

# PROJECTION OF URBAN GROWTH AND MIGRATION TO CITIES IN THE UNITED STATES

PHILIP M. HAUSER AND HOPE T. ELDRIDGE<sup>1</sup>

**T**HE volume and direction of internal migration and the growth of cities are a function of a number of variables none of which is subject to rigorous control. They are determined by such factors as long-time trends in our economy and in economic opportunity; fluctuations of the business cycle; changes in political and social organization; changing mores, folkways and attitudes; regional and urban-rural differentials in fertility and mortality; immigration; and, of course, trends in total population growth.

As is usually the case in the realm of human affairs, the safest and frequently the only way of foreseeing the future lies in an analysis of the past. The combined influence of the factors enumerated above and many other variables is reflected in the actual trends in urban growth, and in the observed patterns of internal migration.

The historical patterns of urban growth and internal population movement in the United States are fairly well known. From analysis of these trends it is possible, on the assumption that no radically new economic and social elements will enter the picture, to make certain broad qualitative predictions with reasonable safety. For example, on the basis of this assumption it may be predicted with some confidence that the rate of urban growth will be dampened by the decline in the growth of the total population of the Nation; that regional differentials in urban growth will continue for some time, with more rapid development in the South and West than in the North; that cities in the North will reach points of stability or even population decline in advance of cities in the South and West; that rural-farm population will continue its net movement to urban places. On the basis of observed trends, it is possible even to make reasonably reliable short-run predictions of the prospects

<sup>1</sup> From the Bureau of the Census.

for population growth of individual urban areas as one of the writers has attempted.<sup>2</sup>

It is another matter, however, to attempt quantitative predictions of the volume and direction of internal migration or of urban growth. Even if all the variables that have stimulated or inhibited urban growth in the past could be isolated, measured, and predicted, it still would not be a simple matter quantitatively to predict urbanization in the United States and to quantify the volume of future migratory flow to and from our cities. Nevertheless, it is important to know, or at least to have some quantitative feel of, what the future holds in store on the growth of cities and on urban internal migration. A preliminary attempt is therefore made in the materials which follow to get at some approximation of the outlook—to set up some ranges within which the course of events may fall.

It is to be emphasized that the quantifications of future urban growth and migration to cities presented in this paper are not intended as predictions of the future. The estimates presented are projections, not predictions. That is, they indicate what would happen under the explicitly stated assumptions. The estimates are, in fact, presented as ranges in accordance with varying assumptions. The one thing that we can be certain about is that the assumptions will not hold.<sup>3</sup>

The historical pattern of urban growth is tied to irregular social and economic changes. The course of urbanization in the United States has been somewhat uneven and erratic—precipitate in one period, quiescent in another. There has been some correspondence between rates of population growth and rates of urban growth and some correspondence between economic prosperity and urban expansion. Despite discernible

<sup>2</sup> Hauser, Philip M.: Wartime Population Changes and Postwar Prospects, *Journal of Marketing*, January, 1944.

<sup>3</sup> The Thompson and Whelpton estimates of future urban population, prepared in 1934, indicated a high and low that bracketed the actual count in 1940, but their high estimate for 1950 is lower than a recently prepared estimate for 1946 based on the results of a sample survey. See Warren S. Thompson and P. K. Whelpton, "Estimates of Future Population by States" published by the National Resources Board, December, 1934.

associations of this type, it is quite possible that the very factors that have drawn people into cities in the past may in the future disperse them. Technological advance, which stimulated industrial concentration, may in another phase decentralize the economic operations of our society. Such a development could make it possible for the population to eat its cake and have it too, in the sense of living more spaciouly while losing none of the advantages of urbanization. On the dark side, there is even now, in the atomic bomb, a technological threat to concentrated living, a threat which may scatter the population hastily and without the satisfactions of urban "culture."

These are the types of considerations that make it impossible to predict the future of urban growth, and force us rather to an analysis of the past as a basis for the preparation of projections, though even the projection of historical trends is not without its difficulties.

Two central tasks are here attempted: First, to project to the year 2000 the urban population of the Nation and the future population of places having 100,000 inhabitants or more; second, to project to the same period the volume of net migration to cities.

