Characteristics of the Population

GENERAL

The major portion of the information on the population of this State, compiled from the Censuses of Population and Housing of 1950, is presented in this volume. It contains three chapters previously published as separate bulletins. Chapter A recapitulates the statistics on the distribution of the total population within the State (originally published in the Series P–A bulletin and in Volume I); Chapter B presents statistics on the general characteristics of the population of the various political subdivisions of the State, such as counties and cities, as well as of standard metropolitan areas and urbanized areas (originally published in the Series P–B bulletin); and Chapter C presents data on the detailed characteristics of the population of the larger areas within the State (originally published in the Series P–C bulletin).

The major part of this volume is devoted to the presentation of information on the characteristics of the population. Statistics on the general characteristics contained in Chapter B include data on urban-rural residence, age, sex, race, nativity, citizenship, country of birth, school enrollment, years of school completed, marital status, residence in 1949, employment status, occupation, industry, class of worker, and family income. In Chapter C, information on most of these characteristics is presented again but in greater detail. The statistics in Chapter C include cross-classifications of age with race, nativity, citizenship, marital status, relationship to household head, education, and employment status; the occupational and industrial attachments of the labor force; and personal income. The general content of the tables in Chapter B and Chapter C is indicated in the charts on pp. viii and ix.

Additional reports are also planned on such subjects as mobility of the population, characteristics of families and households, nativity and parentage, institutional population, characteristics of the nonwhite population by race, and characteristics of the labor force. These special reports will relate mainly to the United States and regions. In some cases, a few tables for States and other large areas will also be included.

Statistics on the number of inhabitants as shown in Chapter A in this volume are all based on complete counts of the population. Similarly, the statistics on the general characteristics of the population presented in Chapter B are based on complete counts except in the case of those characteristics, such as school enrollment and income, that were reported for only 20 percent of the population. For Chapter C, only the tabulations relating to occupation and industry are based on complete counts; all the other tabulations are confined to the 20-percent sample. Because of sampling variability, differences may be expected between figures obtained from a complete count and the corresponding figures based on the 20-percent sample. Furthermore, differences between figures for corresponding items in different tables may arise because they were prepared from separate tabulations. The resources available did not permit a full adjustment of small processing differences, whereas in earlier censuses such adjustments were made.

In the Series P–A, P–B, and P–C bulletins, the tables were numbered in such a way as to provide a continuous series when bound together in this volume. Thus, tables 1 to 9 present data on the number of inhabitants for this State, tables 10 to 50 present the data on general characteristics of the population, and tables 51 to 94 present the data on detailed characteristics.

PUBLISHED DATA FOR NONWHITE POPULATION

In Chapter B, there are a number of tables for the South in which additional information on the characteristics of the nonwhite population is presented. These tables—28a, 30a, 32a, 37a, 45a, 48a, and 49a—present statistics on occupation, industry, income, and other subjects for the State and areas within the State. Most of the foreign-born white population is to be found outside the South. Tables 34a and 42a present statistics on country of birth of the foreign-born white in the North and West. These basic differences between the South and other regions are also recognized in tables 36, 38, 44, and 50 in which the content for Southern States is somewhat different from the content for the Northern and Western States.

In Chapter C, statistics for the nonwhite population are presented for all areas with a relatively large nonwhite population, regardless of the region in which they are located. Statistics on marital status, relationship to head of household, education, employment status, and occupation are presented by age for the nonwhite population for those States, standard metropolitan areas, and cities that had 50,000 or more nonwhite inhabitants in 1950. For Southern States, separate data on nonwhite persons are also presented for those urban, rural-nonfarm, and rural-farm parts of the State having 50,000 or more nonwhite inhabitants. (In most of the Northern and Western States, relatively few nonwhite persons live in rural areas.)

Selected statistics are also presented in Chapter C for the population classified by race (white, Negro, and other races) for all States and for standard metropolitan areas, and, in some cases, cities with a total population of 100,000 or more. These data include separate distributions by age, occupation, industry, and income.

