49,400</td>
<td>62,687</td>
<td>64,194</td>
</tr>
<tr>
<td>Czechoslovakia (N)</td>
<td>1,181,649</td>
<td>368,438</td>
<td>491,368</td>
</tr>
<tr>
<td>Denmark (O)</td>
<td>199,580</td>
<td>149,884</td>
<td>77,059</td>
</tr>
<tr>
<td>Finland (N)</td>
<td>1,177,418</td>
<td>133,072</td>
<td>132,232</td>
</tr>
<tr>
<td>Germany (O)</td>
<td>6,911,237</td>
<td>1,686,108</td>
<td>1,068,814</td>
</tr>
<tr>
<td>Great Britain (O)</td>
<td>1,271,293</td>
<td>1,153,489</td>
<td>1,923,000</td>
</tr>
<tr>
<td>Greece (N)</td>
<td>1,011,292</td>
<td>175,976</td>
<td>174,526</td>
</tr>
<tr>
<td>Hungary (N)</td>
<td>495,609</td>
<td>397,283</td>
<td>274,450</td>
</tr>
<tr>
<td>Ireland (O)</td>
<td>1,352,251</td>
<td>1,037,234</td>
<td>923,624</td>
</tr>
<tr>
<td>Italy (N)</td>
<td>1,843,125</td>
<td>1,010,113</td>
<td>1,790,424</td>
</tr>
<tr>
<td>Lithuania (N)</td>
<td>( )</td>
<td>135,068</td>
<td>193,606</td>
</tr>
<tr>
<td>Netherlands (O)</td>
<td>120,063</td>
<td>131,766</td>
<td>133,133</td>
</tr>
<tr>
<td>Norway (O)</td>
<td>403,877</td>
<td>363,803</td>
<td>347,852</td>
</tr>
<tr>
<td>Poland (N)</td>
<td>637,884</td>
<td>1,139,979</td>
<td>1,958,583</td>
</tr>
<tr>
<td>Portugal (N)</td>
<td>59,360</td>
<td>69,981</td>
<td>69,974</td>
</tr>
<tr>
<td>Rumania (N)</td>
<td>65,923</td>
<td>102,832</td>
<td>146,393</td>
</tr>
<tr>
<td>Russia (N)</td>
<td>1,184,412</td>
<td>1,400,495</td>
<td>1,177,847</td>
</tr>
<tr>
<td>Spain (N)</td>
<td>42,108</td>
<td>40,535</td>
<td>55,302</td>
</tr>
<tr>
<td>Sweden (O)</td>
<td>665,207</td>
<td>625,385</td>
<td>595,230</td>
</tr>
<tr>
<td>Switzerland (O)</td>
<td>124,848</td>
<td>118,659</td>
<td>113,010</td>
</tr>
<tr>
<td>Yugoslavia (N)</td>
<td>169,459</td>
<td>211,416</td>
<td></td>
</tr>
<tr>
<td>All other (N)</td>
<td>56,070</td>
<td>39,855</td>
<td>72,720</td>
</tr>
<tr>
<td>New immigration</td>
<td>5,844,808</td>
<td>6,378,436</td>
<td>6,577,583</td>
</tr>
<tr>
<td>Old immigration</td>
<td>6,547,293</td>
<td>5,903,017</td>
<td>5,920,583</td>
</tr>
<tr>
<td>Percent new</td>
<td>44.5</td>
<td>54.5</td>
<td></td>
</tr>
<tr>
<td>Percent old</td>
<td>55.5</td>
<td>45.5</td>
<td></td>
</tr>
<tr>
<td>All Europe</td>
<td>11,791,841</td>
<td>11,882,083</td>
<td>11,686,166</td>
</tr>
<tr>
<td>Canada</td>
<td>1,209,717</td>
<td>1,138,174</td>
<td>1,278,421</td>
</tr>
<tr>
<td>Mexico</td>
<td>221,015</td>
<td>486,418</td>
<td></td>
</tr>
</tbody>
</table>

* Persons reported in 1910 as of Polish mother tongue born in Germany, Austria and Russia have been deducted from respective countries and combined as Poland.
* Change in boundary in 1920 Census.
* Lithuania counted with Russia in 1910.
* Native and foreign born not yet tabulated.

There have also been marked changes in the character of immigrants in respect to their previous occupations. Comparing the average of the pre-war period 1911 to 1914 with the average of the quota period 1926 to 1929 it is evident that the small professional element has more than trebled, rising from 1.7 percent to 5.9 percent of the total. Those previously in skilled occupations increased from 20.0 percent to 30.8 percent.
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Notwithstanding the preference given to farmers, this group decreased from 33.4 percent to 16.4 percent. There was a large decrease in unskilled labor and a slight increase in servants.

The increase in Mexican migration was so rapid from 1920 to 1930 and the problems resulting from it were so acute that this movement should be analyzed separately. It has been noted that the Mexican element has increased from 3 to 16 percent of all immigration within the past twenty years. This has meant an increase from 400,000 in 1910 to nearly a million and a half in 1930 in the number of persons born in Mexico or of Mexican parentage. Of this million and a half about 65,000 were enumerated in 1930 as "white Mexicans" or those of Spanish descent, while the remaining 1,400,000 were of Indian and Negro descent. Some writers state that because of the movement backward and forward across the border, the census figures exaggerate the number of Mexicans. It is safe to say, however, that enumerations made in the winter and early spring count the minimum number because the seasonal demand for farm labor is not at its height until later in the year. Like European immigration, Mexican immigration fluctuates with the economic prosperity of this country. From 1920 to 1930, however, there were several years when unsettled political conditions in Mexico coincided with periods of great industrial activity in the United States. With this double impetus the movement across the border was heavy.

Natural Increase.—The increase of the foreign stocks has been discussed in Chapter I. Some observations on the increase in the color groups are pertinent here.

Negro Increase.—The census figures seem to indicate that the natural increase of Negroes was more rapid between 1920 and 1930 than formerly. This is probably not the case since the Negro rate of increase was dwindling steadily up to 1920. The rate of increase declined from 17.9 percent in 1880–1890 to 6.6 percent in 1910–1920. On the face of the 1930 returns the increase from 1920 to 1930 appears as double that of the previous decade. Such a reversal of trend is hardly credible, since all the evidence of vital statistics points to a slight diminution in the rate. It is more probable that there was a slight undercount of Negroes in 1920 and that the rate from 1910 to 1920 was somewhat higher than from 1920 to 1930.

The decline has been caused by a more rapid reduction in the birth rate than in the death rate. In addition to the rising standard of living and postponement of marriage, migration has proved a factor in reducing

11 This distinction is made by the Census Bureau in the 1930 enumeration of Mexicans; whereas in 1920 all Mexicans were included as foreign born.

12 The Census Bureau estimates this undercount at 150,000. The author and other investigators estimate between 300,000 and 350,000.

13 See discussion of Negro increase in Chap. I.
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the birth rate. The manner in which migration unbalanced the sex and age distribution is indicated in Table 3. Michigan, receiving migrants, had a great excess of males in 1920, while Georgia, a source of the movement, had an excess of females. Movement of women tended to balance the Michigan ratio by 1930 while Georgia’s continued loss by migration further emphasized the excess of females. It will be noted from Table 3 that the age distribution in the two states was also unbalanced, a greater proportion of children and old people being left in Georgia and a greater proportion of those in the vigorous productive ages being found in Michigan. The age and sex distribution in the north was more normal in 1930 than in 1920, hence there was a slight rise in the rate of Negro increase in northern states during the decade.

 Mexican Increase.—Since the Mexicans are the newest of the large immigrant groups, there has not been sufficient time to rear a large second generation born of parents of this nationality. In 1920 the ratio of natives of Mexican or mixed parentage was 73 to 100 of the Mexican born, somewhat below that of the newer immigrant groups (96 to 100). In spite of a high death rate, the Mexican rate of natural increase is high because of the large excess of births. Any calculation of exact rates for this group is difficult because of wide seasonal fluctuations in the population. The report of the Fact Finding Committee appointed by the Governor of California, indicates that in Los Angeles from 1918 to 1927 there was an
average annual gross excess of births over deaths of 1,019 as against 4,307 for other groups. Thus the Mexicans contributed 24 percent of the excess of births over deaths although they formed a much smaller proportion of the population. Correspondence with several Texas cities indicates that births are over one and one-half times as frequent as deaths, and California figures indicate a birth rate approximating 40 per 1,000.\textsuperscript{14}

Other Groups.—The Indian increase of 88,000 from 1920 to 1930 is also more apparent than real. From 1910 to 1920 the census showed a decrease in Indians and from 1920 to 1930 an increase. This has come about largely by differences in the manner and time of enumeration. There are so many persons with merely a trace of Indian blood that the enumerator’s judgment is often a marked factor in classifying them as Indians or white. The present trend seems to be a very slow increase or slight decrease in persons with a large proportion of Indian blood and an increasing number of individuals so nearly white that they are sometimes classified one way and sometimes the other.

The Japanese increase of 27,800 appears consistent with the excess of births over deaths. The natural increase exceeded that number but was to a degree offset by a net decrease in immigration. The crude rate of natural increase of the Japanese is high, approximating 40 per thousand. This is largely because of the high proportion of women of childbearing age in the group. Proper refinement of the rate for age and sex would reduce it to a figure much nearer the native white ratio. There was an increase of 18,000 in the Chinese from 1920 to 1930, which is difficult to explain since both the immigration figures and the vital statistics for the period register a net loss in the Chinese group. A similar discrepancy in the 1910 and 1920 figures had been attributed to smuggling but it would seem that an annual average of 1,300 smuggled Chinese for the years 1920–1930 is excessive.\textsuperscript{15} Very little of the Filipino increase of 40,000 is to be credited to excess of births over deaths since this is a new group with a negligible proportion of women.

Distribution.—Changes in the distribution of racial groups are important because race relations vary with the number and concentration of minority groups. A natural geographic segregation takes place, the Negroes in the south, the foreign born in the east and middle west, the Mexicans in the southwest and the Orientals on the Pacific coast.

The segregating process also operates within communities. New York has its Chinatown, Little Italy, Ghetto and Harlem. Other cities show

\textsuperscript{14} California State Bureau of Vital Statistics reports an average of 12,752 Mexican births in 1926, 1927, 1928. Estimated Mexican Population, July 1, 1927, 298,000.

as distinct cleavages. This separation creates a community solidarity and a sense of security in the minority races but it exposes them to exploitation and neglect if they are not protected by social or political organizations. At best it is difficult to protect these groups from exploitation in the form of high rents, poor housing and other economic disadvantages.

Between 1920 and 1930, however, the general trend has been toward less of this regional and neighborhood segregation. Population movements from one section to another have distributed racial groups more widely, especially into smaller industrial centers, while sub-urbanization and movements within the cities have scattered members of the foreign and colored colonies in mixed neighborhoods.

*The Movement of Foreign Born and Their Children.*—The relative importance of the foreign born in different sections of the country has varied considerably since 1900, as is shown in Table 4. It is apparent from this table that the sections which have showed marked increases are New England and the middle Atlantic, west north central and far western regions. The increase in the west south central states has been largely made up of Mexicans and in spite of a number of sporadic efforts to attract immigrants, the southeast has never had a large number of foreigners. On the other hand the west north central has a declining number of foreign born.

The increases in the middle western and Atlantic seaboard regions have been associated with industrial development and a relatively stable farm population. The increases in foreign born in the Pacific and mountain regions are associated with mining and agricultural expansion. The decline in the west north central region resulted from the fact that the older members of long established immigrant farm communities are dying out without being replaced by new immigration.

Carpenter points out that the proportions of immigrants of the second generation in the various sections remain about the same as the proportions of immigrants and concludes that “immigrant children remain in the same section of the country as their parents, or the one adjoining it.”

The foreign born have always tended to concentrate in urban regions and from 1910 to 1930 those in the country moved cityward as rapidly as the native born. The earlier waves of migration included many who settled on the land. The newer movement is predominantly urban. For example the farm colonies of the foreign born in the middle west which have been such a substantial element of the population are shrinking

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16 Compare with regional groupings in Chap. I.
RACIAL AND ETHNIC GROUPS

without being repopulated by new immigrants. All of these states show a substantial decrease in the actual number of their foreign born and a relatively smaller proportion of foreign born who live on farms. The census of 1930 shows that 62 to 78 percent of the rural farm population of the middle western states are more than 45 years of age, indicating

<table>
<thead>
<tr>
<th>Table 4.—Foreign Born and Foreign White Stock, by Geographical Divisions, 1900–1930a (In thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division</td>
</tr>
<tr>
<td>New England</td>
</tr>
<tr>
<td>Middle Atlantic</td>
</tr>
<tr>
<td>East north central</td>
</tr>
<tr>
<td>West north central</td>
</tr>
<tr>
<td>South Atlantic</td>
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<tr>
<td>East south central</td>
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<td>West south central</td>
</tr>
<tr>
<td>Mountain</td>
</tr>
<tr>
<td>Pacific</td>
</tr>
<tr>
<td>United States</td>
</tr>
</tbody>
</table>

a U. S. Census of Population, op. cit.
b Adjusted for Mexican Population.

that there will be a still further reduction of this element by death. In the same states the children of immigrants show similar rural decreases. New England, New Jersey and parts of Pennsylvania, however, show a foreign population which is stable, the deaths being about balanced by new immigrant farmers.

Mexican Movement.—The Mexicans also show tendencies to scatter from their stronghold in the southwest. In 1920, 85 percent were in California, Arizona and Texas, while only 82 percent were in these states in 1930. Striking increases occurred in Oklahoma, Colorado, Kansas, Illinois, Michigan and Indiana and slight increases even in New York, New Jersey and Pennsylvania.

The seasonal movement of Mexicans is as great a factor in their social life as the long range movement. Because they engage in seasonal labor on railroads and on farms they migrate from place to place and have gained the reputation of gypsies. Some tendency toward more permanent settlement is noted. Farmers of several sections are successfully attempting to hold their Mexican labor by offering permanent houses. The industrial settlements such as those in Chicago, Detroit, Gary and Bethlehem are relatively permanent.
NEGRO MOVEMENT.—In recent years the most spectacular movement of the population within the United States has been the shift of hundreds of thousands of Negroes from south to north, introducing into industry a new type of labor and changing the environment of the migrants from the most rural to the most metropolitan. The great majority of the Negro migrants have moved since 1910. At that census only 4.8 percent of the southern born Negroes were living elsewhere and most of these had migrated from the border states, Virginia, Kentucky and Tennessee.

Between 1910 and 1930, however, a number of new factors caused a movement from the heart of the black belt. The principal elements in the situation were (1) the long standing and deep seated dissatisfaction with conditions in the south centering around the economic disadvantages of the tenant system and the difficulty which the Negro experienced in escaping from it, (2) discontent with the school facilities provided by southern communities, and (3) a feeling of insecurity in some communities because of inadequate protection for the life and property of Negro citizens. In addition to these, the cessation of European migration and the war demands for labor created a vacuum in the industrial labor market and drew thousands of Negroes to the east and middle west to fill it. At the same time the boll weevil was ruining crops in the southeast and disorganizing the tenant system to such an extent that thousands of Negroes were literally forced to leave in order to live. By 1920 there were 780,000 southern born Negroes living in the north and west, 8.1 percent of the total. The increase in the north was nearly half a million from 1910 to 1920, or 45 percent. Between 1920 and 1930 the increase was almost a million, or 68 percent. Table 5 shows the increases in the north and south for the period 1910–1930.18

While this movement brought new and large aggregations of Negroes to the north, it thinned out the Negroes in the rural south. In this connection it may be said that the natural increase of the southern rural white population is greater than that of the Negroes. This excess plus the migration of Negroes is rapidly “whitening” the southern rural districts. Over a period of years such change in the racial proportions can be expected materially to affect the relationship between the southern white population and the Negroes. The movement of Negroes is predominantly a process of urbanization as northern rural districts have attracted very few migrants. Negro groups in both southern and northern cities have grown rapidly, as shown in Table 5.

The social effects of this movement have been varied. The rise in the standard of living has meant an increase in home ownership19 and other

18 Compare with Chap. I.
advances in family life. Superior school facilities are available in the large cities. While the change in climate and housing has some adverse effects as shown by the rates of tuberculosis and pneumonia, the superior public health programs of large cities in a large measure offset this. Problems of adjustments are brought to the social agencies of the migrant communities, especially those dealing with child welfare and recreation. Politically the shift of large numbers from non-voting areas to areas where there is no restriction on suffrage adds to the power of Negroes.

Table 5.—Negro Urban and Rural Population, by Regions, 1900–1930
(In thousands)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Total United States:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>2,002</td>
<td>2,685</td>
<td>3,560</td>
<td>5,194</td>
</tr>
<tr>
<td>Rural</td>
<td>6,882</td>
<td>7,143</td>
<td>6,903</td>
<td>6,097</td>
</tr>
<tr>
<td>Southern states:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>1,365</td>
<td>1,854</td>
<td>2,251</td>
<td>2,906</td>
</tr>
<tr>
<td>Rural</td>
<td>6,538</td>
<td>6,895</td>
<td>6,661</td>
<td>6,395</td>
</tr>
<tr>
<td>Northern and western states:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>837</td>
<td>880</td>
<td>1,300</td>
<td>2,228</td>
</tr>
<tr>
<td>Rural</td>
<td>274</td>
<td>248</td>
<td>242</td>
<td>392</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Increase</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1900–1910</td>
<td>683</td>
<td>875</td>
<td>1,634</td>
<td></td>
</tr>
<tr>
<td>1910–1920</td>
<td>511</td>
<td>-239</td>
<td>-806</td>
<td></td>
</tr>
<tr>
<td>1920–1930</td>
<td>490</td>
<td>397</td>
<td>715</td>
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</tr>
</tbody>
</table>

* Minus sign denotes decrease.
* Includes following census divisions: south Atlantic, east south central, and west south central.

II. ECONOMIC LIFE

The economic experiences of the minority groups are roughly similar. In all cases except that of the Indian, the coming of the aliens has been stimulated by a vigorous demand for their labor. They have been welcomed because they could and would do things which the native laborer did not wish to do. They would accept wages which, while higher than those to which they had previously been accustomed, were still lower than those paid to the native workers. They have often been hampered in employment because of the prejudice of native workers and ill considered opinions of employers as to the type of work for which they were fitted. In short each group has had to push its way up from the bottom.

Agriculture.—As long as cheap land was available in quantity there was no noticeable competition between the various groups in agriculture, but when the supply of land became limited there was a tendency for groups with a lower standard of living to supplant those with a higher standard, especially in positions as farm laborers and tenants. Up to the time of the passage of the alien land laws the Japanese in California were
RECENT SOCIAL TRENDS

rapidly replacing natives. Until 1910 the Negroes in the south were increasing more rapidly than the whites as independent owners and cash tenants. In sections of Texas the Mexicans have now begun to crowd the Negroes from cotton culture, and recently in New England the foreign born, particularly the Poles, have begun to take over land long cultivated by natives.

Immigrant Farmers.—The foreign born farmers who developed some of our most prosperous agricultural communities are dwindling in number and in proportion to the total. This decrease is entirely from the ranks of the old immigrant farmers who settled some time ago in the middle west and who have now reached the age where they are dying out without replacement. The recruits in the ranks of the new immigrant farmers are settling along the Atlantic coast. Between 1910 and 1920 the farm operators among the old immigrants decreased 26.6 percent and those among the new immigrants increased 13.7 percent.20

Little has resulted from the preference shown by the recent immigration laws for immigrants with farming experience. The annual admissions of aliens who have had agricultural experience (including Mexicans) total only about 30,000 and not all of these seek the land for a livelihood. Foreign born farmers operate in such varied sections that it is difficult to generalize as to their condition. There are, however, some more or less characteristic features of their situation. They are predominantly owner farmers furnishing a negligible number of tenants and working as laborers only on a farm owned by some member of the family. It is by liberal use of their unpaid family labor that they gain initial success. They improve their original holdings or eventually acquire land more valuable than the average of that owned by native farmers. The few farm management surveys which have been conducted indicate that they succeed about as well as native farmers and that where they have been established for a long period they tend to surpass the natives. Thus the shrinkage in their number is due far more to deaths than to failures.21

Negro Farmers.—Negroes as owners and tenants operate 30 percent of the southern farms and perform a great part of the hired labor. The Negro is therefore so closely identified with southern agriculture that his racial status depends greatly upon sectional conditions. Of all the depressed agricultural regions the south has been most severely deflated because it has been so largely dependent on two money crops, cotton and tobacco. Recurring sharp depressions have tended to undermine the prosperity of the whole south, but especially of the old southeastern cotton belt. The area of most profitable cotton production has shifted

20 Brunner, E. de S., Immigrant Farmers and Their Children, Garden City, New York, 1925, p. 25.
21 Ibid. p. 59.
to the southwest which now produces 40 percent of the cotton while it produced but 30 percent from 1920 to 1925.

From 1910 to 1925 there was a shrinkage of 25,000,000 acres in southern farm land, most of this being in the states of Alabama, Mississippi, Georgia and South Carolina. Since 1925 there has been a tendency to bring back into cultivation some of this idle land in Alabama and Mississippi, but the decline has continued in Georgia and South Carolina. In many sections the richer lands dropped out of cultivation faster than the poorer since the more fertile tracts were concentrated in large plantations which were more seriously disorganized by the boll weevil and low prices and were abandoned or taken over by foreclosure. Not only was much land abandoned between 1920 and 1925 but there was a great sacrifice of timber and domestic animals which were sold to make ends meet.

The difficulties inherent in southern agriculture which particularly affect the Negro are the tenant system, the one crop system and the credit system. In the old cotton states a relatively small proportion of the land is operated by the owner with his own labor or with that of his family. Tracts larger than those which can be farmed by one man are operated by tenants who receive proportions of the crop varying with the proportion of the capital supplied and the risk taken by the tenant. The cropper or half share tenant who supplies nothing but his labor is at the bottom of the economic ladder. The third and fourth share tenant who supplies animals and sometimes equipment is next, the independent renter who supplies everything and pays only a fixed rent to the landlord is next and the owner is at the top.

Up to 1910 the Negroes had made steady progress in climbing this tenant ladder. Starting immediately after the Civil War when all were laborers, a cropper class soon emerged. More independent share tenants then began to appear and next came independent renters and owners. By 1910 there were over 200,000 Negro farm owners. This number held constant to 1920 and dropped off markedly in 1925. From 1925 to 1930 Negro farm ownership tended to increase in the states where cotton production was revived (Alabama, Mississippi, North Carolina and Louisiana) and continued to decline in the states of stagnant cotton production. Independent renters showed similar fluctuations, increasing in proportion up to the year 1920 and then falling off sharply. This class is particularly affected by depressions as their capital is swept away and they are forced to move out altogether or drop back into the cropper class.

Thus each depression shows a falling off in ownership and renting and an increase in the cropper class. Periods of prosperity, on the other hand,

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22 See map in Chap. II.
RECENT SOCIAL TRENDS

provide opportunities for regaining lost ground. Between 1920 and 1925 it was evident that the Negro farmer was losing an established status in southern agriculture; after 1925 he regained some of the losses, but whether this is a definite resumption of the trend toward progress in agriculture will depend upon the trend of cotton production and the ability of the Negro to break away from the one crop system.

Both tenancy and the credit structure have exerted pressure on the Negro to force concentration on the money crops, cotton and tobacco, to the neglect of the food and feed crops. The landlord wants cotton and tobacco to secure his rent and the merchant or banker who is furnishing the credit wants cash crops for security. As a result the concentration on cotton and tobacco makes the southern farmer and especially the Negro farmer subject to the depressions in these crops. Some improvements in diversification have been made. In 1910 only 1.8 acres of food and feed were planted in the south for each acre in cotton and tobacco, while in 1925 2.4 acres of feed and food were planted for each one of the money crops. In 1920 in states heavily populated with Negroes only .8 of an acre of food and feed were planted for each acre of cotton, indicating that the Negroes were not seeking the advantages of diversification as rapidly as the whites.

The third serious drawback in southern agriculture which especially handicaps the Negro is the credit system. Dissipation of small savings by frequent depressions leaves the tenant farmer dependent on credit to meet current crop expenses. Rates for this credit are exorbitantly high, ranging from 15 to 35 percent and drastically reducing profits. This crop mortgage system is weak to begin with and its abuses make it even more burdensome. With these handicaps the returns from farming are small. The productivity per man of southern agriculture is only about half that of other sections. After this small product has been divided between the tenant, the landlord and the furnisher of credit, the shares are inadequate to support a good standard of living. Studies of Negro farm incomes in several sections show averages around $400 per year, with many falling below this figure. As long as such a condition exists, the desertion of southern farms for city jobs will doubtless continue.

Indian Farmers.—A recent survey of the Indians revealed that 81 percent were farmers or ranchers of a sort and that the principal source of income for the Indian is the land. However, the production of these farmers forms a negligible proportion of the nation's output and provides only a limited diet and income. Of the 71 million acres in reservations only 3 million were shown by the United States census of 1920 to be in

Racial and Ethnic Groups

farms operated by Indians, the balance being leased to others or reserved for lumbering. Indian lands are poor to begin with and their utilization is below standard. This condition is reflected in income. It is difficult to understand how more than a quarter of the Indians live on an annual income of less than $100 and three-fourths on less than $200. A recent survey of Indian jurisdictions showed a median per capita property value of $1,950 and a median per capita annual income of $66.

Two trends have been manifest in regard to the holding of Indian lands. One has been the allotment of lands to individuals rather than to tribes without the right to alienate the title. The allotted land on reservations rose from 31 million acres in 1911 to 39 million in 1929. Early in 1920 there was also an increase in the grants of fee patents to Indians, giving them full control of their lands. This practice, however, is not now so prevalent as it was ten years ago. In an effort to throw some light on this question, Meriam26 gathered information on about 24,000 Indians who had received fee patents indicating that only about one-fifth had retained any portion of their property. This, of course, does not mean that they may not be doing well in some other capacity. Such inquiry needs further elaboration.

Among the difficulties described as holding back Indian farmers and ranchers are: a low standard of living, due principally to difference in culture levels; an attitude that the government owes them a living and consequently too great dependence upon unearned income; the lack of fertility of many tracts of land; a lack of adequate agricultural education; complications arising from tribal ownership and from faulty systems of individual allotment; care free camp life with frequent wanderings militating against the regular care of animals; a lack of well grounded programs for the agriculture of each jurisdiction; the great diversity of regions occupied multiplying the problems in some sections; difficulties with irrigation in some sections; lack of local agricultural leaders; and a lack of adequate working capital.

All who are interested in the processes by which the Indian is to absorb the surrounding culture and become an independent citizen emphasize the strategic position of agriculture in the process. Recent steps of the Indian Bureau to improve agriculture have included surveys and formulation of five-year programs for each region, the appointment of a director of extension, a supervisor of livestock, eight agricultural extension agents and seven home demonstration agents.

Races in the West and the Southwest.—The pressure for the labor of outsiders in the west springs from the basic agricultural situation. In this section agriculture is expanding more rapidly and is more intensive than

RECENT SOCIAL TRENDS

in other major regions of the United States. Irrigation, clearing of new
land and change from grazing to crops have extended and intensified
farming. An additional demand for labor is created by the seasonal nature
of certain crops such as beets, vegetables, citrus fruits, berries and grapes
all requiring extra labor for cultivation and harvesting. To supply these
needs the west has constantly attracted outside labor. The native
Mexicans were supplemented by migrants; Chinese and Japanese were
first drawn in, and recently Filipinos, a few Hindus, Negroes, Hawaiians
and Koreans.

However, the tendency to deprecate the newcomers as members of the
community is as fixed as the tendency to seek their labor. Hence the
Chinese had no sooner become a significant group in the population than
further accessions were stopped. As a result the few Chinese rapidly passed
from agriculture to the city. The Japanese, sought as laborers when the
Chinese were excluded, were also shut out by the Gentlemen’s Agreement
and have since been barred from land leasing and ownership by anti-alien
land laws. Yet the Japanese farmers, like Europeans, are usually ambi-
tious to own land and are not content to remain laborers. Fresh accessions
to the Mexican population have been welcomed, as the Mexicans have
not begun to purchase lands, but have continued as laborers.

The importance of the Japanese in California agriculture before the
passage of anti-alien land laws is indicated by the estimate that in 1920
they raised about 90 percent of the asparagus and almost half the green
vegetables and sugar beets and made substantial contributions to the
fruit and berry crops. Later estimates indicate that the land laws, although
they are not rigidly enforced, have caused a 25 percent loss in land leased
by Japanese farmers as against an increase of two-thirds in the area
operated by them on share.

In enumerating the harmful effects of these laws, Mears26 lists the
following:

(1) The employer can never be sure of securing this labor supply, yet (2)
he is uncertain of getting satisfactory help elsewhere; (3) the bank is unwilling
to loan money when farming becomes so speculative; (4) the Oriental who
connives with landowner or tenant is uneasy about holding his position; (5) he
can recover no damages if the contract is broken; (6) co-operative marketing
associations for handling fruits, vegetables, and dairy products, with all or mostly
Japanese membership, have been compelled to disband because ineligible aliens
have no title to the crop; (7) these acts are economically unsound, morally
questionable, and internationally unfortunate; and (8) their lax enforcement
sets a bad example both to Americans and Asians, especially serious in the case
of the younger generation.27

26 Mears, E. G., Resident Orientals on the American Pacific Coast, Their Legal and Eco-
nomic Status, University of Chicago, 1925, p. 261.
27 Mears, after careful study, concludes that there is a growing disinclination to enforce
these laws, op. cit., p. 253.
The chief positive results stated are the discouraging of prospective Oriental settlers and the detering of the second generation from utilization of rural property.

Like the Negro in the southeast the Mexicans occupy a unique position in Texas and New Mexico. They monopolize the culture of cotton and of truck and citrus fruits in the newer areas and they have been partially substituted for European foreign labor in the beet fields. On the other hand, along the Pacific coast the Mexican is in competition with all other ethnic groups.

The preferences of employers for labor are to some degree indicated by the extent to which they use the various types, as shown in the report of the Governor's Fact Finding Committee: 28

<table>
<thead>
<tr>
<th>Employing Mexicas</th>
<th>814 operators</th>
<th>Employing East Indians</th>
<th>48 operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employing Japanese</td>
<td>247 operators</td>
<td>Employing Negroes</td>
<td>35 operators</td>
</tr>
<tr>
<td>Employing Filipinos</td>
<td>194 operators</td>
<td>Employing Porto Ricans</td>
<td>18 operators</td>
</tr>
<tr>
<td>Employing Chinese</td>
<td>52 operators</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In the non-competitive areas Mexican wages are low, comparing with the Negro farm wages in the southeast which are the lowest in the country. Competition brings better wages in Colorado and on the Pacific coast but

### Table 6.—Differential Wage Scales of Racial Groups in California, 1930

<table>
<thead>
<tr>
<th>Comparison of—</th>
<th>Total number of reports</th>
<th>Number reporting same scale</th>
<th>Number reporting higher for—</th>
<th>Number reporting higher for—</th>
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</thead>
<tbody>
<tr>
<td>Whites and Mexicans</td>
<td>228</td>
<td>53</td>
<td>Whites, 129</td>
<td>Mexicans, 51</td>
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<td>Whites and Filipinos</td>
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<td>29</td>
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<td>Filipinos, 0</td>
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<td>Mexicans and Filipinos</td>
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<td>Filipinos, 7</td>
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<td>11</td>
<td>Mexicans, 0</td>
<td>Chinese, 1</td>
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<td>Mexicans and Japanese</td>
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<td>7</td>
<td>Mexicans, 4</td>
<td>Negros, 4</td>
</tr>
<tr>
<td>Filipinos and Japanese</td>
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<td>26</td>
<td>Filipinos, 1</td>
<td>Japanese, 8</td>
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<tr>
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<td>9</td>
<td>Chinese, 0</td>
<td>Japanese, 3</td>
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<table>
<thead>
<tr>
<th>Average wage scale</th>
<th>Per day</th>
<th>Per hour</th>
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<tr>
<td>Dollars</td>
<td>Cents</td>
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<tr>
<td>These columns correspond to groups as listed in first vertical column</td>
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</tbody>
</table>

<p>| | | |</p>
<table>
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<tr>
<td>3.60</td>
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<tr>
<td>3.44</td>
<td>3.50</td>
<td>36.2</td>
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</tbody>
</table>

*Mexicans in California, op. cit.*

not as high a wage as is given to native labor. The relative wage scale of employers hiring two or more groups is a better index. Table 6 indicates that the wage differentials where any are in force favor the whites and Japanese first, the Chinese next, the Mexicans and Filipinos next with the Negroes slightly behind these two. The opinions of employers as to the output of these workers in comparison to white workers are recorded in Table 7.

The Mexican population of south and west Texas is, in a sense, a barrier to the westward spread of Negroes. However, permanent restriction of Mexican immigration would probably mean that some of the surplus agricultural labor of the southeast would spread westward instead of concentrating entirely in the cities of the east and middle west. The stoppage of European immigration has meant the entrance of Mexicans into new employment, notably the cultivation of the sugar beet fields. The Governor's Fact Finding Committee points out that of the aliens designating California as their destination, Mexicans have increased from 14.8 percent in 1919-1921 to 41.3 percent in 1925-1928. The Mexicans are favored by the operation of the alien land laws of the states on the Pacific coast.

Industry.—Alien labor has always been much in demand for the hot, arduous and monotonous jobs in industry. Up to the outbreak of the World War these jobs were largely monopolized by the aliens most recently arrived from Europe. Many of the older immigrants and the native born had worked up into semi-skilled, skilled and office positions. Since 1914 the Negroes have partially replaced the foreign born, accelerating the rise of the more able foreign born workers. Still more recently the Mexicans, for a long time a vital part of the construction and maintenance

<table>
<thead>
<tr>
<th>Racial groups</th>
<th>Number of replies</th>
<th>Output compared with white laborers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Same</td>
</tr>
<tr>
<td>Mexicans</td>
<td>676</td>
<td>258</td>
</tr>
<tr>
<td>Porto Ricans</td>
<td>50</td>
<td>16</td>
</tr>
<tr>
<td>Filipinos</td>
<td>181</td>
<td>60</td>
</tr>
<tr>
<td>Chinese</td>
<td>100</td>
<td>30</td>
</tr>
<tr>
<td>Japanese</td>
<td>244</td>
<td>71</td>
</tr>
<tr>
<td>Negroes</td>
<td>69</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>1,220</td>
<td>464</td>
</tr>
</tbody>
</table>

* Mexicans in California, op. cit.
1 Opinion concerning the Filipino output per day is about equally divided as between "same," "more," and "less"; and likewise for the Chinese.
RACIAL AND ETHNIC GROUPS

labor force of the railways, have been drawn into heavy industry, and the abler Negroes are beginning to rise into the skilled and semi-skilled jobs.

Orientals in Industry.—The Oriental groups are not competitors in heavy industries, except the Japanese who have penetrated to some extent into the lumber camps and mills of the west. For the most part, however, they are confined to domestic service and trade, with a scattering few in special employments such as fish canning, laundries and the building trades. Table 8 gives the distribution of Chinese and Japanese gainfully employed in 1920.

Table 8.—Non-agricultural Occupations of Orientals, 1920

<table>
<thead>
<tr>
<th>Description of group</th>
<th>Chinese</th>
<th>Japanese</th>
<th>Description of group</th>
<th>Chinese</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing and mechanical</td>
<td>4,256</td>
<td>6,046</td>
<td>Domestic and personal service</td>
<td>26,450</td>
<td>14,723</td>
</tr>
<tr>
<td>industries</td>
<td></td>
<td></td>
<td>Professions</td>
<td>402</td>
<td>1,295</td>
</tr>
<tr>
<td>Laborers</td>
<td>2,519</td>
<td>3,753</td>
<td>Trade</td>
<td>8,870</td>
<td>5,750</td>
</tr>
<tr>
<td>Semi-skilled</td>
<td>510</td>
<td>578</td>
<td>Fishermen</td>
<td>24</td>
<td>1,081</td>
</tr>
<tr>
<td>Machinists and mechanics</td>
<td>54</td>
<td>315</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carpenters</td>
<td>47</td>
<td>101</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>1,526</td>
<td>2,109</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The Filipinos who are not agricultural workers are predominantly in domestic service, with a few in common labor and the fish canneries.

Mexicans in Industry.—For a long time Mexicans have been an important source of labor for the railroads of the southwest and recently their employment in this capacity has extended up to Chicago. The percentages of foreign born railway laborers (mostly Mexicans) in Texas, Arizona and New Mexico are given in Table 9. The table indicates a

Table 9.—Percentage of Foreign Born in the Total of Steam Railroad Employees, 1900–1920

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage of foreign born</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Texas</td>
</tr>
<tr>
<td>1900</td>
<td>14.7</td>
</tr>
<tr>
<td>1910</td>
<td>25.8</td>
</tr>
<tr>
<td>1920</td>
<td>48.0</td>
</tr>
</tbody>
</table>

*Report of Alfred Thom, op. cit.*

marked increase in the Mexicans employed in this capacity between 1910 and 1920. In 1920 Alfred Thom, general counsel for the Association of Railway Executives, reported that on railroads running west and south of Chicago, 26,783 out of a total of 48,632 section laborers normally employed were Mexicans and 14,593 out of 16,757 of the extra gang laborers,
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i.e., over 50 percent of the normal force of laborers and 87 percent of the extras were Mexicans.

In 1928 the questionnaire circulated by the Governor's Fact Finding Committee\(^ {29}\) revealed the following percentage of plants in California employing Mexican labor:

<table>
<thead>
<tr>
<th>Group of industries</th>
<th>Percent employing Mexicans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stone, clay and glass.</td>
<td>80.9</td>
</tr>
<tr>
<td>Metals, machinery and conveyance.</td>
<td>45.8</td>
</tr>
<tr>
<td>Wood manufacture.</td>
<td>46.7</td>
</tr>
<tr>
<td>Leather and rubber.</td>
<td>38.9</td>
</tr>
<tr>
<td>Printing and paper.</td>
<td>20.2</td>
</tr>
<tr>
<td>Chemicals and paints.</td>
<td>56.7</td>
</tr>
<tr>
<td>Textiles.</td>
<td>57.9</td>
</tr>
<tr>
<td>Clothing, millinery and laundry.</td>
<td>42.6</td>
</tr>
<tr>
<td>Foods, beverages and tobacco.</td>
<td>43.1</td>
</tr>
<tr>
<td>Water, light and power.</td>
<td>100.0</td>
</tr>
<tr>
<td>Miscellaneous.</td>
<td>42.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>45.0</strong></td>
</tr>
</tbody>
</table>

The entry of Mexicans into the heavy industries of the middle west is more recent. A scattering few were reported in industrial centers by the census of 1920 but now there are sizeable colonies in the middle west and as far east as Bethlehem, Pennsylvanina, where about 1,000 worked in 1923 and where a more or less stable colony of 400 is located now. The census of 1930 shows large colonies of Mexicans in Chicago, Gary and Detroit. They are mostly employed in the same industries entered by the Negro in 1916–1917, namely, steel, meat packing and automobile manufacture. Taylor\(^ {30}\) shows that in selected meat packing houses the Mexicans increased from 2,181 or 22 percent of the total in 1923 to 3,963 or 42.9 percent in 1928, and in 15 selected industrial plants Mexican employees increased from 16 in 1916 to 7,050 in 1928. Thus the Mexican begins the cycle at the same place but a few years later than the Negro.

The Negro in Industry.—Nearly five million Negroes are living in cities and the past two censuses have shown large relative losses in the number employed in agriculture. The general tendency has been for the proportion of all colored people gainfully employed to decrease. This decrease has occurred largely through the tendency of young Negroes to remain longer in school and for married women to work less outside the home. The shrinkage has, therefore, occurred largely in agriculture and domestic service.

\(^ {29}\) Mexicans in California, op. cit.

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Negro Women in Industry. 31—While a larger proportion of Negro women now remain at home as housekeepers, many have entered factories as unskilled workers. The tobacco industry employs the largest number, although the manufactories of clothing and food also offer some employment. The women started as unskilled workers but they are gradually rising into semi-skilled and skilled positions. The number of Negro waitresses has doubled in the decade and the number of school teachers and trained nurses is increasing. The development of Negro business enterprises has opened up clerical and semi-professional work for Negro women. The following is a list of some of the new fields which Negro women were entering in 1920:

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevator tenders</td>
<td>3,073</td>
</tr>
<tr>
<td>Attendants, professional service</td>
<td>1,235</td>
</tr>
<tr>
<td>Semi-professional</td>
<td>1,323</td>
</tr>
<tr>
<td>Semi-skilled:</td>
<td></td>
</tr>
<tr>
<td>Clothing</td>
<td>7,623</td>
</tr>
<tr>
<td>Food industries</td>
<td>4,632</td>
</tr>
<tr>
<td>Other industries</td>
<td>8,012</td>
</tr>
<tr>
<td>Retail dealers</td>
<td>3,136</td>
</tr>
<tr>
<td>Clerks in stores</td>
<td>2,334</td>
</tr>
<tr>
<td>Saleswomen</td>
<td>2,344</td>
</tr>
<tr>
<td>Clerical</td>
<td>8,301</td>
</tr>
<tr>
<td>Laborers:</td>
<td></td>
</tr>
<tr>
<td>Iron and steel</td>
<td>1,123</td>
</tr>
<tr>
<td>Furniture factories</td>
<td>3,122</td>
</tr>
<tr>
<td>Cotton mills</td>
<td>2,634</td>
</tr>
<tr>
<td>Other industries</td>
<td>5,701</td>
</tr>
<tr>
<td>General laborers</td>
<td>6,968</td>
</tr>
<tr>
<td>Food industries</td>
<td>3,092</td>
</tr>
<tr>
<td>Transportation</td>
<td>2,176</td>
</tr>
</tbody>
</table>

The South.—Southern cities have jobs which, until recently, have been by tradition wholly or largely monopolized by Negroes. The past fifty years, however, have witnessed a gradual incursion of whites into these jobs and a consequent shifting of Negro employment. Several outstanding examples of the displacement of Negro by white workers may be given. In restaurants serving white patrons the owners are now usually white rather then Negro as was common in earlier years. Similarly, Negro men waiters have been partially displaced by white men or by white or Negro girls. White patrons have almost entirely abandoned colored barber shops. Negroes monopolized the building trades up to and immediately after the Civil War but white workmen now get the choicest jobs and Negro carpenters, masons and plasterers are steadily declining in number. As a final example, there is the recent but persistent pressure for the replacement of Negro locomotive firemen by white men.

31 Compare with general discussion of occupations of women in the United States in Chap. XIV.
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Back of this pressure of white workers for Negro jobs is the steady increase in the white rural population of the south. Reared in a territory which is unable adequately to support the present population these people seek city jobs and are willing to take the more menial positions rather than be idle or remain on the farm. In compensation for these losses new jobs have been opened to the Negroes, such as those in the lumbering and the tobacco industry, garages and filling stations.

The North.—The use of Negro labor in machine industries during the war was looked on as a necessary experiment; it gave the Negro a foothold in many of the heavy industries, principally metal working, auto manufacturing and meat packing. Negro employment was resumed in the same plants after the 1920 depression and increased up to 1929, indicating that the use of this labor had passed beyond the experimental stage.

Most of the Negroes who lost employment during the slump of 1920 remained in northern cities or returned to them after a short stay in the south, for the Negro sections continued to expand and by 1930 all cities showed considerable increases in Negro population. Yet it seems to have taken the Negro until about 1930 to regain the place which he held in 1920. This is indicated by a state wide survey in Pennsylvania32 and by the replies to a questionnaire circulated by the author. The volume of Negro employment in the plants making complete questionnaire reports was as follows: 1920, 37,500; 1925, 39,800; 1928, 39,200; and 1929, 40,000.33 (See Table 10.)

It is also evident from a number of surveys34 that the Negro has proved to be about as satisfactory in industrial labor as any other group which these industries have been able to secure. These show that 64 percent of the employers reported the turn-over among Negro unskilled labor as the same or less than that of whites and only 36 percent reported it as greater. Considerable evidence has also been gathered concerning the reliability and efficiency of laborers which gives about the same result. Several investigators have reported that the opinions and attitudes of the officials controlling the labor policies of plants are strong factors in the success or failure of Negroes working under these policies. There is also a wide diversity of opinion about Negro labor among manufacturers who have never tried it. In one city employers will say that it is impossible to use Negroes on certain jobs and in a nearby city they will be found working on those jobs.

Before 1920 Negroes in industry were largely confined to unskilled jobs with a scattering few engaged in semi-skilled work and a very few

33 The 1929 reports were evidently rendered as of a time before the depression commenced.
34 Chicago Commission on Race Relations, The Negro in Chicago, University of Chicago, 1922; and unpublished studies of the National Urban League (New York).
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in skilled operations. Investigations conducted in 1928 and 1929 indicate that they have gained ground slightly in this respect. At that time 17 percent of the plants used Negroes only as janitors, porters, furnace tenders, etc. Eighty-three percent employed them in plant operations. Of these 44 percent employed only unskilled workers, 23 percent semi-skilled and 33 percent skilled. Some plants employed Negroes as foremen and clerks. The industrial surveys previously cited disclose the fact that

<table>
<thead>
<tr>
<th></th>
<th>Total Negroes employed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1920</td>
</tr>
<tr>
<td>Metal working</td>
<td>16,658</td>
</tr>
<tr>
<td>Automobile manufacturing</td>
<td>492</td>
</tr>
<tr>
<td>Packing houses</td>
<td>10,766</td>
</tr>
<tr>
<td>Other food products</td>
<td>341</td>
</tr>
<tr>
<td>Tanneries</td>
<td>116</td>
</tr>
<tr>
<td>Clothing and power machine</td>
<td>280</td>
</tr>
<tr>
<td>Chemical manufacturing</td>
<td>1,651</td>
</tr>
<tr>
<td>Other manufacturing</td>
<td>1,739</td>
</tr>
<tr>
<td>Laundries, dry cleaning</td>
<td>854</td>
</tr>
<tr>
<td>Hotels, hospitals</td>
<td>1,540</td>
</tr>
<tr>
<td>Trade</td>
<td>1,475</td>
</tr>
<tr>
<td>Garages</td>
<td>200</td>
</tr>
<tr>
<td>Construction</td>
<td>2,151</td>
</tr>
<tr>
<td>Other non-manufacturing</td>
<td>154</td>
</tr>
<tr>
<td>Transportation</td>
<td>2,907</td>
</tr>
<tr>
<td>Mining</td>
<td>892</td>
</tr>
<tr>
<td>Middle west</td>
<td>31,645</td>
</tr>
<tr>
<td>East</td>
<td>5,911</td>
</tr>
<tr>
<td>Total</td>
<td>37,556</td>
</tr>
</tbody>
</table>

* From a questionnaire circulated by the author in 1930, sent to all firms outside the south known to employ a considerable number of Negroes.

many Negroes have won positions of trust in the large industrial centers, such as head of pipe department, drawers of copper wire, locomotive engineers, etc. It is to this phase of industrial opportunity that the Negro and those interested in him need to give the closest attention. Without the chance to advance in industry the Negro common laborer has no incentive to become an ambitious workman.