*Assumptions.* The general assumption that underlies these projections, is that no sudden or drastic changes will occur in our economic development, or in our social and political organization. That is, it is assumed that the combination of forces which have determined urban growth in the past will continue to operate in much the same way in the future.

In spite of the short-run fluctuations in urban growth in the United States, fairly definite overall trends are discernible. The proportion of the population living in urban places has increased during every decade since 1790, except the decade 1810 to 1820 (probably the aftermath of the war of 1812). The percentage increase in urban population has been greater than the percentage increase in total population during every decade except 1810 to 1820. The increase in the percentage urban has varied from a high of 6.9 percentage points, 1880 to 1890, to

a low of 0.3 percentage points, 1930 to 1940; (there was a loss of 0.1 percentage points from 1810 to 1820) with no apparent pattern beyond the fluctuations coinciding with troughs and peaks of economic activity. The percentage increase in the proportion urban has shown some tendency to decline slightly since the turn of the century, but because the last few decades have been characterized by economic extremes (from prosperity in the 'twenties, to extreme depression in the 'thirties, and back to prosperity in the 'forties) it is difficult to guess to what extent urban growth rates are representing aberrations and to

Table 1. Growth of the urban population of the United States, 1790 to 1946.

YEAR	TOTAL POPULATION	URBAN POPULATION		INCREASE IN PER CENT URBAN DURING PRECEDING PERIOD	
		Number	Per Cent of Total	Absolute Increase	Percentage Increase
1790	3,929,214	201,655	5.1	—	—
1800	5,308,483	322,371	6.1	1.0	19.6
1810	7,239,881	525,459	7.3	1.2	19.7
1820	9,638,453	693,255	7.2	-0.1	-1.4
1830	12,866,020	1,127,247	8.8	1.6	22.2
1840	17,069,453	1,845,055	10.8	2.0	22.7
1850	23,191,876	3,543,716	15.3	4.5	41.7
1860	31,443,321	6,216,518	19.8	4.5	29.4
1870	38,558,371	9,902,361	25.7	5.9	29.8
1880	50,155,783	14,129,735	28.2	2.5	9.7
1890	62,947,714	22,106,265	35.1	6.9	24.5
1900	75,994,575	30,159,921	39.7	4.6	13.1
1910	91,972,266	41,998,932	45.7	6.0	15.1
1920	105,710,620	54,157,973	51.2	5.5	12.0
1930	122,775,046	68,954,823	56.2	5.0	9.8
1940	131,669,275	74,423,702	56.5	0.3	0.5
1946 (Estimate)	141,229,000	84,753,000 <sup>1</sup>	60.0	3.5 <sup>2</sup>	6.2 <sup>2</sup>

<sup>1</sup> This estimate contains no allowance for increase through reclassification. An allowance of 500,000 would give an estimate of 85,253,000, or 60.4 per cent of the total population.

<sup>2</sup> The equivalent decennial increase in the percentage urban is 5.6 percentage points (9.9 per cent of the 1940 proportion) with no allowance for increase through reclassification. An allowance of 500,000 would give an equivalent decennial increase over 1940 of 10.4 per cent in the proportion urban.

what extent they are reflecting an alleged secular trend (see Table 1 and Figure 1).

Of all the factors which have had a significant effect historically on the rate of urban growth in the short run, the swings of the business cycle seem to be among the most important. These fluctuations in urban growth in response to the rise and fall of the economic barometer are likely to occur in the future as they have in the past. A projection of the short-run rate of growth that accompanied each extreme of the business cycle within recent decades can therefore be made with some assurance that the most creditable prospect lies somewhere between the two.

Thus, within the framework of a relatively stable economic, social, and political climate, allowance is made in our projections for differing rates of urban growth under differing conditions of economic weather. These are: (1) Conditions of full production and full employment, (2) conditions of medium production and medium employment, and (3) conditions of low production and low employment. For purposes of the projections, the first is assumed to be represented by urban growth between 1920 and 1930, a period of boom prosperity; the last by growth between 1930 and 1940, a period of deep depression. The second or medium condition of production and employment is assumed to be that of the whole twenty-year period, 1920 to 1940, or an "average" of the first and third.<sup>4</sup>

*Methods and Procedures.* The estimates of urban population in the United States for 1946, as shown by the results of a sample survey conducted by the Bureau of the Census in July 1, 1946,<sup>5</sup> were used as a base population for the projections.