AVAILABILITY OF UNPUBLISHED DATA

For urban places smaller than 10,000 inhabitants, and for the urban and rural parts of counties, only part of the tabulated data are published in Chapter B. A complete listing of tabulated, but unpublished, statistics for these areas is contained in the publication, U. S. Bureau of the Census, *U. S. Censuses of Population and Housing: 1950, Key to Published and Tabulated Data for Small Areas*, Washington, D. C., 1951.[1]

Some of the detailed statistics tabulated for large areas in connection with the preparation of Chapter C are not being published; for example, separate data for each standard metropolitan area and city of 100,000 or more, and certain statistics for the nonwhite population. A complete description of these unpublished data can be obtained upon request.

The tabulated, but unpublished, statistics can be made available upon request, for the cost of transcription or consolidation. If enumeration district data are desired, copies of maps showing enumeration district boundaries can also be furnished, usually at nominal cost. Requests for such unpublished material should be addressed to the Director, Bureau of the Census, Washington 25, D. C.

[1] Address purchase orders to the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 30 cents.

POPULATION TRENDS

The State.—Colorado was organized as a Territory in 1861 from parts of Kansas, Nebraska, New Mexico, and Utah Territories. In 1876, without change in boundaries, and with boundaries as at present, it was admitted to the Union as the thirty-eighth State. Its population on April 1, 1950, according to the Seventeenth Census, was 1,325,089. The State has a land area of 103,922 square miles. In 1950 there was an average of 12.8 inhabitants per square mile as compared with an average of 10.8 in 1940. Among the States, Colorado ranked thirty-fourth in population and seventh in land area.

In 1860 the area which a year later was organized as Colorado Territory had a population of 34,277 (table 1). In 1950, 90 years later, the population of the State was nearly 39 times as large. Between 1870 and 1890, Colorado experienced a very rapid growth; and in all the succeeding decades except the decade 1920 to 1930 the State gained at a rate in excess of that for the Nation as a whole. The gain of 201,793 between 1940 and 1950 is the largest intercensal numerical increase since that for the decade 1900 to 1910.

Urban and rural population.—The 1950 urban population of Colorado comprised 831,318 persons, or 62.7 percent of the population of the State (table 1). The urban population was living in the 40 urban places in the State and in other territory included in the urban-fringe areas of the Denver and Pueblo Urbanized Areas. More than two-thirds of the urban population of the State was living in urbanized areas (table 2).

The rural population of Colorado comprised 493,771 persons, or 37.3 percent of the population of the State (table 1). Of the rural population, 70,693 persons, or 14.3 percent, were living in 39 incorporated and 7 unincorporated places of 1,000 to 2,500 inhabitants (table 2).

Urban population according to new and old definitions.—According to the new urban-rural definition, the 1950 urban population of Colorado consisted of the following: (*1*) The 759,939 inhabitants of the 36 incorporated places of 2,500 or more; (*2*) the 13,108 inhabitants of the 4 specially delineated unincorporated places of 2,500 or more; and (*3*) the 58,271 persons living outside incorporated places of 2,500 inhabitants or more in the urban-fringe areas of Denver and Pueblo. Since there were no areas urban under special rule in Colorado according to the old definition, the population of the first element comprised the urban population under the old definition. The population of the remaining elements—71,379—represents the gain in the urban population which resulted from the change in definition. (See section below on "Urban and rural residence.")

Trends of urban and rural population.—Trends in the urban and rural population can be examined only on the basis of the old definition. On this basis, the urban population of Colorado nearly tripled between 1900 and 1950, rising from 260,651 to 759,939 (table 1). The largest numerical increase over the 50-year period came between 1940 and 1950, when the urban population increased by 169,183, or 28.6 percent. The most rapid rate of growth took place between 1900 and 1910. The proportion of the population of Colorado living in urban territory increased from 48.3 percent in 1900 to 57.4 percent in 1950.