A recent nationwide survey of business owned by Negro proprietors showed a rapid expansion in the number of these concerns.\(^{35}\) When the business is owned by a Negro, there is, of course, no problem as to the

\(^{35}\) *Report of the Survey of Negro Business*, conducted by the National Negro Business League, Tuskegee Institute, in 1928, covering 2,817 enterprises in 33 cities. (Mimeographed, not published.)
subordinate jobs, but with the growth of Negro neighborhoods there has also been a rapid expansion of neighborhood stores, theatres, real estate offices, branch banks and drug stores owned by white persons but serving Negroes. The chain stores have set up numbers of branches in Negro communities. Until recently most of the business owned by white persons have employed white personnel. An increasing number of young Negroes who are graduates of commercial high schools have cast their eyes on these positions and a few have secured them. Aggressive campaigns, to some extent successful, have been waged in cities to secure employment for Negro clerks in business concerns which serve Negroes. The difficulty in many instances is that the patronage of the stores is mixed, and the proprietor sometimes has to choose between offending his white or his colored customers.

The results of a campaign of this sort in Chicago have been outstanding. A chain of drug stores, several chain groceries, several chain department stores and a number of small businesses have taken on colored help. In New York the movement has not proceeded so far.

The expansion in municipal employment both in large and in small cities of the north is noticeable. The following is quoted from a survey of New York City: [6] “One of the most marked increases in the employment of Negroes has been in the field of municipal service. Data published in 1929 revealed that there were approximately 1,644 Negro employees on the city payroll.”

An obstacle to the Negro in industry is his relationship to the trade union movement. In general it may be said that difficulty in entering a union has driven a large proportion of Negroes into open shop jobs. Sometimes jobs from which the union excluded the Negro have been entered by him during a strike of the white unionized workers. The American Federation of Labor in its resolutions favors no racial discrimination and recommends the organization of Negroes, but the final decision on this point rests in the hands of the international and local unions. There are twenty-four international unions which exclude Negroes by constitutional provision.

Another serious handicap of the Negro worker is inadequate industrial training. One of the reasons why the Negro building tradesmen are losing ground in the south is the fact that they are not as well trained as they were in the previous generation. This factor will be more fully discussed in the section on Negro education.

In a time of depression the Negro is also especially handicapped by unemployment. Surveys both of 1920 and 1929 show that there was a very large percentage of unemployed Negroes. This is due in part to

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discrimination and in part to the fact that the Negro being the last man hired is the first laid off.\textsuperscript{37}

The European foreigner and the Negro seem to be improving their industrial status in spite of difficulties; the Mexicans show signs of beginning the cycle in the heavy industry where their predecessors began; while the Indians are so small in number that they are a negligible factor. With the Orientals the vocational problem of the second generation seems to be most acute. In business they are not legally restricted but prejudice limits their clientele; in the professions they are under obvious handicaps for as lawyers, as doctors and dentists, their service is confined almost entirely to members of their own race. Few positions in office work or the skilled trades are open to them. Though many have taken advantage of the excellent educational opportunities of the Pacific states, their problem of finding a vocation is very difficult. By their American nativity and education they have lost touch with the land of their parents, by their color they are debarred from many contacts in the land of their birth. Second only to the problem of the children of Oriental immigrants is the vocational handicap of the Negro in the south. Here political disfranchisement leaves him open to forms of exploitation which could in some measure be combatted with the ballot. This is evident in sporadic attempts of white groups, such as barbers, to drive Negroes out by municipal ordinance, the licensing of electricians, plumbers and other skilled tradesmen and the barring of Negroes from public employment on such work as construction, street cleaning and garbage removal. Aside from the specific difficulties which confront each ethnic group in its effort to work for a living, there are others which apply more or less to all groups varying in degree largely with the length of the time of their contact with industry.

Feldman summarizes these difficulties:\textsuperscript{48} (1) Most of these groups have to live down a tradition of disparagement. (2) Regardless of skill most of them have to begin at the bottom. For instance in the northward migration of Negroes many who were skilled as carpenters, masons or even mechanics, began in common labor in the north. (3) Even on this lower level there is sometimes friction, particularly in periods of unemployment or strike, between the newcomer and those who have not risen far. When there is prosperity, industrial peace and plenty of work for all, the newcomers are welcomed for their willingness to take the undesirable jobs and release the older employees for higher positions. In slack times, however, undesirable jobs are taken in preference to unemploy-

\textsuperscript{37} \textit{Survey of Unemployment in Philadelphia}, Philadelphia Board of Public Education; Survey of unemployment in Dayton (unpublished); Surveys of the National Urban League (unpublished).

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ment and friction ensues. Similarly when Negroes or immigrants are used as strike breakers, racial and industrial antagonism reinforce each other. There is also friction when the newcomers begin to acquire experience and rise in the scale. (4) In the south effective "dead lines" as to the limits of Negro work are set by tradition and to a lesser degree this applies to other groups. Attempts have been made to give statutory force to such restrictions as in the Arizona law forbidding employers of more than five persons to have less than 80 percent of their employees citizens. This and other such statutory attempts are usually thrown out by the courts because they violate the fourteenth amendment, but maximum levels beyond which only the exceptional non-native white worker may rise are not rare in industrial plants. By limiting their membership to white citizens, unions also constitute an effective barrier to entrance into the occupations which they control. Where the alien groups are not actually debarred they may be given the less desirable or the poorer paid jobs in the trade. (5) Non-native white groups have to overcome an amazing diversity of opinion among employment managers and executives as to their traits and abilities. Feldman states that manufacturers who are ordinarily very careful of the grades of raw material used in their product, rely upon hearsay and rumor as to the grades of the labor hired.

These are real handicaps to a man who desires to rise in the industrial scale and if they were emphasized it would be possible to paint a gloomy picture. On the other hand if attention is focused on the progress actually made it is apparent that industry is able eventually to fit some members of all the diverse groups into higher positions of skill.

III. SOCIAL PROBLEMS

As non-white and new immigrant groups are usually on a low economic level and are socially less adjusted to American community activities, the impression has become widespread that these groups are racially predisposed to crime, poverty, delinquency or ill health. In other words racial and social problems have become confused.

Recent studies, however, have emphasized the factors of economic and community adjustment and educational level so strongly that doubt as to the importance of the racial factor has arisen. For instance, it was widely asserted that the foreign born accounted for the major crime problems of our metropolitan communities with an implication that this group was predisposed to crime. Examination of the Wickersham report will convince the reader that when the rates are adjusted for age, sex and economic condition, the aliens are a little less criminally disposed than the natives. Similar adverse impressions as to Negro criminality have prevailed, but the studies in this field are as yet insufficient to
warrant any assumption of racial predisposition to crime, especially when it is remembered that the Negro is more likely to be arrested "on suspicion" or slight evidence.

A notable advance in the social adjustment of the diverse ethnic groups has been the increasing tendency of organizations to employ workers of various ethnic origins to deal with their own people. Associated charities and probation agencies in cities have long employed members of various nationalities, and recently the principle has been extended to Negro work. The first Negro probation officer in the south was employed in 1913 and many cities now have these workers. Negro public health nurses and case workers in relief organizations date from somewhat earlier and these have also increased to a marked degree. The development of such trained leadership among the Indians has not proceeded as fast as it has among the foreign born and the Negroes.

Increased poverty and to some extent increases in crime accompanied the northward migration of the Negroes. It has been pointed out that the movement disrupted families and unbalanced the sex and age distribution. In two recent studies of the rural south it was found that a third of the Negro families still remaining were being supported by aged widows, the aunts or grandmothers of the children of the household. Many of these families were living at a level which in the city would have demanded relief but which in the country amounted merely to distressing poverty. The converse of this picture is the excess of young vigorous persons in the cities who swell the number of delinquents beyond the normal proportion. These conditions tend to disappear as the proportion of migrants in the population becomes smaller. On the other hand, among the migrants to cities many are able to better their standard of living, though some, through maladjustment, increase the case load of welfare organizations.

IV. HEALTH

**Death Rates.**—All non-native white groups have, in different degrees, the same basic health problems. They are in an environment more or less alien; they are relatively ignorant and low in the economic scale. These factors combine to cause high death rates from the diseases associated with ignorance and poverty. So high are these rates in fact that the uninformd have assumed a racial predisposition to these diseases.

**General Death Rates.**—The Negro death rates are almost half again as high as the white. They have shown some improvement in the past

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39 On the crime rates of Negroes, see Chap. XXII. See also Preliminary Reports, XXI of President's Conference on Home Building and Home Ownership.
40 For additional material on Negro death rates and for material on death rates of foreign born groups, see Chap. XII.

[ 583 ]
twenty years, but the discrepancy between the races has remained about the same. The expectancy of life of Negro male industrial policy holders of insurance companies has increased from 32.5 years in 1900 to 44.2 years in 1927, an increase of more than eleven years in the life span. The life expectancy of Negroes, however, is still ten years less for Negro males and twelve years less for females than for white persons. Negro death rates are higher in the city than in the country and hence higher in the north than in the south, but the rate for southern cities is higher than that for northern cities.

Indian death rates are unreliable both because of inaccuracies in the estimation of the population and because of deficiencies in reporting deaths, but surveys made in 1925 indicated that death rates on reservations were more than double those of the states in which the reservations were located.

There is even less information on Mexican deaths and a less stable population upon which to base rates but such information as is available indicates a very high mortality.

_Tuberculosis._—All of these groups suffer most from tuberculosis. The available evidence indicates that the color groups were free from this disease before contact with the whites but once exposed they are relatively more susceptible owing to ignorance, unfavorable environment and low scale of living. In 1910 one-fifth of the Negro mortality was accounted for by tuberculosis; in 1928 about one-tenth. Among the policy holders of the Metropolitan Life Insurance Company, Negro deaths (male) declined 44 percent as against a 62 percent decline for white males. This disease seemingly accounts for seven times as large a proportion of the Indian deaths as of the general deaths.

_Infant Mortality._—All the groups under discussion have high infant mortality rates owing to unsanitary living conditions and ignorance of proper diet. Infant mortality eliminates from ten to fifteen percent of the Negro babies during their first year. Indian and Mexican rates are even higher. The Negro infant mortality rate has declined very rapidly in northern cities as a result of vigorous public health measures but it remains more than a hundred and fifty percent of the white rate. In the southern states there has also been a noticeable but less rapid decline.

_Venereal Disease_ is also known to be more prevalent among these groups than in the white population but scattered studies seem to indicate that when similar social classes are compared the discrepancy is not so great. Accurate trends in mortality from venereal disease are not available.

_Special Diseases._—While the foregoing categories are common to all groups, each group has certain peculiar health conditions. Negroes, moving from the fresh air and sunshine of the rural south to crowded
RACIAL AND ETHNIC GROUPS

cities, suffer heavily from pneumonia, this disease in some years accounting for as many deaths as tuberculosis. In the rural south malaria takes a high toll and typhoid has not been completely eliminated. However, in recent years there has been a marked decline in the malaria rate. Indians are especially subject to trachoma and it has been estimated that from 2 to 20 percent suffer from this complaint. The Indians of the southwest are also affected by addiction to peyote, a habit forming drug.

Hospitalization.—Data are not at hand to determine trends in Negro hospitalization but some facts as to the present situation will indicate future needs. Recent figures show that the Negroes of North Carolina (one of the best of the southern states) have only one-half the number of hospital beds per thousand persons as the whites, and seven times as many persons per doctor. In South Carolina the number of hospital beds for the colored is less than a third the number for whites and there are eighteen times as many persons per doctor.

The chief difficulty in the south arises from the fact that few Negro interns and doctors have opportunities for hospital practice. The 100 Negro graduates each year have only ten hospitals approved by the American Medical Association which are open for internship. Negro practitioners are also at a disadvantage because the great majority of hospitals in the south have a white staff and patients brought in must be attended by that staff. Some of the larger hospitals have recently permitted Negro physicians to serve on the staff of the Negro ward.

The increased appropriations for Indian health are resulting in better hospital facilities. The appropriation for Indian health services which was $90,000 in 1913 was more than 3 million in 1931. In this time the hospital bed capacity has almost trebled, the number of physicians increased and the number of nurses trebled. The Indian public health nurse appeared first in 1925 and 79 were employed in 1931. The Meriam survey reported only 43 percent of the hospital beds occupied because the Indian is suspicious of hospitals. This fear has been overcome to some extent by public health education as the Indian office reports a continually increasing number who apply for hospital treatment.

V. EDUCATION

The United States places upon education the chief reliance for the eventual assimilation of the various ethnic groups. In the case of the foreign born, however, only the second generation is reached through the conventional educational system and in recent years this has led to the establishment of special night schools and adult educational movements for the instruction of the foreign born.

During the war a considerable pressure toward Americanization was applied by various agencies. This movement was rather hurriedly con-
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cieved and has given way to more mature programs of instruction for the non-English speaking immigrant and as “Adult Education” has gained widespread support. The decrease in the illiteracy of the foreign born from 13.1 percent in 1920 to 9.9 in 1930 is partially ascribable to the efficiency of such programs and partially to the enforcement of the literacy test for immigrants. The small proportion of children of school age among the foreign born does not constitute a problem for the public schools. In 1930, 97.5 percent of the foreign born from 7 to 13 years of age were in school as compared with 84.1 percent in 1920. (See Table 11.) The native born of foreign parents do, however, constitute a large proportion of those attending school in certain cities. Of the native born of foreign and mixed parentage a slightly higher proportion of the children of elementary age (7 to 13) attend school than among the native born of native parents. But in the optional attendance, ages 13 to 20, the children of foreign parents drop out more rapidly than those of native parents. There was a marked improvement in this respect between 1920 and 1930 as the attendance of the natives of foreign and mixed parents increased from 75 to 91 percent in the 14 to 15 age group, from 36 to 61 percent in the 16 to 17 group, and from 12 to 19 percent in the

Table 11.—Percentage of School Attendance, by Sex and Age Groups, and by Color and Nativity for the United States, 1910–1930

<table>
<thead>
<tr>
<th>Population class and census year</th>
<th>Age and percent in school</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7 to 13 years</td>
</tr>
<tr>
<td>All classes:</td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>95.3</td>
</tr>
<tr>
<td>1930</td>
<td>90.6</td>
</tr>
<tr>
<td>1910</td>
<td>86.1</td>
</tr>
<tr>
<td>Native white of native parentage:</td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>96.1</td>
</tr>
<tr>
<td>1930</td>
<td>92.2</td>
</tr>
<tr>
<td>1910</td>
<td>88.2</td>
</tr>
<tr>
<td>Native white of mixed and foreign parentage:</td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>98.0</td>
</tr>
<tr>
<td>1930</td>
<td>94.1</td>
</tr>
<tr>
<td>1910</td>
<td>92.7</td>
</tr>
<tr>
<td>Foreign born white:</td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>97.5</td>
</tr>
<tr>
<td>1930</td>
<td>84.1</td>
</tr>
<tr>
<td>1910</td>
<td>87.1</td>
</tr>
<tr>
<td>Negro:</td>
<td></td>
</tr>
<tr>
<td>1930</td>
<td>81.3</td>
</tr>
<tr>
<td>1930</td>
<td>76.5</td>
</tr>
<tr>
<td>1910</td>
<td>64.1</td>
</tr>
</tbody>
</table>

18 to 20 age group. Part of this gain is ascribable to the difference in the status of industry at the time of the two census enumerations. In 1920 the abnormally active demand for labor attracted many who would otherwise have been in school. When the 1930 census was taken the demand was slack.

The Negroes, who have the lowest attendance rate, also improved markedly between 1910 and 1930 but there are still 250,000 Negroes aged 7 to 13 who are not attending school and nearly a million from 5 to 20 who are not enrolled. There is in school a far higher percentage of colored children from 7 to 13 years of age than is characteristic in the older groups.

Negro Education.41—The task of providing school facilities for Negroes has progressed at all levels as indicated by two preceding census figures on the increase in attendance. The fact that a quarter of a million Negro children of elementary school age are still out of school and that three quarters of a million of the high school and college age group are not enrolled, gives an idea of the extent of improvement still to be desired. Since one of the causes is the inadequate number of schools, the need is plainly indicated. There has also been marked improvement in the quality of education offered to Negroes but here again much more progress is necessary before the standards of Negro schools approximate those of white schools. The data on the present status of Negro education indicate a marked improvement when compared with those of former years, but when contrasted with white educational standards they show the inadequacy of the Negro schools.

The south has greatly advanced Negro education in its separate public schools. The expenditure per Negro child of school age had advanced in the 15 years up to 1928 from $2.01 to $8.86,42 with increases in teachers’ salaries and corresponding increases in the quality of teaching. There has also been a progressive absorption by the public schools of elementary pupils formerly taught in private schools. Many of the privately supported institutions have discontinued their elementary work and are concentrating on secondary and collegiate courses. The Negro public school term has been lengthened from an average of 120 days per year in 1919 to 131 days in 1928 but is still 49 days short of the full nine months.

Much constructive work in Negro education has been accomplished by the General Education Board through direct appropriations to Negro schools but more through subsidizing a state supervisor of Negro schools in each of the southern states. The supervisors stimulate interest in

41 Compare with educational trends for the entire United States discussed in Chap. VII.

42 Average for 6 southern states per capita expended for salaries in public schools per child 6 to 14 years of age. Age figures from the census. Expenditures from state school reports.
NEGRO education, advise in its extension in the counties and administer such outside aid as may be contributed by the various foundations interested in Negro education. Another outstanding improvement in Negro schools has come from the Rosenwald Fund, under the patronage of which over 5,000 new rural schools have been erected since 1913 in accordance with modern specifications. Approximately one-sixth of the cost was borne by the fund, one-fifth by subscriptions from Negroes and the rest by public authorities and white citizens. The work of the Jeannes Fund in providing visiting teachers who supervise Negro schools in southern communities has also progressed rapidly.

When the quality of education offered by the Negro schools of the south is compared with that of the white schools the extent of the discrepancy in facilities is still marked. The expenditure of $8.86 for each Negro child of school age is only about one-fourth of that for the white child. In some districts the Negroes do not even receive for their schools the amount which they have paid in school taxes. The school term averages thirty days less than that for the whites, and the average salary paid white teachers is from two to two and a half times the salary of Negro teachers which in some states is still as low as $300 per year. The transportation of pupils to consolidated schools which has progressed so rapidly in white districts has been extended to a negligible number of colored districts. In five southern states from which information is available there were over 350 thousand white pupils transported and less than 2,000 Negro pupils.

These deficiencies in the educational opportunities lead to retardation and failure to complete the work in the grades. Statistics on Negro pupils entering the public schools of northern cities after having transferred from four southern states indicate that more than 20 percent of the pupils were retarded three or more years. From six other states 15 to 20 percent of the pupils were thus retarded. In recent years there has been some progress in holding pupils in school, but 62 percent of the Negro public school enrollment is below the fourth grade. By every measure the progress made by Negro education has been rapid but not sufficiently rapid to catch up with the white schools. The Negro schools of today are about what the white schools were a generation ago.

Northern Public Schools.—The shift of more than 20 percent of the Negro children of school age to northern cities where they have the advantages of the most progressive public school systems of the country has resulted in a great improvement in educational opportunity for this segment of the population and will, in the future, make a marked difference. The shift has brought the color problem to northern schools to a more marked degree than ever before. Many cities now have public schools where the proportion of Negro pupils runs from 30 to 100 per-
cent, creating new problems of administration and of instruction. Some cities have established separate schools with Negro teachers, some have set up mixed schools with no Negro teachers and some have created mixed schools with mixed teaching forces. The retardation of the migrants before leaving their native states has been one of the chief problems underlying the pressure for segregation.

Higher Education.—The instruction in colleges, unlike elementary and secondary instruction, is carried on largely in private institutions. Each southern state has an agricultural and mechanical college for Negroes and marked increases have been made in their appropriations but the great majority of the college students are in independent and denominational institutions. In 1913 there were 33 Negro institutions giving some college courses and graduating a few pupils annually, but only 3 of these had sufficient equipment and teaching force to be regarded as colleges. In 1932 nearly 20,000 Negroes were going to college and about 1,500 degrees were granted. Of these some 2,000 students and 250 graduates were in the large universities of the north and west. Many of the smaller Negro colleges are still understaffed to such an extent that the teaching load is heavy and the selection of electives is limited. Concentration on a few of the larger institutions is beginning and some of the denominational boards have reduced several of their small colleges to high schools thus increasing the support available for the larger schools. The work of Fisk and Howard Universities has been strengthened and important mergers of several colleges in Atlanta and New Orleans give promise of two more university centers. Hampton and Tuskegee have added college courses within the past ten years. The education of Negro professional men has also improved. Teaching and preaching absorb the large majority of Negro college graduates, but the output of professional men has never filled the demand. Medical and dental instruction has recently been strengthened at Howard and Meharry Medical Colleges. In 1931 these two institutions graduated 108 doctors, 23 dentists and 25 pharmacists. Professional education has gradually changed the character of Negro leadership in the past twenty years. Influence in the community has shifted from the uneducated preachers to the educated preachers, the teachers and the business men.

Vocational Education.—With the expansion of Hampton and Tuskegee and a score of smaller schools, the Negro has been provided with exceptional facilities for the vocational training of a selected few. But the opportunities are not widespread because with few exceptions the southern public school systems have not invested sufficient money in equipment and trained teachers to make the work effective. Moreover, two factors have conspired to make industrial courses unpopular with the Negro youth. One is the meagerness of equipment mentioned above which has
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often robbed these courses of the dignity which would make them as attractive as other courses; the other is the fight against industrial education which has been waged for twenty-five years by certain advocates of colleges as a means of advancing education. So thoroughly have they accomplished this purpose that they have succeeded in creating in the minds of the masses a distrust of industrial training so that the pupils do not elect courses in trade and agriculture. The result is that some agricultural and mechanical colleges for Negroes have far larger enrollments in commercial than in trade courses and the less specialized city high schools can create little real interest in vocational subjects. 43

With the precarious position of the Negro in industry attracting such wide attention even the most partisan advocates of college education admit the need for more thoroughgoing industrial training for the mass of Negroes. The way is opened therefore for a rededication of the interest in vocational training. Many of the elements in the new situation deserve more study than they have been given and whatever program is evolved should be predicated on such studies. Much has been accomplished in strengthening and in adding to the attractiveness of vocational training by the extension of the Smith Hughes work to Negro schools and by the work of the Jeanes Fund county industrial supervisors, who work with colored teachers. In the distribution of the Smith Hughes funds the Negroes do not share in proportion to their numbers, but are allotted part of the funds by the local boards.

Mexican Education.—Except in certain parts of Texas, Mexicans are admitted to the same public schools as white pupils. The few studies which have been made indicate the same kind of problems in the separate Mexican schools in Texas as in the Negro schools. Mexican education, however, is a field in which there has been little study.

Indian Education.—The really important changes in Indian education have been so recent as to be difficult to describe statistically. For many years Indian education proceeded largely on the theory of herding the children into boarding schools and placing them under the instruction of teachers whose pay and educational qualifications were below those of the surrounding public schools. In 1930, 38,000 out of 75,000 Indian children were enrolled in the public school system with tuition paid by the federal government.

Retardation is a great problem in Indian schools. This is largely due to failure to get the pupils into school at the right time rather than to defects in the pupils or deficiencies in the instruction. Doubts as to the educability of the Indian have been dispelled by the increasing number of those creditably completing college courses and by the measures of mental tests which indicate intelligence of a high rank.

43 Woofier, Negro Problems in Cities, op. cit.
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The Indian office has moved expeditiously to put into effect the changes suggested by the survey of Indian Administration made in 1928. An expert supervisory staff has been assembled in Washington to vitalize various special phases of Indian education and steps taken gradually to raise the pay and qualifications of the teachers.

VI. RACE PREJUDICE

In this section only white-Negro prejudice is discussed, but there are general similarities in the relations between the native whites and the non-native white groups, as shown by social deprecation, economic exploitation and even violence. The manifestations of race prejudice against the white foreigner and the Indian are far less marked than against the other groups which are set apart by color.

Negro-white Prejudice.—Prejudice is based in part on social fear and in part on economic competition. Many of the taboos and practices of the south regarding the contact of the races had their inception in the rebuttal of the south to anti-slavery agitation and later in the resistance of the south to reconstruction policies. As these recede into the past the prejudice which they engendered tends to become less violent. From another point of view prejudice tends to be more violent in proportion to the numbers of the non-white group. On the Pacific coast there was not much prejudice against Orientals until they came in large numbers. Similarly the states and counties in the south which have had Negro majorities in the population have been more unrelenting in their racial code than the border states where Negroes constitute only one-fourth to one-third of the population. There has also been a flare up of prejudice in many northern communities when there has been an influx of Negroes into cities where only a few lived formerly. The task of charting prejudice can best be approached by tracing the course of some of its indirect manifestations.

The most marked result of prejudice is the violent settlement of racial difficulties by beating, homicide, or lynching. As an aftermath of slavery, the lash was an accepted instrument of discipline on the plantation and in the prison, but the practice of whipping Negroes for minor breaches of discipline has now been abandoned by practically all plantations. Lynching has declined steadily since the first records were kept. For thirty years before 1920 the annual average was 84, the trend being continuously downward, and since 1920 the trend has been sharply downward averaging only 16 per year from 1925 to 1929. Lynching fluctuates somewhat with the economic cycle, being more frequent in periods of depression. Thus 1930 was a year of lynching far above the general trend line. There is

44 See discussion of prejudice and economic competition in President's Conference on Home Ownership, Preliminary Report, XXI.
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a moderately high negative correlation between the fluctuations in lynching and in the per acre value of cotton.

Segregation.—The influx of large numbers of Negroes into northern cities has in general increased the pressure toward segregation. Negro neighborhoods have become more solidified and many theatres and restaurants which paid little attention to colored patrons as long as they were few have adopted policies of segregation. There has been no change in the segregation laws of the south and little in the general customs, but observers agree that functionaries dealing with the Negro in public places are less brusque and arbitrary than formerly.

Exploitation.—Economic exploitation has been emphasized in the sections on Agriculture and Industry. The chief offset to exploitive tendencies has been the increase in Negro education, but prejudice in industry is still manifest in limiting Negro jobs, in allowing exploitation of cheap rental property and in perpetuating unsatisfactory credit conditions on the farm. Zoning laws and building codes have imposed some checks upon the exploitation of rental property and one feature of the plantation system is decreasing, namely, the requirement that tenants and laborers purchase their supplies from the plantation commissary. It is becoming more and more the custom to pay by check.

Politics.—The political impotence of the southern Negro is both a result and a cause of race discrimination. It sprang from the prejudices inflamed by reconstruction and it results in discriminatory practices in the economic world, in education and in the residence community, which would not be imposed if those in administrative positions feared the Negro vote. The shift of large numbers of Negroes into areas where they can vote has given them a considerably greater influence in national politics and in the politics of the northern states. There seems to have been little change in the southern political situation.

The Prejudice of Negroes.—There has been an increase of the prejudice of Negroes against white persons due to an increasing dissatisfaction with existing conditions. Policies of segregation have forced upon the Negro the program of developing himself as a Negro. Hence as his education has increased, his organizations have become stronger and his press more influential it is natural that he should become more conscious of his situation and more rebellious against it.

Social Science.—Social science has made its contribution to the lessening of prejudice by greatly increased research in Negro problems. Prejudice in the past has rested in part on popular misconceptions as to the health, morality and mentality of the Negro, and the discovery and dissemination of the truth has ameliorated prejudice among well read people.

45 On Negro communities in metropolitan centers, see Chap. IX.
VII. NEGRO-WHITE COOPERATION

Individual cooperation between Negroes and white persons has long been practiced in the south in the form of: aid in farm and home buying; aid in difficulties with the law, in securing an education, and through health and medical advice. In community and statewide matters, however, the machinery for interracial action was neglected until the World War when the older generation of whites and Negroes who had cooperated on a personal basis was dying out.

In 1919 a movement was started which has developed a promising technique for adjusting racial difficulties and promoting a spirit of tolerance and helpfulness. In principle this technique consists in assembling in each community a committee of leaders of the two races who trust each other and are trusted by their constituents and who are committed to the method of conference and cooperation rather than to bickering, controversy and struggle. County, city, state and southwide committees have provided for cooperation at the various levels. The task of finding leaders willing to serve on such committees has not been difficult, but organization on such a large scale and preparation for constructive action is a long, slow process. In the twelve years of the existence of this organization much has been accomplished. It has helped to create a new atmosphere in which it is no longer unfashionable to be an outspoken friend of the Negro. This opinion making process has occupied the major thought of the Commission on Interracial Cooperation, although it has held that the best method of cultivating tolerant opinion is through working together for civic or moral improvement. The reduction in the number of lynchings and the increase in educational appropriation has resulted in large measure from the pressure of these joint committees.

This technique for reconciling opposing groups has possibilities for other interracial situations as well but it has not yet been applied to any great extent to other than Negro-white relationships. The Institute of Pacific Relations sponsors this interchange of ideas on a broad scale but no machinery has been set up for dealing cooperatively with local questions.

VIII. ASSIMILATION

Factors of Assimilation.—The adaptation of alien born white groups to American life is not so difficult a process as that of the colored races. The normal activities of industry and education accomplish the major assimilative processes; in community affairs, aliens need further adjustments which are accomplished through the churches, special organizations and the press. Finally and most thoroughly assimilation takes the form of intermarriage with the native born.
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_Citizenship._—One of the indices applied to the assimilation of aliens is the extent to which they become citizens. There was a marked increase in naturalization between 1920 and 1930, the naturalized foreign born increasing from 48.7 to 58.8 percent of the total foreign born.

_Choir._—With the stoppage of the inflow of new immigrants the foreign language church has changed considerably. In the early days of an immigrant group the church was usually an institution for the preservation of the language and religion of the mother country. In the groups which have been established here some time services are held in English and mission priests and ministers are replaced by those trained in this country. From 1916 to 1926 (the date of the last _Census of Religious Bodies_) there was a marked increase in the membership of the foreign language churches serving the newer immigrant groups and a more stable membership in the older groups.

_Organizations._—Most foreign organizations are nationalistic in their inception in that their object is to keep alive in this country the language, customs and traditions of the mother country. They soon discover many things which need to be done to adapt their members to the new environment. As expressed by one investigator, "Everyone of the eighty-two [Rumanian] Beneficial and Cultural Societies can claim the honor of having helped to initiate its members into a better understanding of their duties as citizens of the United States."46

One of the most marked trends of the past twenty years in these organizations has been the movement toward federation and consolidation. For the most part local organizations of immigrants grew up as community beneficial societies having few contacts with similar organizations in other localities. Gradually it was realized that benefits were to be derived from federation, and national consolidation resulted. The largest of these groups is the Polish National Alliance with 275,000 members and 2,300 branches in twenty-six states. Through these large integrations each local community of foreigners is brought in contact with the life of its nationality all over the country and to some extent with that of other foreign groups. Another marked trend since the restriction of immigration has been the increased effort of such organizations to secure memberships from the second generation in order that their future existence may be more secure.

Practically all such organizations have educational aims, although in many instances they were slow in developing effective educational programs. Aside from formal activity much educational benefit is derived from attendance at the meetings and informal discussions of American problems. Recently through the stimulation of such agencies as the


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American Association for Adult Education and the Foreign Language Information Service, the educational programs of some of the organizations have become more effective. Lecture bureaus have been established, libraries stimulated, discussion groups promoted, and athletics and recreation developed as a prominent feature. Foreign organizations have recently gained a greater degree of recognition as integral parts of community recreational programs. Their games and pageants have received wide attention and have enriched the community leisure time activities.

The Press.—Soon after its arrival in any appreciable numbers every foreign group acquires a press. The dates of founding of the oldest existing papers correspond very closely to the earliest waves of migration. It is frequently stated by competent observers that the aliens in this country read more than they did in their home land. Several factors have contributed to this situation. All large foreign organizations print official papers. As aliens in a new environment they naturally turn their thoughts back to the home land. In many cases they come from countries where their dialect or vernacular has had no written expression either because it was suppressed for nationalistic reasons or because the literary language was not intelligible to the masses. Again nationalistic leaders who have used the press have been interested not only in preserving the nationalism of immigrants who expected to return but they have also endeavored to foster the nationalistic spirit in the American group. This was particularly true of the minority groups whose political life in their native lands had been restricted before the World War. While nationalistic and linguistic tendencies have been hindrances to Americanization, the foreign language press has met other demands which have helped to adjust the immigrant to American life. Considering Americanization as a process of learning to use American things, it is evident that advertisements are great “Americanizers” and it is said that these are often as seriously read as the articles. Again, as a purveyor of American news the foreign press satisfies the desire of the immigrant to keep in step with his new community, and the commercial type of foreign language paper which, like its American contemporaries, places emphasis on news, is winning over the propagandist papers.

The mortality among foreign papers is so high that it is difficult at any time to get an exact idea of the extent of the foreign press but the general trend may be inferred from the number of publications.\(^47\) These increased up to 1890, when there were slightly over 1,000, of which 750 were German. The increase was slow from 1890 to 1917 when 1,323 publications were listed. During this period, however, the German publications decreased from 750 to 522 and others increased from 278 to 801. Since the World War there has been a rapid decrease in German news-

\(^47\) For figures on foreign language dailies, see Chap. IV.
papers and a suspension of many of the propagandist organs which had been devoted to the interests of submerged European groups. Much of this decrease represents the consolidation of small with large papers.

It was noted by Park in 1920 that the cosmopolitan commercial foreign language newspaper was emerging as the survivor in the struggle with fraternal organs and radical or nationalistic propaganda sheets and the continuance of this trend since that date is confirmed in the study by Mark Villehur. The large well established papers are becoming more firmly entrenched and many of the weaker “one man” papers are disappearing. The type of publication which is the best “Americanizer” tends to survive.

In the decade following the close of the World War several other trends toward greater Americanizing influence may be observed among the successful language publications. There has been an orientation toward America in the distribution of space. Almost from the beginning German papers were American newspapers printed in the German language. Lately some of the Czech, Italian, Polish and Hungarian newspapers have assumed the same character. The Czech press is an interesting illustration of this pro-American trend. Initially Czech newspapers in this country were printed in German and were socialist and strongly anti-clerical, fighting the cause of the national radicals in the former Austria-Hungary. Gradually these positions gave way to more conservative attitudes until today there are a dozen pro-church publications to three radical journals and the Czech press in this country may be said to be predominately conservative with a distinct church affiliation.

The situation in the Italian and Russian press is a notable illustration of the same trend. Until recent years the Italian papers were divided into “camps” according to their attitude toward Fascism, and the Russian papers according to their attitude toward the Soviets. This division still persists, particularly in the Russian press, but important new factors have changed the general line-up of newspapers in these two languages. With immigration reduced to negligible figures, these papers are serving few recent arrivals, while their older readers are becoming Americanized.

The World War removed many controversies with which the foreign papers in this country were preoccupied, leaving them free to devote more attention to the American news. On the other hand new problems created by the treaty of Versailles have come forward in the papers in this country. The opposing views as to problems of Yugoslavia find expression in the Croatian, Serbian and Montenegrin press. Likewise the Slovaks

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in America are supporting a semi-separatist movement and the Lithuanians are preoccupied with a literary and linguistic revival.

In the larger commercial foreign language papers the space is allotted to five major divisions: American news, world news, home country news, group life and interests, and editorial features. A number of papers devote the first two columns to world news, the middle three to home country news and the last two to American news. The second page is given over entirely to editorials and all the third and fourth pages to group interests.

The foreign language press has gained the reputation of radicalism on account of the fact that it serves laboring people and is friendly to labor. The majority of papers, however, are non-partisan. Of 853 studied during the presidential campaign of 1928, only 257 definitely declared for a candidate and all but 46 of these were Republican or Democratic. The 46 organs supporting radical candidates compare with 57 supporting radicals in the campaign of 1924. Since 1928 the number of communist papers has further declined, two having discontinued and two changed from dailies to weeklies.

Radical papers often face two ways advocating radicalism in the home land and conservatism in the United States. Thus the Russian Voice is moderate on American policies but strongly pro-Soviet. On the whole religious propaganda is much more common than political in the foreign papers. The ratio of church to radical papers in the various language groups is anywhere from 6 to 1 to 10 to 1.

Formerly the racial appeal was played up in the foreign language press of several nationalities. It is still strong in the Czech, Lithuanian, Slovak and Spanish language groups. On the other hand, the appeal to race pride and solidarity is negligible in the German, Norwegian, Danish and Swedish papers. It has been steadily declining in the Italian, Polish, Hungarian and Yugoslav papers.

Another Americanizing trend has been the recent inauguration in many papers of an English section designed to interest the Americanized immigrant and the second generation. Roughly about 200 publications in the foreign languages use English text in their pages.

The sources of news have also become more American in type. A single news service started by the federal government in 1918 and operated by the Foreign Language Information Service is widely used by the foreign language press. The articles cover a wide range of subjects designed to help interpret America to the immigrant. Few of the language papers belong to a major press syndicate and of the 17 language groups surveyed for this study only four had functioning press syndicates. However, such material as the syndicated columns, comic strips, short editorials and serials is increasingly used in the foreign papers.

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Since the drastic restriction of immigration the foreign language press is facing gradual extinction as there is little hope that the artificially stimulated interest of the immigrant children in their fathers' native tongue and culture will replace even a small percent of the loss in readers.

**Negro Assimilation.**—In cultural assimilation the Negro has the advantage of freedom from linguistic and nationalistic traditions but this is balanced by the disadvantage of color segregation and prejudice. Education, adaptation to industry, and the rise of the middle class have been mentioned as factors in the adaptation of the Negro to American life. The Negro press, special organizations and the church also play their part.

Unlike the foreign press, the Negro newspapers are an almost negligible factor in assimilation. They are almost entirely devoted to such news and editorials as promote racial pride and racial solidarity. The Negro press has expanded from one or two magazines published twenty years ago to a body of several hundred newspapers and magazines, many of which have large circulations.

Negro organizations promote cultural assimilation to a marked degree. Like the foreign born, the Negro first developed fraternal insurance organizations many of which later developed into insurance companies, and in recent years there has been a tendency to develop a system of national organizations paralleling those set up by the whites, evidenced by such bodies as the National Negro Medical Association, the National Association of Teachers in Negro Schools, and the National Negro Business League.

In the arts the Negro is attaining greater recognition. Books by and about Negroes are increasing in number and popularity as are plays by Negro authors and with Negro casts. Appreciation of Negro music is increasing. In the arts the Negro tends more and more to contribute as a Negro than to imitate white achievement.

The Negro church, or more specifically, the Negro ministry is also powerful in assimilation. Until recently preachers and teachers were the most influential community leaders. General community movements such as health week, better homes contests and community chests are increasingly using the Negro church as a means of enlisting the interest of the Negro community. Negro church membership continues to include a slightly higher percentage of the total than does white church membership.\(^{49}\)

**Interrace.**—While Negro intermarriage is at a minimum, the homogeneity of the race in America has been destroyed by the infusion of white blood. Seemingly the direct infusion is less than before the Civil War but mulattoes are increasing in proportion because of matings of

\(^{49}\) For additional data on Negro churches and ministers, see Chap. XX.
mulatto with mulatto and of black with mulatto, while pure blacks can only increase by the union of pure blacks.  50

This increase has led some authors to assert that biologically as well as culturally the Negro in the United States is developing a new "brown" race.  51 This is certainly true of the urban groups where studies indicate that in numbers and in power the lighter groups are increasing.  52 The rural black belts remain the last place where large numbers of pure Negroes are to be found.

The southern states forbid by statute the intermarriage of Negroes and white persons. There are few data either as to the number or the trend of Negro-white marriages in the states where it is not forbidden. The only recorded marriages by color are those of New York state exclusive of New York City,  53 where the figures show a negligible number of marriages of colored brides to white grooms and about 2.8 percent of all colored grooms married to white brides (1916–1924).

Marriage statistics by nationalities are published only for New York state (exclusive of New York City) and two other states. These areas, however, indicate a marked increase in marriage of foreign born to native born and to natives of other than their home land. In the second generation this is apparent in the increase in children of mixed parentage. In 1920 the number of children of mixed parentage was only 45 percent of the number of foreign parentage while in 1930 the number of children of mixed parentage was 50 percent of the number of foreign parentage.

There has always been so great an excess of males in the foreign population that men have been forced to intermarry in larger numbers than women. The figures of this section therefore refer to foreign grooms and not to brides. Brunner's  54 study of the rural marriages of foreign born grooms in three states indicates that in the period 1900 to 1912, 57 percent of the foreign grooms married foreign brides and from 1921 to 1926 only 44 percent married foreign brides. The proportion of marriages to natives of foreign parents remained about the same and the marriages to natives of native parents increased from 14.6 percent to 27.6 percent. A similar trend was noted in marriages of native grooms who were the children of foreign parents. That this trend has been accentuated since 1925 is indicated by the figures of the New York State Health Department. In 1925 there were 90 marriages of foreign grooms to foreign

50 Census figures as to the proportion of mulattoes are very inaccurate. Estimates vary from 40 to 80 percent of the total.
53 New York State Department of Health, Annual Reports.
54 Brunner, E. de S., Immigrant Farmers and their Children, Garden City, New York, 1929.
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brides per 100 marriages to native brides; in 1929, the ratio was only 75 to foreign per 100 to native. This trend is manifest in each nationality tabulated except the Germans.

The increase in intermarriage may be traced to several factors:

1. The proportion of the older people among the foreign born has grown, especially in communities which do not receive new immigrants. This means that the foreign born of the older group are more likely to find mates of their own age in the native American population than in their own group or the second generation of their own stock.

2. The proportion of females in the foreign stock has become more nearly equal to the proportion of males so that the practice of sending back for brides is not so frequent.

3. The growth of a large stable group of the second generation of a number of nationalities has made it possible for both grooms and brides of foreign stock to mate with American born descendants of their own stock without recourse to fresh arrivals from Europe.

4. The slackening of immigration during the World War and since the application of quotas has reduced the proportionate number of foreign born so that the chances of their mating with American born consorts have been increased.

IX. CONCLUSION

The exploitation and prejudice indicated in the previous sections show clearly that the work of adjusting to American life the various color and national groups and of adjusting American life to them is still of primary importance. The extent and intensity of the activities of the Ku Klux Klan manifested the amount of prejudice against alien groups which persists in the native mind. However, the final complete collapse of the Klan and the failure of similar movements to succeed it (notably the American Fascisti organized in Atlanta) show a hopeful recession of post war intolerance.

While the race contacts have become more extensive in the past decade friction has probably become less intensive. Foreign immigrants have become successful farmers and have risen to skilled positions in industry, and Negroes, owing to the depressed condition of southern agriculture, have deserted southern farms for northern industry in large numbers. Here they have made satisfactory progress. However, the position of the Negro in southern urban occupations is not so satisfactory, as he is losing ground in some of his traditional occupations. All groups have participated in the general progress of American education and public health work, but the educational facilities of the Negroes (and of the Mexicans in Texas) are still far inferior to those of white children.
Economic and educational progress has meant the emergence of a middle class. No longer are all foreigners or colored people merely laborers. Some are skilled workmen, small business proprietors and professional men.

In addition there is the fact that a growing number of organizations are interesting themselves in problems of the adjustment of alien groups. The technique of interracial cooperation is proving of value in securing more satisfactory Negro-white relations. The greatly increased appropriations for the Indian Bureau applied to carrying out the recommendations of a thoroughgoing Indian survey have increased the value of Indian services and the tendency toward federal, state and county cooperation in Indian problems tends to bring the Indian in closer touch with the white community. A number of organizations for dealing with the immigrant have strengthened their programs and having abandoned the idea of forcing the alien into a "melting pot" have directed their efforts toward assimilation along essential lines and the cultivation of those things in the old world tradition which may enrich American life. The immigrant church, organizations and press have also changed from purely nationalistic agencies to agencies which help in adjustment as well as keep alive old world languages and customs.
Chapter XII

The Vitality of the American People

by Edgar Sydenstricker

General trends in mortality were discussed in Chapter I in connection with population growth, and some of the problems of health and vitality peculiar to racial and ethnic groups have been referred to in Chapter XI. The present chapter presents briefly, but with some degree of critical appraisal, significant evidence relating to the vitality of the American people. It discusses trends in mortality at various ages, basic facts relating to vitality, changes in environmental conditions associated with trends in mortality, genetic problems and the present state of the people’s health.

The term vitality is used so variously and so loosely that a workable definition is desirable at the outset. Vitality in the sense of ability to reproduce may be dismissed as inapplicable to this discussion for the reason that fertility and the capacity to survive beyond the age of reproduction are two distinct biological capacities and, as far as we know, are not even associated. Similarly the conception that the vitality of a population is the ability to reproduce at a much higher rate than its members die must be rejected since a very fecund people may die soon after the reproductive period has been passed. A theoretically adequate definition is the biological, which states that vitality is the inherited capacity of the individuals composing a people to survive. Unfortunately, however, this definition is not a workable one for the obvious reason that

1 For assistance in collecting material for this chapter especial acknowledgment should be made to the research staff of the Milbank Memorial Fund and the statistical staff of the United States Public Health Service. It is also proper to state that several of the principal researches to which references are made were undertaken because of the need for their results in the preparation of this chapter although, in the interest of science and public health, some have been and others will be published in much greater detail than is possible within the limits of this necessarily brief discussion.

2 In their paper “On the Correlation Between Duration of Life and the Number of Offspring” published in the Proceedings of the Royal Society, 1900, vol. LXVII, pp. 159-179, Beeton, Yule and Pearson supported the thesis that persons who survived to advanced ages are by nature more fecund than those who do not. However, the evidence adduced is not convincing since it rests on the unwarranted assumption that there was no secular trend in the size of families whose genealogical records furnished the data for the study.