Urban population growth in the United States is a function

<sup>4</sup> Urban growth between 1940 and 1946 was similar to growth during the 1920's, at least so far as changes in the proportion urban are concerned. (See Table 1.)

<sup>5</sup> United States Bureau of the Census: *Population*, Series P-S, No. 19, "Urban and Rural Population of the United States, by Age and Sex: 1946, 1945, and 1940." The data in this release refer to the civilian noninstitutional population. For the estimate presented in our Table 1, adjustments have been made to include members of the armed forces and persons in institutions.

of total population growth. Since projections of total population growth are available and since it is known that the rate of population growth is declining and approaching a point of stability, it is clear that the size of the total population sets a limit on urban growth. The characteristic that was projected, therefore, is the percentage urban of the total population. The projected proportions were applied to revised estimates of the future population of the United States recently prepared by the Bureau of the Census in cooperation with P. K. Whelpton of the Scripps Foundation for Research in Population Problems.<sup>6</sup> These revised projections are the "medium" set, that is, estimates of the future population based on assumptions of medium fertility, medium mortality, and no immigration after July, 1945. The projected proportions can, of course, be applied to other population projections to obtain estimates of the urban population under different assumptions of overall population growth.

In terms of actual computation, the following procedures were observed. The geometric annual average percentage increase in the proportion urban was computed for the decades 1920 to 1930, and 1930 to 1940, for the high and low urban projections. A similar average for the whole period 1920 to 1940 was computed for the medium projections. Because of the lack of distinct historical trends in the rate of change in the percentage urban of the total population, the rates of change for the various levels of future urban growth were held constant in the projections. The annual rates of increase were applied to the percentage urban in 1946 and resulting proportions were computed for decennial intervals, 1950 to 2000. The proportions were then applied to the projected population totals to obtain the urban population for each date. The results are presented in Table 2 and Figure 1.

<sup>6</sup> A preliminary release presenting medium estimates, 1945 to 2000, was recently published by the United States Bureau of the Census in *Population, Special Reports, Series P-46, No. 7*. The full report containing forecasts based on various assumptions with respect to the future courses of fertility, mortality, and immigration will be published later in 1947.

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YEAR	TOTAL POPULATION	URBAN POPULATION					
		Low		Medium		High	
		Number	Per Cent of Total	Number	Per Cent of Total	Number	Per Cent of Total
1950	145,460,000	87,421,000	60.1	89,022,000	61.2	90,476,000	62.2
1960	153,375,000	92,792,000	60.5	98,620,000	64.3	104,448,000	68.1
1970	159,847,000	97,187,000	60.8	107,897,000	67.5	119,246,000	74.6
1980	163,877,000	100,129,000	61.1	116,189,000	70.9	133,724,000	81.6
1990	164,585,000	101,055,000	61.4	122,616,000	74.5	147,139,000	89.4
2000	163,312,000	100,764,000	61.7	127,710,000	78.2	159,719,000	97.8

Table 2. Projected urban population of the United States, 1950 to 2000.

*Estimates of Urban Population.* On this basis, the urban population of the United States under sustained conditions of high production and employment will be 104,000,000, or 68 per cent of the total population in 1960. Under conditions of low production and employment, the 1960 urban population is estimated at 93,000,000, or slightly more than 60 per cent of the total; and under conditions of medium production and employment at about 99,000,000, or 64 per cent of the total.

The figures for the year 2000 are merely a demonstration of what would happen if the assumed rates of change in the urban proportion should remain constant until the end of the century. Thus, in the high projections, about 98 per cent of the population is shown to be urban in the year 2000.