There was a steady increase in the rural population of Colorado from 279,049 in 1900 to 565,150 in 1950 (table 1). The rate of growth over the 50-year period ranged from 3.2 percent for the decade 1930 to 1940 to 42.2 percent for the decade 1900 to 1910. The largest numerical gain was also between 1900 and 1910. The proportion of the population of Colorado living in rural territory declined from 51.7 to 42.6 percent between 1900 and 1950.

Counties.—The counties in Colorado ranged in size from Hinsdale with a population of 263 to Denver with a population of 415,786. Between 1940 and 1950, 30 of the 63 counties in Colorado gained in population. Twelve of the 33 counties which lost population were among the 24 which also had had declines in the previous decade. Almost half of the population gain for the State between 1940 and 1950 was accounted for by Denver County.

Minor civil divisions.—To the primary political divisions into which counties are divided, the Bureau of the Census applies the general term "minor civil divisions." The minor civil divisions in Colorado are election precincts and some of the cities. In addition, Denver is in a class by itself, being incorporated as the "City and County of Denver." The cities (other than Brighton, Boulder, Longmont, Fort Collins, Greeley, and Denver, which are independent of election precincts) and the towns form subdivisions of the minor civil divisions in which they are located.

Table 6 shows statistics on the population of each county by minor civil divisions for the last three censuses. The population of each incorporated place (other than Brighton, Boulder, Longmont, Fort Collins, Greeley, and Denver, which are independent of election precincts) and unincorporated place is shown in *italics* under the population of the minor civil division in which it is located. When an incorporated or unincorporated place lies in two or more minor civil divisions, the population of the several parts is shown in table 6 in the appropriate counties and minor civil divisions, and each part is designated by "part." Figures on the total population of such places are given in table 7. Unincorporated places are designated by "uninc." Changes between the 1940 Census and 1950 Census in the boundaries of the areas listed are shown in notes to table 6. For changes in boundaries prior to the 1940 Census, see reports of the Sixteenth Census (1940), *Population*, Vol. I, pp. 162–169, and reports of earlier censuses.

Incorporated and unincorporated places.—In 1950 Colorado had 252 places incorporated as cities or towns and 11 unincorporated places of 1,000 inhabitants or more. There were 891,389 persons living in the incorporated places, 131,450 of whom were in the 216 places with fewer than 2,500 inhabitants. Of the 21,843 inhabitants of the unincorporated places, 8,735 were in the seven places of 1,000 to 2,500 inhabitants.

Urbanized areas.—There were two urbanized areas within Colorado, the Denver and Pueblo Urbanized Areas, with 498,743 and 73,247 inhabitants, respectively. Of the 571,990 persons in the State living in urbanized areas, 479,471 were in the two central cities, Denver and Pueblo, and 92,519 were in the urban-fringe areas. The urban-fringe areas included a population of 41,855 in two cities and nine towns and 50,664 in the unincorporated parts (tables 2 and 9).

DEFINITIONS AND EXPLANATIONS

The definitions of the pertinent concepts used in the 1950 Census are given below. Several of these definitions differ from those used in 1940. The changes were made after consultation with users of census data in order to improve the statistics, even though it was recognized that comparability would be adversely affected. In many cases, the new definitions were tested in connection with the Current Population Survey; and, where feasible, measures of the impact of the change on the statistics were developed. This survey, covering a sample of 25,000 households throughout the country, has been in operation since April 1940 and has provided national estimates of the employment status of the population (*Current Population Reports*, Series P–57, "The Monthly Report on the Labor Force"). The distribution of employed workers by major occupation group is included each

quarter in this series; and statistics on other subjects, such as marital status, school enrollment, migration, and income, are collected in the Current Population Survey and published annually in other series of Current Population Reports.

USUAL PLACE OF RESIDENCE

In accordance with Census practice dating back to 1790, each person enumerated in the 1950 Census was counted as an inhabitant of his usual place of residence or usual place of abode, that is, the place where he lives and sleeps most of the time. This place is not necessarily the same as his legal residence, voting residence, or domicile, although, in the vast majority of cases, the use of these different bases of classification would produce identical results.