3 For this reason, such expressions as “vital index,” the ratio of births to deaths, which is a convenient mathematical expression of the relationship between birth and death rates for those who desire to consider the two biological facts together, have not been adopted for the purposes of this discussion.
it is impossible to ascertain accurately what the inherited span of life is for any individual; only his actual attainment in length of life can be known. The years he lives are determined not only by his innate capacity to survive, but also by the influences of a complex environment. Ordinarily it is said that “three score years and ten” constitute the man’s span of life and measure his innate capacity to survive. Yet it is a fact of common observation that under the most difficult conditions many people not only live to the age of seventy but also continue to enjoy life and be socially useful to the end. A few reach the century mark. But even those who live to a great age do not finally fall to pieces like the “one hoss shay” in Holmes’ poem. For if one takes a group of persons of unusual vitality, as Pearl did when he studied a group who had attained the age of at least ninety years before death, it will be found that some parts of the physiological machine break down earlier than others because of damage from environment. We really learn nothing, therefore, about the vitality of such persons. We merely learn how long they lived and something about why they died, information available for short lived people as well.

We cannot, therefore, accurately measure vitality in its strictly biological sense. Yet the concept should not be lost sight of, and the available evidence relating to genetic factors, such as inheritance of longevity and its implications as to constitutional vigor, should carefully be taken into account. The evidence is scanty, but the possible force of genetic influences cannot be ignored in considering the significance of changes in the length of life actually attained by the American people composed of persons with different racial origins and living under greatly varying conditions of environment.

I. THE TRENDS IN MORTALITY AT DIFFERENT AGES

With this conception of vitality in mind, the trend in the expectation of survival (or conversely, the trend in the rates at which individuals fail to survive) may be discussed. This section will embody the basic material of the chapter.

Unfortunately, complete records of deaths have never been kept for the entire United States, although in the last few years they have been collected for over 95 percent of the population. For only a relatively short period—some thirty years—they are available for what is known as the “original” death registration area of 1900 which is composed

4 Pearl, Raymond and Raenkham, T., ”Studies on Human Longevity—Constitutional Factors in Mortality at Advanced Ages,” Human Biology, Feb., 1932, vol. 4, no. 1, pp. 80–118. Thus for 72,320 deaths of such persons in 1923–1927, Pearl showed that “over forty-five percent in each sex were chargeable to breakdown or failure biologically of the circulatory system; approximately twelve (in males) to thirteen (females) percent to breakdown or failure of the respiratory system; about twelve percent (males) and nine percent (females) to the kidneys; and about seven percent in each sex to the alimentary tract.”

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of ten states$^5$ and the District of Columbia and includes about 40 percent of the people in the country. Prior to 1900 mortality statistics are fragmentary. They exist for only a few states and cities. Limitations of space make it impossible to present all these fragmentary data, so a selection of typical records has been made.

![Graph of Expectation of Years of Life at Birth in Massachusetts, 1789-1929](image)

The longest record of expectation of life is afforded by various life tables for Massachusetts. These are summarized for a few ages in Table 1 and the trend in the expectation of life at birth for males and females has been plotted in Figure 1. The data for the earlier years are not as precise

$^5$ The states are Maine, Vermont, New Hampshire, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Michigan and Indiana.
as those for the later but they are sufficiently accurate to indicate that in Massachusetts at least, at the end of the eighteenth century, the expectation of life at birth was about thirty-five years. During the nineteenth century a gradual increase in this figure is indicated until about 1890. In that year the expectation began to increase rapidly and the upward trend has been especially marked from 1900 to the present. This striking

Table 1.—Complete Expectation of Life in Years, for Each Sex, at Selected Ages, Massachusetts, 1789 to 1929

<table>
<thead>
<tr>
<th>Date</th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>1789</td>
<td>34.5</td>
<td>36.5</td>
<td>34.2</td>
<td>34.3</td>
</tr>
<tr>
<td>1850</td>
<td>38.3</td>
<td>40.5</td>
<td>40.1</td>
<td>40.2</td>
</tr>
<tr>
<td>1855</td>
<td>38.7</td>
<td>40.9</td>
<td>39.8</td>
<td>39.9</td>
</tr>
<tr>
<td>1878-1882</td>
<td>41.74</td>
<td>43.50</td>
<td>42.17</td>
<td>42.78</td>
</tr>
<tr>
<td>1890</td>
<td>42.50</td>
<td>44.46</td>
<td>40.66</td>
<td>42.03</td>
</tr>
<tr>
<td>1893-1897</td>
<td>44.09</td>
<td>46.01</td>
<td>41.20</td>
<td>42.79</td>
</tr>
<tr>
<td>1901</td>
<td>46.01</td>
<td>49.42</td>
<td>41.82</td>
<td>43.71</td>
</tr>
<tr>
<td>1910</td>
<td>49.33</td>
<td>53.06</td>
<td>42.48</td>
<td>44.85</td>
</tr>
<tr>
<td>1919-1920</td>
<td>54.07</td>
<td>56.56</td>
<td>44.46</td>
<td>45.5</td>
</tr>
<tr>
<td>1929</td>
<td>58.11</td>
<td>61.38</td>
<td>45.31</td>
<td>47.68</td>
</tr>
</tbody>
</table>

The data for 1859, 1878-1882, and 1893-1897 are taken from a compilation of life tables presented in "A Historical Retrospect on the Expectation of Life—II," Statistical Bulletin, Metropolitan Life Insurance Company, March, 1928, vol. IX, no. 5, pp. 5-8, and those for 1789 and 1855 are estimated from the expectations given in the same article for the population undifferentiated by sex. The expectations for 1890, 1901, and 1910 are taken from the U.S. Census Bureau, United States Life Tables, 1890, 1901, 1910, and 1901-1910, 1921, and those for 1919-1920 are graphic interpolations (hence only one decimal reported) of the U.S. Census Bureau United States Abridged Life Tables, 1923. The expectations for 1949 were obtained by constructing a life table by the method described by Sir Arthur Newton and Dr. T. H. C. Stevenson in "The Graphic Method of Constructing a Life Table Illustrated by the Brighton Life Table, 1891-1900," Journal of Hygiene, 1903, vol. III, p. 297 ff.

b Massachusetts and New Hampshire.
c White population only.

acceleration is also shown in the data for the original registration states covering the years 1900-1929. (Table 2.) The expectation of life at birth is now approximately fifty-seven years for males and sixty years for females. These figures do not, of course, represent the span of life; they merely indicate the average age at death in the particular year for which they were computed from mortality and population records or estimates. The expectation of life is also ordinarily computed at different ages, and in Table 2 figures for selected ages are presented. Thus in 1929, for males who had attained the age of forty, it was twenty-eight years. At the age of sixty it was fourteen years. A very cursory examination of Tables 1 and 2 is sufficient to reveal the extremely interesting fact that the marked
increases in expectation of life occurred only in the younger age groups; in middle and old age no consistent increases and some decreases occurred. This is portrayed graphically and in more detail in Figure 5, which indicates the number of males and females surviving at each age out of 100,000 born alive (the $l_x$ curves of the life table).  

For further discussion of the vitality and health of children, see Chap. XV.  

For a population the ideal statistical measure of actual survival would be afforded by records of the entire lives of all individuals born at a given instant of time so that the number of survivors at successive years could be shown. Such records are not available anywhere and it is consequently necessary to resort to the records of mortality within a given period and to ascertain for a theoretical group of the population how many survived to the various ages based upon that rate of mortality. This is the commonly used $l_x$ of the life table.
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The trends in the rates at which persons at different ages fail to
survive are thus a matter of extreme interest and importance in this
discussion. After a canvass of the available mortality data the following
series of age-specific death rates were selected for detailed study: (1) the

![Graph showing mortality trends](image)

Baltimore records from 1830 through 1929 at decennial years, a period
of almost a century; (2) the Massachusetts records for single years; and
(3) the records for the original death registration area beginning in 1900,
a period of 30 years. The statistical tables are omitted from this chapter
because of limitations of space but the data are shown graphically in

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Fig. 4.—Trends in mortality among persons of different sex-age groups in Massachusetts, 1868-1929. A logarithmic ordinate scale is used to indicate the rate of change by the slope of the line. The figures inserted are the deaths per 1,000 population at the beginning and end of the period. Data were compiled from Annual Reports of the Massachusetts State Health Department and United States Mortality Statistics.
Figures 3, 4 and 5. The rates are plotted in such a fashion (on logarithmic ordinate scales) that the slopes of the trends of mortality among persons of different ages may be compared. These figures present the basic material of the chapter. For the purpose of completeness some data, presented in [609].
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![Graph showing trends in mortality among persons of different age-sex groups in Massachusetts, 1868-1929](image)

**Fig. 4b.**—Trends in mortality among persons of different age-sex groups in Massachusetts, 1868-1929 (continued).

**Table 2.**—**COMPLETE EXPECTATION OF LIFE IN YEARS, FOR EACH SEX, AT SELECTED AGES, ORIGINAL REGISTRATION STATES, 1901-1929**

<table>
<thead>
<tr>
<th>Date</th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
<th>Female</th>
<th>Male</th>
<th>Female</th>
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<td>1901</td>
<td>47.88</td>
<td>50.70</td>
<td>42.03</td>
<td>43.60</td>
<td>27.65</td>
<td>29.08</td>
<td>14.33</td>
<td>15.21</td>
</tr>
<tr>
<td>1910</td>
<td>49.86</td>
<td>53.24</td>
<td>42.48</td>
<td>44.86</td>
<td>27.32</td>
<td>29.15</td>
<td>13.95</td>
<td>14.90</td>
</tr>
<tr>
<td>1890-1929</td>
<td>54.05</td>
<td>56.41</td>
<td>44.4</td>
<td>45.4</td>
<td>28.8</td>
<td>30.1</td>
<td>14.6</td>
<td>15.8</td>
</tr>
<tr>
<td>1920</td>
<td>56.81</td>
<td>60.36</td>
<td>44.37</td>
<td>46.82</td>
<td>27.85</td>
<td>30.06</td>
<td>13.89</td>
<td>15.10</td>
</tr>
</tbody>
</table>

*The data for 1901 and 1910 are taken from the United States Life Tables, and those for 1890-1920 are graphic interpolations of the United States Abridged Life Tables. The values for 1929 were obtained by the same method as those shown for Massachusetts in Table 1.*

*White population only.*
Fig. 5.—Trends in mortality among persons of different age-sex groups in the registration states of 1900, 1900–1929. A logarithmic ordinate scale is used.
Table 3 and Figure 6, on the trends of the gross mortality rate among Negroes are included. Deaths among Negroes are not registered as completely nor as accurately with respect to cause as among whites. Furthermore their separation into sex and age groups has not been observed for a long enough time to indicate trends in the sex-age specific rates. It may be pointed out, however, that the trends in the death rate for Negroes are not significantly different from those for white persons in two cities for which fairly comparable records are available, Baltimore and New Orleans.\(^8\)

![Diagram](image)

**Fig. 6.**—Trends in mortality among colored and white persons in Baltimore and in New Orleans, 1880-1928. (*Public Health Bulletin, 174, 1927.*)

Attention is now called particularly to the trends in mortality of the sex-age groups since 1870 shown in the basic Figures 3, 4 and 5.\(^9\) Several highly significant facts appear from these data which cover the last sixty years. They are:

1. That the mortality of children under five years of age did not decrease materially until about 1900.
2. That the rates at which persons over five years of age but under middle age have died has been steadily downward.
3. That the rate at which persons of the upper adult groups have died has been steadily upward.


\(^9\) The rise in the mortality rate prior to 1870 (in Baltimore, for example) will be referred to later.
4. That significant sex differences appear in the rate at which mortality has been increasing, particularly during the last decade.

Table 3.—Mortality among Colored Population in Maryland, 1911–1928, and in Selected Southern and Northern States, 1916–1928

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual deaths per 1,000 population Maryland</th>
<th>Selected southern states</th>
<th>Selected northern states</th>
<th>Year</th>
<th>Annual deaths per 1,000 population Maryland</th>
<th>Selected southern states</th>
<th>Selected northern states</th>
</tr>
</thead>
<tbody>
<tr>
<td>1911</td>
<td>23.7</td>
<td>...</td>
<td>...</td>
<td>1920</td>
<td>21.1</td>
<td>17.2</td>
<td>20.3</td>
</tr>
<tr>
<td>1912</td>
<td>22.6</td>
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<td>...</td>
<td>1921</td>
<td>19.4</td>
<td>15.4</td>
<td>17.1</td>
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<td>...</td>
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<td>1922</td>
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<td>1914</td>
<td>23.3</td>
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<td>...</td>
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<td>16.3</td>
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<td>1916</td>
<td>24.6</td>
<td>18.4</td>
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<td>1925</td>
<td>20.9</td>
<td>16.9</td>
<td>18.9</td>
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<tr>
<td>1917</td>
<td>25.9</td>
<td>19.1</td>
<td>23.0</td>
<td>1926</td>
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<tr>
<td>1918</td>
<td>33.0</td>
<td>23.8</td>
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<td>1927</td>
<td>19.6</td>
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<td>1919</td>
<td>22.3</td>
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<td>1928</td>
<td>19.5</td>
<td>17.4</td>
<td>18.6</td>
</tr>
</tbody>
</table>

* Compiled from Annual Reports of Mortality Statistics, U. S. Bureau of the Census.

* Includes: Kentucky, Missouri, North Carolina, South Carolina and Virginia.


II. SOME BASIC FACTS RELATING TO VITALITY

Before considering what these facts mean it is important to have clearly in mind some of the basic concepts which are involved in any discussion of vitality.

Theoretically, if all persons were endowed with the same vitality and suffered no mishaps they would live to the end of a span of life that is as yet undetermined precisely. But at least there would be no infant mortality, no mortality among children or among young adults and the middle aged—indeed no mortality at any age until man’s allotted days were fulfilled. The survival curve of a population would continue on a straight line from birth until the span of life was completed and then it would drop perpendicularly. Under actual conditions, of course, this is far from true. The actual curve of survival (Figure 2) is constantly decreasing from the first moment after birth until almost the last person dies a century later.

Disease Is Selective as to Age.—This salient fact is depicted in Figure 7 which shows that individuals composing our population usually die from quite different causes at different ages. In other words, the decrease in the number of survivors proceeding from a given date of birth is not altogether due to the wearing out of some human machines earlier than others, but to a variety of causes characteristic of different
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Fig. 7.—Some important causes of death at different ages under 40 years and at different ages 40 years and over in 1920 in the United States death registration states of 1900.
VITALITY

stages of life. Some are peculiar to very early infancy like the so-called congenital defects and malformations; others are peculiar to later infancy and childhood and include most of the infectious diseases; others are peculiar to early adult life and include typhoid and pulmonary tuberculosis; while in the later adult years the large majority of deaths are due to organic breakdowns such as nephritis and heart and circulatory diseases, or to such diseases as pneumonia, diabetes and cancer. It may be observed in general that in the early years of life failure to survive may be ascribed chiefly to accidents of environment, such as unfavorable conditions of living, the ignorance of mothers, and infections that may arise out of the environment. Nevertheless it is important to recognize that there are differences in the capacity to resist infections and the diseases resulting from infections. In the later years of life failure to survive may be traced chiefly to organic breakdowns which in turn may be due to damages resulting from earlier infections, "congenital" defects, the inheritance of specific constitutional weaknesses and the effects of unfavorable environment. The relative importance of any one of these factors as affecting mortality in middle and old age cannot be determined from information now available.

Inheritance Influences in the Duration of Life.—Some of the differences in the duration of life are due to inheritance specifically and are independent of environment. It has long been recognized that the vitality of the female foetus is higher than the male, and that this higher vitality persists through infancy and childhood. Whether the generally lower female death rate in later life is attributable to a stronger vitality or a better conservation of vitality is still a matter for debate. With regard to the more pertinent matter of differences in inheritance of vitality among persons of the same sex, about as far as students have gone to date is to show that such differences do exist. Convincing scientific evidence on this point has appeared only recently.10 Dublin11 analyzed a large mass of American insurance records containing data on the duration of life of parents and siblings of insured persons. This analysis

10 The classic studies of Beeton and Pearson and of Bell were disappointing to those who, from common observation of long lived families, expected much more positive results. As Pearl has shown, these studies were not based on representative samples of the population and the existing data relating to the length of life of parents and of children are not suitable for analysis by the statistical method of correlation. At least they have yielded no definite conclusions. See Beeton, M., and Pearson, K., "Data for the Problem of Evaluation in Man. II. A First Study of Longevity, and the Selective Death Rate in Man," Proceedings of the Royal Statistical Society, London, 1899, vol. 65, pp. 290–305. See also, by the same authors, the paper "On the Inheritance of the Duration of Life, and on the Intensity of Natural Selection in Man," Biometrika, 1901, vol. 1, pp. 50–89. Also Bell, Alexander Graham, The Duration of Life and Conditions Associated with Longevity. A Study of the Hyde genealogy, Washington, 1918. For the reference to Pearl, see footnote 4 to this chapter.
Fig. 7A.—Some important causes of death that occurred at all ages in 1920 in the United States death registration states of 1900.
points to the conclusion that there is a gross association between the length of the lives of parents and those of children. (Figure 8.) Probably the most searching and satisfactory study to date is a preliminary one by Pearl and his associates of original material collected for a sample of a fairly homogeneous class of the population (workingmen’s families in Baltimore) in which life table methods were employed in analysis. His results are illustrated in Figure 9, which is taken from a recent paper.\(^{12}\)


“First, that the expectation of life of the parents (either father or mother) of children dying at 50 and over years of age is, at all ages from 20 on, greater, by amounts varying from about 7 to 28 percent, than the expectation of life of the parents of children dying under 50 years of age; second, that the expectation of life of grandparents (either grandfather or grandmother) of grandchildren dying at 50 and over years of age is, at all ages, from 20 on, greater, by amounts varying from about 7 to 59 percent, than the expectation of life of grandparents of grandchildren dying under 50 years of age; third, that the expectation of life of fathers of children dying (or living) at 80 and over years of age is, at all ages from 20 on, greater by amounts varying from about 26 to over 50 percent, than the expectation of life of fathers of children dying under 5 years of age; fourth, that the expectation of life of mothers of children dying (or living) at 80 and over years of age is, at all ages from 20 on, greater, by amounts varying from 23 to 36 percent, than the expectation of life of mothers of children dying under 5 years of age.

“These life table studies also indicate that the expectation of life of sons of fathers dying (or living) at 80 and over years of age, is greater at all ages from birth on, than the expectation of life of sons of fathers dying at ages between 50 and 70 years inclusive, and is still greater than the expectation of life of sons of fathers dying under 50 years of age. These differences are regular and considerable in amount.”

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The fact that the progenitors lived under different environments from those of their offspring has not been taken fully into account. Exactly what part differences in inheritance of longevity play in determining the death rate of a population is still unknown.

![Sons of Fathers Dying](image)

**Fig. 9.**—Expectation of life in years (mean-after-lifetime) at birth and at certain older ages of sons, fathers dying at various ages. (From Pearl. See footnote 12.)

The Rate of Survival Varies in Different Areas.—It has been suggested by various studies that in different geographic areas the mortality rate varies because of differences in climate and in the prevalence of specific infectious diseases; because of differences in degree of urbaniza-
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tion; because of conditions affecting males more unfavorably than females (presumably occupational); because of selective factors, such as the climatic selection of tuberculous persons in Colorado, or selection of the more hardy in opening up new territory, or industrial selection according to type of work, etc.; and because of differences in culture and habits of living. To illustrate: there is some evidence that the populations of localities differ with respect to physique and possibly physical constitution. Physique, for example, is correlated with tuberculosis, a disease that in the opinion of many is an index of vitality. The data analyzed in preparation of this chapter are too voluminous for presentation here, but they may be summarized briefly. Using the measurements of chest circumference, height and weight of men under thirty years of age drafted during the World War in 1917 and 1918, it was found that young adult males differed significantly by localities according to Davenport's index of build and Pignet's index of robustness. These differences were found to be associated with the predominant types of industry in the various localities. In other words, cities with a relatively large population of males employed in "heavy" industries, such as steel, had relatively large proportions of physically robust men; cities with a relatively large proportion of males employed in "light" occupations, such as trade and clerical, had relatively large proportions of less robust young men. The tuberculosis death rate among young adult males in these cities varied directly with the proportion of the less robust. Thus there appeared to be a selection of physical and constitutional types in accordance with the physical demands of the predominant industries. Similarly wide differences were found in the prevalence of defects among men drafted from different parts of the country. Many of these impairments are directly associated with environmental and not constitutional factors. The differences in the mortality and impairment rates of different areas illustrate the complexity of the problem of ascertaining what factors are involved and what their relative influence is in determining the rate at which the various populations survive. That genetic factors exist there can be no doubt. The continuous process of breeding is a simple biological fact but the conditions that influence the mixtures of breeding are becoming more complex and more difficult to evaluate. Practically nothing is known about human genetics that can be applied in the study of so large and heterogeneous a population as that of the United States.

Particular Environmental Conditions Are Associated with the Rate of Survival.—Whatever may be the genetic factors involved it is undoubtedly true that organic breakdowns occur to a greater extent and at an
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earlier age among persons living and working in what must be regarded as low social and economic conditions than among people in a more favorable environment. This point has been touched upon in the preceding paragraph but is presented here from this somewhat more particularized angle to put it into its proper setting. British occupational mortality data clearly point to differential death rates according to social classes. American studies have established a definite association between pellagra and economic status (as affecting certain dietary essentials), tuberculosis

Table 4.—Mortality from All Causes and Ratio of Male to Female Death Rate, in the Age Period 55-64 Years, in 34 States, 1920*

<table>
<thead>
<tr>
<th>State</th>
<th>All ages</th>
<th>Ratio of male to female death rate, ages 55-64</th>
<th>State</th>
<th>All ages</th>
<th>Ratio of male to female death rate, ages 55-64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colorado</td>
<td>14.6</td>
<td>1.14</td>
<td>Utah</td>
<td>12.1</td>
<td>1.42</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>13.9</td>
<td>1.20</td>
<td>Ohio</td>
<td>12.0</td>
<td>1.09</td>
</tr>
<tr>
<td>Delaware</td>
<td>13.8</td>
<td>1.18</td>
<td>Missouri</td>
<td>11.9</td>
<td>1.16</td>
</tr>
<tr>
<td>New York</td>
<td>13.5</td>
<td>1.18</td>
<td>North Carolina</td>
<td>11.7</td>
<td>1.06</td>
</tr>
<tr>
<td>Michigan</td>
<td>13.4</td>
<td>1.07</td>
<td>Florida</td>
<td>11.5</td>
<td>1.29</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>13.3</td>
<td>1.11</td>
<td>Virginia</td>
<td>11.4</td>
<td>1.03</td>
</tr>
<tr>
<td>New Jersey</td>
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<td>1.15</td>
<td>Washington</td>
<td>11.1</td>
<td>1.13</td>
</tr>
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<td>Massachusetts</td>
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<td>1.12</td>
<td>Oregon</td>
<td>11.0</td>
<td>1.21</td>
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<td>1.12</td>
<td>Louisiana</td>
<td>11.0</td>
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<td>1.14</td>
<td>Kentucky</td>
<td>10.9</td>
<td>1.00</td>
</tr>
<tr>
<td>Illinois</td>
<td>12.6</td>
<td>1.12</td>
<td>Tennessee</td>
<td>10.9</td>
<td>1.11</td>
</tr>
<tr>
<td>California</td>
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<td>1.80</td>
<td>Minnesota</td>
<td>10.6</td>
<td>1.14</td>
</tr>
<tr>
<td>Maine</td>
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<td>1.04</td>
<td>Wisconsin</td>
<td>10.6</td>
<td>1.06</td>
</tr>
<tr>
<td>South Carolina</td>
<td>12.4</td>
<td>1.11</td>
<td>Kansas</td>
<td>10.5</td>
<td>.92</td>
</tr>
<tr>
<td>Vermont</td>
<td>12.3</td>
<td>1.07</td>
<td>Montana</td>
<td>10.3</td>
<td>1.34</td>
</tr>
<tr>
<td>New Hampshire</td>
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<td>1.10</td>
<td>Mississippi</td>
<td>9.8</td>
<td>1.26</td>
</tr>
<tr>
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<td>1.06</td>
<td>Nebraska</td>
<td>9.7</td>
<td>1.02</td>
</tr>
</tbody>
</table>

* U. S. Bureau of the Census, Mortality Statistics.

b Adjusted to a standard age distribution.

and economic status as well as an association between mortality and industrial hazards like exposure to certain inorganic dusts and poisoning by lead, etc. Furthermore, infant mortality is definitely associated with the lack of intelligence, improper care and inadequate diet, all of which are characteristic of the poorer parts of the population. As yet of undetermined importance are the rapid cultural changes that have occurred in the past century. The thinking and acting, not merely of the people as a whole, but of its various racial groups, in various areas, in various "social" or socio-economic classes, have altered profoundly. These changes are due to many causes, the most potent of which came with the


See also Chap. XV.
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machine age. They are manifested in ways such as an increased and standardized consumption and a lessened individual art in production, in a multiplication of desires, in manifold experiences, and in a sort and degree of sophistication never before attained. Undoubtedly these have changed habits and modes of living in ways that affect the mental and physical status of the population and the duration of life.

With the foregoing discussion in mind, what interpretation can be placed on the trends in mortality indicated by the data previously presented? Are they signs of changes in the vitality of the American people?

Fig. 10.—Prevalence of defects of all kinds among men drafted for the World War, by states. (From Love and Davenport. See footnote 13.)

According to one view improvements in medical science and in public health activities, as well as in general conditions of living, have prolonged the lives of "weaker" children into adult years. Such persons, as they approach the limit of their natural or inherited vitality, die and their deaths increase the mortality rate of the middle age group of the general population. Improvements in the environment merely give such individuals a better chance to live out the days allotted to them by heredity. An important implication of this line of reasoning, recognized by its proponents, is that a larger and larger proportion of the population is composed of the "weaklings" whose lives have been prolonged and that, as a result, the trend of the vitality of the people, however it may appear when expressed in some average form, must be inevitably down-
ward. This interpretation, which has been emphasized by Pearson and others of the so-called "genetic school," is based upon the assumption that the individual's actual survival—not necessarily his capacity to survive—is primarily, if not wholly, determined by inheritance.

Another implication of this genetic argument frequently put forward is that a shorter lived and less "vital" race is being bred. Various reasons are advanced in support of this theory. One is that since a larger number of persons are surviving into the younger adult years—between twenty and forty, or the reproductive period of life—and since the span of life in some measure at least is an inherited characteristic, the prolongation of the lives of persons with relatively low vitality gives an increasing number of them an opportunity to procreate. Since, according to the laws of inheritance propounded by Mendel and others, some of their progeny will be short lived, not only is the portion of the population with relatively low vitality thereby increased but additional potential progenitors of future generations with low vitality are added to the population. Other conditions may also contribute, theoretically at least, to the same result. The increasing mobility of individuals reduces the likelihood of inbreeding in communities and thereby lessens the possibility of preserving the long lived stock. Under conditions prevailing before the steam and electric railways, automobiles and airplane travel, inbreeding within a community was of necessity greater than now because of the smaller opportunity for individuals to mate with other individuals in or from other communities. If it be true that the less hardy were killed off by disease and exposure at early ages and at greater rate in the older era than now, the stronger and long lived had naturally to choose mates from among persons who possessed a marked vitality. Again, it may be suggested that the stream of immigrants from Europe which rapidly increased until 1915 provided an assortment of progenitors varying considerably in vitality. As the opportunity to "fuse" with the immigrants or their immediate descendants was afforded, some cross breeding between the "original" hardy stock and the newcomers has taken place.

The opposed interpretation is that the decline of mortality in the younger age groups is due to general preventive efforts that are, in effect, similar to the prevention of accidents as ordinarily understood. On the other hand, the increase in the death rate in the older ages is alleged to be the result of a failure to prevent deaths due to certain hazards of the modern environment affecting older persons adversely. Using the analogy of accidents the proponents of this interpretation argue that most diseases which killed children and young adults in large numbers a generation or so ago (and still kill too great a proportion of them) are not, biologically, to be regarded as a real indication of vitality. On the contrary the victims, or at least most of them, possessed as much vitality
as those who by chance escaped. As William H. Welch\textsuperscript{16} recently expressed it, those dying of infectious and other diseases peculiar to the young are just as much victims of accidents as are the thirty-odd thousand persons who are killed annually in automobile accidents. This argument is carried even further by advocates of public health and preventive medicine who say that if the vitality of an increasing number of individuals is being conserved and an increase in the number of persons with good and undamaged vitality is thereby being brought about, the result eventually will be longer lives generally rather than shorter. Obviously the hypotheses upon which this interpretation is based involve the assumption that susceptibility to infections is in no way associated with vitality. That is to say, a given disease such as typhoid, tuberculosis or diphtheria, does not select individuals who possess low vitality but those who are attacked are victims of circumstances like accidental contacts with ill persons or the carriers of the disease. Certain questions of fact are also involved. Little definite information is yet available on a very pertinent point. What is the duration of life among persons attacked by a given disease as compared with that of persons not so attacked? Another matter is the importance to be given to immunity acquired by mild attacks which is undoubtedly favorable to longevity. Again, the nature of the disease must be taken into account. The main thesis of the purely environmental view, however, is clear. In explanation of the rising mortality in the older ages, its supporters say (1) that an insufficient interval has elapsed for those damaged by the conditions of early life, including infectious diseases, to die off, and (2) that possibly the strain of “high geared” work and life in the modern era may be in part responsible for the increasing mortality in the later adult years.

These interpretations reflect clearly two diametrically opposed points of view. The real crux of the problem may best be expressed interrogatively. Has any diminution in vitality in its strict biological sense taken place? To what extent and in what direction are efforts to conserve vitality worthwhile? If justified, are present efforts adequate? If they are not yet adequate, along what lines should one proceed to make them more effective? In discussing these problems we shall first deal with the environmental approach at some length and then turn to the genetic aspects of trends of mortality.

III. CHANGES IN ENVIRONMENTAL CONDITIONS ASSOCIATED WITH TRENDS IN MORTALITY

It would be futile to attempt any consideration of these questions without some understanding of the historical background. This back-

\textsuperscript{16} Remarks as chairman of the Advisory Council of the Milbank Memorial Fund at its annual meeting, April, 1931.
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ground is given elsewhere in this report, particularly in those chapters dealing with economic and social conditions, population, urbanization, immigration, the welfare of children, the family and cultural changes generally. The more pertinent points may be briefly summarized here as follows:

1. The first half of the nineteenth century was a period characterized by the rapid growth of urban communities which drew people from the rural areas of Great Britain, northwestern Europe and the United States. Conditions of living and working were particularly unfavorable to the maintenance of health. The standard of social responsibility, especially on the part of industrial leaders, was low. 

2. During the latter half of the nineteenth century and perhaps the first decade of the twentieth century extraordinary changes took place in the mobility of the population. The immigration was of different origin from that of the previous period. There were striking developments in mechanical methods of production, distribution and transportation. During this period the standard of social responsibility, although it had somewhat improved, was still low when judged by the standards of today.

3. The past twenty or thirty years have been characterized by marked improvements in the standards of living and conditions of labor. There has been an increasing sense of social responsibility. Extraordinary developments have taken place in sanitation, medicine and methods of controlling infectious and some other diseases and marked progress in modes of communication so that public education in matters relating to health has been made easier as information has increased.

As far as possible effects upon the health of the population are concerned, probably the most direct manifestation of this cultural change is in attitudes toward the conservation of life and health and in habits of everyday life. The machine age may have imposed standardized patterns on work, styles and materials, as well as other things, but it has brought about a more even distribution of improved standards of housing, factory work and urban living generally. Furthermore, it has made possible a more diversified diet. Greater leisure is possible and more time is actually spent in recreation. The individual has greater freedom even though at the expense of the family as a unit. Community care of children, probably more efficient than that attainable in many families, has become possible.

The role of medicine and public health in these changes has been summarized succinctly by Theobald Smith as follows: "Civilization

17 On the concentration of population see Chap. IX.
18 On economic maladjustments and medical needs, see Chap. XXI.
19 For a discussion of the increasing mobility of population, see Chap. IV.
20 See data on standard of living of workingmen in Chap. XVI.
from the medical aspect may be defined as the maintenance of any increasingly dense population with a falling death rate in spite of free intercourse. Taking this definition as a base we are safe in saying that without the steady development of medical science and practice civilization would have been unable to move forward. In every detail of individual and communal life medical science has formulated protective devices to maintain health, largely by the suppression of infection. Without the constant application of medical and preventive safeguards the human race could not sustain itself. If it should drop to the level of animals in this respect, and throw safeguards to the winds its fate would be reduction to animal destiny in population or even worse, unless the race segregated itself into non-communicating groups and each one allowed the existing viruses to burn themselves out, as it were. The number of diseases scattered over the globe is so great that free inter-communication on the animal level might bring so many to bear on the race as to make impossible its struggle against other natural injurious agencies."

As it is impossible to recount here in any detail the development of sanitation, medicine and control of disease, we shall have to content ourselves with a few glimpses which will reveal in somewhat sharp relief the more significant changes that have taken place.\textsuperscript{22} The modern dweller in the cities and towns of this country must have a broad historical perspective in order to grasp the extraordinary sanitary changes that have taken place in the past century and even in the last fifty years. In somewhat less degree modes and standards of living, particularly in those aspects associated with health, have also been profoundly altered in most rural areas. The striking changes can best be pictured in a few diagrams (Figures 11, 12 and 13) and by a few passages of description. Stephen Smith has written\textsuperscript{23} that until 1866 "Smallpox, scarlet fever, measles, diphtheria, were domestic pestilences with which the people were so familiar that they regarded them as necessary features of childhood. Malarial fevers . . . were regularly announced in the autumnal months as having appeared with their 'usual severity.' The 'white plague,' or consumption, was the common inheritance of the poor and rich alike.

"With the immigrant came typhus and typhoid fevers, which resistlessly swept through the tenement houses, decimating the poverty-stricken tenants. At intervals, the great oriental plague, Asiatic cholera, swooped down upon the city with fatal energy and gathered its enormous harvest of dead. Even 'yellow fever,' the great pestilence of the tropics, made occasional incursions . . .

"Failure to improve the unhealthy conditions of the city, and the tendency to aggravate them by a large increase of the tenement-house

\textsuperscript{22} Compare with Chap. XXI.

\textsuperscript{23} Smith, Stephen, M. D., \textit{The City That Was}, New York, 1911, pp. 19–20
Fig. 11.—Trend of mortality from typhoid fever, diphtheria, scarlet fever, and pulmonary tuberculosis in Massachusetts, 1850 to 1920.
Fig. 12.—Death rates among males and females of different ages from tuberculosis, cancer, diabetes and cerebral hemorrhage in the original registration area in 1900 and 1929.
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FIG. 12A.—Death rates among males and females of different ages from heart disease, pneumonia, nephritis and accidents, in the original registration area in 1900 and 1929. (In some cases 1921 is used instead of 1900 on account of changes in the classification of causes of death.)

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population, offensive trades, accumulations of domestic waste, and the
filth of streets, stables, and privy pits, then universal, causes an enormous
sacrifice of life, especially among children." Dr. Smith shows that the
death rate for the five years preceding 1866 averaged 38 in 1,000 popula-
tion. Today the death rate is around 12 per 1,000. A death rate of 38
per 1,000 in 1932 would mean about 275,000 deaths in New York City.
Actually there will be something like 80,000 to 85,000. In 1848, during a
cholera epidemic in New York, the Sanitary Committee of the City
Board of Health wrote: "The labors of your committee, during the past

appalling season of sickness and death, and the awful scenes of degrada-
tion, misery, and filth developed to them by their researches, have
brought into full view the fact that we have no sanitary police worthy of
the name; that we are unprotected by that watchful regard over the
public health which common sense dictates to be necessary for the security
of our lives, the maintenance of the city's reputation, and the preserva-
tion of the interest of the inhabitants."24 "This," commented a speaker
before a legislative committee nearly twenty years later, "is a perfectly
truthful statement of the present condition of New York." He then
proceeded to describe the conditions prevailing in 1865 as follows:

24 Ibid., p. 144.

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“Smallpox . . . is at this moment an epidemic in New York. In two days’ time, the inspectors found 644 cases, and in two weeks, upward of 1,200; and it was estimated that only about one-half were discovered. In many large tenant-houses, six, eight, and ten cases were found at the same time . . . It was in the street cars, in the stages, in the hacks, on the ferry-boats, in junk-shops, in cigar-stores, in candy-shops, in the families of tailors and seamstresses, who were making clothing for wholesale stores, in public and in private charities.”

“Typhus is greatly aggravated by domestic filth, and by overcrowding, with deficient ventilation. The inspectors found and located by street and number no less than 2,000 cases of this most contagious and fatal disease. Commencing in a large tenant-house in Mulberry Street, it was traced from locality to locality, in the poorer quarter, until it was found to have visited nearly every section of the city. It became localized in many tenant-houses and streets, where it still remains, causing a large amount of sickness and mortality.

“At Mulberry Street, in a notoriously filthy house, it has existed for more than four years. This house has a population of about 320, which is renewed every few months. During the period alluded to, there have been no less than 60 deaths by fever in this single house, and 240 cases.”

The contrast between the prevalence of certain infectious diseases in an American city of the middle of the nineteenth century and one of the present time is so striking as to be almost unbelievable. Typhoid fever, smallpox, measles, scarlet fever, diphtheria, malaria, whooping cough—these formed a group of diseases which occurred in epidemics regularly and which took turns in keeping the gross mortality rate high. In fact, one of the most marked characteristics of the earlier time was the wide variation in the annual death rates. For instance, in Chicago in the decade 1850–1859, scarlet fever showed a maximum mortality rate of 272 per 100,000 and a minimum of 6. A comparison of the maximal rates since 1850 with those of the last decade is given below for some of the communicable diseases:

<table>
<thead>
<tr>
<th>Chicago</th>
<th>Death rates per 100,000 population</th>
<th>Chicago</th>
<th>Death rates per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Highest rate since 1850</td>
<td>Highest rate in the last decade</td>
<td></td>
</tr>
<tr>
<td>Typhoid fever</td>
<td>174</td>
<td>2</td>
<td>Whooping cough</td>
</tr>
<tr>
<td>Smallpox</td>
<td>230</td>
<td>0.5</td>
<td>Diphtheria</td>
</tr>
<tr>
<td>Measles</td>
<td>80</td>
<td>7</td>
<td>Diarrhea and dysentery</td>
</tr>
<tr>
<td>Scarlet fever</td>
<td>272</td>
<td>7</td>
<td>Malaria</td>
</tr>
</tbody>
</table>

26 Ibid., p. 113.
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The highest death rate from all causes in Chicago during this period was in 1854 when the rate was 64 per 1,000. There were 4,217 deaths out of a population of 65,000. That rate in Chicago today, with its population of 3,500,000 would mean 225,000 deaths annually—half the number swept away in the whole of the United States by the influenza epidemic of 1918.27

Sanitation and purification of water and milk supplies were important factors in bringing about the great changes noted but, in the opinion of many, they do not entirely account for the transformation. C.-E. A. Winslow in a careful study of public health in New Haven during the past half century found that the death rate declined from 18.2 to 12.5. The decrease in five causes, namely pulmonary tuberculosis, diphtheria, typhoid fever, scarlet fever and infant diarrhea accounted for 92 percent of this total net reduction. As a proponent of public health efforts he remarks that “how these decreases have been accomplished, we can say with considerable definiteness,” and continues as follows: “Typhoid fever has been controlled chiefly by the purification of water supplies, the pasteurization of milk, and the use of vaccine; diphtheria, by the use of antitoxin, and more recently by toxin-antitoxin immunization; scarlet fever by isolation and very recently by serum treatment; diarrhea, by pasteurization of milk and breast feeding of infants. In the case of tuberculosis, the causal relationships are less well established. Discussion of the reasons for the decreasing death rate from this disease offer a happy hunting ground for the mystics who from time to time seek to substitute vague cosmic tendencies for more obviously apparent causes. The statement that the fall in the tuberculosis rate has been a continuous process irrespective of public health activities is, however, simply untrue. The sharp and sudden decrease began about 1890 when the anti-tuberculosis campaign began and not before; it has taken place in countries where there has been an organized anti-tuberculosis campaign and not in other countries. Some part of the decrease is without doubt due to improved economic status since everything which affects physical well-being affects this disease. There was, however, improvement in economic status before 1890 but it was accompanied by no such spectacular results as have since accrued from a combination of improved economic status and organized public health work.”28

The Negroes, a separate and relatively homogeneous race living in the same localities with the white population but obviously in a less favorable environment, have a much higher mortality rate than the whites.29 It


29 On Negro and white death rates, see Chap. I.
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will be pointed out later that certain racial differences appear to exist with respect to susceptibility and resistance to certain diseases. But it is of interest to note that the death rate among Negroes is relatively higher in cities than in rural areas as compared with white rates, even after taking into account differences in age composition. Again, both white and colored rates are higher in southern than in northern cities; both white and colored rates are higher in northern than in southern rural areas; and the higher rural rates in the north are more marked for the colored than the white race. The age specific rates indicate that tuberculosis is the principal reason for the high mortality among the rural colored in the northern states, since the high colored rural rate for all ages is due to the excessively high rates for the early middle age groups. Two further observations are pertinent: (1) a study of the trends in mortality from specific causes showed some differences for the two races and (2) that when infants of both races were given similar supervision and diet, the mortality rate was about the same, whereas under uncontrolled conditions the Negro infant mortality was greatly in excess of the white.

A wholly dispassionate interpretation of these changes in terms of effects upon vitality is difficult. There can be no question that efforts to control certain diseases have resulted in a reduction in mortality from these diseases. It is also evident that social, economic and cultural changes, especially during the past quarter century, are correlated with the decline in the death rate of the younger age groups. But until rigid scientific tests are applied, one must withhold judgment as to the causal relationships that are now too generally proclaimed.

IV. GENETIC ASPECTS OF TRENDS IN MORTALITY

The suggestion that the increase in the death rate of persons over fifty years of age is due wholly or in part to a deterioration of vitality raises a question of profound importance. Are the American people breeding a stock with a lower inherited capacity to survive? It is not yet

30 Sydenstricker and Gover, op. cit.
31 Sydenstricker and Gover point out that "(a) Pulmonary tuberculosis has declined a little more rapidly among the white than the colored; (b) the acute pulmonia diseases have almost certainly declined more rapidly among the whites, although the colored rate has also decreased; (c) cardio-renal diseases are increasing and probably faster among the colored; (d) cancer is increasing with no observable difference between the rate of increase for white and colored; (e) during the last 20 years mortality from scarlet fever and diphtheria among whites has been less than it was during the 20 years preceding, while there has been no decrease in mortality from measles or whooping cough; among the colored the average death rate from diphtheria and whooping cough, 1905-1924, is less than it was for 1885-1904, but measles and scarlet fever have not decreased."
33 For further details on the medical care of children, see Chap. XV.
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possible to give a strictly scientific answer to this question. The best that can be done is to consider, as impartially as we may, the available evidence that has a more or less direct bearing on the matter. The available evidence of scientific character, however, is very slight. Though vast in quantity the literature of the subject is either philosophically speculative or full of prechamments and alarums that are of thin texture—a few threads of fact interwoven with some reasoning and much argument. It would profit little, even if there were space, to review the flood of opinions, philosophizings and semi-popular discussions, although reference to their factual bases is obviously pertinent.

The data essential for a definite answer to the question would include a series of records of vitality, in the strict biological meaning of the term, over a considerable number of generations for the various groups that compose our population, together with accurate information as to the extent and nature of the cross breeding of persons with varying inheritances of longevity, constitutional stock, and capacity to cope with or take advantage of environmental conditions. This is a large order and, except for the evidence that individuals probably do differ somewhat with respect to the inheritance of longevity, it has not been filled as yet either by recorders of human history or by scientific inquiries. There are, however, certain aspects of the genetic phase of the subject which have been seriously discussed and on which some data having an indirect bearing are relevant and suggest reasonable hypotheses if not tentative conclusions.

In the first place, the purely genetic view of the ultimate results of "interfering with" the process of "natural" selection by reduction of infant mortality and by prolonging the lives of constitutionally weak individuals into the reproductive period deserves consideration in any attempt to interpret the rise in the death rates at older ages. This view is a challenge to the basic soundness of efforts to conserve vitality. It is not unfair to state that the elaborate and dispassionate studies made to test the validity of this view by comparing the mortality rates of successive cohorts of children following reductions in infant deaths have been inconclusive so far. On the other hand, all evidence points to the fact that relatively little decrease has occurred in the infant death rate from the

34 For example: Crum, Frederick S., "The Effect of Infant Mortality on the After Lifetime of Survivors," Proceedings of the Sixteenth Annual Meeting of the American Child Health Association, Section on Infant Hygiene, October 11-18, 1920. The author himself, after an exhaustive analysis of Dutch statistics that were peculiarly well suited to the purpose of the study, pointed out the inconclusiveness of his results. Obviously such data cannot yield other than inconclusive results for the reason that efforts to reduce infant mortality are almost always contemporaneous with efforts to prevent disease among older children, and are continued in some measure into the later years of the infants. A scientifically "controlled" situation is not afforded by mere statistics of births and deaths; more exact and specific data are necessary.
so-called "early infancy" causes; practically all of the reduction has actually been brought about from causes that may be considered "accidental," chiefly communicable and intestinal diseases. This fact is so well known that it is unnecessary to reproduce the familiar statistics. In spite of all efforts to prolong the lives of morons, imbeciles and idiots, they still fail to survive at the same rate as "normal" persons35 (Figure 14), especially in pre-reproductive ages. The higher death rate among single persons of marriageable age than among the married warrants the inference that many constitutionally inferior and defective persons do not reproduce. Nature still selects, even though we are horrified by such examples as the Jukes. It cannot be assumed that all infants who die from "preventable" or "accidental" causes are as constitutionally strong as those who do not die; it is logical to assume that at least some of these infants possessed less vitality than those who were attacked by disease and pulled through. On the other hand, prevention of disease may be regarded as prevention of damage to the vitality of the constitutionally strong. From the historical point of view there is no evidence that the decline in infant mortality is in any way associated with the increased death rate at older ages. The entirely contrary fact is clearly evident: that the death rate at older ages was increasing long before any considerable reduction in infant or child mortality began to be manifested, and the downward trend in the death rate among persons 5–39 years of age has been fairly synchronous with the upward trend in mortality among persons over 50 years of age for as long a period as we have records in

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this country. (Figures 3, 4, 5.) At least, a causal relationship between interference with natural selection through death of infants and children and the increased mortality of older persons has not yet been demonstrated.