As the situation is today with respect to agricultural productivity, habits of living, suburban trends, industrial labor force potentialities, and related matters, this "high" estimate does not seem a very likely eventuality. On the other hand, by the year 2000 our patterns of living may have changed so radically that the present meaning of the term "urban" may have vanished and the universe of discourse we now employ in this connection may find no comparable application. With respect to the high projections, it should also be noted that even if the rate of increase in the percentage urban had been allowed

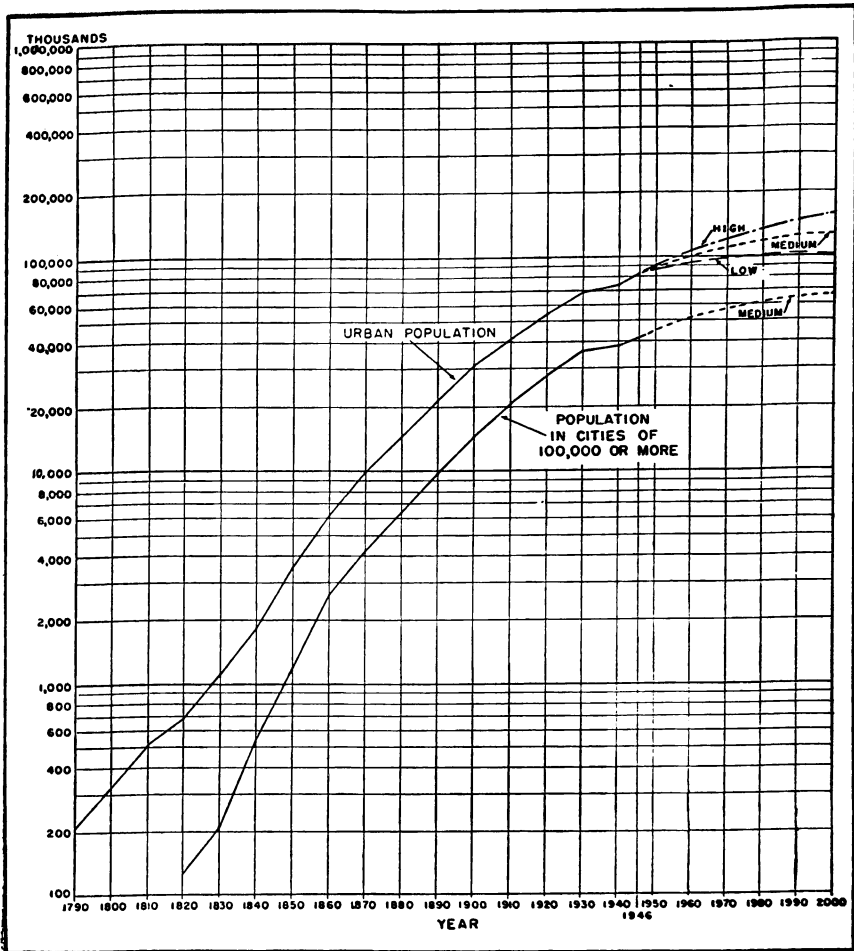


Fig. 1. Growth of urban population, 1790 to 1946, and projection, 1946 to 2000.

to diminish gradually as is suggested by the data for the period since 1850, the percentage urban obtained for the year 2000 would still be extremely high. An allowance for a decrease in the amount of increase in the proportion urban of 0.1 percentage point per decade (beginning with an increase of 5.7 percentage points in the decade 1940 to 1950) would yield an urban proportion of about 90 per cent in 2000.

The low series shows that, at the "depression" rate of increase in the proportion urban, cities would begin to lose popu-



lation near the end of the century, as the total population passes its peak and begins a gradual decrease.

The medium series, being a composite of the high and low projections, implies fluctuations between these extremes. It is shown as a smooth trend simply because it is not possible to predict the timing and severity of future fluctuations. This series indicates for the year 2000 an urban population of some 128,000,000, or 78 per cent of the total, as compared with the present 85,000,000 or so, roughly 60 per cent of the total. The decennial detail for the various projections is shown in Table 2 and in the chart.

*Estimates of Migration to Cities.* The problem of estimating the change through migration to and from urban areas that is implicit in these projections is more difficult. Because of the mobility of the population, a true estimate of natural increase in urban population cannot easily be made for past periods, let alone for the future. Much of the natural increase that occurs in urban areas results from the fertility of in-migrants to urban areas. It is possible, theoretically, to obtain an estimate of the urban population that would be expected at any time if no in-migration had occurred during preceding decades. It would be necessary, however, to apply age-specific birth and death rates to the urban population on a chosen base date and to prepare two sets of population estimates similar to the forecasts prepared for the United States, one allowing for in-migration and one not. In this way the cumulative effect of migration upon urban growth could be measured. Data for this kind of calculation are not readily available, although reasonable estimates could perhaps be made with sufficient time and facilities.