In the application of this rule, persons were not always counted as residents of the places in which they happened to be found by the census enumerators. Persons in continental United States and Hawaii in places where guests usually pay for quarters (hotels, etc.) were enumerated there on the night of April 11, and those whose usual place of residence was elsewhere were allocated to their homes. Visitors found staying in private homes, however, were not ordinarily interviewed there. In addition, information on persons away from their usual place of residence was obtained from other members of their families, landladies, etc. If an entire family was expected to be away during the whole period of the enumeration, information on it was obtained from neighbors. A matching process was used to eliminate duplicate reports for persons who reported for themselves while away and were also reported by their families at home.

Persons in the armed forces quartered on military installations were enumerated as residents of the States, counties, and minor civil divisions in which their installations were located. Members of their families were enumerated where they actually resided. In the 1950 Census, college students living away from home were considered residents of the communities in which they were residing while attending college, whereas in 1940, as in most previous censuses, they were generally enumerated at their parental homes. This change affects the comparability of the 1950 and 1940 figures on education of persons of college age in States and local areas. Comparability of the statistics on other subjects may also be affected for areas containing large colleges or universities.

In 1950 the crews of vessels of the American Merchant Marine in harbors of the United States were counted as part of the population of the ports in which their vessels were berthed on April 1, 1950. In 1940 such persons were treated as part of the population of the port from which the vessel operated. Inmates of institutions, who ordinarily lived there for long periods of time, were counted as inhabitants of the place in which the institution was located; whereas patients in general hospitals, who ordinarily have short stays, were counted at, or allocated to, their homes. All persons without a usual place of residence were counted where they were enumerated.

COMPLETENESS OF ENUMERATION

The degree of completeness of enumeration has always been a matter of deep concern to the Bureau of the Census; and, in the course of its history, a number of devices have been developed to aid in securing adequate coverage. These devices include the special procedures for the enumeration of transients and infants, urging notifications from persons who believed that they may not have been enumerated, and the early announcement of population counts in local areas to make possible the thorough investigation of complaints as to the accuracy of the count. In the 1950 Census earlier procedures were strengthened and additional procedures were introduced. Adequate handling of the problem of underenumeration involves not only the development of techniques in order to insure satisfactory coverage but also methods of measuring the completeness of coverage.

Prior to 1950, no method had been devised to give an over-all direct measure of the completeness of enumeration of the total population. For the most part, discussion in census reports was confined to qualitative statements based on various kinds of evidence. Some quantitative measures were developed, however. For example, the underenumeration of children under 5 had been estimated for recent censuses by comparisons of census counts with survivors of births in the preceding five years. Such comparisons indicate that the total understatement in the published figure for this age group was about 810,000 in the 1950 Census, according to a provisional estimate, and about 860,000 in the 1940 Census; the corresponding percentages were 4.8 and 7.6, respectively.

In the 1950 Census the population of all ages was re-enumerated on a sample basis in a carefully conducted post-enumeration survey, thus permitting a direct check on a case-by-case basis of the actual enumeration. The results of this survey indicate a net underenumeration in the census count of the total population of the United States of about 2,100,000, or 1.4 percent.

URBAN AND RURAL RESIDENCE

According to the new definition that was adopted for use in the 1950 Census, the urban population comprises all persons living in (*a*) places of 2,500 inhabitants or more incorporated as cities, boroughs, and villages, (*b*) incorporated towns of 2,500 inhabitants or more except in New England, New York, and Wisconsin, where "towns" are simply minor civil divisions of counties, (*c*) the densely settled urban fringe, including both incorporated and unincorporated areas, around cities of 50,000 or more, and (*d*) unincorporated places of 2,500 inhabitants or more outside any urban fringe. The remaining population is classified as rural. According to the old definition, the urban population was limited to all persons living in incorporated places of 2,500 inhabitants or more and in areas (usually minor civil divisions) classified as urban under special rules relating to population size and density.