No consideration of the purely biological factors involved in changes in vitality would be complete without reference to the significance of differential fertilities according to social class. The subject is too intricate for adequate discussion here, but a brief comment may be made. It has been repeatedly shown by various studies that the so-called "lower" urban classes have a higher fertility than the "upper" urban classes. It has also been shown that certain mortality and sickness rates and the proportions of individuals affected by some organic impairments are higher for the lower classes than for the upper. Furthermore, it appears that the gross contribution to the population, by reason of their larger numbers and higher fertility, is greater from the lower social classes than from the upper. The conclusion drawn by some from these three facts is that the vitality of the population is gradually deteriorating, and various eugenic movements have been initiated for this reason. Yet it is pertinent to point out that in a country such as the United States, where no rigid caste system has been established, any one social class is continually being recruited from others and intermarriage of individuals from different social classes is constantly going on. The "successful" professional or business man, for example, frequently is the son of parents who ordinarily would be classed as in a relatively low social group. It is a common observation also that families rise and fall in spite of the fact that the children of parents in higher social classes tend to become fixed in those classes by reason of inherited wealth, education and social environment. To what extent these changes occur is a matter about which practically no scientific information exists and it is impossible to draw any conclusion whatsoever about the effect of differential fertility according to social class in lowering the vitality of the population.

It is pertinent to consider in somewhat more detail a question that has been widely discussed for many years, namely, the effects of the changing racial composition of the population due to changes in the sources of immigration. Here again the impartial and careful student meets with difficulties that are well nigh insuperable. For the net effect of changes in the vitality due to increments of "new" stock to the American population through immigration has never been evaluated and probably never can be measured accurately for the simple reason that we

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37 Reference will be made to differential sickness and impairment rates later.
cannot know the constitutional type of immigrants in the past any more exactly than we know that of the peoples from which they come. Differences in environment obscure differences in constitution in the countries of origin just as they do in the country to which they go. It has been said, somewhat grandiloquently, that the United States is a vast racial experiment—a melting pot of races from which the student and the statesman ought to learn something about the various racial values as they come from the crucible in the form of human alloys of varying composition. The melting pot is here and fusion is in process, but it is necessary to know what is being put into it as well as to be able to test what comes out of it before its product can be appraised. All of this knowledge is lacking and the student is compelled to rely upon facts that are of rather vague meaning and to be content with very general and gross conclusions.

In order to arrive at an intelligent understanding of the effect of immigration upon the vitality of the American people, it is necessary to keep in mind the historical background already referred to. For the sake of brevity a summary table (Table 5) is added here which indicates the principal changes in sources of immigration for the last hundred years. It is important to emphasize three facts that have a special bearing at this point. The first is that all available evidence points to a selection—whether natural or artificial or both—of relatively ambitious and physically strong persons from the countries of origin. In the early days more than usual hardihood was required to embark across the ocean and brave the uncertainties of survival in a new and raw country and something more than a mere spirit of adventure was required in later days. To this “natural” selection was added artificial selection by the enactment of laws and regulations relating to the physical and mental conditions of the immigrant, beginning in 1882 and becoming more and more strict with the years. The second fact is that in all periods of our history the immigrant has had to live and work under the least favorable conditions with the added handicap of having to adjust himself to a new physical and social environment. The third fact is that the disparity in living conditions as

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38 Detailed records of the number of immigrants coming annually from different countries are available in the *Annual Reports* of the Commissioner General, U. S. Bureau of Immigration, and the number of foreign born by country of birth at decennial intervals are, of course, given in the reports of the census. For data on the latter, see Chap. XI.

39 Limitations of space preclude even a summarization of the voluminous data on the relatively poorer economic status, unfavorable standards of living, and hazards of work under which immigrants have lived in the United States. The reader is referred particularly to the wealth of information on this subject contained in the Reports of the U. S. Immigration Commission published in 1911 (U. S. Congress 61 Cong. 4 Sess., Senate Docs., *Reports of the U. S. Immigration Commission*, 1911, 41 vols.; also *Abstracts* of same, 2 vols.), and to the *Annual Reports* of the Massachusetts State Department of Health during the period 1867–1890 and the Boston Health Department, *Annual Reports*, 1874–1876, for discussions of the relation between the death rate of the Irish immigrants and their families and their conditions of living in a much earlier period.
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well as other environmental factors between natives and immigrants was far greater in the first half of the nineteenth century than later. This difference existed in a greater degree in the towns and cities in which the immigrants were concentrated than in rural areas. The differences were most pronounced with respect to conditions directly affecting health, especially sanitation, water supply, food, housing and congestion and protection against epidemics. Thus the earlier immigrants—the British, Irish and Germans—came mostly from rural areas and congregated chiefly in the American cities whose growth was too rapid to provide even the facilities for protection of health then known. This fact probably explains the curious phenomenon that in the period 1868-1895 the death rates in Massachusetts, for example, rose and fell almost synchronously with the variations in industrial activity and, of course, with the flow and ebb of immigration (Figure 15), a correlation that in later years failed to manifest itself.

The assumption of a biological selection of population by means of immigration cannot be lightly made, however, since it is a matter of utmost importance in determining what the trend of vitality of the entire population has been. It is desirable to consider somewhat critically the evidence bearing upon the death rates among persons of specific nativities in the United States and then to summarize some of the available data on the trend in the death rates among persons of native, mixed and foreign stock.

From the mass of statistical data on mortality among persons of different countries of birth living in the United States the study by

<table>
<thead>
<tr>
<th>Years</th>
<th>United Kingdom</th>
<th>Germany</th>
<th>Scandinavia</th>
<th>Italy</th>
<th>Austria-Hungary</th>
<th>Russia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1820-29</td>
<td>24.7</td>
<td>16.5</td>
<td>6.4</td>
<td>12.4</td>
<td>12.3</td>
<td>10.0</td>
</tr>
<tr>
<td>1830-39</td>
<td>60.7</td>
<td>4.5</td>
<td>.2</td>
<td>.3</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>1840-49</td>
<td>45.5</td>
<td>23.2</td>
<td>.4</td>
<td>.4</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>1850-59</td>
<td>61.3</td>
<td>27.0</td>
<td>.9</td>
<td>.1</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>1860-69</td>
<td>32.6</td>
<td>34.7</td>
<td>.9</td>
<td>.3</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>1870-79</td>
<td>46.6</td>
<td>35.2</td>
<td>4.6</td>
<td>.5</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>1880-89</td>
<td>36.5</td>
<td>27.4</td>
<td>7.6</td>
<td>1.7</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>1890-99</td>
<td>28.3</td>
<td>27.5</td>
<td>12.8</td>
<td>5.1</td>
<td>12.3</td>
<td>12.3</td>
</tr>
<tr>
<td>1900-09</td>
<td>19.9</td>
<td>15.7</td>
<td>10.6</td>
<td>16.3</td>
<td>14.5</td>
<td>12.3</td>
</tr>
<tr>
<td>1910-19</td>
<td>9.9</td>
<td>4.0</td>
<td>6.0</td>
<td>23.5</td>
<td>24.4</td>
<td>18.3</td>
</tr>
</tbody>
</table>

Table 5.—Immigrants from Certain Countries Shown as Percentages of Total Immigration, by Decades, 1820 to 1920

Dublin and Baker has been selected because it is the most comprehensive yet published and because it relates particularly to two of the most important industrial states—New York and Pennsylvania—at a time of unusual industrial expansion before the movement to improve working and living conditions had borne much fruit. This study had for its primary purpose the determination of racial differences in physical constitution, and the general conclusion was that "the superior vitality of the native stock is fully demonstrated as to both sexes." The term "vitality," as used by them, means simply the rate of survival. The gross data upon which this conclusion was based are summarized in Table 6, from which it is obvious that there were wide differences in death rates among persons living in these states but born in different countries. These differences are all the more interesting because they do not appear to the same extent for the populations of the countries of origin. Thus, the death rates for Austria and Hungary for persons of comparable age were higher than for Austro-Hungarian immigrants in the United States; for Italy the rates were about the same as those for Italians here; for Germany the rates were lower than for Germans here, particularly for males; for Great Britain the rates were much lower than for British here; and for Ireland the rates were strikingly lower than for Irish living in the United States. Unless the British, Irish and German immigrants, as a result of some

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Fig. 15.—Relative annual deviations from secular trends of mortality from all causes among males aged 20–29 years in Massachusetts, and of the volume of immigration into the United States, and Ayre’s monthly index of business conditions, 1868–1895.

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41 The comparisons are drawn from Dublin and Baker, op. cit. No data for Russia were available. It may be observed that Russian (principally Jewish) immigrants had been accustomed to urban life before emigration.
VITALITY

Table 6.—Death Rates among Persons Ten Years of Age and Over of Different Nativities, in New York and Pennsylvania, 1910*

<table>
<thead>
<tr>
<th>Nativity</th>
<th>Pennsylvania</th>
<th>New York</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Native born of native parentage</td>
<td>12.5</td>
<td>12.3</td>
</tr>
<tr>
<td>Native born of foreign or mixed parentage</td>
<td>18.8</td>
<td>16.3</td>
</tr>
<tr>
<td>Foreign born: total</td>
<td>17.5</td>
<td>16.0</td>
</tr>
<tr>
<td>Austro-Hungarian</td>
<td>14.4</td>
<td>12.3</td>
</tr>
<tr>
<td>Russian*</td>
<td>13.7</td>
<td>12.7</td>
</tr>
<tr>
<td>Italian</td>
<td>14.5</td>
<td>12.9</td>
</tr>
<tr>
<td>German</td>
<td>17.0</td>
<td>14.2</td>
</tr>
<tr>
<td>English, Scotch, Welsh</td>
<td>16.1</td>
<td>16.6</td>
</tr>
<tr>
<td>Irish</td>
<td>23.6</td>
<td>25.9</td>
</tr>
</tbody>
</table>

* Adjusted to the age distribution of native born of native parentage in New York State in 1910. From Dublin and Baker (see footnote 40).
* Composed mainly of Jews.

The process of economic or social selection, represented the constitutionally weaker elements of the populations from which they came, their higher mortality rates in the United States must be interpreted as reflecting not a lower vitality but the effects of conditions under which they lived and worked here. In other words, an experiment, in effect, was tried of drawing large samples from the rural populations of Great Britain, Ireland and Germany and placing them in a new environment where they were subjected for many years to the least favorable urban conditions of working and living in order to see whether or not they could survive as long as those who were not transplanted. If this hypothesis is true in the main, the result of the experiment is strikingly clear. The relatively low death rate of native born persons of native parentage (descended almost entirely from earlier British and German immigrants) who had attained higher economic and social standards is additional evidence in support of this explanation.

The fact that death rates of various races from Austria-Hungary and of Russians (chiefly Jews) and Italians living in these two states in 1910 were either not lower than those of their countries of origin or not greatly in excess of the 1910 rates for native born of foreign parentage probably reflects the shorter period of exposure to unfavorable environment on the part of these immigrants as contrasted with the longer experience of the British, Germans and Irish. The higher rates among the older immigrants may properly be explained not only on these grounds.

42 It will be recalled that the periods of large immigration from the United Kingdom and Germany were in 1845–1860, 1865–1875, and 1880–1895, although many Irish also came after 1900. The newer immigration of Italians, Russians, and Austro-Hungarians began about 1900.
Fig. 16.—Mortality at different ages from pulmonary tuberculosis among males and females of various countries of birth residing in New York and Pennsylvania in 1910. (Based on data from Dublin and Baker. See footnote 40.)
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but also by the fact that the environment to which they were subjected was far more unfavorable during the early years of their residence in this country than that to which the newer immigrants were exposed after 1900.

The significance of this influence of a different and more unfavorable environment upon the mortality rate of immigrants is illustrated in the statistics for tuberculosis, a disease that is considered to reflect environmental as well as constitutional factors in a peculiarly sensitive way. Using Dublin and Baker's data, the age specific tuberculosis death rates among males and females have been plotted in Figure 16. Here it is seen that the high rates for the older male immigrants, particularly the Irish, and for native born males of native parents are in striking contrast from two points of view to those for the males of people coming later. (1) The former are higher than the latter taking all ages into account. (2) The curves for the former reach their peaks in the age period 30-50 years whereas the latter reach their peaks later in life. A greater susceptibility to the disease on the part of the older immigrants cannot be assumed in view of the general similarity of the curves for females. The striking contrasts in the shapes of the curves for the males suggests that only the oldest age groups of the newer immigrants, who had resided in this country for a considerable time, had suffered from the influence of conditions that break down resistance to the disease. To these there may be added four other pertinent facts. One is that the newer immigrants were more mobile than the earlier and when stricken with disease returned to their own countries more readily. The second is that the height of the curves for any country of birth are different in the two states and emphasize further the differential significance of environmental factors. A third is that the proportionate mortality from pulmonary tuberculosis in the entire registration area in 191043 exhibits no such wide contrasts according to country of birth as shown for New York and Pennsylvania. (Table 7.) A fourth is derived from the statistics of mortality among infants with mothers of different nativity residing in New York. Eastman44 has shown, for example, that such differences as appear are due more to deaths from communicable, respiratory and gastro-intestinal diseases than to prenatal and other causes peculiar to early infancy, principally prematurity and congenital defects. "It is not to be wondered at," said Eastman, "that they are the dominant causes among the foreign-born population, the majority of whom are poor, illiterate, without knowledge of English and almost wholly ignorant of the elements of modern

43 For this particular year the U. S. Bureau of the Census classified deaths from various causes according to the country of birth, sex, and age of decedent.

sanitation and inhabit, as a rule, the most congested districts of the larger manufacturing centers."

Table 7.—Proportionate Mortality from Pulmonary Tuberculosis Among Males Residing in the United States, Classified by Country of Birth and Age, 1910*

<table>
<thead>
<tr>
<th>Country of birth</th>
<th>Age group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20-24</td>
</tr>
<tr>
<td>United States</td>
<td>41.7</td>
</tr>
<tr>
<td>England and Wales</td>
<td>81.3</td>
</tr>
<tr>
<td>Ireland</td>
<td>42.1</td>
</tr>
<tr>
<td>Germany</td>
<td>31.8</td>
</tr>
<tr>
<td>Austria</td>
<td>32.1</td>
</tr>
<tr>
<td>Hungary</td>
<td>32.8</td>
</tr>
<tr>
<td>Italy</td>
<td>26.5</td>
</tr>
<tr>
<td>Russia</td>
<td>38.5</td>
</tr>
</tbody>
</table>

* Percent due to pulmonary tuberculosis of total deaths exclusive of suicide and accidental causes. Computed from mortality statistics, United States Bureau of the Census, 1911.

It is now possible to consider briefly the trends in the mortality rates of natives of native parents, natives of foreign parents and foreign born for the past forty years. Unfortunately the records are not given for each country of birth. Winslow and Wang have presented the mortality rates for these nativity groups from 1890 to 1920 at quinquennial periods for persons of different ages in six states (Connecticut, Massachusetts, New Hampshire, New Jersey, New York and Rhode Island) into which immigration has always been heavy. All these states except New Hampshire have been relatively industrial and urban. The data are shown graphically in Figure 17 where logarithmic ordinates are used in order to compare the rate of increase or decrease in mortality for the three nativity groups. Some of the very interesting and significant facts illustrated may be summarized as follows: (1) The death rate for persons under 40 years of age fell most rapidly among natives of foreign parents, less rapidly among foreign born, and least rapidly among natives. The greater decline for foreign born and natives of foreign born parents, particularly

45 Winslow, C.-E. A. and Wang, P. L., "The Relation Between Changes in Nationality, Stock and Increasing Death Rates in Adult Life," *American Journal of Hygiene*, July, 1931, vol. XIV, pp. 79-88. These authors have suggested that the declining death rate among foreign born "may be largely due to replacement since 1890 of Irish and German stocks (characterized by high mortality) by Italian and Russian and other related stocks (characterized by low mortality), without taking into account the possible effects of differences and of varying changes in environmental conditions."

46 The relatively low rates in this age group for foreign born throughout the period may be attributed chiefly to the fact that only those foreign born infants were brought in who had passed the state of high infant mortality (the first month or so of life) and who were free from infectious diseases at the date of entry.
the latter, appears to be associated with improvements in public health, medicine and living conditions. (2) The death rate for the foreign born in the age groups 40–49 and 50–59 definitely declined, whereas the rates for native born of foreign parents and for natives of native parents did not exhibit any downward trend. In fact, the mortality of the immediate descendants who were over 40 years old actually increased after 1905.

(3) The general trend of death rates for all three nativity groups over 60 years of age has been upward, particularly among the native born. Thus, as Winslow and Wang have pointed out, "this increasing mortality (in adult life), so far as the entire population is concerned, cannot be explained by changes in immigrant race stock." If the changes in mortality rates for foreign born are compared for different age groups, as is done in Figure 18, the older the age group the less encouraging has been the decline in the death rate. Viewed against the historical background, the
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most plausible interpretation is that for the older foreign born these rates reflect a vitality damaged by the unfavorable conditions of their early life in this country. For example, the foreign born aged 60–69 years in 1910 immigrated at the age 20–29 or even 30–39 between 1870 and 1890 when the environment of the immigrant was peculiarly unfavorable, as indicated by the death rate among foreign born aged 40–49 in 1890 and by other data already referred to.

![Logarithmic Scale Graph](image)

**Fig. 18.**—Trends in mortality among foreign born persons of different ages in six states (Massachusetts, Connecticut, New Hampshire, New Jersey, New York and Rhode Island), 1890–1920. The graphs were drawn on logarithmic ordinate scales of the same magnitude and superimposed at the year 1890. (Based on data from Winslow and Wang. See footnote 45.)

The available evidence thus points strongly to the conclusion that environmental conditions account in far greater degree than any constitutional factors for differences in actual achievement in survival among the racial stocks that have composed the immigration to this country. There may be, and probably are, constitutional differences that manifest themselves in a higher susceptibility to disease on the part of one race stock as compared with another, but the evidence on this point is so

47 The relatively high mortality rate of the Irish born resident in the United States, so frequently remarked upon, should be considered in relation to factors other than possibly low vitality. The early Massachusetts Board of Health reports contain frequent references to their extremely unfavorable conditions of living in contrast to those of other immigrants
unconvincing as yet that it must be regarded as of relatively little importance in comparison with the known effects of different conditions of life and work. At any rate, whatever slight differences in constitution may exist among the races that have come into the American melting pot, there is every sign that fusion will be accelerated more than ever before if any real limitation upon immigration continues. As DePorte has shown, intermarriage between persons of different nativities is increasing for several reasons, the simplest and most potent of which is that there are coming to be fewer and fewer persons of any one nativity to mate.

The discussion thus far has not included Negroes for the reason that the Negro is separate and relatively homogeneous, although somewhat affected by racial admixtures. As pointed out before, the existing records do not permit a study of the genetic changes. Various studies of the Negro indicate that he differs from the white in certain constitutional respects and in susceptibility to certain diseases, but the data are insufficient to warrant definite conclusions as to whether or not the net results of these differences point to inferiority or superiority in vitality, in its strict biological sense.

V. THE PRESENT STATE OF THE PEOPLE'S HEALTH

This discussion of the trend in the vitality of the American people and of some of the principal factors involved in its conservation would not be complete without a summary on the present state of the people's health. Some of the evidence has already been given in the foregoing pages; it remains to round out the picture, even though it be only a sketch.

From the great mass of information, much of which cannot be put into statistical form, a few samples have been selected. These relate to:

of that period. The Irish did not rise as high in the economic scale as did the native born or English and the Scotch, as the reports of the Immigration Commission show. A very considerable proportion of German immigrants settled in rural areas, whereas very few of the Irish did. Moreover, under the more favorable environment of a later period, the death rate from tuberculosis, to which Irish are commonly regarded as peculiarly susceptible, was not much higher for the Irish than for other nativities, as for example in Chicago in 1910.


49 See Holmes, S. J., "Differential Mortality in the American Negro," Human Biology, vol. III, nos. 1 and 2, pp. 71–106, 203–244. This is perhaps the most exhaustive recent study of the subject. In his conclusion Holmes say: "There is no adequate evidence that [the Negro] has any less capacity to resist disease than the whites. The mortality of the Negro is so greatly affected by his unfavorable environment and habits of life that for most diseases it is quite impossible to detect any influence of hereditary racial factors which nevertheless may be present." (p. 242); see also Sydenstricker and Gover, op. cit.

50 Except in so far as the data have already been given or may be necessary to complete the picture at different ages, the evidence relating to children and adolescent ages will not be given in this chapter since it is presented and discussed adequately in Chap. XV.
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1. The prevalence of physical and mental impairments.
2. The prevalence and incidence of various kinds of illness.
3. The mortality rate from the principal causes.

Prevalence of Physical and Mental Defects and Impairments.—The most accurate statement about the health of the population should be afforded by the results of physical and medical examinations of random samples. Unfortunately the data yielded by examinations of this kind are neither accurate nor typical. The ordinary physical examination is so cursory that only some of the major defects are found and the opinions of the examining physicians vary so greatly that they are in no respect comparable. The largest mass of records yet published are those of examinations of recruits and of men drafted in the World War. Although these records yielded some rather interesting information about a specific age group of males, they can be almost entirely dismissed for the purposes of this discussion because the examiners were looking for specific defects and frequently did not look for others when one disabling impairment was discovered. The more careful examinations made by the officers of the United States Public Health Service in the course of certain industrial studies constitute a valuable source of information for a single group, namely the industrial workers.\(^\text{51}\) More recently, and partly for the purposes of this study, the records of approximately 100,000 males who received “health” examinations under the auspices of the Life Extension Institute were tabulated and analyzed. It is believed that this set of records constitutes the best data so far available on the prevalence of specific impairments according to age, although they possess certain defects which should be noted as follows:

(a) The examinations were made by about 9,000 physicians in typical localities in the United States but the physicians were not specially trained in the technique of discovering impairments. The results therefore merely represent the professional opinions of the average American physician.

(b) The persons examined were all adults but they constitute a selected group by reason of the fact that they were life insurance policy holders and therefore had passed some sort of medical examination before. Moreover they were more representative of the upper social and economic level than of the population as a whole.

Although great variability in the findings of individual physicians undoubtedly occurred, the results given by 9,000 examiners for so large a number of persons are not without some value in affording an impression, admittedly not exact, of American medical practitioners’ findings. The data yielded by these examinations have therefore been selected for

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comment. It is proper to state that the findings of the Life Extension Institute examiners generally coincide with those of the medical officers of the United States Public Health Service already referred to.

In general, the findings may be summarized as follows:

1. For reasons stated above the actual percentages of white males who were found to have impairments are of little value as a complete revelation of the extent to which the various impairments prevailed. Nevertheless they are not without interest and the frequency of the principal impairments are shown in Table 8, the percentages having

| Table 8.—Frequency of Certain Impairments, Adjusted to the Age Distribution of Adult Males in the United States
<p>| (1920 Census) |
|-------------------|-------------------|-------------------|</p>
<table>
<thead>
<tr>
<th>Impairment or disease</th>
<th>Percent of total persons examined</th>
<th>Impairment or disease</th>
<th>Percent of total persons examined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes and ears:</td>
<td></td>
<td>Stomach and abdominal:</td>
<td></td>
</tr>
<tr>
<td>Defective vision (corrected and uncorrected)</td>
<td>57.0</td>
<td>Acid stomach</td>
<td>10.5</td>
</tr>
<tr>
<td>Defective hearing</td>
<td>15.9</td>
<td>Gastric disturbances</td>
<td>8.0</td>
</tr>
<tr>
<td>Wax in ears</td>
<td>13.0</td>
<td>Constipation</td>
<td>33.7</td>
</tr>
<tr>
<td>Nose and throat:</td>
<td></td>
<td>Tenderness in region of appendix</td>
<td>2.5</td>
</tr>
<tr>
<td>Deflected septum—marked</td>
<td>7.6</td>
<td>Hemorrhoids</td>
<td>15.2</td>
</tr>
<tr>
<td>Deflected septum—slight</td>
<td>40.9</td>
<td>Varicocle</td>
<td>8.9</td>
</tr>
<tr>
<td>Enlarged or diseased tonsils</td>
<td>43.0</td>
<td>Weak inguinal rings</td>
<td>7.2</td>
</tr>
<tr>
<td>Naso-pharyngitis</td>
<td>8.0</td>
<td>Inguinal hernia—truss</td>
<td>3.1</td>
</tr>
<tr>
<td>Hypertrophic rhinitis</td>
<td>36.7</td>
<td>Inguinal hernia—no truss</td>
<td>3.1</td>
</tr>
<tr>
<td>Frequent colds</td>
<td>16.2</td>
<td>Other hernias</td>
<td>.85</td>
</tr>
<tr>
<td>Teeth:</td>
<td></td>
<td>Genito-urinary:</td>
<td></td>
</tr>
<tr>
<td>Carious teeth—septic roots</td>
<td>15.0</td>
<td>Prostate enlarged or tender</td>
<td>10.9</td>
</tr>
<tr>
<td>Pyorrhea</td>
<td>6.0</td>
<td>Frequent or painful urination</td>
<td>10.5</td>
</tr>
<tr>
<td>Slightly infected gums</td>
<td>17.9</td>
<td>Brain and nervous:</td>
<td></td>
</tr>
<tr>
<td>Heart and pulse:</td>
<td></td>
<td>Nervousness</td>
<td>6.9</td>
</tr>
<tr>
<td>Functional murmur</td>
<td>6.0</td>
<td>Reflexes sluggish, absent, unequal, irregular</td>
<td>4.3</td>
</tr>
<tr>
<td>Enlargement</td>
<td>3.3</td>
<td>Miscellaneous:</td>
<td></td>
</tr>
<tr>
<td>Other organic</td>
<td>4.8</td>
<td>Adenitis</td>
<td>3.5</td>
</tr>
<tr>
<td>Rapid pulse</td>
<td>8.6</td>
<td>Chronic skin infection</td>
<td>10.1</td>
</tr>
<tr>
<td>Blood vessels:</td>
<td></td>
<td>Urinalysis:</td>
<td></td>
</tr>
<tr>
<td>Moderate or marked arterial thickening</td>
<td>4.7</td>
<td>Albumin—slight trace</td>
<td>19.5</td>
</tr>
<tr>
<td>Slight arterial thickening</td>
<td>15.7</td>
<td>Albumin—definite trace or marked</td>
<td>3.3</td>
</tr>
<tr>
<td>Varicose veins</td>
<td>6.4</td>
<td>Protein</td>
<td>12.0</td>
</tr>
<tr>
<td>Respiratory:</td>
<td></td>
<td>Casts—hyaline</td>
<td>12.5</td>
</tr>
<tr>
<td>Emphysema</td>
<td>1.5</td>
<td>Casts—granular</td>
<td>8.7</td>
</tr>
<tr>
<td>Tuberculosis (suspected or active)</td>
<td>1.0</td>
<td>Specific gravity—high</td>
<td>4.0</td>
</tr>
<tr>
<td>Endocrine:</td>
<td></td>
<td>Specific gravity—low</td>
<td>4.0</td>
</tr>
<tr>
<td>Enlarged thyroid (simple goitre)</td>
<td>1.7</td>
<td>Sugar—trace or marked</td>
<td>6.2</td>
</tr>
</tbody>
</table>

* For source, see footnote 52 and text.

Fig. 19.—Percent of male white policy holders found by medical examiners of the Life Extension Institute to have certain impairments and conditions at different ages, by occupational class.
been adjusted to the age of distribution of adult males in the United States in 1920.

2. The most important results are variations in the percent of adults impaired in various ways according to age. In Figure 19, the age variations of some of the impairments are shown in graphic form, the heavy lines indicating the percentage for the total group. Those impairments which decreased with age were otitis media, deflected septum, hypertrophic rhinitis, naso-pharyngitis, history of common colds, enlarged and diseased tonsils, tuberculosis, tenderness in the region of the appendix, enlarged thyroid and dysfunction of the thyroid, specific gravity of the urine, and mastoid defects. Impairments which showed a marked rise with age were as follows: defective vision and cataract, defective hearing, emphysema and asthma, pyorrhea and carious teeth, heart impairments, high blood pressure and arterial thickening, hemorrhoids and varicose veins, hernia, enlarged or hardening of the liver, tenderness in the region of the gall bladder, visceroptosis, hydrocele, genito-urinary impairments, sluggish and irregular reflexes and the occurrence of positive Romberg, casts, albumin, pus and sugar in the urine, oedema, neuralgia and neuritis. It was also observed that constipation and habitual use of laxatives was more frequent in older than in younger persons.

In the same diagram are shown the impairment rates according to age for persons of different occupational and, in a general sense, social class. These clearly suggest certain variations that are associated principally with environmental conditions, although in some instances they may be interpreted as reflecting differences in constitution.

The true prevalence of venereal diseases is not revealed by statistics of impairments nor by records of morbidity and mortality. In fact, the full extent of their prevalence is not shown by any statistics now available for representative population groups. The most complete data are those obtained by the United States Public Health Service on the number

<table>
<thead>
<tr>
<th>Disease</th>
<th>Rate per 1,000 of population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both sexes</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>3.41</td>
</tr>
<tr>
<td>Syphilis</td>
<td>4.05</td>
</tr>
<tr>
<td>Gonorrhea and syphilis</td>
<td>7.46</td>
</tr>
</tbody>
</table>

of cases of syphilis and gonorrhea under treatment by physicians in private practice, clinics, hospitals or charity institutions. These surveys are summarized in Table 9. Obviously these rates are minimal statements since many cases do not come to the physicians for treatment. Their significance lies in the fact that the diseases have their onset in early adult life and, entirely aside from their social consequences or effects upon offspring, contribute to the prevalence of organic diseases of other kinds before old age is reached.

The extent to which mental defects and impairments are prevalent or occur annually is a matter of conjecture. Estimates made by so-called authorities on mental hygiene vary so widely as to be ludicrous. They depend on opinions as to what are mental disorders and obviously no accuracy can be attained until some scientific standards are set up and tested by objective methods. We are thus compelled to rely on such objective data as are available but with the full understanding that they are far from complete. For this purpose admissions to institutions and hospitals because of mental disease are the most reliable, although admittedly minimal, data. Since the statistics for New York state are probably the most complete, they may be selected as the most dependable sample for the country.53

Even these data, minimal as they are recognized to be, reveal the seriousness of the problem of mental disease. The expectancy of supposedly sane persons born in the state of New York of becoming so mentally diseased in one form or another as to be patients in institutions is 4.5 percent. Pollock and Malzberg54 point out that "on the average, approximately one person out of 22 becomes a patient for mental disease during the life of a generation." The rates for mental disease are higher for males than for females; they rise gradually with age from 13 to about 60 years and thereafter increase rapidly from approximately one per 1,000 population to about four per 1,000. The rates for foreign born males and females are considerably higher than those for natives under sixty years of age, but, as these authors suggest, these higher rates "are more probably due to environmental stresses such as are incidental to the struggle for existence in a new land" than to any racial inferiority. Syphilis, which is the cause of a considerable proportion of mental disease, is probably more prevalent in the foreign born than in the native population.

Prevalence and Incidence of Illness.—The only considerable source of information on the prevalence of disabling illness is the series of sickness surveys of 637,038 white and Negro industrial policy holders and

53 Compare the New York rates to be quoted with those given in the report of the U. S. Bureau of the Census on Patients in Hospitals for Mental Disease, 1925.

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their families made in 1915–1917 by the Metropolitan Life Insurance Company. The surveys were made at various seasons of the year and included a fair proportion of the wage earning population of each locality. The results indicated that at a given instant in time slightly more than 2 percent of the persons canvassed were ill. Of the total sick persons percent were unable to work. The general nature of the causes and kinds of sickness is summarized in Table 10. Nearly 60 percent of the illnesses had lasted one month or longer at the time the record was made and for nearly 30 percent the duration had been one year or longer.

Were all of these conditions peculiar to old age, near the end of the life span, disabling illness would not be regarded as any indication of impaired or low vitality. But the age specific rates for prevalent disabling illness affords no such comforting explanation, as Table 11 shows. The prevalence of disabling sickness in the age period 35–44 years, when the capacity for work and life should be nearing its zenith, is twice that of children and increases by almost half in the decade after 44 years of age. The higher prevalence of disabling illness among men 45 years of age and over than among women is an indication of damaged vitality that, in the light of other data referred to in this report, must be regarded as evidence that environmental conditions bear more severely upon men.

The lack of ability to resist disease and impairments is measurable from another point of view—the frequency with which illness of different kinds occurs in the population. This is shown by records of the incidence of disease and illness during a given period which may be contrasted with the records of the prevalence of illness at a given instant in time. Estimates

TABLE 10.—PREVALENCE OF VARIOUS TYPES OF DISABLING ILLNESS, 1915–1917a
(Among 571,737 persons surveyed by the Metropolitan Life Insurance Company)

<table>
<thead>
<tr>
<th>Disease or condition</th>
<th>Rate per 100,000 population</th>
<th>Disease or condition</th>
<th>Rate per 100,000 population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious diseases of childhood</td>
<td>93.7</td>
<td>Kidneys and genito-urinary</td>
<td>64.9</td>
</tr>
<tr>
<td>Tuberculosis, malaria and typhoid fever</td>
<td>111.7</td>
<td>Puerperal conditions, including normal pregnancy</td>
<td>51.5</td>
</tr>
<tr>
<td>Rheumatism</td>
<td>104.4</td>
<td>Mental and nervous conditions</td>
<td>236.4</td>
</tr>
<tr>
<td>Respiratory</td>
<td>331.6</td>
<td>External causes, chiefly accidents</td>
<td>178.4</td>
</tr>
<tr>
<td>Digestive system</td>
<td>105.8</td>
<td>All other</td>
<td>396.2</td>
</tr>
<tr>
<td>Heart and circulatory system</td>
<td>80.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


b The prevalence of tuberculosis was 27.8 per 100,000, probably an understatement of the amount of disabling tuberculosis and certainly of total tuberculosis.

The population surveyed was industrial in type and lived in Rochester, New York, Chelsea neighborhood of New York City, Trenton, New Jersey, Boston, industrial villages in North Carolina, in Pennsylvania and West Virginia, and Kansas City, Missouri.
of the frequency of illness vary according to the definition of what is meant by illness. Some estimates and records include minor respiratory

and digestive symptoms that are not really morbid but are normal physiological reactions to changes in meteorological and dietary conditions. A fairly conservative estimate would be between 0.8 and 1.0 illness

<table>
<thead>
<tr>
<th>Diseases and conditions causing illness (numbers in parentheses refer to those given in the International List of Causes of Death, 1920)</th>
<th>Rate per 1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>All diseases</td>
<td>857.8</td>
</tr>
<tr>
<td>Total respiratory (11, 31, 97–107, 109)</td>
<td>853.3</td>
</tr>
<tr>
<td>Influenza and grippe (11)</td>
<td>85.4</td>
</tr>
<tr>
<td>Diseases of the pharynx (100)</td>
<td>68.9</td>
</tr>
<tr>
<td>Diseases of the larynx (98)</td>
<td>5.7</td>
</tr>
<tr>
<td>Epidemic, endemic and infectious diseases (1–42, except 11 and 31)</td>
<td>75.0</td>
</tr>
<tr>
<td>General diseases (43–60)</td>
<td>39.3</td>
</tr>
<tr>
<td>Cancer (43–49)</td>
<td>1.2</td>
</tr>
<tr>
<td>Diabetes (57)</td>
<td>1.0</td>
</tr>
<tr>
<td>Diseases of the nervous system (70–84, part of 203)</td>
<td>39.4</td>
</tr>
<tr>
<td>Diseases of the eye and annexa (85)</td>
<td>11.5</td>
</tr>
<tr>
<td>Diseases of the ear and mastoid process (86)</td>
<td>23.5</td>
</tr>
<tr>
<td>Diseases of the circulatory system (87–90)</td>
<td>23.4</td>
</tr>
<tr>
<td>Diseases and disorders of the digestive system (110–127, part of 108 and 205)</td>
<td>89.9</td>
</tr>
<tr>
<td>Indigestion and upset stomach (part of 112)</td>
<td>32.9</td>
</tr>
<tr>
<td>Diseases of teeth and gums (part of 108)</td>
<td>11.5</td>
</tr>
<tr>
<td>Diseases of kidney and annexa (128–134)</td>
<td>15.1</td>
</tr>
<tr>
<td>Non-venerel diseases of the genito-urinary system (135–143)</td>
<td>17.3</td>
</tr>
<tr>
<td>Puerperal state (148–150)</td>
<td>28.7</td>
</tr>
<tr>
<td>Confinement</td>
<td>19.7</td>
</tr>
<tr>
<td>Diseases of skin and cellular tissue (151–154, part of 205)</td>
<td>38.4</td>
</tr>
<tr>
<td>Diseases of bones and organs of locomotion (155–158, part of 205)</td>
<td>16.8</td>
</tr>
<tr>
<td>Congenital malformations and infancy (159–163)</td>
<td>2.1</td>
</tr>
<tr>
<td>Senility (164)</td>
<td>.8</td>
</tr>
<tr>
<td>External causes (165–203)</td>
<td>75.1</td>
</tr>
<tr>
<td>Ill defined and unknown</td>
<td>15.5</td>
</tr>
</tbody>
</table>

* Preliminary tabulation of the results of a study made under the auspices of the Committee on the Costs of Medical Care in cooperation with the United States Public Health Service and State Departments of Health. The data were secured from families at frequent intervals during a period of one year.
VITALITY

per person per year, using “illness” in the commonly accepted sense. The evidence is fairly definite that about one in ten industrially employed males suffer a disabling illness of one week or longer per year.56

The largest collection of records showing the frequency or incidence of illness during twelve months in samples of the general population of all ages at home and at work (about 40,000 persons) was made by the Committee on the Costs of Medical Care in cooperation with the United States Public Health Service. These records are summarized according to cause or nature of illness in Table 12 which shows that although about forty percent were respiratory and that about half of these were “common colds,”57 the incidence of illnesses of more serious kinds are distressingly frequent.

56 Brundage, D. K., “The Incidence of Illness among Wage Earning Adults,” Journal of Industrial Hygiene, vol. XII, no. 9, November, 1930, p. 342. This figure is based on 899,064 years of life observed in 1921–1928.
57 The Hagerstown Morbidity Studies made by the United States Public Health Service over a period of 28 months for about 7,200 persons showed that 60 percent of illnesses were respiratory in kind. These studies were more intensive than the one referred to above in that the families were canvassed more frequently and a more complete record of minor illness was obtained. Otherwise the two series of studies were generally similar as to method. (U. S. Public Health Service, Public Health Reports, September 24, 1926, vol. XLI, no. 39.)

Fig. 20.—Incidence of illnesses due to certain causes at different ages in a sample of 7,200 white persons residing in Hagerstown, Maryland, 1921–1924. (From the Hagerstown Morbidity Studies, U. S. Public Health Service.)
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More significant than gross illness rates are the statistics of illness according to age, since they portray conditions and diseases as manifestations of impaired vitality. The first illness records obtained for a sample of a typical population of all ages, of both sexes, living at home or working, were collected by the writer for the United States Public Health Service in Hagerstown, Maryland, in 1921–1924, and have been tabulated according to cause for different age groups. Using "illness" in the ordinary sense, it was found that the frequency of total illness was highest in childhood, lowest in the ages 15–24, and increased gradually according to age thereafter. The preponderance of respiratory illness (60 percent of the total) somewhat obscured the picture of illnesses of other kinds, but when respiratory illnesses were subtracted, this variation in the age curve was even more pronounced. When illness is pictured in terms of its causes or nature at different ages (Figures 20 and 21) the conclusion is inescapable.

Fig. 21.—Incidence of illnesses due to certain causes at different ages in a sample of 7,200 white persons residing in Hagerstown, Maryland, 1921–1924. (From the Hagerstown Morbidity Studies, U. S. Public Health Service.)
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able that, aside from the minor respiratory and digestive ailments, certain organic and nervous conditions manifest themselves at an early adult age. Sickness in childhood is mainly due to infections from the communicable intestinal and respiratory diseases and conditions affecting the skin, teeth, eyes and ears. The extent to which these infections are causally related to the impairments of later life, particularly at those ages when physical efficiency should be greatest, has not been precisely determined, but the general consensus is that a very large proportion of the impairments of early and middle adult life are traceable to some of the diseases contracted in childhood. Whatever may be the exact correlation, the later impairments are serious enough to be measured in terms of actual illness and are strikingly shown by the incidence rates of digestive, nervous, general, circulatory and kidney diseases.

The frequency of illness for an entire population during a given period of time does not tell us how many individuals were ill nor whether or not some individuals were ill more often than others. The Hagerstown study showed that, for persons observed at frequent intervals for 26 months, the proportion ill once a year did not vary greatly according to age, the percentages varying from 18.1 to 22.4. But the percentage of persons ill twice a year or oftener varied from 45.5 in childhood to 10.5 in the age period 20–24 years, gradually increasing thereafter to 22.6 in the age period 45–54 years. The large number of children frequently sick is a reflection of the frequency of infections and minor ailments, but the

<table>
<thead>
<tr>
<th>Diseases or conditions</th>
<th>Rate per 1,000 persons observed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Both sexes</td>
</tr>
<tr>
<td>Tuberculosis (all forms)</td>
<td>6.99</td>
</tr>
<tr>
<td>Cancer</td>
<td>2.33</td>
</tr>
<tr>
<td>Venereal diseases</td>
<td>3.91</td>
</tr>
<tr>
<td>Rheumatism, lumbago, myalgia, myositis</td>
<td>34.01</td>
</tr>
<tr>
<td>Paralysis</td>
<td>3.14</td>
</tr>
<tr>
<td>Neuralgia, neuritis, sciatica</td>
<td>81.75</td>
</tr>
<tr>
<td>Neurasthenia and nervous exhaustion</td>
<td>22.36</td>
</tr>
<tr>
<td>Diseases of the heart</td>
<td>21.19</td>
</tr>
<tr>
<td>Digestive disorders</td>
<td>25.86</td>
</tr>
<tr>
<td>Calculi, biliary and of urinary passages</td>
<td>6.64</td>
</tr>
<tr>
<td>Cholecystitis and other liver conditions</td>
<td>6.05</td>
</tr>
<tr>
<td>Nephritis and other kidney conditions</td>
<td>16.77</td>
</tr>
<tr>
<td>Chronic diseases of female genital organs</td>
<td></td>
</tr>
</tbody>
</table>

* Table 13.—Prevalence of Certain Chronic Conditions Resulting in Illness during a 28 Months’ Period in a General Population Group in Hagerstown, Maryland*

* Condensed from Table 4, Hagerstown Morbidity Studies no. 1, United States Public Health Reports, September 24, 1926, vol. XLII, no. 39; the uniformly higher rates among females may be due in part to the fact that women in the households observed were the informants and may have reported more completely upon their own ailments than upon those of their husbands and other adult males.
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rising percentages of adults who were more frequently sick as age advances, considered in relation to the nature of the illness, points to the fact that certain impairments and diseases are of a chronic nature. The Hagerstown study also afforded the opportunity of ascertaining the prevalence of chronic diseases and conditions serious enough to cause illness. The more frequent cases are shown in Table 13. The foregoing is a minimal statement for two reasons: only those conditions that were severe enough to cause illness or at least discomfort were reported and, of these, a large proportion were serious enough to demand a physician’s attendance.

A study of the chronic disease situation in Massachusetts formed the basis for an estimate that approximately half a million persons, or about

Table 14.—Mortality from Certain Causes in the 1900 Registration Area, 1900–1929\(^a\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Infant mortality</th>
<th>Maternal Total puerperal causes</th>
<th>Puerperal septicemia</th>
<th>Diphtheria</th>
<th>Measles</th>
<th>Scarlet fever</th>
<th>Typhoid fever</th>
<th>Whooping cough</th>
<th>Diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td></td>
<td>53.0</td>
<td>23.0</td>
<td>40.4</td>
<td>13.4</td>
<td>9.6</td>
<td>51.3</td>
<td>12.3</td>
<td>11.0</td>
</tr>
<tr>
<td>1901</td>
<td></td>
<td>52.3</td>
<td>21.8</td>
<td>33.4</td>
<td>7.4</td>
<td>13.5</td>
<td>27.5</td>
<td>8.7</td>
<td>11.5</td>
</tr>
<tr>
<td>1902</td>
<td></td>
<td>50.0</td>
<td>20.9</td>
<td>29.7</td>
<td>9.3</td>
<td>11.9</td>
<td>20.9</td>
<td>12.4</td>
<td>11.6</td>
</tr>
<tr>
<td>1903</td>
<td></td>
<td>51.6</td>
<td>21.5</td>
<td>31.0</td>
<td>8.6</td>
<td>12.9</td>
<td>24.6</td>
<td>14.3</td>
<td>12.5</td>
</tr>
<tr>
<td>1904</td>
<td></td>
<td>59.0</td>
<td>25.8</td>
<td>29.3</td>
<td>11.3</td>
<td>11.6</td>
<td>23.0</td>
<td>5.8</td>
<td>14.0</td>
</tr>
<tr>
<td>1905</td>
<td></td>
<td>57.0</td>
<td>25.1</td>
<td>23.6</td>
<td>7.4</td>
<td>6.8</td>
<td>22.4</td>
<td>9.0</td>
<td>13.9</td>
</tr>
<tr>
<td>1906</td>
<td></td>
<td>56.8</td>
<td>23.0</td>
<td>25.8</td>
<td>11.8</td>
<td>7.5</td>
<td>22.0</td>
<td>14.5</td>
<td>14.7</td>
</tr>
<tr>
<td>1907</td>
<td></td>
<td>59.7</td>
<td>25.7</td>
<td>24.0</td>
<td>8.9</td>
<td>9.8</td>
<td>20.5</td>
<td>9.5</td>
<td>15.5</td>
</tr>
<tr>
<td>1908</td>
<td></td>
<td>56.8</td>
<td>24.3</td>
<td>21.6</td>
<td>10.2</td>
<td>12.9</td>
<td>20.6</td>
<td>9.4</td>
<td>15.1</td>
</tr>
<tr>
<td>1909</td>
<td></td>
<td>57.3</td>
<td>24.4</td>
<td>21.1</td>
<td>11.0</td>
<td>10.8</td>
<td>17.2</td>
<td>9.9</td>
<td>16.0</td>
</tr>
<tr>
<td>1910</td>
<td></td>
<td>60.0</td>
<td>20.9</td>
<td>22.5</td>
<td>12.6</td>
<td>12.2</td>
<td>18.0</td>
<td>10.7</td>
<td>17.6</td>
</tr>
<tr>
<td>1911</td>
<td></td>
<td>61.8</td>
<td>28.4</td>
<td>18.5</td>
<td>9.3</td>
<td>8.9</td>
<td>15.3</td>
<td>10.6</td>
<td>17.7</td>
</tr>
<tr>
<td>1912</td>
<td></td>
<td>56.6</td>
<td>24.0</td>
<td>16.8</td>
<td>9.0</td>
<td>6.2</td>
<td>18.2</td>
<td>8.0</td>
<td>17.7</td>
</tr>
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International list. 100–101 74a 31–37 87–90 43–49 128–149 175–196 201–203

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*U. S. Bureau of the Census, Mortality Statistics, number of deaths per 100,000 population. The intercensal populations have been estimated by straight line interpolation from the federal censuses of 1900, 1910, 1920 and 1930. Infant mortality is the number of deaths per 1,000 live births in the original birth registration area. The maternal mortality is the number of deaths per 100,000 females 15–44 years of age. The numbers appearing at the bottom of the columns correspond to those given in the 1920 International List of Causes of Death.