One fact is ascertainable in this connection, however. During the modern era, urban birth rates have been such that without in-migration to urban areas American cities would eventually experience natural decrease rather than natural increase. The intrinsic rate of natural increase of the urban population was - 11.4 per thousand during the period 1935 to

PERIOD	INCREASE IN URBAN POPULA- TION	NATURAL INCREASE		INCREASE DUE TO RECLAS- SIFICA- TION	INCREASE THROUGH MIGRATION	
		Number	Annual Rate per 1,000 Persons		Number	Annual Rate per 1,000 Persons
<i>Low Urban Projections (with low natural increase)</i>						
1950-1960	5,371	2,711	3.0	1,000	1,660	1.8
1960-1970	4,395	2,185	2.3	1,000	1,210	1.3
1970-1980	2,942	1,381	1.4	1,000	561	0.6
1980-1990	926	201	0.2	1,000	-275	-0.3
1990-2000	-291	-1,110	-1.1	1,000	-181	-0.2
<i>Medium Urban Projections (with medium natural increase)</i>						
1950-1960	9,598	3,664	3.9	1,250	4,684	5.0
1960-1970	9,277	3,098	3.0	1,250	4,929	4.8
1970-1980	8,292	2,022	1.8	1,250	5,020	4.5
1980-1990	6,427	359	0.3	1,250	4,818	4.0
1990-2000	5,094	-1,253	-1.0	1,250	5,097	4.1
<i>High Urban Projections (with high natural increase)</i>						
1950-1960	13,972	4,487	4.6	1,500	7,985	8.2
1960-1970	14,798	3,915	3.5	1,500	9,383	8.4
1970-1980	14,478	2,783	2.2	1,500	10,195	8.1
1980-1990	13,415	421	0.3	1,500	11,494	8.2
1990-2000	12,580	-1,381	-0.9	1,500	12,461	8.1

Table 3. Projected net migration and natural increase in the urban population of the United States, 1950 to 2000. (All figures, except rates, in thousands.)

1940.<sup>7</sup> The depressed conditions of the 1930's may be accountable in large part for this high inherent rate of natural decrease, but the intrinsic rate of natural increase for the period 1905 to 1910 was -2.3 per thousand, showing that the fertility of cities has been potentially below replacement levels at least since the early part of the present century. Urban net reproduction rates were 726 per thousand for the period 1935 to 1940 and 937 per thousand for the period 1905 to 1910.<sup>8</sup>

<sup>7</sup> United States Bureau of the Census: SIXTEENTH CENSUS OF THE UNITED STATES, 1940, POPULATION, DIFFERENTIAL FERTILITY, 1940 AND 1910, "Standardized Fertility Rates and Reproduction Rates," Table 9.

<sup>8</sup> *Op. cit.*, Table 7.

A rough indication of the decennial contribution of migration to future urban growth can be obtained by assuming that urban crude rates of natural increase will maintain a constant ratio to national rates of natural increase and by comparing the expected urban increase under this assumption with the various projected estimates of urban increase. For this purpose, ratios of urban to national rates were computed for the same three periods as those used for the population projections: 1920 to 1930 (high ratios of urban to national rates of natural increase, therefore high urban natural increase), 1930 to 1940 (low ratios of urban to national rates, therefore low urban natural increase), and 1920 to 1940 (intermediate ratios, therefore medium urban natural increase). These ratios were adjusted for the trend from 1920-1930 to 1940-1944 and applied to the future national rates of natural increase derived from the population projections for the United States. Three sets of future urban rates of natural increase were obtained (*see* Table 3).

One further adjustment was needed to allow for changes in urban classification. Urban areas are redefined in each census as additional places become eligible for the urban classification and others lose eligibility. There is always some increase in urban population as a result of reclassification. For present purposes, a decennial allowance of 1,000,000 to 1,500,000 is made for reclassification. This allowance is based on analysis of data from earlier decades.