In both definitions, the most important component of the urban territory is the group of incorporated places having 2,500 inhabitants or more. A definition of urban territory restricted to such places would exclude a number of equally large and densely settled places, merely because they were not incorporated places. Under the old definition, an effort was made to avoid some of the more obvious omissions by the inclusion of the places classified as urban under special rules. Even with these rules, however, many large and closely built-up places were excluded from the urban territory. To improve the situation in the 1950 Census, the Bureau of the Census set up, in advance of enumeration, boundaries for urban-fringe areas around cities of 50,000 or more and for unincorporated places outside urban fringes. All the population residing in urban-fringe areas and in unincorporated places of 2,500 or more is classified as urban according to the 1950 definition. (Of course, the incorporated places of 2,500 or more in these fringes are urban in their own right.) Consequently, the special rules of the old definition are no longer necessary. Although the Bureau of the Census has employed other definitions in the course of its history, the statistics on the population by urban and rural residence shown for years prior to 1940 are in substantial accordance with the 1940 definition. All 1950 statistics on urban-rural residence presented in this volume are in accordance with the new definition unless otherwise specified in a given table.

Basic characteristics for urban and rural areas classified according to the old urban-rural definition are presented for the State in tables 13 and 15 and for counties in table 50. The 1950 figures presented in table 15 on age by color for persons in the rural-farm and rural-nonfarm population under the old urban-rural definition are partly estimated, since the detailed age by color distribution was not tabulated for the farm and nonfarm parts of the areas that are urban under the new definition but were rural under the old definition.

URBANIZED AREAS

As indicated above, one of the components of urban territory under the new definition of urban-rural residence is the urban fringe. Areas of this type in combination with the cities which they surround have been defined in the 1950 Census as urbanized areas.

Each urbanized area contains at least one city with 50,000 inhabitants or more in 1940 or according to a special census taken since 1940. Each urbanized area also includes the surrounding closely settled incorporated places and unincorporated areas that comprise its urban fringe. The boundaries of these fringe areas were established to conform as nearly as possible to the actual boundaries of thickly settled territory, usually characterized by a closely spaced street pattern. The territory of an urbanized area may be classified into incorporated parts and unincorporated parts. (See urbanized area maps which follow table 9 in Chapter A.)

An urbanized area also may be divided into central city or cities and urban fringe as defined below.

Central cities.—Although an urbanized area may contain more than one city of 50,000 or more, not all cities of this size are necessarily central cities. The largest city of an area is always a central city. In addition, the second and third most populous cities in the area may qualify as central cities provided they have a population of at least one-third of that of the largest city in the area and a minimum of 25,000 inhabitants. The names of the individual urbanized areas indicate the central cities of the areas. The sole exception to this rule is found in the New York–Northeastern New Jersey Urbanized Area, the central cities of which are New York City, Jersey City, and Newark.

Urban fringe.—The urban fringe includes that part of the urbanized area which is outside the central city or cities. The following types of areas are embraced if they are contiguous to the central city or cities or if they are contiguous to any area already included in the urban fringe:

1. Incorporated places with 2,500 inhabitants or more in 1940 or at a subsequent special census conducted prior to 1950.

2. Incorporated places with fewer than 2,500 inhabitants containing an area with a concentration of 100 dwelling units or more with a density in this concentration of 500 units or more per square mile. This density represents approximately 2,000 persons per square mile and normally is the minimum found associated with a closely spaced street pattern.

3. Unincorporated territory with at least 500 dwelling units per square mile.

4. Territory devoted to commercial, industrial, transportational, recreational, and other purposes functionally related to the central city.

Also included are outlying noncontiguous areas with the required dwelling unit density located within 1½ miles of the main contiguous urbanized part, measured along the shortest connecting highway, and other outlying areas within one-half mile of such noncontiguous areas which meet the minimum residential density rule.