12 percent of the entire population of the state, are "sick with chronic disease at any one given moment." It was found that among persons under 20 years of age, the chronic disease sickness rate was 17 per 1,000 and among persons 50–54 years of age 198 per 1,000; that about one-fifth of the sick individuals had more than one disease; and that over 8 percent of the sick (including the aged sick) were completely disabled.

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Mortality Rates.—That all individuals must die is an inescapable fact of life. What the mortality rate would be if all lived to the end of the life span depends of course upon the length of the span. The point that interests us here is the failure of so large a proportion of the population to reach the end of even a modest life span—say 60 or 70 years. The data already referred to are ample to illustrate the actual failure to survive as well as to indicate some of the principal causes of death at different ages. Table 14, which brings up to date the gross mortality rates for certain causes, shows the rates for the more immediate causes of death. These facts should be interpreted, however, in the light of the impairments and illnesses that have been found to exist and occur long before death comes. If this is done, a conclusion of profound significance to the conservation of vitality is inescapable, namely that the vitality of the American people—whatever it may be if it were measurable in terms of inherited longevity—is impaired to an appalling extent by disease and environmental conditions that result not only in the immediate death of many but also in lowered efficiency, suffering, unhappiness and organic breakdowns which contribute to premature mortality.

VI. CONCLUSION

1. The expectation of life, i.e. the average age at death, has greatly increased, particularly during the past thirty years. This increase is due to the reduction in the mortality rate among persons under middle age, especially among infants and children, which has more than balanced the slower but consistent increase in the mortality rate of persons in middle and old age.\(^{59}\)

2. The span of life has not changed. The expectation of life will inevitably increase more slowly as it approaches the limit of this span. Already indications of this change are to be seen.

3. The gross mortality rate is tending to reach a level beyond which it will not decrease further unless effective methods of controlling the diseases of middle and old age are discovered and applied. Unless this can be accomplished on a considerable scale in the next few decades, an increase in the gross death rate can be predicted because of changes in the age distribution of the population, due to the decline in the birth rate.

4. The available evidence is insufficient to warrant a decisive verdict as to any change in the vitality, in the strict biological sense, of the American people. Further research may reveal that some process of breeding is going on which is resulting or will result in the inheritance, by an increas-

\(^{59}\) For estimates of future death rates, see Chap. I.
VITALITY

ing proportion of the population, of shorter rather than longer life. There are no scientific grounds as yet upon which the increase in mortality among older persons can be used as evidence of such a process. The recent increase in the mortality from important organic conditions among older males as compared with females of the same age is a definite sign that some unfavorable environmental condition or conditions, but not decreased inherited vitality, is peculiar in its effect upon males.

5. On the contrary, all evidence at present points to the conclusion that environmental factors have had a far greater influence than genetic factors in determining the rate at which the American people survive. The decline in the mortality rate may be properly interpreted to mean that conservation of vitality has been highly effective.

6. This conservation of vitality has been principally the result of successful efforts to control the most deadly of the communicable diseases which attack the susceptible and therefore the younger persons, and of improvements in modes and standards of living. Other than the signal achievements in reducing the mortality from tuberculosis, no such specific efforts have so far been as successful in controlling diseases peculiar to middle and old age or in postponing organic breakdowns that, although natural concomitants of the aging process, are hastened by disease or undue strain.

7. In spite of the reduction in the death rate among younger persons and the prevention of many infectious diseases, the American people are not enjoying the full extent of their vitality before they die. The high rate of sickness at all ages, except in late childhood and adolescence, is a disconcerting statistical expression of an almost universal experience. The available evidence on the prevalence of chronic diseases and organic as well as functional impairments, although incomplete, also reveals that a large proportion of the population is thus rendered more or less inefficient. Less commonly known but equally appalling is the fact that nearly 5 percent of American babies at birth have the prospect of becoming so mentally diseased in adult life as to require admission to some institution. The importance of conserving vitality and promoting enjoyment of life throughout life greatly overshadows, at least at present, the vague possibilities of lengthening the life span by the scientific breeding of future generations.

8. The most important field for further conservation of vitality is among persons over forty years of age. While great opportunities lie in the control of such diseases as syphilis, cancer, diabetes, tuberculosis,
pneumonia and other respiratory diseases, even greater opportunities exist in discovering the causes of organic breakdowns of the heart and circulatory system, the kidneys and the entire alimentary mechanism. As the statistics of sickness and physical impairments at earlier ages indicate, the search for these causes doubtless will go into the conditions of childhood and young adult life and, when successful, will result in further conservation of vitality throughout the entire life span.
THE INSTITUTION OF THE FAMILY HAS BEEN ATTACKED AND DEFENDED WITH UNUSUAL VIGOR IN RECENT YEARS. THE PRESENT CHAPTER DISCUSSES CHANGES IN THE FAMILY AS AN ECONOMIC INSTITUTION, ITS PROTECTIVE, RELIGIOUS, RECREATIONAL AND EDUCATIONAL FUNCTIONS, TRENDS IN THE WAY IN WHICH FAMILIES ARE ORGANIZED, THE EXTENT OF BROKEN HOMES AND PROBLEMS ARISING IN CONNECTION WITH THEM, RELATIONS OF PARENTS AND CHILDREN AND OF HUSBANDS AND WIVES, AND FINALLY, THE EFFORTS TO DEAL WITH FAMILY PROBLEMS.


THE OTHER OUTSTANDING CONCLUSION IS THE RESULTING PREDOMINANT IMPORTANCE OF THE PERSONALITY FUNCTIONS OF THE FAMILY—THAT IS, THOSE WHICH PROVIDE FOR THE MUTUAL ADJUSTMENTS AMONG HUSBANDS, WIVES, PARENTS AND CHILDREN AND FOR THE ADAPTATION OF EACH MEMBER OF THE FAMILY TO THE OUTSIDE WORLD. THE FAMILY HAS ALWAYS BEEN RESPONSIBLE TO A LARGE DEGREE FOR THE FORMATION OF CHARACTER. IT HAS FURNISHED SOCIAL CONTACTS AND GROUP LIFE. WITH THE DECLINE OF ITS INSTITUTIONAL FUNCTIONS THESE PERSONALITY FUNCTIONS HAVE COME TO BE ITS MOST IMPORTANT CONTRIBUTION TO SOCIETY. THE CHIEF CONCERN OVER THE FAMILY NOWADAYS IS NOT HOW STRONG IT MAY BE AS AN ECONOMIC ORGANIZATION BUT HOW WELL IT PERFORMS SERVICES FOR THE PERSONALITIES OF ITS MEMBERS.

IN COLONIAL TIMES IN AMERICA THE FAMILY WAS A VERY IMPORTANT ECONOMIC ORGANIZATION. NOT INFREQUENTLY IT PRODUCED SUBSTANTIALLY ALL THAT IT CONSUMED, WITH THE EXCEPTION OF SUCH THINGS AS METAL TOOLS, UTENSILS, SALT AND CERTAIN LUXURIES. THE HOME WAS, IN SHORT, A FACTORY. CIVILIZATION WAS BASED ON A DOMESTIC SYSTEM OF PRODUCTION OF WHICH THE FAMILY WAS THE CENTER.
RECENT SOCIAL TRENDS

The economic power of the family produced certain corresponding social conditions. In marrying, a man sought not only a mate and companion but a business partner. Husband and wife each had specialized skills and contributed definite services to the partnership. Children were regarded, as the laws of the time showed, not only as objects of affection but as productive agents. The age of marriage, the birth rate and the attitude toward divorce were all affected by the fact that the home was an economic institution. Divorce or separation not only broke a personal relationship but a business one as well.

Other institutional functions of the family were at the same time strongly developed. It furnished protection to its own members, with less aid from the community than is expected today; it might even, as in the case of feuds, carry on private wars. The authority of the father and husband was sufficient to settle within the family many of the problems of conduct. Religious instruction and ritual were a part of family life. For a successful marriage it was considered important that couples should hold the same faith. In general the home was the gathering place for play activities though there were some community festivities. Educationally, the farm and home duties constituted a larger part of learning than did formal instruction in schools. Farm life furnished what we now call manual training, physical education, domestic science instruction and vocational guidance. The individual spent much of the daily cycle in the family setting, occupied in ways set by the family pattern. Kinship was part of the structure and family status meant much.

Such was the family in colonial days and with slight variations such it has been during much of our history. But changes set in as manufacturing technique evolved, as economic division of labor progressed and as trade developed. More people lived in towns, where they produced less of the food they consumed. Manufacturing first became specialized in the urban household, but with the introduction of steam power and the growth of mechanical invention it went into the factory. Markets and railroads stimulated the growth of cities. The making of furniture, thread, cloth, medicines and leather early left the household. At varying intervals other productive operations have been similarly transferred wholly or in part. This loss of economic functions has been a factor in many social questions, including the position of women in society, the stability of the family and the birth rate.

The family has been losing other functions as well. The government is assuming a larger protective role with its policing forces, its enormously expanded schools, its courts and its social legislation. Religious observances within the home are said to be declining. Opportunities for recreation can be sold for a profit and the existence of theaters, dance halls and ball parks indicates that members of families find more recreation
than formerly outside the home. A child or adult is regarded more as an individual and less as a bearer of the family name.

These historical changes in family functions have not been accomplished without corresponding changes in structure. The household of today is about a quarter smaller than that of the colonial family. Marriage occurs probably somewhat later in life now than in earlier times, especially for women. There are many more families without children. The American home is broken much more frequently by separation and divorce than in colonial times. Children are an economic burden for a longer time and an economic asset for a shorter time, although in this respect there is still a difference between the city and the country. Wives, except when they work outside the home for pay, contribute proportionately less to the family support. The organization of the family is becoming diversified. The rural family differs from the city family, and the family in the village from both. Families in cities vary according to economic level, cultural status and occupation.

The personality functions of the family have suffered somewhat by the decline in the number of children in the average family and by the increase in the relative number of families with no children at all; by the growing demands of the schools; and perhaps also by the fact that the modern city makes possible a wider range of contacts beyond the limits of the family circle. Men in particular seem less dependent on the family for social contacts than was formerly the case.

Nevertheless, it may be said that the affectional function is still centered in the family circle and that no evidence is recorded of any extensive transfer elsewhere. The evidence of increased separations and divorces does not prove that husbands and wives now find marriage less agreeable than their ancestors did. It may mean only that certain functions and traditions which once operated to hold even an inharmonious family together have now weakened or disappeared.

If the personality functions have undergone a slight positive decline they have risen in relative importance because of the much greater decline of the institutional functions. To express it differently, the family is thought of much less as an economic institution than as an organization for rearing children and providing happiness. There is thus a greater individualization of the members of the family.

The changes in the family outlined in the preceding paragraphs have taken place over a long period of time. Although this chapter is primarily concerned with changes during recent years, it is essential to bear in mind the long time trends. For example, in interpreting data on the recent growth in the number of restaurants and delicatessens it is important to know whether such a development indicates a continuation at a slower or faster rate of a long time trend in the transfer of economic
functions from the home. In other words, is cooking about to follow manufacturing out of the home? Or will the departure of economic functions from the home be retarded by the increased use of electrical appliances and other mechanical aids? These questions and others relating to the shift in emphasis in the functions of the family will be discussed in the later sections of this chapter.

I. THE FAMILY AS AN ECONOMIC INSTITUTION

The economic functions which have been taken from the family were not all lost at once. Some, such as the making of metals, implements and furniture, began to decline early. Spinning and weaving, a more sudden and spectacular loss, followed somewhat later, the making of clothing later still. The loss of some of the functions, as, for instance, the making of medicines and soaps, extended over a long period. The loss extends only to a part of all the families. Thus there are still families who use the muzzle loading gun as a means of adding to the food supply. Not all families have given up baking and canning and sewing. All but a very small proportion of families do some cooking. Recent trends will be shown by considering one at a time some of the economic functions of the household that appear to be in transition.

Household Economic Activities.—The production of bread has already been transferred in large part from the home to the bakery. In a sample study of over 1,000 homes in 1930 it was found that two-thirds of the farm households used baker's bread only. There is of course variation by regions. Three-fourths of the village homes and nine-tenths of the city homes used baker's bread only. One-fifth of the farmers' households used home made bread only, while only about 1 percent of the urban homes did.

The transfer of baking from the home was still going on during the decade preceding 1929, as is shown by the increase in bakery products manufactured outside the home. The quantity of bakery products is not

1 At different points in the sections of this chapter dealing with the institutional functions of the family, some of the researches of John Dollard, submitted for the degree of Doctor of Philosophy at the University of Chicago, have been utilized and the author is indebted to him for valuable suggestions made in the course of many conversations on the subject. For a fuller treatment of the subject, the reader is referred to Dollard's *The Changing Functions of the American Family*, University of Chicago, 1931.

2 The depression has, indeed, restored soap making as an activity for some farmers' wives. See Bruce Melvin, "Rural Life," *American Journal of Sociology*, May, 1932, vol. XXXVII, pp. 937–941.

3 Data supplied by Hildegard Neeleman of the U. S. Bureau of Home Economics from a study of the work of rural and urban households. See further studies of rural and mountain families in Alabama and Kentucky, President's Conference on Home Building and Home Ownership, *Preliminary Reports* XXIII and XVIII.

4 The data are from the U. S. Bureau of the Census, *Census of Manufactures* (biennial), as are other data on production cited in the immediately following paragraphs, unless otherwise stated. No data since 1929 are available at the time of writing.
available, but when their value in dollars is divided by the index number of retail prices of bread of the U. S. Bureau of Labor Statistics, the result is a fair index of the quantity of production, which is very near the index of consumption. The per capita production of bakery goods made outside the home increased 27 percent from 1919 to 1929, whereas the per capita consumption of wheat flour both inside and outside the home decreased about 10 percent.

Since 1929, however, this transfer of baking from the home may have been somewhat retarded, for during the depression years there is scattered evidence of a slight revival of some of the earlier economic activities of the household. As to the future, it is difficult to predict whether or not the village and rural homes will become as dependent upon the outside bakery as the city home is now.

The evidence indicates also that canning is leaving the home. Certainly during the decade 1919-1929 it has developed rapidly outside of the sphere of the household. The per capita quantity of vegetables, fruits and soups canned outside the home approximately doubled during the decade. These products comprise about 70 percent of all canned and preserved products. The year 1919, the year following the war, may not be a good one from which to measure the change. If 1921, a depression year, and hence not a good base year either, be taken the quantity nearly tripled. Only a small portion of this great increase could be due to a change in dietary habits. The increase in per capita consumption of fresh fruits and vegetables seems to have been around 25 percent for this decade. The growth of canning and preserving outside the home is so rapid that a continuance may be expected in the future with a consequent lessening of time required in the household preparation of food.

Laundering has not left the household to the extent that baking has. In the special study referred to in presenting evidence on baking, the data show that 88 percent of farm homes and 33 percent of the city homes have no laundry done outside. Only 3 percent of the urban families sent all of their laundry out. The indications for the decade 1919-1929 are that an increasing proportion of laundering was being done away from home, but the data may not be wholly conclusive. The expenditures for work done in power laundries increased 110 percent from 1919 to 1929, when expressed in terms of dollars of equal purchasing power, while the

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6 Establishments producing products valued at less than $5,000 a year are excluded. In 1919 only about 1 percent of these manufactured products were produced in these smaller bakeries.

6 For additional material on canned goods, see Chap. XVII.

7 For index numbers of the production of these commodities, see Chap. XVII.

8 Deflating by the general index number of the Federal Reserve Bank of New York removes the influence of the general price level fairly well, but not of the special laundry prices.
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total population increased 16 percent and the urban population 26 percent. The horse power of machinery installed in laundries increased 111 percent and the number of wage earners 79 percent. These changes are so great in a decade that it hardly seems reasonable that they could be explained on the basis of changes in standards of consumption or the increase of laundry prices above general prices, which sample opinion indicates is probably negligible. The sale of home washing machines has somewhat slowed up the transfer of laundering from the home.

In cleaning and dyeing the number of wage earners increased 220 percent from 1919 to 1929 and the machine horse power 274 percent. The growth of this industry may represent a rise in the standard of living and the resulting increased emphasis on cleanliness, as well as a transfer of an industry from the home.

As to sewing, the making of men's clothing seems to have left the home in earlier decades. The per capita production shows little significant change during the decade under discussion. With regard to the clothing of women and children, the evidence indicates a possible increase in per capita production, although perhaps not much more, save in the case of dresses, than might be explained by a not unlikely change in the standard of living or a decline in seamstresses not in the employ of manufacturers. The per capita production of domestic and factory sewing machines has shown a slight decline during the decade. The increases in the outside manufacture of knit goods and shirts occurred prior to the post-war period.

Losses in the Occupations of Women at Home.—These shifts of occupations from the home to the factory must obviously reduce the economic importance of the woman in the home. The tendency is, therefore, for her to seek outside employment or activities. This phase of the subject is discussed in the following chapter, but it is interesting to observe here that the entry of women into outside occupations has been rapid in the decade 1920 to 1930. The number of married women working outside the home increased 60 percent while the total number of married women increased only 23 percent, and the number of married women in the urban population increased 34 percent. The increase of all employed females over ten years old was 26 percent. Where both husband and wife work outside the home its economic functions become small indeed, but the housework of the married woman who works out is a double burden, since in many cases she does some work at home after business hours.

9 From 1920 to 1930 the number of laundry operatives increased 99,000, or 82 percent as shown by the occupation census. But the launderers not in laundries decreased 35,000. A rough net increase of 64,000 may be claimed, which would be a 53 percent increase during the decade for laundry operatives. For figures see Chap. VI.

10 See Table 15 in Chap. XVII.
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The contrast between present day conditions and those when the household was an economic unit may be visualized by a contemporary description of households in the isolated mountain regions of Kentucky.\(^{11}\) Churning is still done in 96 percent of these mountain homes, fruit canning in 99 percent, fruit drying in 86 percent, the pickling of fruits and vegetables in 94 percent, hog butchering in 85 percent, sausage making in 35 percent, lard making in 82 percent, the salting of meat in 57 percent, the smoking of meat in 17 percent, shoe making in 1 percent, shoe repairing in 48 percent, spinning in 8 percent, dyeing in 7 percent, weaving in 1 percent, knitting in 15 percent, quilting in 67 percent, broom making in 22 percent, furniture making in 4 percent and soap making in 76 percent. There are many household tasks other than these listed. The occupations of these mountain farm homes are somewhat like those of the typical home of earlier times.

The family dwelling tells something as to the economic functions carried on within. Thus the heating in the multi-family dwelling is often attended to by a janitor who is, of course, outside the family circle, and many other services are handled by outsiders. In addition, the individual family usually has less space to care for. In Chapter IX the extent of construction of multi-family dwellings in comparison with one-family dwellings is shown by years.\(^{12}\) The data indicate that since the war the number of homes provided for in multi-family dwellings in cities has increased, until in recent years about 50 percent of the new homes were in apartment buildings and only about one-third in one-family houses. There has been, however, a recession of this tendency since the depression hit building construction. The tendency toward multi-family dwellings has been much greater in large urban centers than in rural areas.

Data of dwelling construction in Chicago show that the new apartments constructed are smaller. In the five year period from 1913 to 1917 inclusive, 45 percent of all new apartments approved by the Board of Health were less than five rooms, while from 1927 to 1931 new apartments of these sizes were 75 percent of the total. New apartments of more than five rooms were 25 percent of the construction in the earlier period and 8 percent in the latter period.\(^{13}\) In a study of 18,000 apartments in 1,000 buildings in 26 cities, 4 out of 10 had kitchenettes\(^{14}\) as contrasted with full kitchens. These data show nothing, of course, about the extent to which a room is used.

\(^{11}\) Data supplied by Faith M. Williams, of the Bureau of Home Economics, U. S. Department of Agriculture, from a study of 228 homes in the Kentucky Appalachians in 1930.

\(^{12}\) See also President's Conference on Home Building and Home Ownership, Preliminary Reports I, IX, X, XI, XII, XXIII.

\(^{13}\) Similar trends have been recorded for New York City. See data in Chap. IX.

\(^{14}\) Release of the National Association of Real Estate Boards, Chicago, December 21, 1930.

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The Use of Power in Household Production.—The use of gas and electricity for cooking and other household tasks lessens somewhat the labor which was previously involved in the use of coal, wood or oil. The home becomes at the same time more dependent upon an outside industry. The number of domestic consumers of manufactured and natural gas,\textsuperscript{15} increased 41 percent from 1920 to 1930 while the number of families\textsuperscript{16} increased 23 percent. The domestic users of electricity increased 135 percent during the same period. Gas and electricity are used largely for lighting, cooking and heating. It is interesting to inquire as to other uses of these sources of energy. Steam as a source of energy and power was not very practicable for home units. Its adaptation to larger units and the fact that energy thus generated could not be transported far from its source led to the transfer of production from the household to the factory. Electricity, however, can be transported to the household and there applied to machines for domestic production. One such machine is the refrigerator for preserving food and making ice. The large number of refrigerators that have been sold suggests a reversal of the usual movement, for with regard to ice we have a type of production that seems to be leaving the factory for the home. Many electrical machines for home use have to do with cooking, as for instance toasters, grills, waffle irons and percolators. The per capita production of these increased from 50 percent to 600 percent from 1923 to 1929, though declines are noted for the despression years since\textsuperscript{17} 1929. The manufacture of electrical washing and ironing machines per capita as measured in deflated dollars increased 65 percent, 1919–1929; the number of vacuum cleaners per capita 20 percent; and electric flatirons 50 percent. Great increases in production have also occurred for electric curling irons, heating pads, fireless cookers and radios.

Despite the service of electricity for cooking, the kitchen seems to be less used. The number of restaurant and lunch room keepers increased 88 percent from 1920 to 1930, whereas the urban population increased only 26 percent and the total population 16 percent. The number of waiters and waitresses increased for the same period by 72 percent. The increase in restaurants might be explained by the decline of boarding houses (if it were known that they have declined) but that would hardly explain the fact that waiters increased in numbers faster than did the number of families. Prior to 1920 delicatessen dealers increased about three times as fast as the population—since 1920 the statistics have not been collected.

The growth of traveling, commuting and hotel life is no doubt a part of the background of this movement. If data are used which exclude these

\textsuperscript{15} Data supplied by the American Gas Company.

\textsuperscript{16} The term family is here used as it has been defined in the various decennial censuses, as the "number of persons per economic family."

\textsuperscript{17} See Table 15, Chap. XVII.
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factors the results are somewhat different. In a study that was made of the amount of time spent on the different household tasks, in which all individuals eating at home were included (with the exception of babies), it was found that in farm homes each person ate an average of 20.2 meals per week at home. This means that each person had an average of less than one meal a week away from home. In the homes in large cities each person took an average of 2.0 meals per week away from home. This does not mean, however, that only 19 meals per week were served in the city homes, for not all of the members were absent at the same time. In fact the actual number of meals served per week averaged 20.4.

While there may be somewhat less cooking at home than formerly, it seems probable that the use of electricity is slowing up the rate of decline. The very rapid growth in the manufacture of electric appliances suggests that the use of electricity in the home is only in its beginning. It is used now for lighting, cooking, washing, ironing, sewing, house-cleaning, refrigeration, ventilation, projection of motion pictures and many other purposes.

Women's Present Housekeeping Duties.—The outward movement of duties previously performed in the home arouses curiosity as to just how much time is spent in household work. Fortunately data are available on which a reply to this question can be based. Hildegard Kneeland of the U. S. Bureau of Home Economics has collected and analyzed time records kept by housewives showing how much time is spent in different types of homes on such various duties as preparing meals, washing and ironing and the like.

One group of homes studied was in cities of over 50,000 inhabitants and another group was on farms. The city group consisted of the homes of college alumnae from whom the data were obtained by correspondence. The farm group was reached through the aid of the extension divisions of agricultural colleges. By comparing homes where less than 7 hours per week of outside paid help was employed, probable income differences were lessened somewhat. When thus restricted the sample for cities was only 82, since most of these homes employed outside help; for the farms it was 336. In the average of the city homes 66 hours and 48 minutes per week were spent on home making duties, while in the average of the farm homes the time was 63 hours and 32 minutes. Evidently keeping the home still requires many hours per week although many occupations have left it. Not all these hours of work were done by the home maker, however. Her time was 56 hours and 39 minutes in the city homes and 53 hours and 50 minutes on the farms. Most of the help given by others in these homes came from members of the family, only 1 hour and 50 minutes coming from paid help in the city homes and 14 minutes, on the average, in the farm home.
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How this time was distributed among the different household tasks will next be shown, but comparisons here, as above, are further complicated by the fact that the average size of the farm homes, 4.8 persons, was 23 percent larger than that of the city homes, 3.9 individuals. Comparisons of the time spent on the specific duties may thus best be made in terms of proportions of the total time spent on various housekeeping tasks.

The percent of time spent on preparing meals and washing dishes was less in the city homes than on the farms, 33 percent as compared with 43 percent. The allotment for house cleaning was about the same for both, 13 and 14 percent respectively. But washing and ironing required a smaller proportion of the time in the city than in the farm homes, 8 and 10 percent. Only 23 percent of the city homes did all washing at home, as compared with 70 percent of the farm homes. Mending and sewing also occupied a smaller proportion of the time of the city household than of the farm household, 6 percent and 9 percent respectively. On “other care” of the house, which included the tending of fires, the proportion of time in the city (3 percent) was about one-half as large as in the rural households.

For the tasks just named which comprise roughly a large part of the labor spent on the production of essential economic goods and services, the city homes spent 63 percent of all the time required on home duties while the farm homes spent 82 percent. The remaining time was spent on the care of children, purchasing and management, going back and forth and other home making activities. It is interesting to compare city and country in regard to the time spent on the care of children. This duty took 24 percent of the time in the city homes but only 10 percent in the farm homes. It would be an interesting generalization if it could be said that the home maker of the city spends more time with her children than does the farmer’s wife. But it is doubtful whether such an inference can be made, for in these samples one-half of the city homes had a youngest child under 3 years old as compared with only one-fifth of the farm homes. On the other hand, there were fewer children in the city homes to care for. Of the city homes 21 percent had 3 or more children as compared with 38 percent of the farm homes.

The homes just discussed all had children under 15 years of age. In other cases where the household consists of home maker and husband only and where paid help was employed for less than seven hours a week, the time spent on household duties, 43 or 44 hours a week, was about two-thirds of what it was in the city and farm homes where there were children. The one-child households of the cities called for about 45 percent more hours of home work than did the households of husbands and wives only and about 80 percent more for those households where there was considerable help employed. A first child adds from 45 to nearly 80 percent
to the household duties but the latter figure for the one-child family households had on the average one additional person for every four families.

Household duties took less time for those living in apartments than for those living in houses, especially those duties having to do with meals and the cleaning and care of the house; the difference was nearly 30 percent in the city group (but the size of the apartment household was about 30 percent smaller). In the families where there were only husbands and wives these duties were 24 percent less in the apartment. Also fewer meals (per person) were served at home in the apartments than in the houses, the difference being a little less than 6 percent.

On the whole, despite the inroads which the factory has made on home occupations, the average family still spends a great deal of time in cooking meals, cleaning house, laundering, sewing and mending. Since we have no comparable earlier data it is difficult to make any inferences from the material presented as to trends. If, however, the domestic economy of the farm is thought of as containing a larger element of survival from an earlier cultural situation the differences between the rural household and the city household, assuming the economic level to be the same, might be taken to indicate the line of evolution.

Housekeeping still remains one of the major industries and home management is one of its most important occupations. The housewife still makes her contribution to the family’s support through the production of goods and services in the home. There are 26 million housewives, though not all of them have full time jobs, as against 14 millions engaged in the manufacturing and mechanical industries. The home is a consumption unit, largely supported by the money earnings of the males, supplemented with increasing frequency by those of the wife and probably with decreasing frequency by those of the children. A summary of 20 studies shows that 53 percent of women working outside of their homes for money contributed all their earnings to the family and 39 percent contributed a part. In a study of sons and daughters in Manchester, New Hampshire, three-fourths of the girls and two-thirds of the boys contributed half or more of their earnings to the family.

But the shifting of home occupations to industry has created many problems other than economic. Some of the old ideals and standards for the prospective home maker are gone with the conditions which gave rise to them. Woman’s duties and responsibilities are no longer as rigidly defined as they were. There is uncertainty about having children, about

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their care and education if it is decided to have them, about the relative advantages of housework and work outside the home, about the proper apportionment of the family income to the various necessities and luxuries. The many inventions of household equipment, contemporary experiments in new forms of housing and more scientific methods of purchasing all hold out possibilities for raising the quality of home service and perhaps giving it a genuinely professional status.

II. OTHER INSTITUTIONAL FUNCTIONS OF THE FAMILY

Economic functions are always important in the scheme of life, but there are other activities which are equally important. Some of these are closely correlated with the economic factors, others are not. Thus the changing protective and recreational activities of the family are closely related to its economic organization. Its educational and religious activities are less so. Under these headings the trend of the other institutional functions of the family will be presented.

The Protective Functions.—Throughout history the family has afforded protection to its members. The marriage contract that comes down from earlier times carries the promise to protect. The family has traditionally guarded its members against bodily harm from enemies and against economic insecurity in infancy, illness and old age.

In recent times, the state has assumed important duties in protecting health. The budgets for public health and sanitation in cities of 30,000 and over have increased about twice as fast as urban families since 1903. The care for health has also passed in part to hospitals, many of which are non-governmental. The number of beds in hospitals increased 115 percent in the 20 years from 1909 to 1929. Nearly one-third of all babies are born outside the home.\(^\text{20}\) Hospitals have a capitalization exceeded only by 4 groups of manufacturing industries: iron and steel, textiles, chemicals and food.\(^\text{21}\)

The protection of the very old members of the family was formerly rendered almost exclusively by their offspring. With smaller families and greater mobility of the population they are less often so protected. In some countries, the care of the aged has been assumed in part by the state today. Within the decade preceding 1932, 17 states of the United States have legalized or adopted some form of old age insurance, either enabling counties to pass enactments, or being mandatory.\(^\text{22}\) In a sample study of families, discussed in a later section, there are shown to be fewer families in 1930 with three generations in one home than in 1900. In

\(^{20}\) "Hospital Service in the United States," Table 1, The Journal of the American Medical Association, March 29, 1930, vol. 94, no. 18, p. 923.

\(^{21}\) Rorem, C. Rufus, The Public’s Investment in Hospitals, University of Chicago, 1930. See also material given in Chap. XXI.

\(^{22}\) See data in Chap. XVI.
the sample of farm families 10.7 percent were three-generation families in 1900 and 6.2 percent in 1930. In the metropolitan area the percentages of three-generation families were 9.9 percent in 1900 and 7.3 percent in 1930. The number of endowment insurance policies, largely a protection against old age, increased 800 percent from 1899 to 1929. But equally rapid has been the growth of other forms of life insurance which may be viewed as a protection for the family through the aid of an outside institution. 23 Many relatives are cared for by the family and in so far as the family does not do so, there is a tendency for this duty to fall to philanthropy or to the state.

The care of the feeble minded and the insane in public institutions is an assumption by the state of protective functions formerly belonging to the family and still exercised by many families, particularly outside the cities. Patients in state hospitals for mental disease increased 110 percent24 from 1904 to 1929, while the number of families increased 67 percent. The feeble minded and epileptics in special state institutions for such cases increased 45 percent25 in the seven years from 1922 to 1929, while the number of families increased but 15 percent. These figures, however, may have been augmented somewhat by an actual increase in the number of insane in society, by the transfer of feeble minded from other types of institutions and by a broader definition of feeble mindedness.

The extent to which the family is delegating the protection of life and property, or at least the extent to which such protection is growing up outside the family, is suggested by the fact that the total number of policemen, guards, watchmen, detectives, probation officers, sheriffs, marshalls and firemen increased 40 percent from 1920 to 1930, while the number of families increased only 23 percent. The recorded expenditures for protection to persons and property in cities of over 30,000 inhabitants in the United States have increased since 1903 somewhat more rapidly than have families. Of course the property to be protected has increased also and much of it lies outside the family habitation.

Some of the protective functions recently assumed by the state are designed to safeguard the family as a unit rather than as individuals. The state steps in to arrest what might otherwise be a process of dis-integration. Thus provision for mothers' aid out of public funds, spreading rapidly over most of the states since 1911, enables mothers, though the allowances are small, to stay at home with their children. Child labor legislation and juvenile courts, discussed in other chapters, 26 illustrate

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25 Ibid., p. 71.
26 On child labor, see Chap. XV, and on the juvenile courts, see Chap. XXII.
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protective functions developed by the state to care for interests that were formerly thought of as family matters. Compulsory education, truancy laws and the provision for visiting teachers also represent an assumption of family functions by government agencies. If the provision and control of income is thought of as a protective activity, however, the family, at least in the United States, is still the primary guardian of its members' interests.

Religious Functions.—Certain religious functions have traditionally been performed by the family and its role is significant in the inculcation and maintenance of ethical standards. Marriage is held by many to be a sacrament and some consider it desirable that a family be formed by mates with the same church affiliation. Family prayers are apparently a declining practice. In a study made of parents and children in 1930, including samples of school children in rural areas, villages, and in cities of various sizes, about 1 in 8 white American born school children of the seventh, eighth and ninth grades was found to participate in family prayers. There was not much difference in the practice of this custom between the city and the country, though in the very large city the proportion of children participating was slightly smaller.27

The same study shows that family attendance at church is much more widespread than family prayers. In the rural area, 85 percent of the children went to church with their families (in the month preceding the study) while in the large city group only 40 percent went together to church. Family reading of the Bible was reported by 22 percent of the rural white children and 10 percent of the city children. Grace at meals was the practice in 30 percent of the samples from the large city and in 38 percent from the rural area. It should be observed that these data are for family rather than individual activities. Data for earlier years are not available for indicating the trends. Trends may possibly be indicated, however, by these comparisons between country and city at the same period or year, for the farm preceded the city in point of time and the city is often the center of cultural diffusion for the country.

The trend in the religious functions of the family is affected by trends in religion as truly as it is by trends in the family. There is variation in this regard between the different religions as well as different areas.

Recreational Functions.—The great growth in commercialized amusements and the recreational programs of industry, church and state show that much recreation is provided by other institutions than the family.28

27 From data compiled by E. W. Burgess in connection with a study of the “Function of Home Activities in the Education of the Child” for the White House Conference on Child Health and Protection. See also Chap. XX.

28 For a discussion of the recreation needs of the home, see President's Conference on Home Building and Home Ownership, Preliminary Reports IX, XXIII, XXVIII. See also treatment of commercial amusements in Chap. XVIII.
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But this growth is not due solely to a transfer of function. Recreation has itself grown in institutions outside the home, thus affecting the relative position of the home in comparison with outside agencies. The reduction of 15 percent in hours of labor between 1890 and 1926 has made possible more leisure for recreation.

The subject of recreation and leisure time activities is presented in Chapter XVIII. In general, the material there reveals that nearly all lines of recreational activity for which comparable data are available show increases much greater than the growth in the population. The growth in recreational facilities has been particularly large since the World War. Thus in Chapter XVIII it is shown that municipal parks expanded in acreage 240 percent from 1907 to 1930; public playgrounds increased 450 percent from 1910 to 1930; golf courses increased 207 percent from 1923 to 1930, and tennis clubs increased 170 percent from 1920 to 1930. Baseball attendance at the big league games was only 10 percent greater in 1930 than in 1920, but football attendance more than doubled, as did the receipts from social and athletic clubs. It is known that the moving picture audience has grown enormously, though the attendance declined during the depression following 1929. Municipal expenditures for recreation have been increasing two and a half times as fast as the number of families. Factories, too, are providing recreation, 450 of them having been enumerated as so doing in 1928.

While most of these facts indicate an overshadowing growth of outside recreational agencies, it should be remembered that the home is still the center of much recreation. A recent survey of 908 families from four different sections of Indianapolis shows that 90 percent of the homes had back yards, 60 percent were equipped with phonographs, 55 percent had pianos or pianolas, 60 percent subscribed to magazines and 365 husbands or wives played musical instruments.

In the study of the home activities of parents and children previously referred to, it was found that reading aloud was practiced in the families of 33 percent of the American born white children in the rural samples, but of only 13 percent of the children in the large city. The family played games together in about half the cases in the country and in about 40 percent of the cases in the city. The same percentages held true for singing or playing music together. Attendance of the family together at the moving picture was about twice as great in the city (65 percent) as in the country. Family visits were as numerous in the city as in the

country; and walking together was twice as frequent among the city families.

Budgetary studies show a growing proportion of family expenditures for things other than food, household equipment, rent, fuel and light.\textsuperscript{32} Much of this increase is undoubtedly for recreation. Certainly the large expenditure for radios accounts for a portion of it; it has been estimated that there were some 16,000,000 sets in use in January, 1932.\textsuperscript{33} A far larger share has gone for expenditures on the family automobile which is said to have displaced maid service in the home as an item in the family budget.

Educational Functions.—The school teacher may be viewed as a substitute parent in regard to the function of training the child. The teacher is reaching into the home earlier and taking the child at a younger age for part of the day. In 1910, 17 percent of all five-year old children were in school. By 1930, the proportion had increased to 20 percent. Education is discussed in Chapter VII, but a few of the developments which throw light on the family will be noted here.

That the teacher is a competitor of the parent (without a feeling of rivalry, of course) for influence over the child is not readily recognized, for the teacher aids both child and parent and is in this sense a cooperator also. Yet the school performs many services which were once the function of the home. Thus the duties on the farm give some experience in manual training not found in city homes. The schools tend to develop this function. The development of manual training in the school may not, however, exactly balance its decline in the home. Manual training courses contain new practices not found in household life.

The same generalization may be applied to the whole system of modern education. The schools teach subjects never taught at home and so would have added to their functions even though the family had relinquished none. Farmers’ daughters find much that is new in domestic science courses, even though they also learn much at home. But the evidence indicates that formal education has grown not only by developing new methods and new subjects but to some extent also by a transfer of functions from the home. No conclusion is here attempted as to the relative qualities of education in the home and education in the school. It is apparent, however, that the city child is on a different footing in regard to his opportunities for extra-mural education in the household arts than is the country child. Presumably young women might learn in the modern city home to do what they will need to do in their adult life as truly as the farmers’ daughters learn in the rural home. Presumably, also, the city girl’s home instructions is far from adequate and her school instruc-

\textsuperscript{32} See family budget studies given in Chap. XVII.

\textsuperscript{33} For further discussion of the use of the radio, see Chaps. III and IV.

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tion in domestic science is not wholly a substitute but also a better type of training.

In a study of 35 high schools in 1929–1930, compared with an earlier study of 60 high schools in 1906–1911 and 1915–1918 in the middle west\(^4\) there was a 700 percent increase from 1906–1911 to 1929–1930 in the average number of courses offered in the industrial arts, which includes such subjects as manual training, mechanical drawing, woodwork and automobile mechanics, and a 500 percent increase in the household arts courses. There were no courses in physical education in 1906–1911, but 27 schools offered such courses in 1929–1930.\(^5\)

When society was based on a land economy most of the occupations had to do with farming and allied activities and were learned at home. There was then no need of schools for vocational training. Under a capital economy, with expanding varieties of occupations, the home is handing over the task of vocational training to specialized schools. The pupils enrolled in vocational courses of federally aided schools increased 270 percent from 1920 to 1930.

The number of children in schools is still increasing a little faster than the number of children in the population. In 1900, 59 percent of the children 5–17 years old were in the public elementary and secondary schools and in 1928, 80 percent.\(^6\) The average number of days these schools were in session increased from 144 in 1900 to 172 in 1928. The schools thus kept children away from home about 28 more school days in 1928 than at the beginning of the century. The number of teachers has doubled since 1900 which is not true of the number of parents. Married persons increased about 88 percent but the increase of parents was somewhat less.

It should also be recalled, in thinking of the educational function of the family, that with the increase of childless families, this function has correspondingly diminished. The fact that the schools are so universally desired and that they perform specific functions never performed by the family has obscured this relationship of institutional functions between the family and the school.

**Family Status.**—Another function which the family performs is to confer upon its members a social status which as individuals they might not possess. In binding them together in a group it enables them to deal as they otherwise could not with other groups and agencies. In setting forth this concept more fully, it may be noted that this function is highly


\(^5\) For further discussion of this topic, see Chap. XV. For more detailed treatment of school curricula, see Chap. VII and the monograph on education.

\(^6\) For school attendance by sex, see Chap. VI. See also figures on teachers, enrollment and attendance in Chap. VII.
developed in China, where, it is said, loyalty to family has precedence over loyalty to state. In many countries marriages are often primarily arrangements between families rather than between the young couples on the basis of a love impulse, although even under such conditions the desires of the young may be more often respected than the traditions of romantic fiction would lead a casual reader to believe. The family name, at any rate, tends to overshadow the individual. Family esprit de corps and the family impulse toward mutual protection extend to all the members. A break between two members of different families often means a break between all the members of the two families and difficulties are frequently settled by the families rather than by the courts. The family feeling extends to relatives, between whom there is felt to exist an altogether special tie which implies hospitality and financial aid. To be born into or to marry into a particular family is all important in giving prestige to an individual. Such is the concept of family status.

That this family function of determining status is changing is obvious, though it is impossible to find data that can be presented in brief compass to establish a trend. The evidence is largely to be found in analyses of social conditions and in case histories of individuals. Certain theories of the factors causing such changes may, however, be briefly presented. Property holdings in land are very likely to help to fix family status, especially in small communities where everybody knows everybody else. Permanence of tenure also seems to be a supporting factor. Clearly it is difficult to maintain family status in a high degree when there is much mobility of population. The growth of large cities, in which the effectiveness of gossip and other forms of non-legal social control is diminished, tends also to diminish family prestige. With few exceptions the personality of the individual family is lost in the crowd. The very phenomenon of rapid change makes the difference between generations appear greater than the differences between families.

For these reasons it is thought that family status as such has been declining in importance, though to what degree in recent years can only be inferred. Loyalty to the club, the school, the city, the team, the state, competes with loyalty to the family, yet no one of these groups absorbs the individual as fully as the family did historically. As the forces determining family status weaken, therefore, the individualization of the members of the family is accentuated. The knowledge and application of the facts of heredity might conceivably aid in restoring family status at some future time, but this development can not be anticipated in any predictable future.

The individualization of the members of the family finds recognition in changes in the law, particularly with regard to the wife. In very early times the law barely admitted the individuality of the wife. The
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common law held that "the legal existence of the woman is suspended during marriage." By marriage she lost the right to control her property; as a married woman she could not sue or be sued in her own name; and she could not make a will. Her earnings and the earnings of the children went to the husband as symbol of family authority. These and other laws illustrate the submergence of the personalities of the wife and children in that of the family, though in practice there was undoubtedly much freedom.

The laws, however, have undergone fundamental changes. Before 1900, all states had given married women the right to make a will. Eight states of the southwest and far west did not follow the ancient common law but adopted the system of "community property" rights. But while the property acquired after marriage belongs to both husband and wife, the husband still controls it. The other states before the close of the last century modified the common law by permitting married women to own property separately. Since 1900 there have been some amendments, particularly regarding real estate and court decrees in a few states. In nine states in 1930 there were still such reservations on the wife's property rights. Equal guardianship laws were not so early adopted. In 1900, 14 states had passed co-guardianship laws and by 1930 there were 39. In regard to citizenship there have been significant changes. The wife's citizenship followed that of her husband (for foreign born women since 1855 and for American born women since 1907), but in 1922 independent citizenship was given to married women.

The question of domicile becomes more important in an age when people move about freely. The recognition of separate domicile of the wife, largely for purposes of voting, holding office, or serving on juries, has been accorded by laws passed in eight states since the World War.

In other family laws there are still some states which do not accord the same rights to a married woman that they do to a single woman. Though in general married women can make contracts, in perhaps half of the states there are some restrictions, however slight, on this right. In one state a wife's earnings are her own only if she is living apart from her husband; and in one state the father can will away from the mother the custody of the child. There are still other evidences of the fact that the individualization of the married woman is not complete under the law.

38 Except that in four of these states the wife must join in the conveyance of real estate. In the summary of the laws which follow, it is not possible in the brief space allowed to give the various exceptions and detailed minor modifications.

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CONTRARY TO A BELief WHICH IS FREQUENTLY EXPRESSED THE PERCENTAGE OF THE POPULATION OF THE UNITED STATES THAT IS MARRIED HAS BEEN INCREASING IN RECENT YEARS. IN 1890 THE PERCENTAGE OF THE POPULATION 15 YEARS OF AGE AND OVER THAT WAS MARRIED WAS 55.3 AND AT SUCCESSIVE TEN YEAR INTERVALS THE PERCENTAGES WERE RESPECTIVELY 55.7, 57.3, 59.9, REACHING 60.5 IN 1930. THIS INCREASE IN THE PERCENTAGE MARRIED IS DUE IN PART TO THE FACT THAT THE PROPORTION OF THE MIDDLE AGED HAS INCREASED DURING THE PERIOD, FOR THIS IS THE AGE PERIOD IN WHICH THE HIGHEST PROPORTION OF MARRIED ARE FOUND. BUT IF THERE HAD BEEN THE SAME PERCENTAGE OF MIDDLE AGED IN THE POPULATION AT THE SUCCESSIVE CENSUS PERIODS THAT THERE WAS IN 1890, THERE WOULD STILL HAVE BEEN AN INCREASE IN THE PERCENTAGE OF MARRIED PERSONS. THE PERCENTAGES WOULD THEN HAVE BEEN 55.3 IN 1890, 56.8 IN 1920, AND 57.6 IN 1930. IN OTHER WORDS THERE WOULD HAVE BEEN AN INCREASE IN MARRIAGE EVEN IF THE AGE DISTRIBUTION OF THE POPULATION HAD REMAINED THE SAME. THE RATE OF INCREASE IN THE NUMBER OF MARRIAGES WAS LESS IN 1930 AND IN 1931 AS IS USUALLY THE CASE DURING A BUSINESS DEPRESSION.