The remainder of the decennial urban increase, after deductions for natural increase and reclassification, is the estimate of net change through migration to and from urban areas. The estimates according to the three sets of basic assumptions are shown in the last two columns of Table 3.

The high projections indicate that increasingly larger gains through migration will be necessary, in conjunction with declining national fertility, to maintain the type of urban growth that characterized the prosperous decades of the 'twenties and 'forties. The low projections show that a depression type of

YEAR	NUMBER	PER CENT OF TOTAL	INCREASE IN PERCENTAGE DURING PRECEDING PERIOD	
			Absolute Increase	Percentage Increase
1820	123,706	1.3	—	—
1830	202,589	1.6	0.3	23.1
1840	517,216	3.0	1.4	87.5
1850	1,174,668	5.1	2.1	70.0*
1860	2,638,781	8.4	3.3	64.7
1870	4,129,989	10.7	2.3	27.4
1880	6,210,909	12.4	1.7	15.9
1890	9,697,960	15.4	3.0	24.2
1900	14,208,347	18.7	3.3	21.4
1910	20,302,138	22.1	3.4	18.2
1920	27,429,326	25.9	3.8	17.2
1930	36,325,736	29.6	3.7	14.3
1940	37,987,989	28.9	-0.7	-2.4

Table 4. Population in cities of 100,000 or more inhabitants, 1820 to 1940.

urbanization will become de-urbanization by the year 2000, that net gains through migration will dwindle through the coming decades and will finally become a net loss during the period 1980 to 2000.

The medium projections indicate that an average decennial net gain of some 5,000,000 through migration will be required to produce moderate urban growth if the vicissitudes of the business cycle continue to frequent the American economic scene.

*Cities of 100,000 or More.* Urban growth within the United States, at the various levels of concentration, has been a fairly unified process. The proportion of the population living in places of 100,000 or more inhabitants has increased in much the same way as the proportion living in all urban places. In most decades, the increase in the proportion of the population in the large cities has proceeded at a more rapid rate than the proportion urban, but the overall pattern was very similar (*see* Table 4 and chart). The outstanding exception is the decade 1930 to 1940, when the proportion in large cities actually de-

creased, and the proportion urban increased slightly. A "medium" projection of the population in cities of 100,000 or more has been made on the same basis as that used for the urban

Table 5. Projected population in cities of 100,000 or more inhabitants, 1950 to 2000. (Medium assumption.)

Year	Number	Per Cent of Total
1950	45,674,000	31.4
1960	50,920,000	33.2
1970	55,946,000	35.0
1980	60,634,000	37.0
1990	64,188,000	39.0
2000	67,285,000	41.2

projections. The results of this assumption (that is, the assumption that the rate of increase in the ratio of cities of 100,000 or more to the total population which obtained for the period 1920 to 1940 will persist in the future) are

shown in Table 5. According to these data, more than 67,000,000 persons, or 41.2 per cent of the total population, will be living in cities of this size class by the year 2000, as compared with about 38,000,000, or 28.9 per cent in 1940.

*Value of Projections.* The estimates presented above are based on a relatively crude methodology, and the assumptions used undoubtedly represent a great oversimplification of the factors influencing urban growth and internal migration. The projection of the high rates of urban increase, for example, obviously results in a highly improbable outcome, at least under present conditions of total population growth in the United States.<sup>9</sup>

Moreover, the changing composition of the urban population in terms of levels of concentration and groupings by city size is perhaps of more importance than the number of persons that live in all places of 2,500 or more inhabitants combined or in the two broad size classes here presented. The Census definition of urban is arbitrary and, although convenient, does not fully embody the concept "city." In the past, the largest cities seem to have shown a somewhat greater sensitivity to the business

<sup>9</sup> The projections could have been made asymptotic to the limits set by the overall population projections for the United States, but this was not considered necessary for purposes of this paper.

cycle than have the great bulk of smaller places. This is particularly noticeable in the 1930's. In addition, growth responses to economic change have varied widely on a geographic basis. An example is the contrapuntal growth of New York City and Washington, D. C. New York, the national urban center *par excellence*, has tended to grow rapidly during periods of prosperity, and slowly during periods of crisis or economic stress. Washington, on the other hand, reflecting Federal participation in the social and economic life of the Nation as it cushions the shock of adverse conditions, has grown rapidly during periods of economic stress, and slowly during periods of prosperity. Within the general trends shown in the present projections, then, there are possibilities of many varieties of city growth as relating to size, arrangement, and geographic location.