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Cities and Marriage.—The economic functions of the family on the farm are more numerous than in the city. The household duties of wives and children in the country are probably greater also. It is therefore not surprising to find the ratio of families to adult population greater in the rural areas than in urban. It has been estimated that the urban community (of 2,500 inhabitants and over) acts as a deterrent to marriage to the extent of about 10 percent.\(^{41}\) There are thus persons in the cities who would be married if they lived in rural areas. In the very large cities the discouragement is probably greater. That the city is more hospitable to the non-family woman is indicated by the fact that of all single women, 20–34 years of age, 66 percent live in urban communities, while of the single men of the same age, only 59 percent live in cities. Similarly, the proportion of widowed is greater in the city. It is apparently easier for a person without a family to live in the city than in the country.

The Size of the Household.—The functions performed by the family household are not unrelated to its size. The average size of the household for a sample of families from different communities was 4.30 persons in 1900, 4.07 in 1920 and 4.01 in 1930. (It is customary to speak of fractions of a person, for instance 4.30 per family, when what is meant is that there are 430 persons per 100 families.) These data are taken from unpublished schedules of the U. S. Bureau of the Census, since until 1930 the Census did not publish data on the size of the family, though they did publish the statistics on the size of the household in 1900 and at each decade they have published the number of “persons per family” which seems to be about 0.1 person larger than the size of the household, which of course is larger than the size of the family. Also data on the family other than the size of the household were taken from the unpublished census schedules for the sample communities and are the basis of many conclusions which follow. It is desirable, therefore, to give a short account of this sample study. The data are for native whites of native parents selected from four middle western states in the vicinity of the Great Lakes. Families with only one mate present were included, but no family was taken in which the wife was 45 or more years of age (except as they were tabulated as relatives living with married children). Two or more families living together were counted separately as families but as one household. The samples are approximately equal in size (15,000 families) and are from four different types of communities, namely, farms, small towns of around 5,000 inhabitants, cities of from 50,000 to 150,000 population and from Chicago, representing the metropolis. The figures just given on the size of the household are an unweighted arithmetic mean of the four samples of equal size from the east north central states. They are

\(^{41}\) Groves and Ogburn, op. cit., Chap. XIX.

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not quite typical of the United States as a whole. The farms, in particular, are under-represented, hence the sizes are a little smaller than for the United States as a whole and the decline shown by the sample is a little less since there has been a movement of population from farms to cities. This analysis of census data was concerned also with other aspects of the family than its size, and frequent references will be made to it; in these references it will be designated as the sample family study. Further descriptions of it will be made as occasion demands.

The percent decreases in the household for the different types of areas from 1900 to 1930 for the sample studied are as follows: farms 0.6 percent, small towns 3.5 percent, cities 4.5 percent, and the metropolis 21.2 percent. For the United States as a whole the Bureau of the Census publishes figures called “persons per family” which is very near to the figure for what is defined here as persons per household.42 Thus in 1930 the persons per family in the whole United States were 4.1 and the persons per household were 4.0. In 1900, the corresponding figures were 4.7 and 4.6. For the United States the “persons per family” were in 1900, 4.7, in 1920, 4.3, and in 1930, 4.1, a decline of 13 percent over the 30 years and a decline of 6 percent in the decade 1920–1930. These declines may be considered as the same as those of the household. Perhaps a greater decline may have been expected, since the birth rate has been falling more rapidly. But the decrease in the size of the family cannot be inferred from changes in the birth rate alone. There are other factors, notably the death rate, which has been declining also. The decrease in the size of the household over a very long time, since the eighteenth century, has also probably not been as great as may be popularly assumed. It appears not to have diminished more than one-quarter since the close of the Revolutionary War. Combined samples of rural and town family households in non-slave-holding communities of 1790 give a household of 5.9 persons, while somewhat similar samples in 1930 give a household of 4.4 persons. The family may have been smaller than usual in 1790 because of the war influence.

In 1900 each 100 households had 63 servants, relations, lodgers and boarders, but in 1920 the number had dropped to 49 and in 1930 to only 44, 33 of whom were relatives, which may perhaps be indicative of the declining economic functions of the family. The size of the household varies in different regions. It is largest in the southern states: 4.41 in

42 The census counts the occupants and employees of a hotel, boarding house, lodging house, if that is their usual place of abode, and all inmates of an institution, as well as the person living alone, as a single family. But these exceptionally large or small families are relatively few in number.

43 A household includes not only parents and children, but relatives, servants, boarders and roomers as well, except that no family was included in the sample study which had more than three boarders or lodgers.
the south Atlantic states in 1930 and 4.29 in the east south central. (The household here used is about .1 person larger than the household as defined for the sample study in the preceding paragraph. It is the "private family" of the terminology of the U. S. Bureau of the Census of 1930.) On the Pacific coast it was smallest (3.38) perhaps due in part to recency of migration. In the east north central states, from which region the sample study was made, the size was 3.88. In New England and the north Atlantic states it was 4.00. For the mountain states it was 3.91. In general, the household is larger in the south and smaller in the west.

The Size of the Family.—More important than the size of the household, perhaps, is the size of the family consisting of parents and children alone, or, if no children, of husbands and wives, or widowed persons. The average size of the family living at home in unbroken families for the four types of communities of equal sized samples combined was 3.67 in 1900, 3.58 in 1920, and 3.57 in 1930, a decline of only 2.7 percent in thirty years and an inappreciable decline in the last ten years. The average size of the family on the farms in the sample studied increased 3 percent, those of the small towns decreased 3 percent. In the cities the decrease was 4 percent and in the metropolis 11 percent. Thus the decrease in the size of the family has been neither great nor rapid.

The changes in the size of the family were not uniform among the different areas. In the farming area the average number of persons in the unbroken family increased, the average size being 4.21, 4.20 and 4.32 for the periods 1900, 1920 and 1930. But this apparent increase may be due to the more advanced age of the farm population in 1930 or to migration, for when families with home makers of the same ages are compared, the increase is no longer evident. In the small towns a slight decrease is indicated by the figures 3.82, 3.72 and 3.72. The decline becomes significant in the cities, however, particularly in Chicago, where a decrease of 11 percent is noted over the 30 year period and a decrease of 9 percent between 1920 and 1930. The figures are 3.22, 3.12 and 2.85 for the three periods. It is not improbable that part of this more rapid decline in the great city may be due to the movement of families with children into suburbs beyond the city limits. In the urban centers represented by cities of around 100,000 population, the decreasing size of the family is shown by the figures for the three periods as follows: 3.57, 3.50 and 3.43 persons per family.

44 See discussion of the size of the family in relation to buying, Chap. XVII.
45 The numerical size of family refers hereafter to families where husband and wife are living together, unless otherwise stated. The word family refers, unless otherwise noted, to the parent-child, husband-wife found living together at the time of the census. It does not include other relatives, boarders, lodgers, roomers, visitors or servants.
46 Indirect evidence of this is found in the analysis of age and sex groups by zones given in Chap. IX.
RECENT SOCIAL TRENDS

Clearly, the size of the family varies in the different types of communities. If the size of the farm family in 1930 is represented by 100, then the size of the town family would be represented by 86, the size of the family in the cities by 79 and in the metropolis by 66. The expectation is that the size of the family will continue to decrease. The possible lead in falling birth rate set by the cities may be followed by the smaller communities. While there is, of course, a theoretical mathematical lower limit to the size of the family, the practical limits will no doubt be reached much earlier. And these practical limits may be expected to vary from period to period.

The Diversification of Structure.—The family is not only decreasing slightly in size but its structure is becoming diversified. The families are a little younger in the cities than in the villages and in the country. There are more children in the suburban type than in the large cities. The differences in the make up of the rural family and the family in the very large city are shown in Table 1.

Table 1.—The Distribution per Thousand of the Different Types of Families in Chicago and on Farms, 1930

<table>
<thead>
<tr>
<th>Type of family</th>
<th>Metropolis</th>
<th>Farms&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Husband and wife only</td>
<td>398</td>
<td>183</td>
</tr>
<tr>
<td>Husband, wife and 1 child</td>
<td>229</td>
<td>205</td>
</tr>
<tr>
<td>Husband, wife and 2 children</td>
<td>152</td>
<td>292</td>
</tr>
<tr>
<td>Husband, wife and 3 children</td>
<td>42</td>
<td>135</td>
</tr>
<tr>
<td>Husband, wife and 4 children or more</td>
<td>19</td>
<td>214</td>
</tr>
<tr>
<td>Husband only</td>
<td>63</td>
<td>25</td>
</tr>
<tr>
<td>Husband and 1 child</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Husband and 2 children</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Husband and 3 children or more</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Wife only</td>
<td>72</td>
<td>14</td>
</tr>
<tr>
<td>Wife and 1 child</td>
<td>31</td>
<td>12</td>
</tr>
<tr>
<td>Wife and 2 children</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Wife and 3 children or more</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>Total of all types of family</td>
<td>1,000</td>
<td>1,000</td>
</tr>
</tbody>
</table>

<sup>a</sup> Original schedules of the U. S. Bureau of the Census.

<sup>b</sup> When the farms have the same age distribution as the metropolis, the frequencies of the different types of families on the farms are affected only very slightly.

This table shows about two and a half times as many unbroken families without children living at home in the metropolis (Chicago) as on the surrounding farms. In the large city only 6 percent of the hus-
bands and wives living together have more than 2 children while in the rural area 35 percent have more than 2 children. Husbands living alone and wives living alone added together are about three and a half times as numerous in the metropolis as on the farms and wives living alone are five times as numerous. The family structures for the towns and for the cities of 100,000 inhabitants are intermediate between those of the farms and of the metropolis.

In the foregoing table, the metropolis is referred to as if there were a type family for this size of community. There are in a great city, however, many different kinds of families: various types of immigrant families, Negro families, families in the rooming house areas and others. It is as though the various types were assorted into the various sections of the city.

Size of Families by Occupation Classes.—The average number of parents and children per family varies not alone by type of community but by occupation classes as well. The professions, with 3.01 persons per family in all 1930 communities, show the smallest average size of family in the sample study from the census schedules made for this report. The families of the clerical group are about the same in size, with an average of 3.04. The proprietary group, consisting of owners of stores, business managers, etc. are next with an average of 3.25 persons. The families of the skilled and semi-skilled workers follow with averages of 3.51 and 3.47 persons, while among the unskilled workers the average number of

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47 For a fuller description of the types of urban families see E. R. Mowrer, Family Disorganization, An Introduction to a Sociological Analysis, University of Chicago, 1927.

48 The social-economic classifications are comprised largely of the occupations listed below. A complete list may be obtained from the author.

Professional.—Architects, artists, authors, editors, chemists, clergymen, dentists, designers, lawyers, physicians and surgeons, teachers, technical engineers.

Proprietary.—Bankers and brokers; proprietors, managers and officials in manufacturing, trade, transportation and communication; wholesale and retail dealers, builders and contractors; hotel keepers and managers; officials and inspectors in city and county governments.

Clerical.—Agents and canvassers; bookkeepers, cashiers and office clerks of all kinds; salesmen and commercial travellers; ticket and express agents; mail carriers and clerks; railroad conductors; inspectors in trade and transportation; telephone and telegraph operators; semi-professional attendants and helpers.

Skilled.—Bakers; blacksmiths; carpenters; compositors, linotypers, electrotypers; electricians; engineers, stationary and locomotive; foremen and inspectors in manufacturing, transportation and communication; iron workers; jewelers; machinists; masons; mechanics; millers; molders; painters and paperhangers; pattern and model makers; plumbers; ropers; shoemakers; stonecutters; tailors; tinsmiths; upholsterers; locomotive firemen; firemen and policemen.

Semi-skilled.—Semi-skilled operatives and apprentices in all types of manufacturing and mining; chauffeurs; street car motormen and conductors; brakemen and switchmen; boatmen and sailors.

Unskilled.—Laborers in manufacturing, trade, transportation, communication, public service, domestic and personal service; draymen and teamsters; building laborers; deliverymen.
persons per family was 3.91. The families of the farm owners and the farm renters averaged 4.48 members and the families of the farm laborers 4.32 members.

The changes in the number of persons per family between 1900 and 1930 varied markedly among the different groups. The greatest decline was among the families of the professional group, where it was 10 percent. The proprietary group was next with a 6 percent decline and the clerical group followed with a decrease of 5 percent. The families of the skilled and semi-skilled workers showed a decrease of 3 percent, while those of the unskilled decreased by 1 percent. The families of the farm owners also decreased 1 percent, but the families of the farm renters and of the farm laborers increased, the former by 5 percent and the latter by 13 percent. Among families with wives in the same age group, 35 to 39 years, the families of the farm owners and of the farm renters declined somewhat in average size, although the farm laborers did not follow this trend.

The comparisons between the occupation classes in 1930 can be shown more precisely when only families with wives in the same age group, in this case 35 to 39 years, are compared. If for these ages the size of the family in 1930 for all occupations is written as 100, then the sizes of the families of the clerical group and of the professional group are 85, of the proprietary class 88, of skilled labor 100, of the semi-skilled 108 and of the unskilled 118. In the agricultural groups the family of the farm owners would be represented by 120, of farm renters by 130 and of farm laborers by 140.

Size of Family and Value of Home.—There is some interest, particularly on the part of the eugenist and the social worker, in knowing to what extent the poorer families are larger. In the past, as is generally known, they have been larger, but if birth control spreads further among these groups the differential may diminish or cease to exist. The fact that the families of unskilled laborers were larger than those of skilled laborers in 1930 suggests that there still exists such a differential. The newly recorded information on rents and value of homes owned taken by the U. S. Bureau of the Census in 1930 enables one to make some observations along this line, since the value of the home is correlated with income. A common category of classification for rent and owned homes was obtained by multiplying the monthly rental by 100 to get the value, and vice versa. In the towns there is clearly a decline in the size of

49 See President's Conference on Home Building and Home Ownership, Preliminary Reports XX, XXIII, XXV.

50 This method of equating rents and values is only approximate. The error is probably a little large for the higher values. But the error in such a process of equating is within the limits of the conclusions drawn, it is thought. Higher rents are indicative of higher incomes taking the size of the family as it is found. See W. F. Ogburn's "Analysis of the
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families where the wives are of the same age, as the rent increases. Thus in the towns, with a rental value of less than $10 a month, the average size of family when the wives were in the 40–44 age group was 5.22 persons and for rental values of $10–$15, $15–$20, $20–$30, $30–$50, $50–$75 and $75–$100, the sizes of the families were 4.56, 4.66, 4.15, 3.82, 3.81 and 3.42 respectively.51

In the cities of around 100,000 inhabitants of the sample study, the sizes of the family for the different rental classes beginning with the $15–$20 class were 4.60, 4.33, 3.96, 3.68 and 3.50. For the rentals of from $100–$150, and over $150, there was a slight increase in size of family, the number of persons being 3.70 and 4.05, but the numbers of families in the sample for these two larger rental groups were only 79 and 40, respectively. In the metropolis, the size of the family declines as the rents increase, up to $100, and then, as was the case in the cities, the size of the family increases as the rents go up. The number of families paying higher rents is greater in the metropolis than in the cities. The sizes of the family, beginning with the $30–$50 rents, are 3.60, 3.04, 3.00, 3.45 and 3.74 respectively. The figures show that in the higher income classes the family (living at home when the mother is 40–44 years old) tends to get larger. In the cities, where there are many renters, the families may adjust size of family and size of apartment more readily. In New York, the gas company reports that the aggregate of the lengths of residence in one place divided by the number of families shows an average move about every two years.

Families Without Children.—For homes that are without children, the problem of home making is somewhat different. The responsibilities of the mates are to each other rather than to children and the household tasks are less. The facts, therefore, as to the trends in the number of families without children are important. In 1930, 31 percent or nearly one-third of all unbroken families (with wives under 45 years old) in the four communities had no children at all or none living at home. In 1900 the percentage of no-child families was 28.

The proportion of unbroken homes without children shows considerable variation according to size of community. In the sample of unbroken farm families 18 percent or about 1 in 6 families in 1930 were without children living at home. Among the small town families, the proportion was 25 percent or 1 in 4; in the cities it was 33 percent or 1 in 3, while in the metropolis 49 percent of the families or virtually every second one was without children.


51 The numbers of families in each rental class were 122, 210, 274, 462, 548, 241 and 73, respectively. The number of cases paying the larger rents was too small to be included.
The rural area shows a decrease of about 5 percent in the proportion of families without children since the beginning of the century, the towns and cities show respective increases of 8 and 14 percent up to 1930 but in the metropolitan area the increase amounted to 30 percent. These comparisons are not very refined, for the age distribution may be different now from what it was in 1900. The great increase in childless families in the metropolis is probably due in part to the moving of families with children to the suburbs as is indicated by a recent census release. This report, analyzing the population characteristics of 96 metropolitan districts, shows that, with four exceptions, the percentage of children under 15 years of age in the population is higher outside than in the central city.

Among women 40–44 years of age, at the close of the child-bearing period, with husbands living, 1 in 4 in 1930 had no children at home. But not so large a proportion have never borne a child. In 1900, a year in which the census collected data comparable with the sample study, about three-fourths of the wives with no children living at home had never borne a child. If this proportion held in 1930, then 18 percent of all wives 40–44 years old had never borne a child. But since deaths are fewer and since perhaps children stay at home longer, it may be that about 1 in 5 wives of this age period with husbands living have had no children.

Problems Suggested by the Size of the Family.—Many of the problems due to the decrease in the size of the family are the same as those occasioned by the falling birth rate. These are factors of population, however, rather than of the family, and as such are discussed in Chapter I. The small family system does, nevertheless, create social problems of its own. For instance, there are many wives without children, as shown by the data of the preceding paragraph. In other families with only one or two children the mother devotes only a few years to child rearing. Families without children may almost be classed as a different type of family. Such situations particularly affect the activity of wives both inside and outside the home, and have a definite bearing on the stability of marriage. Other problems of the small family concern the personality of the children and their relations to their parents. These problems are discussed later in the chapter.

IV. THE DISORGANIZATION OF FAMILIES

A certain amount of disorganization has inevitably resulted from the changes in the structure and functions of the family. The broken home, defined as one in which one of the mates has died or withdrawn, is of great concern to society, for when a breadwinner or a home maker dies or leaves, the home as a functional institution suffers and may have to be supple-

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42 On the growth of suburbs, see Chap. IX.
mented by some outside agency. The seriousness of the breaking up of a home is of course greater where property, productivity, the child or violation of the moral code is involved. The maturing and departure of children from the home may be said, in a sense, to break it too, but this is a normal and unavoidable phase of family life.

The Extent of Broken Homes.—The number of broken homes varies greatly with the ages of the husband and wife. It is to be expected that among the older people there will be many widowed. There are few golden weddings. On the other hand the breaking up of a home before the wife has passed the age of 44 or the husband has passed the age of 49 may be regarded as a deviation from the normal expectation at the time of marriage. The following data, therefore, deal only with cases in which the wife was 44 years of age or younger and the husband, if he were the survivor, was 49 years of age or younger. The data were taken from the special sample study on the size of the family, described more fully in preceding paragraphs.

The average percentage of all families that were found to be broken in 1930, for the equal sized samples from the farms, towns, cities and metropolises, was 14.6 percent or about 1 in every 7 or 8 families recorded. In interpreting these figures, it should be remembered that one family breaking up by separation yields two broken families. The percentage of broken families would have been much larger had older age groups been included. On the other hand, the percentage of broken homes would have been somewhat smaller had the whole United States been included, since the sample studies do not contain a large enough proportion from the rural areas to be representative, and there are fewer broken homes in rural regions than in cities.

In the study of parent and child relationships made by Burgess and previously referred to, 23 percent of the white school children of the seventh, eighth and ninth grades were found to come from homes where the parents were not living together. But his sample was for older parents and was more largely from cities. Clifford Shaw finds a larger percentage of broken homes for public school children in Chicago, 10 to 17 years of age in 1930, but here again the parents may have been somewhat older.

By selecting only native whites of native parents the number of broken homes was somewhat exaggerated. For instance, some of the surviving males may have had wives who were not native born of native parents, and hence would not have been taken for the sample study if the wife had been living, for only those families were chosen where both husband and wife were native born of native parents. This exaggeration was cut down by multiplying the number of broken homes by a coefficient determined for each area, which was based upon the proportion of mixed marriages especially determined for each community.

See footnote 27.

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In the areas of low delinquency, 26 percent of the homes were broken while in the high delinquency areas the proportion was 29. The sample family study undertaken for this report showed that 14.3 percent of the homes in 1900 were broken, revealing no significant change since that time.

The number of broken homes varies greatly according to the size of the community, the cities having twice as many as the country. In the metropolitan area 19.0 percent of the homes were broken and in the cities of 100,000 population 16.7 percent were broken, while in the villages the proportion was 14.7 and in the rural area it was 8.1. The larger percentage of broken homes in the cities may be due in part to the change of residence of widowed and divorced persons to the city from the country. There are, however, more divorces granted to couples living in the city as is shown in a later paragraph. In none of these areas has there been an appreciable change in the percentage of broken homes since the beginning of the century.

Since the death rate has fallen so markedly, it may seem strange that the proportion of broken homes has not been altered. The rising divorce rate, however, has entirely offset the influence of the changing death rate. Homes broken by death have decreased from 7.6 percent in 1900 to 4.9 percent in 1930 and the movement occurred in all the different sized communities. The percentage of homes broken by divorce, annulment or separation, however, has increased from 6.7 percent in 1900 to 9.8 percent in 1930. In 1900 the number of homes broken by separation or divorce was about equal to the number broken by death; in 1930 two were broken by separation or divorce to every one broken by death. One out of every 10 homes in this sample was broken by separation or divorce. In Chicago the proportion was slightly larger, being one in 7 or 8, while in the rural regions it was only one in 23.

Children and Broken Homes.—Society’s greatest concern with broken homes is with those having children. Since fewer children are being born

56 The number of homes broken by separation alone has never been published by the census. The word separation as used here means a condition where a husband or a wife, living and not divorced, were not recorded by the census enumerator as living with a mate at the time. The instructions to enumerators were to record temporary absentees, not where found but at their usual place of abode. Travelers and persons away on short trips were supposed to be recorded as living at their home, and hence their absence would not be noted as a separation. However, there may have been some cases of temporary absentees not being recorded when they should have been. The census enumerators with whom the author has talked seem to think that the recording of one mate only when the other was not noted as divorced or dead showed a genuine separation in the usual sense of the word. The word may not always mean a separation instigated by marital discord. Separation may begin, where labor moves about frequently, without a decision based upon unhappiness with mate, but may grow into a case of desertion. The word separation may be acquiring new meaning, with a dividing line more difficult to draw.

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to the average family it might be inferred that broken homes with children have become less frequent. As a matter of fact the percentage of broken homes with children among all homes with children has dropped only from 10 percent to 9.2 percent between 1900 and 1930. The percentage of broken homes among the families without children was 25.4 percent, in 1930—nearly three times as large as the percentage with children. The presence of children is thus an important factor in holding a family together. Homes may be broken by death or by separation or divorce. Where death is the cause, the percentages of homes with and without children are nearly the same, 4.3 and 6 percent respectively. But where separation or divorce is a cause, there is a marked difference. For only 5 percent of the homes recorded as having children were found to have been broken by divorce or separation while the percent was 19.4 among homes without children.

The differences indicated may be misleading. They do not represent the percentages of marriages that were broken by divorce or separation but rather the proportion of all present homes that are broken. Thus two homes, one with children and one without, both broken by separation, would yield 4 broken homes, one with children and 3 without.

It is also a significant observation that the percentage of homes with children, considered as a group, which are broken by separation or divorce, though still much lower than the percentage of those without children, shows a tendency to rise. For the whole group the increase was from 3.4 percent in 1900 to 4.9 in 1930; for families living on the farms from 1.9 to 2.3 percent; for families in towns, from 3.7 to 5.4 percent; for city families, 3.8 to 5.7 percent; and for families in the metropolitan area, from 4.2 to 6.5 percent.

Families with Low Incomes.—At the higher income levels the wife or the children of a broken home are likely to be provided for from the family income and do not ordinarily become a charge on the state. At these levels divorce may be relatively more frequent than desertion, since there is money with which to pay the necessary expenses of the court proceedings. At lower income levels husbands lacking funds to pay for divorce may simply desert their families. There are no adequate data to show whether desertion is increasing or not, but since divorce is increasing it is very likely that desertion is also, particularly because of the increasing ease with which the wage earner may move from one locality to another. The impression of the family societies seems to be that desertion is increasing, not only among husbands but also among wives. The movement of Negroes to northern cities appears to have increased the frequency of desertion among Negro families. In recent years desertion has created new problems both for social workers and for the state. Since 1910, 26 family courts have been established in the United States to deal
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with situations arising from non-support and from desertions of wife and children.

The failure of the poorer families to function well is often brought to light because of the dependency occasioned. Hence family life has become of especial interest to social workers, as is shown in Chapters XXIII and XXIV. Family welfare societies have increased during the period studied, for the case worker finds that it is often possible not only to prevent the breaking up of families but by increasing family stability to solve the individual problems of the child and the adult. The various forces of society previously described which operate to cause either a disorganization or a decline of family life fall with more shattering force on the poor than on the rich and on the immigrant than on the native. The disruption of family life by divorce, however, is less frequent among the foreign born than among other classes of the population. The stream of immigrants has been retarded, however, and at the same time real wages rose during the decade following the war.

The Increase in Divorce.—There may be marital discord without divorce and the growth of divorce may be no more an index of the increase of marital unhappiness than the growth of hospitals is an index of the increase of sickness. Nevertheless, for religious or other reasons, divorce has received more attention than any other type of broken homes.

In 1900 there were 20 divorces for 10,000 married persons; in 1930 there were 36. Since 1880 the number of divorces per 1,000 population has increased at the rate of about 3 percent a year. But during the decade 1920–1930, considered separately, the rate of increase was only about 1.5 percent. Does this decline in the rate of increase argue for still further declines in the future and perhaps an ultimate stabilization? A better answer can be made when further examinations are made of the factors causing divorce. But if the present divorce curve is regarded as part of the long time curve, further declines, though possible, cannot safely be predicted. There have been other periods when the rate of increase of divorces per 1,000 population was low, as between 1900 and 1910 when it was about 2 percent per year, yet following this period it rose to about 5 percent. In only 5 years, one being 1930, of the 43 years from 1887 to 1930 has the number of divorces been less than in a preceding year and these were years of acute depression. Divorces tend to decline in hard times and increase in good times, although the reason for this correlation has not yet been shown.

Divorces have been increasing since 1900 in the various countries of the world. The only exception is Japan, where new legislation is making divorce more difficult. The rate of increase in foreign countries as well as in the United States has been somewhat retarded since the World War.

57 Groves and Ogburn, op. cit., p. 371.
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The United States has the highest divorce rate of the countries for which statistics are available, with the possible exception of the U. S. S. R., which had in 1926 the same divorce rate per 1,000 inhabitants as did the United States.  

That there were 72 divorces per 10,000 married couples in 1930 indicates what proportion of marriages ended in divorce in a particular year, but it does not indicate the number that ended in divorce in all the years of exposure. The chances of divorce throughout a married lifetime may, however, be estimated. In 1930 there was 1 divorce for every 6 marriages and this approximates the number of marriages contracted in 1930 which will end in divorce. It would be exactly that if the duration of marriage and the divorce rate (for each year of married life of an original married population) remained the same and if the same numbers were married each year. But since it is not unlikely that the divorce rate, the most changing of the above factors, will increase, the number of marriages contracted in 1930 which will end in divorce will probably be more than 1 in 6—a fact that the brides and grooms marching to the altar today hardly realize.

Regional Differences.—The differences in the divorce rates in the different parts of the United States are as great as they are in the different countries of Europe. For the states along the Atlantic seaboard, New England and the middle and south Atlantic states, the rates per 10,000 married persons in 1930 were 24, 14 and 24, respectively, while on the Pacific coast and in the adjoining mountain states the rates were 60 and 70. In the central states the rates were intermediate between those of the coastal regions.

The increases in the number of divorces per 1,000 married persons have been greatest on the Pacific coast and in the mountain states and least on the Atlantic seaboard. This means a greater spread between the different states in the matter of divorce rates. That is, the states with low divorce rates are further separated from the states with high divorce rates than at the beginning of the century. Apparently there is less uniformity than there was before the World War when there was agitation for uniform divorce laws. If in each state the incidence of divorce increased at the same rate, there would be this greater spread; in fact, the spread actually increased at the same rate that the divorce rate did. Clearly the trend is not toward greater uniformity in the divorce rate.


59 The standard deviation of the divorce rates of the 46 different states (omitting South Carolina with no divorces and the state with the greatest number) was 1.1 in 1900 and 1.8 in 1930, an increase in variability of 64 percent, which was almost the same as the increase (62 percent) of the average divorce rate for all the states of the two periods, 2.38 and 3.85.
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**Divorce Laws.**—The changes in divorce laws have some bearing on the increase in divorce. The causes for which divorces may be granted and the period of residence required in a state before a divorce may be had are the aspects of divorce legislation most important in which to note changes. The most significant change in the legal causes for divorce has been the increase in the number of states (from 36 to 44 between 1905 and 1930) permitting absolute divorce because of cruelty, the ground most often advanced. Only four states in 1930 disallowed cruelty as ground for absolute divorce.

Non-support, for varying lengths of time, usually a year, has been added to the lists of grounds for divorce by 6 states in this period and abandonment by 1 state, making 25 states in all that accept non-support as a cause. One state has added abandonment as a legal cause and 4 new states recognize prolonged absence, from 5 to 10 years, as a cause. Ten states have been added to the 4 that in 1905 granted divorce because of insanity. There have been a few other changes regarding miscellaneous causes, such as drug addiction, vagrancy, and attempt on life, some states adding these as grounds and some removing them. On the whole these changes in the laws have been in the direction of extending the grounds for divorce.

Changes in the period of residence, on the other hand, have tended to make divorce rather more difficult. Thus, six states have increased residence requirements. On the other hand, Arkansas in 1931 reduced the period from one year to 90 days. Nevada followed by lowering her requirements to 6 weeks and Idaho lowered her residence requirement to 90 days. About 5,000 persons from other states obtained divorces in Reno in 1931. This means that about 2.5 percent of all divorces were granted in Reno.

**Causes of Divorce.**—The changes in the causes alleged by the plaintiff for divorces granted are somewhat in accordance with the changes in the legal grounds for divorce. Thus, more and more divorces are granted for cruelty. In 1930, 42 percent or nearly half were granted for this cause as compared with 23 percent in the period 1887–1906. Desertion as a stated cause is diminishing, although 29 percent of all divorces were still for this cause in 1930 as against 39 percent in the earlier period.

60 See also discussion in Chap. XXVIII.
61 Alabama, California, Montana, New Hampshire, Ohio and Oklahoma have added non-support as causes, while Tennessee has given it up.
62 Idaho increased the period of residence from 6 months to 1 year in 1919; Nebraska, 6 months to 1 year, 1929; Oklahoma, 90 days to 1 year, 1921; South Dakota, 6 months to 1 year, 1929; Texas, 6 months to 1 year, 1925; and Wisconsin, 1 year to 2 years, 1929.
63 This figure is estimated as follows: If Nevada had the same divorce rate as Wyoming, a western state with a longer residence requirement for divorce than Nevada, then Nevada would have had 200 divorces instead of 5,260. The estimate is necessarily rough, but is sufficiently accurate for the present purpose.

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Adultery as a cause cited (but not necessarily adultery in fact) has declined by one-half, being the ground in 8 percent of all divorces in 1930. About 4 percent of the divorces are granted because of neglect to provide; this cause shows little change over the years. Drunkenness was given as a cause in 4 percent of the divorces of 1887–1906, and for 1.7 percent in 1930. This percentage shows a slight rise, however, since 1922, when it was a cause in 1 percent of the cases. The other 15 percent of the divorces are for various combinations or miscellaneous causes. It may be concluded from these data that divorces are being sought on less serious grounds than formerly.

It should be remembered that these causes of divorce are often stated solely because they are the legal grounds acceptable to the courts. The underlying causes or even the surface causes may be quite different. Thus very common causes of marital differences are quarrels over money matters, relatives, and leisure time. But records are not kept of such causes, though social workers and other advisers testify to their prevalence. Other causes are on quite a different plane. Thus the growth of the city population is a social cause (but hardly so cited by individuals), for the divorces are more numerous in the city than in the country. So also, the possible weakening of the control of religion over marriage may be a cause. In some religions divorce is not permitted. The opposition to divorce was modified by the Methodist Episcopal Church in 1928, but not by the Catholic Church, as is discussed in Chapter XX. In 1930 the United Lutherans increased their restrictions, as did the Presbyterians in 1931.

Divorce and Children.—There are two other aspects of divorce that are of especial social significance. One concerns the children. The percentage of divorces in which children are involved has changed very little in recent years. During the period 1887–1906 there were children reported in 40 percent of the divorce cases. By 1922 the percentage had declined to 34. Within the past decade, however, the percentage reporting children has risen again to 38 percent in 1930. It will be recalled that in

64 The number of families living with relatives or providing a household for relatives is quite large. Among those families that had been in existence less than 5 years, there was an average of 44 relatives per 100 families, which is somewhat more than the ratio of relatives to families, 33 to 100, when marriages of all durations are considered. These data are from all communities of the sample study previously referred to. This does not mean that 44 families are living with relatives, since there may be more than one relative in a number of the families.


67 U. S. Bureau of the Census, Marriage and Divorce, 1930, 1932, p. 38. The divorce papers report children, or report no children, or there may be no report on children. Thus 5 percent made no report on children in 1930 and 10 percent made no report on children.
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a previous section it was shown that the percentage of all families with children which were found broken by divorce or separation was increasing. The causative factors in the situation are, no doubt, changes in the birth rate, changes in the death rate and changes in the divorce rate. But the final result is that up to the present not much change can be discerned in the percentage of divorcees reporting children.

Divorce and Duration of Marriage.—The question of children and divorce is also related to another social aspect of the question, namely, the duration of marriage before divorce. Whether divorce, if come it must, should come early or late is a subject on which there is difference of opinion. Suggested reforms in divorce legislation have had to do with preventing hasty action in filing divorce papers rather than with prolonging the term of marriage when divorce is inevitable. A point made against such a prolongation is that it undoubtedly diminishes the woman’s opportunity to remarry.

In any case, discontented married couples are not waiting so long as formerly to get a divorce. Thus, in 1930, 37 percent of the divorces occurred within 5 years after marriage, as compared with 28 percent during the period 1887–1906. Separations ordinarily occur some months or years earlier than divorces and there are probably a good many more separated husbands and wives at any one time than there are divorced persons. For Chicago in 1920 data indicated that there were 4 separated husbands and wives to one reported divorced. 68 The ratio is probably not so high since the number of divorced is under-estimated. As to remarriage after divorce, the figures are not reported. Most of the attempts to estimate the proportion of divorced persons who remarry place it as around one-third. 69 Case studies indicate that there is a period of travail of spirit after separation and divorce. 70

V. THE PERSONALITY FUNCTIONS

In the preceding sections the changes in the ways the family functions as an institution were first shown. Then the changes that have occurred in its structure were discussed. The personality functions, by

in 1922. Probably, when there is no report on children, there are no minor children. This uncertainty, however, makes it necessary to use caution in interpreting slight trends in this matter.

68 In the special sample study of families made for this report divorced and separated were not distinguished. It is possible, however, to make some estimates of the proportion. Thus in 1920 in Chicago the ratio of widowed to divorced or separated in the special sample study was 135 to 100. If the same ratio held for the whole city there would have been 48,000 divorced or separated. The census published the number of divorced persons as 10,567. Therefore there were about 38,000 separated husbands and wives, according to the definition of the word here used and previously discussed.

69 Cahen, op. cit., Chap. VII.

which are meant, in the main, those which affect the relationships of parents and children on the one hand and of husbands and wives on the other, remain to be considered. The functions of the family may be viewed not as institutional, but rather as personality functions. The economic functions and the protective functions, for instance, not only produce goods and services, but they may also affect the personality. But in the main, the personality functions are those that affect the personality relationships of parents and children and of husbands and wives, and quite generally by procedures not emphasized very much in the discussion of the institutional functions. To what extent have these personality functions of the family been lost or transferred to other institutions? What changes have been taking place in recent years that affect these personal relationships?

Parents and Children.—In the section on the educational function it was seen that the content of much of the subject matter that children learn is being given by the schools. To some extent the schools help also to develop personality. But the fundamental personalities of children are pretty well formed by the time they go to school. Between birth and the age of six, the year when the child is generally first exposed to the influence of formal education, he comes in contact chiefly with the other members of the family group and is permanently affected by them. They are the stimuli to which he responds, many times each day and every day in the year. Such a repetition and limitation of stimuli cannot but leave on the infant’s plastic nature a reaction pattern involving affection, fear and rage, the development of the ego, the quickness of response, feelings of inferiority, inhibitions, etc. The influence of the mother, who has repeated and frequent contacts with her offspring, is probably greater than that of any other member of the family, with that of the child’s brothers and sisters, if there are any, coming next.

The importance of the influence of the parents and of the early home life is easier to demonstrate than to analyze and measure. Nor is there any concise factual evidence as to the changes in the intra-family relations during recent years. In the absence of such data recourse must be had to the rather unsatisfactory device of sketching some of the changes that probably affect these relationships, without attempting to demonstrate what the effects are. Further tendencies are reported in Chapter XV.

It is clear, in the first place, that the diminution in the size of the family must affect family relationships in regard to children; eliminating them, necessarily, when no children are born or adopted; altering them, certainly, when the number of children is limited. It is sometimes stated, a bit naively perhaps, that the mother of a large family spreads her affection out, whereas the mother of a small family concentrates on the smaller number of offspring. It may be that in small families the children
receive extra large doses of affection. This might be true of an only child, of the oldest child or of the youngest in a series. This would possibly lead to a delay in "psychological weaning" which might affect a child's self-reliance. It is thus argued that the chance of developing the so-called "spoiled child" is somewhat greater in small families. First born children, irrespective of the size of the family, appear to contribute more than their proportionate share to the group of so-called problem children, as well as to the genius class. 71 Children in small families are more variable, that is, produce both more successes and more failures. 72 Neuropathic tendencies are unusually frequent among only children. 73 The apparently greater proportion of insanity among the first born may be owing either to order of birth or to the small family. 74 These facts give no evidence as to whether the differences indicated are due to biological or to early environmental factors. The role of the parent-child relationship cannot be determined, though there are many theories that give weight to it.

It may be that the size of the family has not decreased sufficiently to produce a measurable psychological effect. 75 In the case of the one-child family the statistics give no help at all with this problem, for, strange to say, the percentage of one-child homes has neither increased nor diminished since 1900, remaining around 25 percent during the whole period for the sample study of families.

The broken family also affects the parent-child relationship, but as has been seen the percentage of broken families has not changed during the thirty-year period studied. Marital discord in families undoubtedly has an unfortunate influence on the life of the child, although accurate evidence as to the precise nature of this influence cannot be cited. Though the percentage of divorced families has increased there are no data which will aid us to determine whether or not marital discord is increasing in families still technically unbroken.

The employment of nursemaids for children must affect the parent-child relationship by its introduction of an additional person with no

71 Thurstone, L. L. and Jenkins, R. L., Order of Birth, Parent-age, and Intelligence, University of Chicago, 1931, p. 120.
72 Unpublished data collected by the author.
73 Thurstone and Jenkins, op. cit., p. 121.
74 Ibid., p. 120.
75 In this connection it is often argued that whether an adult will be neurotic or not is determined by his early childhood. Whether or not so extreme a statement is true, environmental influences are admittedly important in causing nervousness found later in life. The insane in state hospitals have increased from 16 per 10,000 in 1904 to 23 in 1929. Though this fact may not mean an increase in insanity, yet neuroses and psychoses are undoubtedly very prevalent. The chances of a boy or girl of high school age being placed in a hospital for the insane—conditions remaining as they are—before he dies is, for New York state, 1 in 22 (see W. F. Ogburn and Ellen Winston, "The Frequency and Probability of Insanity," American Journal of Insanity, vol. XXXIV, p. 280), and of course the chances for developing lesser degrees of psychological instability must be much greater.

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ties of kinship into the limited social circle of the child. The percentage of families with nursemaids is, however, too small for this factor to affect the general trend. Relatives in the household are another factor of importance, but though 33 relatives are found with each 100 families in the sample family study there has been no appreciable change in the number over the period under survey.

Another change which may affect the parent-child relationship is the increase in the number of urban families, and in particular the increase in the number of those living in apartment houses. The absence of play space around the home and the limited space within the apartment itself may mean closer contacts between parents and children. On the other hand the clustering of homes in the city would seem to provide more playmates than would be available in the country, and thus the monopolistic home contacts of the child would be subject to more interference. In the study of parent and child relationships previously referred to rural children appear to be more critical of their parents, and testified to less demonstration of affection; and their statements indicated that they confided their joys and sorrows to their parents less than was the case with the city children. Among city families there has been in recent years a marked increase in the percentage of married women who work outside the home. For those of them who have young children the parent-child relationship is affected by the fact that during their absence they must leave the child in a day nursery or a kindergarten, or under the care of a nurse, neighbor or relative. Even when the mother remains at home the child, after he reaches school age, may divide his allegiance among play groups, gangs and clubs outside the home. The city streets are believed to provide many opportunities for children at later ages to escape family supervision.

Another factor, already mentioned, in the parent-child relationship is the widening of the gap between the generations by education and by social changes. In the case of immigrant families and their adolescent children this effect is especially noticeable. Such differences, joined with the growing individualization of the members of the family, and the complexity of the new urban environment, reduce the conscious control of the parents over their children. While psychiatrists speak of the problem of the "over-protected" child there are many families where there exists the problem of the under-protected child, especially during the adolescent years.

The foregoing fragments of evidence indicate some loss of the family's personality function in so far as it relates to children, together with some

changes in its nature. To counteract in part the trend away from the home there are some indications that the function of child rearing is being relinquished by institutions and re-assumed by the home. The general opinion in child-placing organizations is that the demand by families for children to be adopted is growing and that the drift is away from the care of children in orphanages. Unfortunately, comprehensive and comparable statistics bearing on this point have not yet been collected.

**Husbands and Wives.**—The personality functions affecting the relationship of husbands and wives would appear to be inherent in the family and non-transferable. Yet husbands and wives may have close friendships with others outside the family circle and the opportunities for such friendships may increase with improved transportation facilities and the growth of cities. These outside relations may extend to sexual intimacies. But there are no reliable statistics on prostitution, much less on more informal liaisons. The bans against segregated districts for prostitutes, against street solicitation and against organized houses of prostitution have become more effective since pre-war years and may indicate a weakening of this ancient institution.

The changes in the occupations presented in Chapter VI—and in various other chapters—suggest a number of ideas as to possible influences on the personality relations. Thus the increased travel incident to business tends to separate the members of the family for varying lengths of time. Night work is an influence for deviation. Work on transportation lines as railroads and buses cuts across family association. For many migratory or casual laborers family life is impossible. There is also indication that frequent moving about of families increases the number of problem children, probably because of disruptions of group associations. The occupational developments also probably make desertion easier. The increasing number of college students means that many more wives (and husbands) have had a college education. It is not clear what this fact may mean for family life, but presumably it means a better equipment for meeting some of the issues of life.

Changes in the happiness or unhappiness of married couples are difficult to measure in the mass. Attempts have been made, nevertheless, to assess happiness in married life by means of small sample studies. In one such study, among 1,000 married women, largely graduates of women’s colleges, who had expressed a willingness to cooperate, 872 reported their marriages as happy and 116 as unhappy.77 In a more

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77 Davis, Katherine Bement, "A Study of the Sex Life of the Normal Married Woman" in the *Journal of Social Hygiene*, January, 1923, vol. IX, no. 1, pp. 1–26. A letter of inquiry sent to 10,000 women produced over 1,000 expressions of willingness to fill out the questionnaire dealing with various sex aspects of marriage as well as the question of happiness.
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recent study⁷⁸ 7,412 marriages were rated according to the degree of happiness and unhappiness by a number of different persons who knew the couples "very well." Seventy-two percent were rated as happy or very happy and only 9 percent as unhappy or very unhappy. Comparison of these two studies reveals very little difference between self-rating and rating by others on the question of happiness in marriage. Such studies, however, show reported opinion rather than reality, and it is difficult to know how far the two are parallel, though there may be a high correlation. In any case it is interesting to note that about three-quarters of the families of these groups from the well to do classes are reported as happy. Another inadequacy of this material is that it fails to show trends. That so large a proportion of these educated groups are reported as happily married is, nevertheless, an important observation lying at the heart of family problems.

The later of the two studies indicates no substantial difference between the city and the country, for 71 percent of the rural families and 73 percent of the urban families were reported as happy or very happy. This comparison may be valid, even though the error in recording happiness is very large, provided it is equally large for both types of communities. The fact that there is no appreciable change revealed from rural to urban communities suggests that there may be no appreciable change over the years.

The facts as to trends in marital harmony are meager and a search for changes in the factors producing disharmony are even less satisfactory. Nervous persons are said to have more difficulty in becoming adjusted to marriage and nervousness is said to be on the increase. But neither of these statements has been proved. It is also said that the speed and diversions of city life are a strain on family relations, but this again is only an assumption. Theories regarding trends in health, age of marriage, income and sex knowledge as factors are even more speculative. They are only mentioned to indicate the status of the data and to suggest categories in which it would be desirable to have knowledge.

The relationships of husbands and wives are not encompassed wholly under the word affection. Older persons, for instance, sometimes marry to extend aid and comfort to one another. But such needs of family life may be lessened with the declining economic importance of the household and with increased contacts and services outside the home.

Moreover, the personality relationships in family life usually extend beyond the immediate group to include relatives and friends of the whole family or of its individual members. The general opinion is thought to be that transportation and city life weaken the ties of kinship and that

friendships and group contacts are made somewhat more frequently on an individual and less on a family basis than formerly. Nevertheless, the statistics presented earlier show that during the 30 years following 1900 the number of relatives living with families remained about the same. And the family is still a significant group in making contacts with others, even though the previous discussion of family status shows this function to be declining.

From the foregoing analysis it is apparent that there has been only a little loss in recent years of the personality functions of the family, except perhaps in regard to children of school age. The loss in institutional functions has been greater, so great that by comparison the personality functions appear to have risen in importance.

The trends in regard to the personality functions of the family are at present impossible to record. One might speculate on the growth of the influence of outside organizations and groups such as the club, the moving picture and others. But trends in these influences are difficult to measure. There is more evidence of how society is reacting to trends than there is of the trends. These reactions are the efforts to solve the family problems as they concern human relationships and are discussed in the concluding section.

VI. EFFORTS TO DEAL WITH FAMILY PROBLEMS

The problems that emerge from the data on trends affecting the family fall rather naturally into three groups: those involving the family as a social institution; those dealing with children in the home; and those concerning the relationship of husbands and wives. Some of these problems have already been discussed or indicated in previous sections.

Problems of the Family as a Social Institution.—Although industry took away from the family many of its traditional functions, nevertheless some of its economic aspects obviously remain. Not the least of these is the furnishing of shelter.

Since dwellings are usually made of materials which outlast those who build them there are many sections in cities and rural districts where the homes survive from earlier periods. In some instances this fact hinders adjustment to city planning and makes it difficult for housing to keep pace with constructional conveniences, such as plumbing or air conditioning equipment.

The provision of adequate housing, especially for that large portion of the population least favored economically, remains difficult.\(^79\) Capital is not attracted to this field, where, particularly when land values are not increasing, there are no large profits. With the rate of increase in

\(^79\) See President's Conference on Home Building and Home Ownership, *Preliminary Reports* I-IX.
such values falling off as population grows less rapidly the incentive is
less than it used to be.

To meet this situation housing experiments on a large scale are being
carried out in several cities with both economic and architectural ends in
view. Financing for individual purchase is also made easier by organiza-
tion. The purchase of homes from a central source operating on a basis
of mass production holds possibilities of cheaper as well as better building.
On the other hand, the difficulties of renting and ownership are aggra-
vated by the increasing mobility and restlessness of the population.

The effects on the family of the modern trends in housing are not
easy to measure. The functions and structure of family life are un-doubt-
edly modified, however, when play space for children is limited, as it
is in the present type of apartment house in cities, or, in a different way,
when the multi-family dwelling affords opportunities for common dining
rooms, laundries and nurseries.

When all these influences are considered the important task of
properly housing the population is seen to need foresight and planning.

The economics of the home have been shown to be significant, despite
all the changes in modern life. There are still many goods and services
produced in the home for use therein. The home is also the greatest user
of consumer's goods and wives collectively are a very powerful purchasing
group. As conditions alter, however, the necessity for adjustments in
home management increases. To meet this need there has been a rapid
increase in courses in domestic science. Yet the preparation of young
women for the economics of family life is not without its difficulties.
The doubt in the minds of many prospective wives as to whether they
will work outside the home for pay or confine themselves to domestic
management is not conducive to adequate preparation for married life.

The work of the household is quite varied; Amey Watson lists 50
separate tasks which need to be organized. Effcient management,
in home as in factory, requires division of labor and the proper assign-
ment of duties to members of the household and to employees, if any.
Another phase of the problem of management which is not dissimilar to
that found in a factory is the budgeting of money. Installment buying
is said to have encouraged budgeting habits, and some stores selling on
the partial payment plan retain specialists to advise purchasers on the
handling of finances.

Budgetary guidance has long been a function of social workers dealing
with the poorer families and of teachers of home economics. Apparently
this kind of assistance is being increasingly given. In 1932 the directory
of the Family Welfare Association listed 376 societies, three-quarters

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80 Watson, Amey E., "The Reorganization of Household Work," The Annals of the
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of them organized since 1900, 60 in the first decade, 137 in the second, 74 in the third and 12 since 1930, all furnishing services to the family. Further assistance is given to the urban family by legal aid societies. Chiefly of service to individuals, these societies do give advice on the legal problems of the family.

Society gives much more attention at present to preventing the breaking of families than it does to safeguarding their formation. Something, however, has been done to prevent the marriage of children, a problem thought of as usually involving girls rather than boys. Twenty-six states permit marriage of girls below 16 years; and 10 of these as low as 12 years. The trend is to raise this minimum age, 16 states having increased it since 1906. All of the states require the consent of the parents until the daughter is 18 years old and one-fourth until she is 21 years old, 8 states having raised or established the age since 1906. Though child marriage is a sufficiently serious problem to be carefully studied only about one and one-half percent of the girls 15 years old are married. The other side of the picture is that though some women marry too young others do not marry at all. About one woman in 10 reaches the age of 45 without marrying, and few marry for the first time after 45 years is reached. But though society may take steps to prevent premature marriages it does nothing to prevent delayed marriages or failure to marry at all. This problem is still left to the individual.

Hasty marriages have been recognized as an evil in many cases, particularly in the cities, where young people may know little about each other or about each other's families and where opportunities for them to meet at each other's homes are limited. Several methods have been employed by different states to prevent undue precipitancy and to induce a more serious approach to the important step of forming a family. Twenty-two states in 1932 required an advance notice of a few days before the issuance of a marriage contract, as contrasted with two states in 1906. In 1932 sixteen states required that either one or both parties apply in person for the license, while there were only 4 such state requirements in 1906. Twenty states had residential requirements in 1932, although of the 20 states that had such requirements in 1906, 3 had abandoned them by 1932. In 1906, 11 states forbade evasion of state laws by out of state marriage; 3 additional states were added to the list, making the total 14 in 1932.

Further attempts to safeguard the family are found in the prohibition of marriages of the insane and feeble minded in many states. Eight states require by recent action that the male applicant be free from venereal disease, though it is said that these laws are frequently

81 Richmond, Mary E., Child Marriages, Russell Sage Foundation, New York, 1925.
82 Groves and Ogburn, op. cit., Ch. XXI.
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evaded. Eugenic considerations in regard to mental defects and mental disorder will be important for marriage in the future. Now they find only limited legal expression. Knowledge regarding heredity and custom growing out of it may be expected to precede legislation in this field.

The problem of preserving or increasing the economic functions of the household is greatly affected by inventions. While they have taken much productive work from the family and placed it elsewhere, yet sometimes, as is the case of electric appliances, inventions favor retention of work by the home. The inventions which destroyed domestic industry were based upon power that could not be distributed from its source. The electric wire, however, has made a power supply available for home machines. The problem of balance between home and outside industry is in part one of efficiency of production. Is the saving on home output greater than interest on capital investment, the cost of the labor and power involved and cost of repairs of home machinery? An electric mangle for an urban family of two, or a milking machine for a single cow would hardly pay. Technological advance and economic organization will determine the trend, save in those instances where there is a counterbalancing psychological satisfaction in home production, as may be the case, for example, in cooking at home. Detailed evidence on trends has been presented in earlier sections. Prediction is difficult. It may be that electricity is slowing up the migration of work from the home, but most of the evidence points to the further transfer of functions from the home.

Child Rearing in the Home.—An earlier section on parents and children revealed the problems inherent in the relationship, but nothing as to how they are being approached. Parental education is the term applied to the new movement which constitutes the main attack on the problem. In earlier times, when life was much the same from generation to generation, rules for bringing up children were developed in detail and readily disseminated. But the new and changing perplexities of modern life require education for parenthood. Three hundred married alumnae were asked in what subjects they felt themselves least prepared for their family life.83 Three-quarters replied, "In child training."

Education of parents is truly as broad as education for life, since it requires fundamentally the development of the total personality. But certain specific subjects may be taught, as, for instance, child psychology, psychiatry and the sociology of the family. Evidence of beginnings is seen in occasional courses in training for parent education in the lower schools and in the interest of home economics groups in such instruction. Many similar courses are given in colleges, usually attended by women more

than men. The development is extending to university extension courses for adults, many of whom are parents, and for others, various types of education such as the press and the radio are being utilized.

There are a few demonstration clinics in connection with nursery schools. The National Council of Parent Education, embracing 61 member organizations, is active in providing study groups. Another development of recent origin is the visiting teacher, dealing with problems of the school child through the family. Although there were only 250 visiting teachers in 1929, they were distributed in 35 states, and it seems possible that this agency may develop broad and important services. A further link between the parent and the school is provided by the Parent Teacher associations, the membership in which increased from 190,000 in 1920 to 1,500,000 in 1931.

The progress of parent education is also stimulated by the rapid growth of research in the field of child training, although rich in meaning as these studies are they still lack the precision desirable for general diffusion among parents. Some new information has been transmitted to parents through the maternal and infant hygiene societies, whose efforts in behalf of the physical well being of the mother and young child are important also in aiding the development of personality. In 1929, the close of the period for the extension of federal aid to these agencies under the Sheppard-Towner Act of 1921, some 3,000 prenatal and child health centers had been established and over 3 million visits had been made by nurses to the homes of mothers and babies. State aid, granted under various mothers' pension laws, helps to maintain 200,000 children in their homes, it is estimated. Child guidance clinics, of which there are now about 700, are necessarily concerned with the family as well as with the child and offer great possibilities for the future. The juvenile court often has contact with family affairs affecting the parent-child relationship. These and many other agencies dealing with the child are discussed in Chapters XV and XXIII.  

From the foregoing summary it is seen that various agencies of society outside the home are assisting the family in the performance of its educational function toward its young children. While some of these agencies tend to supplant the household, the effort is generally toward aiding child and family at home. For the near future at least, it may be expected that the family, though often with some outside aid and advice, will bear the major responsibility in developing the personality of its children, especially during the preschool years. The task is an increasingly difficult one, however, and society may be expected to give more attention to this vital question, particularly because of a diminishing supply of children. So far, efforts in this country to improve methods of rearing children

84 See also findings of White House Conference on Child Health and Protection.
have not taken the form of bringing up the young child outside the individual home, away from its parents, as has been attempted, for example, in Soviet Russia.

Society's Concern with Marital Problems.—The problems of husbands and wives reach their crises in separation or divorce and maintenance of strict divorce laws represents society's major effort to deal with them. The more fundamental problem for the future stability of the family is to ward off the disharmony which leads to separation. To achieve this successfully requires a much greater knowledge than we at present possess of inherited variability, habit and the relationship of physiological and psychological behavior. There are other linked and disturbing factors of a more social nature, involving such things as money, relatives, manners, drink and conflicts over the use of leisure time and recreation.

There is a growing need not only for more knowledge in this field but for agencies to disseminate such knowledge. To some extent such agencies, largely unorganized, already exist. Advice on marital problems is furnished by some of the professions—ministers, doctors, teachers and lawyers. The extent of their services is unknown, but the clergy manifestly have considerable interest in marital questions. Among the 104 birth control centers in the United States in 1932, some found time to give advice on marital matters. A number of family clinics dealing with a variety of marital and sex factors have been planned during the past decade, but so far as can be learned, only three have been established. Literature on the subject of birth control and the married sex life has shown a marked increase in recent years and is apparently less tabooed than formerly, although its distribution is somewhat hampered by existing laws.

But attention should not be confined to married persons. Some sort of preparation for family life is needed for the unmarried, for most of them will marry. College courses, university extension lectures and high schools deal with some aspects of this problem. Adequate testimony to the need of careful guidance is the popularity of the theme in novels, plays, moving pictures and the columns of feature writers in the daily press.

The relationship of husband and wife is clearly at the center of the problem of the modern family, since most families have children with them for only a part of married life or not at all and since so many other functions of the family have declined. The stability of the future family is not clearly seen. It rests a good deal on what research will discover, and the wide dissemination of the results.

Summary of Major Problems and Future Trends.—The diminution of household activities continues and there are few signs of their increase for the future. How far the movement will go it is difficult to foresee.
The most uncertain element is mechanical invention which did so much to change the home and which might do much to restore the activities of the household. Of the inventions now known the electrical are most significant for some possible restoration of these activities or the slowing up of their decline. The preparation of meals and the care of young children are carried on so little outside the home at present that there is no reliable basis for predicting any substantial departure in the near future. If these activities leave the individual home they will be provided for by government and industry, as in schools and restaurants, or by groups of families cooperating in community nurseries and kitchens.

The first problem is one of deciding what is wanted and in this field there is difference of opinion. The production of cloth by the factory and the growth of schools for children over six years of age are not regretted, but the inroads of group nurseries and restaurants into home life may meet with some objection.

Meanwhile the households, varying from the farm of an isolated region to the small city apartment, still represent a very large economic force involving enormous expenditures of productive energy for many millions of the population. In this period of rapid transition there is a certain amount of disorganization and the problem of efficient home management is an important one.

The great changes raise the whole question of the future work of women. Many now have only part time work at home duties. Suggestions for better adjustments are for a higher standard of household work, for part time or full time paid jobs for wives in industry, or for greater participation in volunteer civic work.

Another large problem of the home is the training of the very young child; a problem which is being appreciated, judging by the increasing interest in it. As the number of children becomes relatively smaller, the attention given to this problem will be greater. It is brought to the fore, also, by the increasing employment of married women, the diminishing size of the family and research in psychology.

Finally, a major problem of the family is its instability. Divorce is still increasing. Although the rate of this increase in the past decade has slowed up, a study of the long time trends gives no confidence in a prediction that the rate of divorce itself will decrease in the near future, though it must do so in the long run. Increased divorce is due to the weakening of the functions which served to hold the family together, and no doubt of public opinion, which would appear to be correlated with the exercise of these functions. If, say, six of these eight functions or bonds are weakened, then more divorce is to be expected, unless there is a corresponding strengthening of the other two. The future stability of the family will depend much more on the strength of the affectional bonds.

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WOMEN'S role in the American community has undergone redefinition during the past thirty years. As delineated in the preceding chapter on the family, the development of mechanical power, the introduction of new inventions, the rise of specialized services outside the home, the changing manner of living and the decreasing size of the family have altered or eliminated many of women's earlier household activities. The chapters on the family, on the people as consumers and on labor groups make it clear that the occupations of women in the home have been of fundamental importance in helping to produce the sum of commodities or services available and likewise in determining the ways in which those commodities and services should be enjoyed. With the departure of many productive activities from the home, however, large numbers of women through necessity or choice are seeking a new place in the economic system and the shift is not being made without revolutionary changes in attitudes with regard to women's responsibilities under the changed surroundings of their lives. Their new position, together with the granting of suffrage, is giving women a share in the entire life of the community. This chapter is concerned then with the activities of women outside the home: their employment for wages, their position in government and their organizations.

No comment is needed at this point on the subject of the activities of women in their own organizations or in government, both of which will be considered at length in later sections. With reference to women's employment, however, a few preliminary remarks will facilitate the later presentation. It should be remembered that there have always been women whose support was not derived from family attachments. There have been and still are four ways in which women obtain a living: (1) in the traditional relationship of marriage, which still implies an obligation on the part of the husband to provide those things suitable to the standard of life in which he places a woman and in return for which there is still the obligation to give marital companionship and to perform domestic services; (2) in the less frequent support of single women by relatives; (3) in the increasing legitimate employment for wages; and finally (4) in prostitution.

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Some of these methods of obtaining a livelihood are discussed in other chapters. In the chapter on shifting occupational patterns an attempt is made to estimate the number of single women not economically self-sufficient, and reference is made in the chapter on the family to the changing proportion of married women. With regard to prostitution, the absence of reliable data has made it impossible to present satisfactory conclusions. The present chapter will discuss the third method listed, namely that of women's increasing legitimate employment for wages outside of the home, together with the attendant problems of training, choice of occupation and reward in wages or salaries.¹

Although attention is called in the chapter on the family to the changes that have occurred with reference to the law of the family group, there are several aspects of this subject, in its relation to the employment of women, on which it is worthwhile to add further comment. Under the older family organization the services of both the wife and the daughter, or their wages if they were gainfully employed, belonged to the husband and father. Whether work was done within or outside the home, the goods, services or earnings accrued to the composite income. Services rendered in the home by the wife or minor children were without any other compensation than provision of support.

This eighteenth and early nineteenth century economy rested on economic and social bases which became radically altered during the course of the nineteenth century. The dissatisfaction produced by the anomalies in the code of the older order made apparent the need for legislative or judicial action directed toward removing the claims on the services of women. By the beginning of the twentieth century nearly all the states had enacted laws giving to married women the right to collect and control their earnings. The fact that, in general, the husband's domicile determines the wife's affects the mobility and hence the opportunities of the married woman who would earn, but there is, nevertheless, abundant evidence that attitudes toward women's role in society are changing and that women are succeeding in establishing their right "as individual human beings to realize their varied interests and capacities in an atmosphere of freedom from the barriers of assumed sex differences."²

A final prefatory remark will explain the statements to follow. No evidence is given to the effect that women are capable of doing the various tasks which they have chosen. It is assumed that such material would be superfluous, although at the beginning of the century there was still questioning as to women's capacity for the higher ranks of academic life.

¹ For a fuller treatment of the activities of women, see the monograph in this series entitled Political, Social and Economic Activities of Women.
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The attempt is therefore made to set out only the evidence as to how women are selecting and being selected to carry on the work found socially, economically or industrially profitable. In that connection an underlying assumption may perhaps be brought to the surface of the discussion. It is the assumption that, in general, in finding ways of accomplishing the work of the community a widening of the range from which choice of workers can be made and an increasing selection of workers in accordance with objective tests of qualification will mean raising the level of performance and therefore benefit the community. If a marginal person suffers from this rise in the level of competence his loss is part of the cost which the community might have to pay, but his claim should properly be met by other adjustments than the exclusion of workers more competent than he.3

It will be noticed that the statistics which have been used do not cover the same periods in all cases. An effort has been made to cover as much as possible of the period between 1900 and 1930 and in a few cases it has seemed desirable to cite even earlier figures. It has not always been possible, however, to get data for the entire period.

I. THE WOMEN WHO WORK

There are several questions to be considered in connection with the number and status of the women who are gainfully employed. Is the proportion of working women becoming larger in relation to the total number of women, and if so, is it at an increasing rate? Are women becoming an increasing part of the working population? What are the trends in the employment of married women? What are the trends according to age and according to race and nativity among working women? These questions are discussed in this section on the basis of the material available.4

Women Workers in Relation to the Total Number of Women.—The number of gainfully employed women, 16 years of age and over, has increased from 1,701,000 in 1870, the first year for which the Bureau of the Census collected these data, to 10,546,000 in 1930. This increase of


4 Most of the data on which this section is based are from the Population volumes of the United States Bureau of the Census. In many cases, however, the figures cited will not be found in the census reports. The reason for this is that the census classifications are changed from time to time, and in order to secure comparable data over an extended period it was necessary to reclassify certain occupations and to make some estimates. These adjustments were made by Ralph Hurlin for Chapter VI, and the reader is referred to the tables in that chapter, particularly Table 5, and in the monograph on the same subject. Attention is called also to the fact that nearly all of the data are for the age period 16 years of age and over rather than the customary period, 10 years of age and over. The adoption of the older age period more nearly confines the discussion to women and has the additional advantages of eliminating from consideration the somewhat doubtful figures on the occupational status of children less than 16 years of age.

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nearly six-fold in sixty years assumes greater significance when it is compared with the somewhat less than four-fold increase in the female population 16 years of age and over.

The increase by decades in the number of women gainfully employed gives clearer evidence of trends, particularly when compared with the increase in the female population. The greatest increase during a ten year period since 1900 was 47 percent during the first decade, when the female population 16 years of age and over increased only 24 percent. Between 1910 and 1920 the increase in female employment dropped to 16 percent, very close to the 17 percent increase in the female population. The retardation is accounted for, in part at least, by the virtual cessation of immigration. During the third decade, however, the increase in female employment rose to 29 percent while the increase in the female population was 22 percent. These figures are based on all gainfully occupied women although there is some question concerning the accuracy of the enumeration of women in agriculture at the time of the census of 1910 and again in 1920.5

The growth in the proportion of women who are gainfully employed in comparison with the total female population 16 years of age and over has increased since 1880, save for one year which is uncertain, but the rate of increase has been by no means uniform. With women in agriculture included, 160 out of every 1,000 females 16 years of age and over in 1880 were engaged in a gainful occupation. By 1890 the number had increased to 190; in 1900 it was 206; in 1910, 243; in 1920, 240; and by 1930, 253 out of every 1,000 women were at work for pay. When similar ratios are calculated with the figures for women in agriculture omitted the apparent decline in 1920 disappears. The numbers of employed women per 1,000 for the last four decades then become 172, 202, 213, and 254 respectively, once more indicating a greater change during the ten years 1920 to 1930 than during the preceding decade. It should perhaps be said that had it not been for the retardation of business activity which was well under way at the time of the 1930 census, probably even more women would have reported themselves as occupied. While the occupation census did attempt to include all who usually worked at a gainful occupation even

5 The figures for farm laborers in 1910 are adjusted for supposed over-enumeration of women and children in agriculture, but they are still probably too high. The 1920 figures were not adjusted for females although there is probably some inaccuracy due to the fact that the 1920 census was taken as of January 1, whereas the preceding enumeration was made as of April 15, and the 1930 census is as of April 1. Because of the seasonal character of farming it is believed that some persons who would have been enumerated as agricultural laborers were omitted in 1920 because they were not so employed during the winter months when the census was taken. See U. S. Bureau of the Census, Fourteenth Census of the United States, Population, 1920, vol. IV, pp. 22–23, and Chapter VI of this report. With agriculture omitted the figures representing the increase in female employment for the decades ending 1910, 1920, and 1930 are 49 percent, 21 percent, and 34 percent respectively.
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though they might have been unemployed at the time, it sought to avoid
the inclusion of those potential accretions to the occupied class, namely
young persons, who had not yet found employment because of the
temporary conditions.

Women Workers in Relation to the Total Number of Workers.—The
growing importance of women in occupations outside of the home is
strikingly shown by the figures indicating the proportion which they
constitute of all occupied persons. In 1930 of all gainfully occupied persons
91.9 percent, or 1 in 5, were women. This is an increase of 50 percent over
1880 when women were but 14.5 percent of the occupied. In 1900 the
proportion was 17.7 percent, in 1910 it was 19.8 and in 1920 it was 20.1
percent. It is apparent from these figures that women are assuming a
greater share of the responsibility for carrying on the work of the country.

Age, Race and Nativity of Women Workers.—Young women pre-
dominate among gainfully employed females, although the tendency is for
the age periods of greatest employment to shift upward. In 1920, 20.6
percent of the employed women were less than 20 years of age while in 1930
only 15.5 percent were under that age. The figures in the following list,
giving the proportion employed in each age period, indicate declines up to
the age of 20 and then increases up to the older ages, 65 and over, where
the number remained stationary.

<table>
<thead>
<tr>
<th>Age period</th>
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| Under 16 years | 5.6                          | 2.9             | 25-44 years |Context of these figures. The marked decline in the proportion of girls under 20 who are employed may be due, in part at least, to the spread of limitations on child labor and the growing sentiment for giving every child a high school education. Part of the difference may be due to the somewhat doubtful character of the occupation figures for children. It is interesting to note, however, that the figures indicate a drop of from 5.6 percent to 2.9 percent between 1920 and 1930 (from 10.2 percent in 1900) in the proportion of children 10 through 15 years of age who are gainfully employed. It has been suggested that the increase in the percentage of women employed between 20 and 45 years of age may be associated with the increase in the number of married women workers, particularly since the proportion of the population married in
these age periods is increasing. And finally, the increase of 13 percent in the proportion of the women 25–44 years of age who are occupied gainfully is interesting in view of the belief that older women find it increasingly difficult to find employment. It is possible that as the supply of young women available for employment is further reduced through the decline in immigration and the decline in the birth rate, older women will find increasing opportunity to work, although this is by no means certain.

Another change already apparent is that native women are making up the ranks of the employed to a greater extent now than at the beginning of the century. In 1900, 58 percent of all employed women were native whites, while 71 percent came under this classification in 1930. In 1900, 15 percent of the native white women were gainfully occupied and this proportion increased to 21 percent, or more than a third, by 1930. The other two major population groups have shown a lesser tendency to vary. The foreign born white women did not vary at all, 19 percent of them having been employed in 1900 and the same proportion in 1930. The reason for this may easily be the shifting age distribution, which is not accounted for in these figures. The Negro group, contrary to expectation, declined from 41 percent employed in 1900 to 39 percent in 1930.

**Married Women Workers.**—The problem of the married woman wage earner took on new aspects during the first thirty years of the twentieth century. Formerly it was assumed that married women with children worked chiefly because they were separated from their husbands or because their husbands did not support them, but a better understanding of the extent to which the household in its earlier form was a productive organization and of the resulting composite character of the family income has made it clear that with the changes in the economics of the family it becomes necessary that either the wife and mother must earn, or the income of the husband and father must in some way be rendered more adequate.

The impression is widespread today that growing numbers of married women are seeking employment and that employed women who marry are more and more endeavoring to remain at work after marriage. Even twenty years ago the married woman was held to be “a considerable factor in the industrial world.” A recent study of Chicago families showed that in 23,373 families investigated 61 percent of the married men were the only wage earners in the family, 17.6 percent of the married women were employed and more than half of them had wage earning husbands. Fewer than 10 percent had husbands in the professions or in

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6 See marriage figures given in Chap. XIII.
7 See Chap. XVI.
executive positions. It seems probable then that at least three-fourths had husbands in low income groups. The proportions of wives gainfully employed were, however, similar in the different occupational groups into which the author classifies the family. The data with reference to the contributions of fathers and mothers are interesting but the contributions of sons and daughters are not distinguished. The likelihood of the older children contributing is discussed as though the wage earning of the daughters was as much to be taken for granted as that of the sons.\(^\text{10}\)

The numbers of married women in employment have grown greatly, as is shown by the census figures. In 1900 there were 769,000 married women at work, in 1910 the number had increased to 1,891,000, and in 1930 it had reached 3,071,000. Between 1900 and 1930 the total number of employed women doubled but the number of employed married women increased four-fold. Moreover the ratio of married women who work to the total number of married women has more than doubled, the figures showing that 5.6 percent of all married women were gainfully occupied in 1900 and 11.7 percent in 1930. This increase is six times that for single women of the same age period, 15 years and over, during the same thirty years. In 1900, 43.5 percent of the single women were gainfully employed and 50.5 percent in 1930, an increase of only 16 percent as compared with 100 percent for married women. The proportion of all working women who are married has also shown a striking increase since the beginning of the century. In 1900 the married constituted 15 percent of all working women. In 1930 the proportion had increased to 29 percent or twice that of the earlier date.

Another point that has interesting implications but which can only be mentioned in passing is brought out by the new census tabulation of families. How many women have placed themselves under the two-fold obligation of caring for a family and pursuing a gainful occupation? Data are available at this time for only 7 states\(^\text{11}\) but they indicate that from 1 in 10 to more than 1 in 7 homemakers are gainfully employed. And between 80 and 90 percent of these employed homemakers find their work away from home. Of even greater significance will be the data now under preparation by the Bureau of the Census showing the proportion of married women workers who are also homemakers.

The right of the married woman to work is at issue when an employer raises the question of the marital status of women, as he seldom would do in the case of men. Employers differ greatly in their attitude toward this question, some asking only for competent workers, others having definite views as to whether or not married women should work. Obviously there is still strong opposition to married women on the part of some employers.

\(^{10}\) *Ibid.*

\(^{11}\) Delaware, Maine, New Hampshire, Utah, Vermont, Wisconsin and Wyoming.
Whether or not this opposition has increased or lessened during the post-war period can only be a matter of opinion.

In 1930–1931 the National Education Association made a study in nearly 1,500 cities of the general policy of each school system with respect to the employment of married women as new teachers and the retention of single women teachers who marry. Of the cities reporting, in all population groups, about 77 percent do not employ married women as new teachers. Only 37 percent of all cities reporting permit teachers to continue teaching after marriage, and a number of these permit it only in the case of teachers who have been elected for permanent service. As to the legal aspects of the question, apparently no state has passed any legislation with respect to married women as teachers. In at least six states and the District of Columbia, however, decisions on the question have been handed down by the courts, the chief state school officials or the state board of education. Two authorities conclude from their analyses of these decisions that in these states marriage is not in itself a valid cause for dismissing a teacher who is under contract or who is teaching under a tenure law which permits dismissal only for specified causes. It is, of course, unsafe to assume that similar decisions would be made in the other states if cases of this kind should come up for adjudication. The most recent decision on the subject was handed down on December 21, 1931, by the Maryland State Board of Education in response to an appeal from Wicomico County. The board ruled that a woman teacher in the public schools of Maryland cannot be dismissed because she marries. It also stated that a clause in a teacher’s contract reading, “If a female teacher marries in any school year she will be expected to resign at the close of the school year,” is in plain conflict with the state tenure law. This law provides no basis for discrimination on account of sex or marital status.\textsuperscript{12}

\textbf{II. \textsc{The Kind of Work Women Do}}

The Broad Occupational Divisions.—Women are represented in relatively large numbers in seven of the ten major occupational classifications employed by the Bureau of the Census. The greatest number, 3,438,000, are in domestic and personal service. There are 1,970,000 in clerical occupations, 1,860,000 in manufacturing and mechanical industries and 1,226,000 in the professions. Trade and agriculture each claim somewhat less than a million female workers, while transportation and communication include something over a quarter of a million.

It is more significant in a study of trends, however, to compare the differentials over the long period from 1870 to 1930. Figure 1 shows the changing relative importance of the major occupation groups for all

gainfully employed women 16 years of age and over. In 1870 agriculture claimed 21 percent of the employed women but by 1930 it claimed only 7 percent. In 1870, 20 percent of all working women were engaged in manufacturing, but the proportion fell to 18 percent in 1930. The domestic and personal service group shows a drop of from 53 percent in 1870 to 28 percent in 1920 and then a slight rise to 33 percent in 1930. The remaining occupations show relative increases in the number of women attracted to them. Between 1870 and 1930 the proportion of all gainfully occupied

women 16 years of age and over who were in the professions increased from 6 percent to 12 percent. The clerical group increased from 0.4 percent to 19 percent, while trade and transportation rose from 1 percent to 12 percent over the same period. These data seem to show a continuous shift in women's employment away from the older agricultural and industrial pursuits toward office, store and professional work with domestic and personal service somewhat more stable.

The tendency is shown more clearly by the numerical increases indicated in Figure 2 and through the comparison of numerical increases among working women with the increases among all occupied persons. In the figure, the very great increases of trade and transportation,
NUMBER OF WORKERS

10,000,000

Total Gainfully Occupied

Domestic and Personal Service

Manufacturing and Mechanical Industries

Agriculture

Professional Service

Trade and Transportation

Clerical Service

Public Service (n.e.c.)

1870 1880 1890 1900 1910 1920 1930

Fig. 2.—Women in major occupational groups, 1870–1930.
cultural and professional occupations between 1870 and 1930 are contrasted with the smaller increases in agriculture, manufacturing and domestic and personal service.

The more recent trends are perhaps a better indication of the immediate situation. Between 1910 and 1930 there was a decline of 6 percent in the total number of persons 16 years of age and over engaged in agriculture, but women in agriculture fell off 26 percent in the same period. Almost as striking is the situation with regard to manufacturing and mechanical industries. There were 34 percent more persons in this group of occupations in 1930 than in 1910, but the numerical increase among women was only 9 percent. The number of women in domestic and personal service increased 36 percent or only a little more than the increase for both sexes, 43 percent. The increase of women in transportation and communication was 156 percent, or just four times the 39 percent increase for men and women combined. In clerical occupations the total number of employees is 141 percent higher now than it was in 1910, but women are 244 percent more numerous. The two sexes together increased 77 percent in trade, while women advanced 110 percent. For professional service the figures are not very different, 80 percent and 87 percent respectively. In public service, a group comprising less than 2 percent of all occupied persons and including such governmental employees as officials, police, firemen, laborers and others not classified with other industries or occupations, the general increase has been 79 percent compared to 129 percent increase for women. In this section trends will be shown for certain specific occupations and data will be presented with regard to opportunities and training for work.

Women in Manufacturing.—Between 1900 and 1930 more than 6.2 million workers were added to the manufacturing and mechanical industries but only 584,000, or less than 10 percent of them, were women. In the later years of this period the proportion of women among the additions to this industry group was even less. In 1930 the number of workers in manufacturing was 1,365,000 greater than in 1920, but only 10,000 of this increase were women. As semi-skilled operatives in manufacturing, the number of women 10 years of age and over increased 34 percent, but in virtually every skilled occupation of significant size their number remained about stationary or decreased, thus indicating a tendency contrary to the great increases in all other occupations save agriculture. The greatest decreases in the skilled occupations were in dressmaking, tailoring and millinery, and are accounted for largely by the general shift of these industries from hand to factory production. Dressmaking and millinery,

13 In a few instances comparable data are not available for occupied persons 16 years of age and over. In such cases the broader age period, 10 years and over, is employed and the fact is so indicated. The differences are in no case large, for the number of employed children in 1930 was less than 1.4 percent of all gainfully occupied persons.
as handicraft industries virtually dominated by women, have fallen off numerically by two-thirds since 1910. The number of women (10 years of age and over) in tailoring decreased 47 percent over the same twenty year period although the number of men decreased only 10 percent. In contrast to these figures for the skilled workers, the number of women operatives (10 years and over) in the clothing industries increased 46 percent, while the number of men showed a decrease of 5 percent. In three managerial groups women are increasing. As foremen and overseers in manufacturing (10 years and over) they are 44 percent more numerous than in 1910 compared with an increase of 92 percent for the sexes combined. While the total number of proprietors (10 years and over) decreased by 12 percent, women increased by 33 percent. The greatest change, however, has come in the group known as managers and officials in manufacturing. Here women (10 years and over) have increased 459 percent while the group as a whole shows a growth of 149 percent (the number, however, is small, only 10,400). Thus it appears that during this period of rapidly changing methods of production, women as well as men have been called upon to make many new adjustments to the changing situation, and while many have gone into semi-skilled jobs others have found opportunity to manage and to direct.

Women in Domestic and Personal Service.—In this general occupation group, as in manufacturing, there has been a drift away from pursuits carried on more or less independently to similar work found in factories and other establishments. In 1910, 25 percent, or 514,000, of the women found in domestic and personal service were laundresses outside of laundries. By 1930, however, the proportion in this category of female workers in domestic and personal service had declined to 10 percent; their number in 1930 was 835,000, representing a numerical decrease of 31 percent. Over the same period women laundry operatives, mainly in power laundries, increased 117 percent. Women workers in cleaning and dyeing shops increased 739 percent during these two decades. Women boarding and lodging house keepers declined 11 percent, while hotel keepers and managers increased 22 percent, a trend which indicates, perhaps, a change in the type of housing. Another great increase has been among barbers, manicurists and hairdressers, mainly in beauty parlors. Women’s increase of 412 percent in this group, compared with an increase of only 93 percent for both sexes combined, represents the opening of what is almost a new occupational field for women.

Other great increases are found in the numbers of women restaurant keepers and waitresses, two occupations in which the trends are indicative of modern urban dwelling. In the former women are nearly four times as numerous as in 1910, while men increased but two and a half times. In the latter occupation the combined sexes doubled and the women alone in-
creased 175 percent. Women as cleaners, janitors and housekeepers also increased, as they did in the occupations of cook and other servants. More than one-third of the women in domestic and personal service are listed as servants, a proportion which has changed little over the twenty year period. There is, however, one shift in this occupation that is not apparent in the data presented: the decline in the practice of "living in." It was found through special analysis of census data that in 1920 almost one-half, 49.6 percent, of servants lived in their own homes, while only one-third had lived at home in 1900.¹⁴

It may be said in summary that in the census classification of domestic and personal service women are increasing, but in the period from 1910 to 1930 they have increased only 36 percent as compared with a rise of 56 percent for men. Moreover, several major changes are taking place among the individual occupations within the larger group.

**Women in Business.**—Of the 265,000 women classified under transportation and communication by the census, 94 percent are telephone operators. Among the 973,000 in trade 83 percent are accounted for by the two groups of occupations, salespersons and clerks in stores, and retail dealers. In the clerical group, numbering almost 2,000,000 women, 39 percent are stenographers and typists, 36 percent are clerks, and 24 percent are listed as bookkeepers and cashiers.

In trade the greatest apparent advance was made in the group of decorators and window dressers, which was still numerically small in 1900 and claimed but 439 women in 1910. In this occupation women advanced 1,321 percent as compared with the advance of 277 percent for the occupation as a whole. In the category of real estate agents, a group which increased 91 percent between 1910 and 1930, women increased 986 percent (from 2,927 to 31,787), making them now 13 percent of all real estate agents. Among insurance agents and officials there were 452 percent more women in 1930 than there were in 1910, while the increase of the occupation as a whole was 192 percent. Women bankers are 249 percent more numerous now than they were twenty years ago, while all bankers increased but 109 percent. The more important of the other trade occupations in which women have advanced more quickly than the occupation as a whole are those of inspectors and samplers (230 percent increase), retail dealers (64 percent increase), and store laborers (126 percent increase). It should be noted that saleswomen and store clerks, who are numerically the most important in the trade group, increased only 100 percent, while salespersons and store clerks in general increased 93 percent.

In the clerical occupations women are by far the most numerous in the categories of stenographers and typists (of whom over 95 percent are

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women), bookkeepers and cashiers (52 percent women) and clerks (34 percent women). Between 1910 and 1930 women stenographers and typists increased 196 percent, while the occupation as a whole increased 156 percent; women bookkeepers and cashiers increased 160 and the occupation 92 percent; and women clerks increased 489 percent and the occupation but 170 percent.

Many of the business and clerical occupations into which women are going demand little more than general ability and experience for their successful performance. Others, such as stenography, accounting and bookkeeping, demand a formal preparation in commercial or business education. In this connection it is interesting to note the growth of attendance at schools offering this type of curriculum. Between 1914 and 1930 the number of girls enrolled in commercial and business schools increased from 183,000 to 653,000. The figures for selected years are shown in the following list. Public high schools are listed separately to indicate the increasingly dominant role publicly provided education is playing in

<table>
<thead>
<tr>
<th>Year</th>
<th>Girls enrolled in commercial and business courses</th>
<th>Year</th>
<th>Girls enrolled in commercial and business courses</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Public high schools</td>
<td>Total</td>
<td>Public high schools</td>
</tr>
<tr>
<td>1914a</td>
<td>92,650</td>
<td>183,021</td>
<td>1924a</td>
</tr>
<tr>
<td>1915a</td>
<td>116,379</td>
<td>213,141</td>
<td>1925-1930b</td>
</tr>
<tr>
<td>1918b</td>
<td>173,857</td>
<td>381,631</td>
<td></td>
</tr>
</tbody>
</table>

b Compiled by J. O. Malott of the U. S. Office of Education. Public high schools includes 86,000 in junior high schools in 1929, and 417,064 in senior high schools in 1930.

the preparation of girls for occupational adjustment. In addition to the high schools and business schools, 132 colleges, were in 1928 providing commercial training for almost 12,000 young women.

Women in the Professions.—In 1930 women constituted 39 percent of all persons enumerated by the census as professional or semi-professional workers. Despite this very high proportion of women, their distribution in the individual professional occupations is very different from that of men. The greatest proportions of men are in the categories of teachers (13 percent of all professional men) and technical engineers (12 percent), while the smallest proportion is in the category of trained nurses (0.3 percent). Of women, however, more than nine-tenths of those in the professions are in the two categories of teachers (72 percent of all professional women) and trained nurses (23 percent), while the number
of those occupied as technical engineers is so slight as to be negligible. Women constitute 78 percent of all teachers and 98 percent of all trained nurses. In five other groups, although they are relatively small numerically, women constitute high proportions of the total number. Women are 48 percent of all musicians and music teachers, 38 percent of all artists and art teachers, 28 percent of all actors and showmen, 27 percent of all authors, editors and reporters, and 21 percent of all photographers. Among physicians, chemists, clergymen, lawyers, dentists and architects the proportion of women varies from 5.2 percent to 1.7 percent. They are 9 percent of all draftsmen and designers.

Despite the small representation of women in a number of these occupations, it will be remembered that between 1910 and 1930 the increase of women in all the professions was 87 percent and that of men and women together but 80 percent. Between 1920 and 1930, however, the increases were almost equal, 40.6 percent for women and 41.4 percent for men. Women authors, chemists, clergymen, designers, lawyers and college teachers increased much more rapidly than the two sexes together. Authors increased 185 percent between 1910 and 1930, but women authors increased 207 percent. Clergymen increased 26 percent in that period but the number of women clergymen increased 378 percent. Designers increased 117 percent but women designers rose 206 percent. Women lawyers (558 in 1910) increased 507 percent while the increase of all lawyers was but 40 percent. There are more than 20,000 women teachers in colleges, representing an increase of 581 percent compared with 295 percent for both sexes. Women actors, artists, photographers, elementary and high school teachers and women in “other professional pursuits” increased at rates similar to those of the combined sexes. Women dentists have not become numerous and their rate of increase is low compared with that of the two sexes. Only among physicians and musicians have women shown a decrease in the period under discussion. The 79,500 women musicians and music teachers is 6 percent less than the number enumerated in 1910, as contrasted with a 19 percent increase in that occupation for men and women together. In medicine and surgery the situation is somewhat different. The 7 percent decline of women is here compared with an increase of only 2 percent in twenty years for the occupation as a whole.

Thus women have made striking advances in winning places for themselves in the professions, but, as has been noted, their numbers are still relatively small except in the groups of teachers and nurses. It must be borne in mind, however, that the professions require longer and more costly preparation, that the work is often more exacting, and that they are surrounded by attitudes rooted much deeper than is the case with most of the other occupations in which women are finding a place. For
All of these reasons progress will probably be slow until women have
developed a prestige in professional activities and have further overcome
the prejudices which in some fields are still a handicap.

The number of women enrolled in law schools has increased without
interruption from 170 in 1900 to 2,216 in 1928, but the proportion of law
students who are women, although it rose from 1 percent at the beginning
of the period to 7 percent in 1918, decreased to 6 percent in 1928.\(^{15}\) While
the number of women lawyers remains small, they are finding increasing
opportunities on the bench and in connection with the administration
of justice. The appointment of a woman assistant attorney general with
the rank of assistant secretary was one of the acts by which President
Wilson recognized the new political status of women. Since 1920 a woman
has been promoted by election from the Common Pleas bench in Cuyahoga
County, Ohio, to the Supreme Court of the state, and eighteen other
women in the country have been elected or appointed to judgeships,
some of them, as in Cook County, Illinois, in great metropolitan centers.
At least four women have been chosen clerks of the supreme courts in
their states; one has been made a reporter; two of the most highly paid
women in the federal service are judges, one appointed for life to serve
as judge of the Customs Court in New York, where complicated financial
and legal issues are adjudicated, and another sitting on the Board of Tax
Appeals. Since judges are elected in most jurisdictions the pathway to
recognition is usually by way of partisan political organization. The
practice of the law requires no such adjustment, but the obstacle in the
shape of prejudice is widespread and obdurate. Although the cases are
increasing on which women are given positions of responsibility and
authority, a large proportion of the women lawyers are pursuing routine
occupations in the offices of others, often with little hope of advancement
in their profession.

The registration of women in medical schools has shown a considerable
degree of variation since the beginning of the century. Women’s registra-
tion in 1900 was 1,219, and from then through 1928, the last year for
which figures are available, it did not reach that figure again. It showed
a general decline until after the war, reached 1,184 in 1924 and then again
declined. In 1928 the proportion of women among the total number of
medical students was 4 percent, or 1 percent less than it was in 1900.\(^{16}\)
Special interest attaches to opportunities in medical schools because for
several years there was a certain reticence on their part with reference
to the number of women applicants for admission. It was a period when
medical education was being reorganized and it seemed important that

\(^{15}\) The data on enrollment in the professional schools are compiled from the U. S. Office
of Education, Annual Reports of the Commissioner of Education for the years 1911 through
1916, and from the Biennial Survey of Education for the years 1916 through 1928.

\(^{16}\) See preceding footnote. For general discussion of medical schools see Chap. XXI.
WOMEN

selection of candidates for the professional opportunities should be based on objective tests and that there should be complete publicity. Nevertheless the figures with reference to the applications for admission and the admissions of women to medical schools were not published by the authorities of those schools and there was a widespread belief that the dice were loaded against women. In 1929–1930 figures were published with reference to the number applying and the number admitted which seemed to show discrimination in favor of women rather than against them. When these figures are more closely examined, however, or are supplemented by independent inquiry they still give the impartial inquirer occasion for doubt. Another problem is presented in the matter of internships. There are at present 660 hospitals in the United States approved for internships, offering a total of 6,119 opportunities. Among these, 5, having a total of 37 internships, are restricted to women, but only 231, maintaining 2,939 or 48.6 percent of the internships, are open to women and many of them appoint women only very rarely.

There is, of course, no question as to women's ability as practitioners or as research workers. Women doctors have attained positions enabling them to make professional contributions of a high order. Six women physicians are members of the American College of Surgeons. In at least eleven states women physicians are directors of a bureau or division in the state public health department. These bureaus are usually concerned with child hygiene and sometimes, in addition, with maternity or public health nursing. A woman was formerly Director of Child Hygiene in the Department of Health in New York City, and there are a few other cases in which women physicians have official positions in local boards of health. In a number of cases women physicians are division chiefs or in other responsible positions in hospitals.

In divinity schools women increased from 181 or 2 percent of all registrations in 1900 to 1,177 or 14 percent in 1922. Between 1922 and 1926 the proportion fell to 11 percent, although numerically the registration of women continued to increase. In 1928 there was a slight decline both in numbers and in percentage. The question of women in the ministry, however, is only one aspect of the activity of women in the church; the position of women in church government and administration should also be considered. Some churches grant no participation, except perhaps certain restricted rights of voting; some grant equal rights; and

17 Myers, Burton D., Journal of the Association of American Medical Colleges, March, 1929, vol. V, p. 63. The results of further study will shortly be available from researches being pursued by Mrs. B. R. Bartlett in cooperation with the U. S. Women's Bureau.

18 Data from the Council on Medical Education and Hospitals of the American Medical Association.

19 See footnote 15. Compare with discussion of the training of ministers in Chap. XX.

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there are some which grant certain rights, perhaps a great many, but no equality in the administration of the government of the church. The great denominations which have resisted the demands of women are gradually yielding (as the Presbyterians did in 1930 and the Episcopalians in 1931) a share of control in the affairs of the church which women are asking on the basis of ability rather than sex.