Broader interpretations of the concept "urban" and the concept "city" can perhaps be made even within the framework of the Census definition. But there are practical difficulties in the way. Cities are strictly defined and enumerated in terms of their political boundaries; and the lag between the expansion of a city as a population unit and the revision of its corporate limits,<sup>10</sup> as well as the functional and qualitative differences that exist between one city and another, are not easy to pin down in statistical data.

The general assumption used for the present projections, namely that urban concentration will continue, is of course subject to challenge. One popular theory with respect to urbanization is that the process of dispersion has already begun. Proof is offered in comparisons of the percentage increase in the cities proper with increases in surrounding areas. The latter almost invariably show greater rates of growth. This kind of re-settlement is often interpreted as the beginning of de-concentration which may eventually result in the reduction of the

<sup>10</sup> The metropolitan district concept, already introduced into the census is an approach to measuring the "true" city, but so far only places of 50,000 or more inhabitants have been treated in this way, and very little has yet been accumulated on which to base historical comparisons.

density of cities and a more even distribution of the population over the country. This may be the correct interpretation, but from another viewpoint, "suburbanization" may be regarded, not as de-concentration, but rather as a by-product of the process of concentration whereby a city grows by accretion at the periphery, while the center, the area of business activity and large daytime population, forms a residential hollow that enlarges as business activity increases and city growth progresses.

Yet, despite the crudities of the methods used and the debatable character of the assumptions, the projections are nevertheless useful tools in indicating what would happen if past trends continued under the stated conditions. They also serve as a background for evaluating the effects of additional factors which could influence urban growth and migration to cities. For example, although it is clear that the urban population of the United States is not likely by the year 2000 to reach the level indicated in the "high" estimates, it is conceivable that the urban population could reach such a magnitude if the immigration laws were changed and additional population were recruited from abroad. Or, conversely, the "high" projection could be interpreted as indicating that the deceleration of total population growth in the United States will prevent the continuation of the same rate of urban growth in the future, even during periods of great prosperity and economic opportunity, that was achieved in the past.

Finally, the methods employed in the preparation of these projections, with such refinements as may be indicated by the specific purposes to be served, suggest a way for projecting the population of the various regions and other subdivisions of the United States. Such broad regional projections could in turn set limits of growth for subdivisions of the region, including city populations; and, perhaps, provide a sounder basis for local population projections than other methods now frequently employed.

"Trends and Possibilities," are the same as in the third edition, with one additional chapter called "International Health."

The paucity of information on health conditions in many countries throughout the period of the war makes the inclusion of the chapter on "International Health" in this edition of particular interest to the public health worker. Many of the references were obtained from the *Epidemiological Information Bulletin*, correspondents of the American Medical Association, and representatives of such agencies as United Nations Relief and Rehabilitation Administration, and the majority are concerned with reports on the prevalence of epidemic diseases.

The book has a complete bibliography for the abstracts included and both an author and a subject index. A more complete system of indexing subjects would be helpful for quick reference. The classification of the chapter headings is broad and there is considerable overlapping of the problems as the author recognizes when he says, "A discussion of the problems of health which have social significance is not confined to this chapter for it is apparent that in a society as closely integrated as that of the world today there can be little or no personal illness that does not influence in one manner or another the health of other individuals" (p. 19). One should be justified then in expecting the index to serve as a guide for locating a particular subject in any part of the book. But that is not always possible. For example, one of the chapter titles is "Nutrition and Health." There appears in the chapter "School Health" an abstract of a report on a nutrition survey in the Florida schools, yet the subject "Nutrition" is not listed in the index.

Despite this shortcoming which is common to many books, the *HEALTH INSTRUCTION YEARBOOK* will prove a timely and convenient reference book for the shelf of the health worker who desires to keep abreast of his subject when new material in the field of medicine and public health is being presented in ever increasing numbers in journals and periodicals today.

KATHARINE BERRY