Although in 1930 there were 83 percent more women teachers than there were in 1910, the proportion of teachers who were women remained the same, 78 percent, in spite of a rise to 82 percent for 1920. The proportion of professional women who were teachers remained about the same during this period, 73 percent in 1910 and 72 percent in 1930. In 1930 there were 79 percent more women in elementary and high school teaching than there were in 1910 but the proportion of elementary and high school teachers who were women maintained a fairly steady average of 82 percent during this period. Among college teachers and presidents women were 581 percent more numerous in 1930 than in 1910, and the proportion who were women increased steadily from 19 percent in 1910 to 33 percent in 1930. It is clear, then, that the pressure on teaching is lightened, and that women are also finding opportunities in the other professional categories.

The circulars of information for 1929–1930 concerning the colleges and universities approved by the American Association of Universities show that women constitute only 18 percent of the faculties of these institutions. Of the 226 institutions in the list, 47 were schools for men, 36 were schools for women and the remaining 143 were coeducational. Women constituted 1 percent of the faculty in the men's schools, 16 percent in the coeducational schools and 68.5 percent in the women's schools, in each case the proportion increasing inversely to the rank of the position. In the men's schools 73 percent of the women on the faculties were in the two lower ranks of assistant professor and instructor while only 49 percent of the men were in these ranks; in the coeducational schools 79 percent of the women and 49 percent of the men; and in the women's schools 59 percent of the women and 36 percent of the men. Of the 47 institutions for men there were 40 with no women on their faculties and 6 with only 1 woman. Of the 36 schools for women, there was but 1 whose faculty was composed entirely of women. The 143 coeducational institutions showed 2 with no women and 2 with 1 woman.

The situation with reference to women in the land grant colleges is briefly described in a publication recently issued by the United States

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20 Woman's Pulpit, November–December, 1931.
21 Cf. The metropolitan press, June 8–10, 1932.
22 Ibid., September 22, 1931.
23 Compare with table given in Chap. VII. Note also in the same chapter the figures showing the proportion of women receiving the Ph. D. degree in 1900 and 1930.

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WOMEN

Office of Education. In 1930–1931 women constituted 16 percent of the faculties. The two lower ranks held 75 percent of the women, while only 46 percent of the men were in these groups. These figures are similar to those for the other colleges and universities.

In the higher administrative positions in the general school system the proportion of women is also small. The teacher training institutions did not, until recently, include administration in the field of instruction. Although women are not at present executives of school systems in great metropolitan areas, there are six states in which women were listed as heads of the state departments of education in 1931. Out of 3,499 county superintendents 909 (26 percent) are women and out of the 2,841 communities of 2,500 population or over, 38 have women superintendents of school systems. In the National Education Association the election of the first woman president was an epoch making event; now alternate elections see a woman president. The United States Office of Education now has four women specialists on its staff in the field of elementary education or specialized education, all of them selected by civil service examinations.

Women in the Civil Service.—Women have been employed in the federal departments since 1862 although even in the 1850's a few women, of whom Clara Barton was probably the first, were in the employ of the government. Until 1919 a bureau chief wishing to fill a position for which there was no eligible list would express a preference for either a man or a woman and an examination would be given admitting only persons of the sex preferred, notwithstanding the fact that the list so compiled would also be used for filling other positions for which the appointing authority had no preference as to sex. In 1919, largely as a result of a study made by the Women's Bureau (then the Women in Industry Service), the Civil Service Commission opened all examinations to both sexes.

Despite the effect which the earlier practice had of preventing women in the civil service from qualifying for many positions similar to those in which they were proving themselves capable in private employment, the war years effected a great increase in the numbers of women in government employment and a considerable widening of the range of their work. After the close of the war the numbers were reduced but in recent years the number of women employees has shown an increase. In 1931 there were 91,196 as compared with 82,180 in 1925, an increase of 11 percent. The proportion of women in the civil service, however, has remained fairly constant. They constitute about two-fifths of the District service and about one-tenth of the field service.

26 For a discussion of general changes in the civil service, see Chap. XXVII.
Fig. 3.—Women in selected occupational groups, 1870–1930.
Fig. 4.—Women in selected occupational groups, 1870–1930.
RECENT SOCIAL TRENDS

The Range of Women's Employment.—While it is clear that women have assumed a much larger place among the gainfully employed during the past three decades, the tendency to concentrate in a few large occupations is apparently as marked now as it was in 1900. In 1900 women were found in 295 or 97.4 percent of the occupations listed in the census, but in 1930 they were in only 527 or 93.9 percent of the 557 occupational classifications. In the earlier year one percent or more of the employed women were found in each of 18 occupations; and these 18 accounted for 86.4 percent of all working women. In 1930 a little over 83 percent of the gainfully occupied women are found in the 24 occupations that claim at least one percent of the total. Thus in 1900 this concentration was to be found in 6 percent of the occupations but by 1930 it covered only 4 percent of the total number of categories. It is possible, however, that some doubt may be cast on these figures, for the census changes its classification frequently in such a way that the groups are not comparable. It may be said, too, that the new occupational groups of the census do not, as a rule, represent new occupations, but breakdowns of the old ones.

In 1900 the groups in which women showed the greatest numerical importance were, in order: servants and waitresses, agricultural workers, dressmakers, laundresses, teachers and farmers. In 1930, however, a similar list shows a different ranking: servants, teachers, stenographers, clerks, agricultural laborers, saleswomen and bookkeepers. The tendency of the business and clerical groups to supplant some of the more domestic and personal occupations is apparent. Figures 3 and 4 show the trends of numerical increases among women in selected occupations.

III. LEGISLATION CONCERNING WOMEN'S WORK

Trade union organization among women to gain working status has been very difficult to effect. Men, on the other hand, seem to prefer to rely on unionism and collective bargaining rather than on legislation in securing improved working conditions. Their organizations maintain influential lobbies in Washington and in many state capitolts, but they do not seek laws regulating hours of work, night work or minimum wages. This is due partly to the uncertainty as to the attitude of the courts but it is also due to the reluctance of men to rely on legislative protection. The situation with regard to women has been summarized in the words: "In spite of the fact that the increasing number of women workers constitutes a permanent wage earning group, as is indicated by the increasing proportion of married women in industry, and the increasing age limit of working women, there is nevertheless a mental attitude of impermanency among

27 For a general discussion of the law of industrial relations, see Chap. XXVIII.
28 On trade unionism, see Chap. XVI.
the women workers themselves which constitutes a serious handicap to organization." 29

The publication of the volume on occupations of the Twelfth Census (1900) attracted the attention of students to the conspicuous increase in the number of women gainfully employed and questions were raised as to whether changes were taking place in the amount and character of the work of women and whether women were invading men’s field of employment and causing disastrous changes in the home. Examination of the figures showed that in the major industrial occupations women were not displacing men 30 and were probably doing no more work than they had always done, but that in the new occupations which were being developed, especially in the group characterized by the census as “trade and transportation,” now subdivided into trade, transportation and clerical occupations, both men and women were finding employment and the older agricultural and domestic occupations were declining relatively. The figures likewise revealed the relative youth of the great majority of women workers as compared with the men, and the large proportion of workers in a small number of occupations. Another important factor in revealing the conditions under which women worked was the appropriation by Congress in 1907 of a special sum to enable the Secretary of Commerce and Labor “to investigate and report on the industrial, social, moral, educational and physical condition of women and child wage workers in the United States wherever employed, with special reference to their age, hours of labor, term of employment, health, illiteracy, sanitary and other conditions surrounding their occupation, and the means employed for the protection of their health, persons, and morals.” 31 The result of this appropriation was the publication between 1910 and 1913 of a series of nineteen volumes and a supplementary volume in 1916. 32 The restricted occupational opportunity, the youth and immaturity of women workers and the resulting lack of bargaining skill as well as bargaining power, as compared with the employer and with men workers, had resulted in the same conditions that had been produced in other countries—excessively long hours, night work, lack of Sunday rest and general working conditions that were often neither safe nor decent.

The problem of women’s hours of work had been met by Massachusetts in the 1870’s by the enactment of a ten hour law which was upheld by the state Supreme Court as a legitimate exercise of the police power. 33

29 Wolfson, Theresa, “Trade Union Activities of Women,” Women in the Modern World, op. cit., p. 120.
31 U. S. Statutes at Large, XXXIV, pt. 1, pp. 866, 1539.
33 Hamilton Manufacturing Co. v. Massachusetts, 1876, 120 Mass. 383.
but when Illinois attempted an eight hour law for women workers the Supreme Court of that state in 1895 held that it was prohibited by the Illinois, and perhaps by the United States constitution. The early years of the new century brought renewed efforts at legislative control with the result that in 1908 an Oregon law limiting the working day of women to ten hours was upheld by the United States Supreme Court and similar laws were later upheld by the highest courts of other states, including Illinois. These statutes followed the general pattern of the English factory acts. By 1930, 44 states had laws limiting the length of the working day, 16 states prohibited night work, 18 states required one day’s rest in seven, and 10 states had established special bureaus to deal with the problems of women and children’s work.

The Oregon case, in which the exercise of the police power in regulating the work of women was upheld, was important from several points of view. The participation of Louis D. Brandeis, now Mr. Justice Brandeis of the United States Supreme Court, gave dignity and prestige to the plea that social and other scientific data bearing on the importance of the subject from the point of view of public well being should have weight with the courts. The court took notice of different bases of classification in accordance with which a legislative program for the protection of women different from that affecting men became possible. The resulting decision rested more upon physiological limitations, especially in relation to child bearing, than was perhaps justified or necessary, and failed to take notice of the industrial and occupational inequality from which it appeared that women suffered. This point was not ignored by commentators on the decision for the doctrine of physiological limitations was being urged in many places for purposes not of protection but of exclusion and restriction. Legislation regulating the work of women is vigorously opposed by many women who desire the widening of women’s opportunity. An influential organization, the Woman’s Party, opposes any legislation affecting the conditions of women’s work unless it applies also to men’s work. The same position is taken by similar groups in European countries, which are organized on an international basis, as the Open Door International. There have been few enactments during the recent

34 Ritchie v. the People, 1895, 155 Ill. 98.
35 Muller v. Oregon, 1908, 208 U. S. 412.
36 See U. S. Women’s Bureau, State Laws Affecting Working Women, Bulletin no. 63, and summaries in Annual Reports.
37 In eight of these states, the director of the bureau was a woman.
sessions of state legislatures dealing with hours of work or prohibition of night work by women. Interesting administrative advances have been made, however, under the leadership of women state officials whenever a favorable state administration has given the opportunity. The administrations in California, Massachusetts, New Jersey, New York and Pennsylvania at different periods during the past decade have indicated an increasing acquiescence in the treatment of the labor administration as an instrument for social readjustment of the productive process and in spite of the opposition to which reference has been made protective legislation for women is slowly but increasingly being developed in the United States for the purpose of setting limits about the wage bargain so that too disastrous an advantage may not be taken of the relative weakness of women in bargaining.

A solution for the problem of women's inadequate pay was sought by the enactment of a minimum wage law in Massachusetts in 1912. This example was followed within a short period by fourteen other states and by Porto Rico and the District of Columbia. As Mr. Justice Holmes pointed out, similar laws had already been tried in New Zealand and Australia since the early 1890's and in England since 1909. Thirteen of these state enactments were of the so-called flexible type and four—those of Arizona, Porto Rico, South Dakota and Utah—were inflexible, fixing a minimum sum below which wages should not fall. The question of the constitutionality of these statutes was raised in eleven states and was uniformly upheld until 1923, when the District of Columbia act was held unconstitutional by a vote of five to three, with Mr. Justice Brandeis not taking part because before being appointed to the bench he had argued the case in behalf of the constitutionality of the act. If the decision had affected only the District of Columbia it would not have been so serious, but the law was held to violate the fifth amendment of the United States Constitution. This decision was accepted as authoritative everywhere except in California and Massachusetts, and activity for minimum wage rulings has of course greatly slowed down as a result of adverse court decisions. The California act has been upheld by a superior court and the opinion acquiesced in by the plaintiff before the higher court had passed upon it, so that the act is still administered in that state. In Massachusetts, where the law was largely advisory, it is still in operation and interesting proposals for strengthening it have recently been laid before the Massachusetts legislature. As to the effect of the statutes while they were in operation, the Women's Bureau has stated, "After all,


41 Children's Hospital, etc. v. Atkins, 1923, 261 U. S. 525 at 542.

42 The subject is admirably set out in the U. S. Women's Bureau, Bulletin 61, sup. cit.

43 Release of the U. S. Women's Bureau, April 1, 1932.
the purpose of minimum-wage laws is not to raise rates in general but to help the most depressed group. Interestingly enough, the few rates that seem high enough to raise the entire depressed group to the cost-of-living level seem to have raised rates in general . . . There is no magic in minimum-wage laws to raise all rates."44 There is interesting evidence in a recently published report of the Minimum Wage Board of Ontario to the effect that women’s wages in that province have not declined during the years 1929–1931 at anything like the same rate as in such industrial states as Illinois and New York, and it is suggested that the minimum wage legislation of the province is to a considerable extent responsible for the difference.45

IV. THE EARNINGS OF WOMEN

Since the beginning of the century the subject of the earnings of women has been closely connected with the problem of the adequate wage and with the problem of the equal wage. Attention was first directed to the subject of the adequate wage by the United States Industrial Commission in 1899, when it revealed that girls did not earn enough to meet what their living expenses were known to be. Shortly thereafter, in a report on employees and wages, prepared for the census of 1900, it was estimated that one-fourth of the women workers sixteen years of age and over received less than $4.49 a week, and only one-fourth more than $6.86, the median being $5.64. These figures were given wide publicity and toward the end of the decade 1900–1910 the data from the study of woman and child wage earners46 began to be made available and confirmed the earlier estimates of wage scales below any level of “health, comfort, or safety.” In response to these revelations efforts were made to secure the enactment of laws which would establish minimum wages based on carefully estimated costs of planned expenditures including only the most essential elements. Adverse court decisions prevented the movement from attaining any great success. The subject is discussed more extensively in the section on legislation above.

With reference to the problem of the equal wage, Sidney Webb pointed out in the early nineties that: “The inferiority of women’s wages is to be gathered not so much from a comparison of the rates for identical work, for few such cases exist, but rather from a comparison of the standards of remuneration in men’s and women’s occupations respectively.”47

45 United States Daily, July 14, 1932.
WOMEN

As a matter of fact, perhaps the major principle on which the wages of both men and women were determined was the same—the bargaining weakness of the worker as opposed to the bargaining strength of the employer, subject to the limitations set by the public opinion of the community. But the use of economic power, like the use of other forms of power, had to be rationalized, and the fiction of men’s responsibility for dependents and of women’s freedom from such responsibility\(^{48}\) served to justify the unequal wage.

During the World War the principle of equal pay received widespread support in the statements of public officials and in the orders issued by the War Labor Policies Board, the Railway Administration and other authorities; it seemed necessary to induce women to try work they had always been taught to think of as men’s work and to persuade men that since the scales of pay would not be affected\(^{49}\) their occupational status would not be damaged by admitting women. When an attempt is made to review the extent to which these orders were actually followed it is found that where the use of women was novel the principle was fairly generally applied but that in the older industries it was applied to a lesser degree.\(^{50}\)

The census figures reveal that in factory occupations the wages of women have been and continue to be low and that they have been and continue to be lower than those of men. Factory wages tend to rise but the gap between men’s and women’s wages remains surprisingly constant. Women’s hourly earnings and annual earnings remain something less than 55 percent of men’s hourly and annual earnings\(^{51}\) and even the sum of the average earnings for women and for children does not equal the average for men. There are, however, wide differences among the various manufacturing occupations in the disparity between men’s and women’s earnings. In cotton, the average wage for men in 1925 was $1,015 and for women $793, a disparity of 28 percent when calculated in the women’s wage; in tobacco, men averaged $978 and women $543, a disparity of 80 percent; and in glass, the disparity was 206 percent, men averaging $1,650 and women $540. Whether the gap between the earnings of men and of women workers in industry will gradually widen or will become narrower cannot now be foretold; if women are drawn to industrial work from older groups the disparity in earnings between men and women may become gradually narrower. It must be remembered, however, in interpreting

\(^{48}\) See, for example, John A. Ryan, Social Reconstruction, New York, 1920, p. 43.


\(^{50}\) Wolfe and Olsen, op. cit., p. 661.

these figures that it is almost impossible to secure wage data for both men and women doing precisely the same tasks, even within the limits of a single occupation.

A study by the Association of Business and Professional Women published in 1930 makes data available concerning the earnings of women in these fields. The research covered 14,071 experienced full time workers. Their occupations were grouped in eight fields of employment and twenty classes determined by the nature of the work done. Seventy percent were, in 1937, in clerical, teaching or publicity work. One-fourth of the total number earned less than $1,213; one-half less than $1,548; and three-fourths less than $2,004. Those women who were independently engaged earned more than those who were on a salary basis. Their median was $308 above the median for the salaried workers and one in three of them earned $3,000 or more, while of the salaried workers the earnings of only one in twenty was in that upper level. Of the whole group, only 174 earned $5,000 or more, but there were 25 who were in the $9,000 level or above.

There were wide differences in the range of earnings in the different groups. Median earnings varied from $692 for 23 telephone operators to $3,088 for 55 physicians in private practice. There were also, of course, great differences in the proportions of workers in the different occupational groups who earned $3,000 or more. Only 2.6 percent of the clerical workers, 4 percent of the teachers and 7 percent of the whole group earned that much, while 13.7 percent of the welfare group, 14 percent of the health group, 18 percent of the legal and protective group and 21.6 percent of the personnel group earned $3,000 or more. These figures say nothing of the relation between men's and women's earnings but the evidence is clear that although some women are receiving incomes in the higher levels, on the whole the rewards are low in comparison with a reasonable standard of self-support.

The report on the land grant colleges for 1930–1931, which has already been referred to, gives a fairly indicative view of the salaries of women in college teaching. The author of this report comments on the situation as follows: "Women staff members receive a lower median salary than men staff members in every academic rank . . . The greatest discrepancy is found in the case of deans, women holding this rank being paid a median salary $1,260 less than men. In both the rank of professor and associate professor the difference between the median salaries of the two sexes is fairly large, being $558 for professors and $402 for associate professors. Only an insignificant difference exists between the median salaries of men and women instructors." The median salary for all men teachers in the land grant colleges, irrespective of rank, is $3,169, while that for women is $2,309.
In connection with the earnings of women in the civil service, the Personnel Reclassification Act of 1923 stated the principle of equal pay for the sexes as well as among departments. Until this time there had been very few women in the civil service who received more than $1,800 a year and the greatest numbers were in the $1,100 to $1,200 group. In 1925, after the passage of the Act, a study by the Women's Bureau showed that 10 percent of the women employees received salaries of $1,860 or more at that time.\textsuperscript{52} In 1930, of the women in the professional services of the various state departments, 36 percent received salaries of $3,000 or more, but this group is so specialized that it is scarcely indicative of the general salary level.

Figures are likewise available for 1,025 women holding the degree of Doctor of Philosophy,\textsuperscript{53} for 3,521 students who have gone out from the land grant colleges,\textsuperscript{54} and for a group of 844 university women.\textsuperscript{55} The ranges of these groups are naturally very similar and bear out the conclusion not only that women's earnings are low but also that they are generally less than the earnings of men.

Thus, although detailed information concerning the earnings of women is in most cases not available, from the data which exists it seems clear that not only are women's earnings low but they are also conspicuously less than the earnings of men.

VI. WOMEN IN GOVERNMENT

Women as Voters.—The ratification of the Nineteenth Amendment to the United States Constitution in 1920—after 56 campaigns for the ratification of amendments to state constitutions, nearly 500 organized efforts with legislatures, 277 appearances at state party conventions, 30 appeals before national political conventions and 19 campaigns with successive congresses—meant the admission of women in all the states to the right to vote and the closing of one era in the movement toward equality of the sexes. Women have now voted in three presidential elections, participated in local, state and national campaigns, been candidates for office and assumed responsibility in high official positions. The direction of women's political activities, however, and the use they will make of their political power are difficult to ascertain. There are some who believe that women must, as women, be politically strong enough to offer to those in control of party organizations such inducements of support, or punish-

\textsuperscript{53} Hutchinson, Emilie J., \textit{Women and the Ph.D.}, Bulletin no. 2 of the Institute of Women's Professional Relations, published by the North Carolina College for Women.
\textsuperscript{54} \textit{After College What?}, Bulletin no. 4, Institute of Women's Professional Relations, published by the North Carolina College for Women.
\textsuperscript{55} Hawthorn, Marion O., "Women as College Teachers," \textit{Women in the Modern World}, \textit{op. cit.}, p. 146.
ment for failure to support measures in which they are interested, as men evidently thought in the years before 1920 they would be able to offer, and that therefore they must preserve a certain independence with regard to existing party organization. Others believe that what is to be done must be done within the parties. There is perhaps no objective test at the moment as to which view will prove correct. One criticism of women, expressed by a leader whose words always command respect, is based on the failure of women who asked freedom to tell what they would do with it after they had secured it.\(^5\) Certainly it cannot be claimed that they have as yet shown clearly all the ways in which they would use it.

When the election of 1920 was over it was found that only 53 percent of the total number of eligible voters had cast their ballots. This led the League of Women Voters to undertake what was known as the Get Out the Vote Campaign. To what extent their work was effective no one can say, but the vote in 1928 increased to 61 percent. This was low, however, when compared with the figures of the earlier decades—71 percent in 1908, 63 percent in 1912 and 71 percent in 1916. The figures with reference to voters are not as a rule reported by sex. There are a few exceptions, however. In Pennsylvania\(^6\) the figures are available for a few years. In 1925, for example, 41.8 percent of the voters were women, while in 1931, they were 44 percent. The percentage increase of women voters was 21, of men 13. In Rhode Island,\(^7\) the percentage of voters who were women was 40.16 in 1922, 44.12 in 1924, 42.79 in 1926, 45.16 in 1928 and 45.37 in 1930. At no time have they been half the voting population, but there has been a percentage increase of 56 in the number of women voting during the decade, while the increase in the number of men voting has been less than twenty percent.

There are also some data with reference to registration by sex. In Chicago the proportion of women among the total number of registrants for voting rose from 32 percent in 1914 to 42 percent in 1931; during this period the number of women registrants increased 173 percent while the number of men registrants increased only 80 percent. In Louisiana the proportion of women rose from 18 percent in 1920 to 30 percent in 1928;\(^8\) the number of women registrants increased during these years 144 percent while the number of men increased only 23 percent. These examples are fairly typical of general conditions. There are more men than women who register to vote but on the whole the number of women who make use of their franchise is increasing.


\(^6\) Figures supplied by the Secretary of State of Pennsylvania.

\(^7\) Figures supplied by the Secretary of State of Rhode Island.

\(^8\) Louisiana, Secretary of State to His Excellency the Governor, *Report*, January 1, 1921, pp. 336–7, and January 1, 1929, pp. 328, 330.
WOMEN

Women as Lobbyists.—Women began their work as lobbyists long before they were granted the vote. Anti-slavery agitation, suffrage, temperance, less cruel treatment of the insane, international agreements for mitigating the horrors of war, were causes to which women devoted their efforts, seeking definite and important community gains without the power of the ballot. What could not be done directly had to be done indirectly. Women had neither funds nor political backing but they had a great belief that legislators who understood would eventually respond to the facts which they presented and the conclusions to be drawn from those facts. In 1900, for example, the General Federation of Women’s Clubs resolved “to work for legislation for women and children so that the law of every state will equal the best already enacted,” and the technique of this work with legislatures was elaborately described. Speeches on methods of lobbying occupied a place on the programs of meetings and in 1914 and 1916 conferences were held at which the successful methods were discussed, apart from the subject matter of the measures to be advanced.

Table 1.—Registration of Men and Women Voters in Chicago, 1914–1932

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Percent distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>1914</td>
<td>455,385</td>
<td>217,614</td>
</tr>
<tr>
<td>1916</td>
<td>470,029</td>
<td>261,172</td>
</tr>
<tr>
<td>1918</td>
<td>498,578</td>
<td>286,634</td>
</tr>
<tr>
<td>1920</td>
<td>550,060</td>
<td>334,060</td>
</tr>
<tr>
<td>1922</td>
<td>511,394</td>
<td>293,364</td>
</tr>
<tr>
<td>1924</td>
<td>654,540</td>
<td>410,255</td>
</tr>
<tr>
<td>1926</td>
<td>556,735</td>
<td>218,546</td>
</tr>
<tr>
<td>1928</td>
<td>787,428</td>
<td>599,133</td>
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<tr>
<td>1930</td>
<td>736,343</td>
<td>597,391</td>
</tr>
<tr>
<td>1931</td>
<td>817,703</td>
<td>594,432</td>
</tr>
</tbody>
</table>

*Figures obtained from Chicago Daily News Almanac, 1915–1932.

The coming of suffrage stimulated further interest in lobbying because of the apparently changed attitudes of persons in positions of power. Since 1920, lobbying in Congress for the special interests of women has been chiefly in the hands of two groups of women. The first of these, representing a very large number of women and known as the Women’s Joint-Congressional Committee, was organized in 1921 for the purpose of keeping Congress informed as to measures in which women were interested and letting women at home know of ways in which they could help. Since 1923 it has been composed of representatives of seventeen national organizations among which are the American Association of University Women, the American Home Economics Association, the
several Federations of Women's Clubs, the National Congress of Mothers and Parent Teachers Associations, the National Council of Women, the National Consumers' League, the National Federation of Business and Professional Women, the National League of Women Voters, the National Women's Trade Union League, the National Women's Christian Union and the Service Star Legion. The second group is the Woman's Party, still pushing the fight for the amendment of the United States Constitution by the adoption of the so-called Equal Rights Amendment which reads: Men and women shall have equal rights throughout the United States and every place subject to its jurisdiction . . . Congress shall have power to enforce this article by appropriate legislation.

Two successes rewarded women's efforts, directed by the Women's Joint-Congressional Committee, during the first years of their new power: the Maternity and Infancy Law of 1921 and in the following year the so-called Cable Act, giving independent citizenship to married women. In 1923 they had much to do with the enactment of the Personnel Reclassification Act, with legislation regulating interstate and foreign commerce in livestock and other agricultural or dairy products and prohibiting commerce in "filled" or adulterated milk, and with the measure creating the new federal prison for women offenders. In 1924 they assisted in obtaining submission to the states of the proposed amendment giving Congress power to regulate the labor of young persons, although up to the present time this has been ratified by only six states. In 1930, looking back a decade, a total of 436 state and local laws enacted with the support of this committee can be listed. There have been 61 dealing with child welfare, 130 removing limitations on the rights of women, 75 on social hygiene, 69 in the field of education, 76 dealing with efficiency in government and several on living costs. Sixty measures violating the principle of efficiency in government have been opposed and failed of passage. But the two great measures protecting maternity, infancy and childhood had failed (the act of 1921 was allowed to expire in 1929) and the greatest number of apparent successes had been in the years immediately after 1920. Thus after the granting of suffrage women's interests widened but after the first few years of victory their obvious achievements seemed to diminish.

In general, social welfare legislation and the quest for equal rights have been their primary interests. That it might be possible to secure public resources adequate to meet the costs of the projects they urged, the committee has laid great stress on problems in taxation, finance and

60 U. S. Children's Bureau, Promotion of the Welfare and Hygiene of Maternity and Infancy, Publication no. 203, 1931, reviews the history of that act.
62 See publications of the League of Women Voters. See also Equal Rights, published by the Woman's Party.
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general governmental efficiency. Throughout the country mothers' pensions laws exist, child labor standards have been improved, and educational opportunities have been advanced, in part at least because of the activities of the women's lobbies.

Women in Party Organizations.—Only brief mention can be made of women in the party organizations and reference will be made only to the two great parties. It is at present impossible to estimate the influence of women in these organizations. Women have official titles and sit on party committees. Both parties have adopted a rule calling for an equal number of men and women in the state committees, and the Republican and the Democratic National Committees consist of 53 men and 53 women each. Of the 26 members of the Republican executive committee in 1930, 11 were women and, of the 9 offices, 2 were held by women. Each state, too, has a director of women's activities. Women's participation in national conventions is an interesting story but has as yet too much of the ceremonial to be of great significance. The experience in party organization is like that in legislation. The year 1924 witnessed a high level in the participation of women in national conventions, which, as shown in Table 2, declined somewhat in 1928, but rose again in 1932.

<table>
<thead>
<tr>
<th>Party</th>
<th>1912</th>
<th>1916</th>
<th>1920</th>
<th>1924</th>
<th>1928</th>
<th>1932</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delegates</td>
<td>Alternates</td>
<td>Delegates</td>
<td>Alternates</td>
<td>Delegates</td>
<td>Alternates</td>
</tr>
<tr>
<td>Republican...</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>19</td>
<td>10</td>
</tr>
<tr>
<td>Democrat......</td>
<td>2</td>
<td>1</td>
<td>11</td>
<td>11</td>
<td>93</td>
<td>206</td>
</tr>
</tbody>
</table>

* Compiled from Republican and Democratic National Conventions Proceedings for the various years.

Women in Congress.—Except for an aged lady from Georgia who held office for one ceremonial day, no woman had been either appointed or elected to the United States Senate until the autumn of 1931, when Arkansas elected the widow of a statesman from that commonwealth to succeed her husband for the unexpired term. This is a clue to the attitude of many citizens toward offices supposed to require high degrees of statesmanship and long experience. In the lower house, of the 14 women who have been elected, 7 have been chosen, as it were, by virtue of their deceased husband’s "selective ability." Some of these women members have justified the practice and have been subsequently elected in their own right so often that the accidental origin of their elevation to office is forgotten. In 1932 there were six women in the House of Representatives and one in the Senate.
RECENT SOCIAL TRENDS

The first woman in the House of Representatives, a Congresswoman at large from Montana, 1916–1918, antedated the suffrage amendment; she did not seek reelection. The first woman after the amendment, a member from Oklahoma, was an anti-suffragist, hostile to all the measures in which organized women had been interested. She, too, did not return. In 1922 a representative from an Illinois district filled out her father’s unexpired term. In January, 1923, a representative from California won her deceased husband’s chair and in December, 1923, she was the only woman member. She did not seek reelection. In December, 1925, a representative from California and one from Massachusetts succeeded to their deceased husbands’ places and a newly elected member from New Jersey came in as the first Democratic woman. A member from Kentucky succeeded a husband who was not physically but civilly dead in that he was sentenced to the federal penitentiary for violation of the Volstead Act. She was reelected for the seventy-first Congress, but was defeated in the autumn of 1930. The seventy-first Congress, with nine women, marked the peak of woman membership in the House. Four had been there before and five new ones were added, two by virtue of their husbands’ deaths. Of the fourteen women who have sat in the House, four did not try for renomination and three were defeated in primaries for reelection. Of the six in the House at present, only one is there by virtue of marital succession. The others are representatives whose constituents have cast one or more votes of confidence in them in their own capacity.

Space does not permit a discussion of women’s committee assignments, except to point out that they are varied in interest. The Senator from Arkansas serves on the committees on Agriculture, Forestry, Enrolled Bills and the Library. Two Congresswomen are on the Committee on Foreign Affairs, one on Military Affairs, one on Civil Service, two on the World War Veterans’ Legislation Committee, one is on the committees on Labor and on Memorials and is chairman of the Committee on the District of Columbia, one is on the committees on Education and the Library.63

Women in Federal Office.—Women in federal office are in two groups—those who hold a political office and those who have entered the service through the civil service examinations. The latter have already been discussed. Women’s experience in federal political office has been like that in legislative effort. The years just before and after the ratification of the Nineteenth Amendment were the most promising. During the decade prior to the ratification women were recognized by the federal administration in various ways. Reference should be made to the establishment of the United States Children’s Bureau in 1912, and to the appointment as Chief of a leader in the field of social reform whose

63 These data are obtained from the Congressional Directory.
qualifications for the position were of the highest. A woman was later appointed Judge of the Juvenile Court in the District of Columbia; in 1920 a woman was appointed on the United States Civil Service Commission and a few women were sent into the foreign field by the Department of Commerce. The diplomatic service was technically open to women and there were three bureau chiefs. There were women members of federal commissions, one woman succeeded another as assistant attorney general, women were appointed in the offices of commissioner of internal revenue, collector of customs, immigration commissioner, superintendent of the institution for women offenders and a member of the woman’s advisory board of that institution. There are three women officers, all exercising functions judicial in character, who receive $10,000 a year for their services. One other woman magistrate has been appointed to the municipal bench in the District of Columbia. The figures, however, show that relatively few women are admitted to the higher salary levels.

Women in State and Local Office.—Holding office under the state or local jurisdiction was not novel in 1920. Clara Barton had been head of the Woman’s Reformatory in Massachusetts in the early 1880’s; there were women on the early state boards of charities and corrections; women were state factory inspectors and served on state health boards and similar bodies. But only after 1920 were women elected to the highest offices. Two have served as chief executive, one in Wyoming and one in Texas. In twelve states women have been elected secretary of state. They have been state treasurers in three states. In some states, as in California, North Carolina and Pennsylvania, women are getting something of a prescriptive claim to the directorship of the department of public welfare. Reference has been made to their positions in the educational organization and in the courts. A woman director of a state labor department has succeeded in placing the administration in a position of constructive leadership.

The participation of women in state legislation seemed sufficiently interesting to warrant special investigation. Letters were written to all women legislators whose addresses could be obtained—320 in all—and replies from 126 were received. No special type predominates among them. The legislators were pioneering women whose other work seemed done; college graduates who have gone almost directly from the quadrangle to the capitol; some who were against suffrage and about half who were in the old movement. Some had a definite purpose, others did not want to be tarred with the feminist pitch. As to vocational experience, 26 had been teachers, 9 lawyers, 2 doctors, 6 business women, 3 social workers. Twenty-six had held office before. Most of them spoke of their experience as interesting and happy and many spoke of the courtesies of the men.
RECENT SOCIAL TRENDS

It is in the local jurisdictions that the evidence of women’s activity is most conspicuous and there has perhaps been more substantial advance in the local than in any other jurisdictions. There have been women mayors; women have sat on boards of aldermen or city councils; they have been comptrollers and city clerks; and they are on boards of county commissioners. The facts are difficult to assemble in their entirety and the report of investigations concerning women in state and local office made in four states by the Leagues of Women Voters of those states summarizes what appears to be the only available study of comparable offices over a period of years. It indicates that the woman in politics progresses faster at home than in the larger political units and it shows that women have had what might be thought to be a surprising concern with fiscal responsibilities.

In Connecticut the number of women in local office increased from 134 in 1925 to 652 in 1929, the great majority of them having been appointed rather than elected. In Michigan, Minnesota and Wisconsin, however, there were many more women selected for local office by election than by appointment. In Michigan the numbers increased from 367 in 1927 to 793 in 1929 and in Minnesota they rose from 227 in 1926 to 348 in 1930. The trend in Wisconsin is more difficult to determine as the basis of enumeration did not remain constant throughout the period studied. There were 62 women in local office in that state in 1926 and 171 in 1929, but the earlier figure did not include women in city, village and township offices. Of the 171 in 1929, 80 were in county and state offices.

VII. WOMEN’S ORGANIZATIONS

Women’s organizations have to do with activities which are frequently outside the exercise of domestic responsibilities, but they have been, and still are in many cases, concerned with matters which were domestic responsibilities but have become subjects of general interest and of important public policy.

The relationship of women to the granges and to the agricultural associations has been almost the reverse of that of women in other social or occupational groups. Those organizations were made up of men and women and after 1867, when women were admitted on equal terms and even elected master farmers, the men were charged with submitting to “petticoat government.” In 1930, in a roster of 128 major state offices, women were listed as holding 26. The farmers’ institutes were a form of adult extension education in which the women had their part. In 1898 domestic extension science associations began to be formed in Illinois. By 1912 there were 720 women’s institutes in 8 states with 78,776 women attending. In

64 These can be obtained from the National League of Women Voters, 352 17th Street, Washington, D. C.
1914 the enactment of the so-called Smith-Lever bill gave federal aid to this important aspect of education. Federal funds, matched by state funds, provided an educational program carried out by home demonstration agents, which meant trained leadership. In 1915, 368 county agents had enrolled 6,871 women and organized 250 community clubs in fifteen southern states. In 1920 the Farm Bureau Federation was formed; in 1922, 210,560 groups of women and in 1929, 403,602 groups of women had been enrolled under the leadership provided from this source.

Many organizations of women seem to have sprung from a sense of a wrong to be righted, from the experiences connected with war, from a sense of educational, occupational or social need, or from some such special stimulus as was given by the Chicago World’s Fair. The process has been, in general, the organization of a small local group, then the federation of the local groups into district or state wide organizations and centralization on a wider, possibly a national basis, then cooperation among national organizations and then a return to specialization in purpose. Women who work are inclined to ally themselves with others in their occupations, or with other groups of women who work. Women of leisure and education are likely to join with others to promote some special program.

It is impossible to make exact comparisons with former years, because the organizations have estimated rather than actually recorded membership figures. One example of the difficulty of exact statement is found in the General Federation of Women’s Clubs, of which the total membership is estimated at "over two million." The Federation is, however, composed of various clubs, and one woman may be a member of several federated clubs.

In spite of these difficulties in the way of exact statement, certain facts may be noted. Women’s clubs, both urban and rural, go back to the eighteen fifties, sixties and seventies. In the early 1890’s the men of the labor movement decided that women should be "brought into the stream of associated effort" and, in 1903, the National Woman’s Trade Union League was formed. In 1898 the National Consumers’ League had already put its hand to the task of bringing consumption, for which women’s responsibility was being recognized, under intelligent control. The patriotic motive and the racial bases of association should also be noted. In 1890 the Daughters of the American Revolution was organized; in 1891, the Daughters of the Revolution, the Colonial Dames and the United States Daughters of 1812; in 1894, the Daughters of the Confederacy; in 1917, the War Mothers of America organized in Indiana; in 1919, the Service Star Legion in Baltimore and the American War Mothers; in 1920, the American Auxiliary to the American Legion; in 1931, the Women’s Auxiliary of the Veterans of Foreign Wars, the
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American Legion Auxiliary and the Women’s Overseas Service League. They present varied points of view with reference to peace and war and to economic readjustment, some being conservative and militaristic, others liberal and seeking another way out, but all devoted to commemorating those who risked their lives for their country. It is not possible to give exact figures of membership for all of them, but the Daughters of the American Revolution in 1930 were organized in 2,377 chapters with 170,299 members; the Overseas Service League had 2,500 members in 50 units; and the American Legion Auxiliary had 9,130 units and 368,049 members.

Responding to the motive of racial loyalty, sometimes strengthened by the sectarian interest, are organizations among the Negro women and the Jewish women. The Women’s Convention (Negro Baptist) was one of the very early organizations. In 1930, 2,000 representatives of their convention attended a conference in Chicago. The National Association of Colored Women was formed in 1896 and in 1930 there were branches in forty-two states which claimed a total of 50,000 members. The Jewish Women’s Congress is one of the organizations growing out of the Chicago World’s Fair and remains a factor in the life of that important racial community. In 1930 it counted more than 50,000 members; it owned buildings and institutions valued at more than a million and a quarter dollars and provided aid to immigrants and supported scholarships and schools, in addition to providing opportunities for social intercourse and for study and recreation. The National Council of Catholic Women represents the national organization, 50 diocese councils organized under the general direction of the Ordinary, 6 state and 1,700 local organizations.

For the professions, there are three organizations of nurses, one concerned with educational problems, one with questions of public health nursing and one with service to practicing nurses. The last maintains scholarships ($34,000), a loan fund ($5,500) and a relief fund ($146,404). In 1921 the graduate nurses gave a new school building in memory of nurses who died in the World War to L’École Florence Nightingale, which is part of the Maison de la Santé at Bordeaux. The Medical Women’s National Association requires membership in the American Medical Association and, in 1930, numbered only about 600. There are also the Women’s Homeopathic and the Osteopathic Medical Women’s Associations, both small in membership and both supplying opportunities for social intercourse and providing scholarships for promising women students. Teachers are organized in the National Education Association with about 175,000 members and in the Federation with 40,000 members.

The Association of Collegiate Alumnae organized in 1881 is now the American Association of University Women, with 40,000 members as compared to 18,400 in 1924. They are organized in 586 branches and
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maintain headquarters in Washington, publishing a quarterly Journal, handling funds in the award of fellowships amounting to $15,800 and participating in international efforts to secure for women wider opportunities for research and freer exercise of their intellectual powers. The National Association of College Women (colored) has 300 members in eight branches; the Parent Teachers Association in 1930 counted a million and a half members in branches in fifteen states.

Although the Association of Business and Professional Women is only thirteen years old, it already has state federations in forty-six states, approximately 1,100 local clubs, and about 50,000 members. Its slogan is "at least a high school education for every business girl," and its researches in the field of vocational aptitudes and of pecuniary rewards are important contributions to the existing vocational literature. 65

The Association of Junior Leagues of America, Inc., has 109 branches and 22,000 members; it maintains national headquarters in New York City. The Women's Luncheon Clubs came in toward the end of the second decade of the century. They provide good fellowship and friendship. Altrusa (1917) boasted 109 clubs in thirty-four states and 3,000 members in 1931; Quota International (1918-1919), 30 clubs and 3,000 members in 1931; Zonta, 108 clubs and 3,000 members; and Soroptomist 4,200 members in 1930.

The sorority system in the colleges and universities began between 1870 and 1880. Twenty chapters organized before 1900 are still active. In 1927 there were 44 national organizations, of which 26 were academic and 18 professional; the academic sororities had 32,000 members in 150 institutions. In 1905, 7 chapters reported owning their houses while in 1927 there were 385 houses valued at $10,602,550. The sororities do not accumulate such funds as the fraternities accumulated in the past, but both in local chapters and as part of their national activity they maintain scholarships.

Women's organizations have tended toward cooperative relationships within the United States and also toward alliances with groups in other countries. The early form taken by the cooperative effort was the National Council of Women, which was and is a branch of an International Council. In 1928 there were 38 state organizations of the National Council. Cooperation sometimes takes the form of regular periodic conferences among organizations on some important subject. The Conference on the Cause and Cure of War, in which there were eleven participating organizations, and a similar Patriotic Conference on National Defense are illustrations of this tendency.

The practice of owning and maintaining club houses, although not a novel one, has developed rapidly in the past years. These houses are not only meeting places and refectories, but they also provide residential accommodations and make possible many activities appropriate to the membership. Some of these houses are valued at over $1,000,000.

Few of these organizations are self-supporting in that the dues of members alone enable them to carry on their work. Some, like the Young Women's Christian Association, are part of the social welfare program; or, like the Women's Trade Union League, are to an extent in the social reform movement. Others, like the Home Economics Association, look to foundations for special funds; and still others, like the General Federation of Women's Clubs or the National League of Women Voters, rely on a sort of annual drive. The totals are amazingly large considering the general scale of dues and the modest scale of pay received by most of the workers.

First federation and centralization, then cooperation, and finally specialization seems to be the changing emphasis in women’s organizations. The new groups which appear and the older ones which grow are more restricted in the field they cover than the clubs which have been united in the Federation. It seems unlikely that the General Federation is growing now at anything like the pace of former years. Its very size and proud diversity militate against it.

VIII. CONCLUSION

The material supplied in the preceding pages justifies certain statements with reference to the changing conditions of women’s employment.

It is clear that an increasing number of women are joining the wage earning group. The rate at which they pass from the non-gainfully employed to the gainfully employed is not rapid, but it has been increasing. This rate varies with women in different social positions and in different sections of the country, and it is higher for married women than for single women. It also seems to be true that the gainfully employed are coming from a higher age level than before and perhaps more definitely from the native group. Domestic and personal service claims the greatest number of women, with the clerical occupations, the manufacturing and mechanical industries, professional service and trade, and agriculture following in the order named. It is also clear that women are forming a steadily increasing proportion of the gainfully employed. The increase is not great—68 in 1,000 in fifty years—but it seems to be continuous. The proportion of women in the wage earning group and the rate of increase vary considerably in the different occupational classifications. The tendency seems to be away from the older agricultural and industrial pursuits, in the direction of office, store and professional work.
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In what is generally known as the business world, described in the census by the terms, "Transportation," "Trade" and "Clerical" occupations, women are increasing steadily. The greatest proportion of the women in these fields are office workers, saleswomen, store clerks, retail dealers and telephone operators. In connection with these occupations the demand for educational opportunities has also grown steadily. There is some evidence that women in these fields are finding their way into positions of greater responsibility and higher pay.

In the professional field the proportion of women is still small in law, medicine and the ministry. By far the greatest number of professional women are teachers or nurses. Women are conspicuously increasing, however, in all professional occupations except those of physicians and musicians.

Women in the semi-skilled divisions of the manufacturing and mechanical industries are increasing somewhat, but in the skilled occupations they are for the most part declining or remaining about stationary. A notable exception to this is in the managerial positions, where women have shown considerable advances. In domestic and personal service, as in manufacturing, there have been changes in alignment reflecting the mechanical trend of contemporary living. The proportion of women in the civil service has not, except during the abnormal conditions of the war years, shown any great variation, in spite of the fact that the number of women entering the service has slightly increased.

As to women's participation in government, figures are not available which would show definite trends, either in the success of lobbying efforts or in the results of party activity. In legislative assemblies, whether federal or state, the numbers rise and fall. Such evidence with reference to voters as is available in certain figures recorded in the registration and in the poll lists by sex indicates an increase in the interest on the part of women voters rather more rapid than that shown by the increase in the men in the same jurisdiction and during the same period.

The changes occurring among women's organizations hardly lend themselves to statistical formulations. Their development, however, becomes more obvious in an objective account of the energy which goes into these organizations. They arose from a volume of interest in religion, social reform and education, and the ratification of the Nineteenth Amendment found a multiplicity of organizations active and occupying the attention of women. With the increase in the number of self-supporting women for whose leisure time the home no longer makes adequate provision, the club and the club house furnish shelter, food and opportunity for friendly association and the exercise of hospitality.

These are the conclusions which lie on the surface of the figures and facts presented in the foregoing pages. For a complete understanding of
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their significance, it is again necessary to recall the connection of this material with that supplied in other chapters, especially those on the family and labor. Such opportunities for women as have been opened up have often been secured under difficulties and against resistance of which these figures take no note. Those difficulties are suggested in the section referring to the necessity of securing legislative changes and of removing barriers by which women's occupational desires have been blocked. As long as women's relation to industry is discussed with that on "aliens, Mexicans, and Negroes," all acknowledged to be seriously disadvantaged groups, it is probably evident that industry, or the occupational world, is not making full use of the variety of abilities and capacities possessed by women, and that some limitations which were characteristic of the position of women in the earlier order of family organization still persist.