TYPES OF PLACES

The term "place" refers to a concentration of population regardless of legally prescribed limits, powers, or functions. Thus, some areas having the legal powers and functions characteristic of incorporated places are not recognized as places.

Incorporated places.—In a majority of instances, however, the legally prescribed limits of incorporated places serve to define concentrations of population. Of the 18,548 places recognized in the 1950 Census, 17,118 are incorporated as cities, towns, villages, or boroughs. In New England, New York, and Wisconsin, however, towns, although they may be incorporated, are minor civil divisions of counties and are not considered as places. Similarly, in the States in which townships possess powers and functions identical with those of villages, the township is not classified as a place. Although areas of this type are not recognized as places, their densely settled portions may be recognized as unincorporated places or as a part of an urban fringe.

Unincorporated places.—In addition to incorporated places, the 1950 Census recognizes 1,430 unincorporated places. These unincorporated places, which contain heavy concentrations of population, are recognized as places by virtue of their physical resemblance to incorporated places of similar size. To make this recognition possible, the Bureau of the Census has defined boundaries for all unincorporated places of 1,000 inhabitants or more which lie outside the urban fringes of cities of 50,000 inhabitants or more. Because local practice as to incorporation varies considerably from one part of the country to another, some States have very few if any such unincorporated places and others have a great many. Although there are also unincorporated places within the urban fringe, it was not feasible to establish boundaries for such places, and, therefore, they are not separately identified.

Urban places.—In the 1950 Census urban places comprise incorporated and unincorporated places of 2,500 inhabitants or more. Because incorporated places of fewer than 2,500 which lie in the urban fringe are not recognized as urban places and because unincorporated places of 2,500 or more are not identified in the urban fringe, the total population of urban places is somewhat less than the total urban population.

FARM POPULATION—RURAL AND URBAN

The farm population for 1950, as for 1940 and 1930, includes all persons living on farms without regard to occupation. In determining farm and nonfarm residence in the 1950 Census, however, certain special groups were classified otherwise than in earlier censuses. In 1950, persons living on what might have been considered farm land were classified as nonfarm if they paid cash rent for their homes and yards only. A few persons in institutions, summer camps, "motels," and tourist camps were classified as farm residents in 1940, whereas in 1950 all such persons were classified as nonfarm. For the United States as a whole, there is evidence from the Current Population Survey that the farm population in 1950 would have been about 9 percent larger had the 1940 procedure been used.

In most tables, data by farm residence are presented for the rural-farm population only, since virtually all of the farm population is located in rural areas. Only 1.2 percent of the farm population lived in urban areas in 1950. Figures on the urban-farm population are shown in tables 13, 34, 42, and 50.

RURAL-NONFARM POPULATION

The rural-nonfarm population includes all persons living outside urban areas who do not live on farms. In 1940 and earlier, persons living in the suburbs of cities constituted a large proportion of the rural-nonfarm population. The effect of the new urban-rural definition has been to change the classification of a considerable number of such persons to urban. The rural-nonfarm population is, therefore, somewhat more homogeneous than under the old definition. It still comprises, however, persons living in a variety of types of residences, such as isolated nonfarm homes in the open country, villages and hamlets of fewer than 2,500 inhabitants, and some of the fringe areas surrounding the smaller incorporated places.

STANDARD METROPOLITAN AREAS

Origin and Purpose

It has long been recognized that, for many types of social and economic analysis, it is necessary to consider as a unit the entire population in and around the city whose activities form an integrated social and economic system. Prior to the 1950 Census, areas of this type had been defined in somewhat different ways by various agencies. Leading examples were the metropolitan districts of the Census of Population, the industrial areas of the Census of Manufactures, and the labor market areas of the Bureau

of Employment Security. The usefulness of data published for any of these areas was limited by this lack of comparability.

Accordingly, the Bureau of the Census in cooperation with a number of other Federal agencies, under the leadership of the Bureau of the Budget, established the "standard metropolitan area" so that a wide variety of statistical data might be presented on a uniform basis. Since counties instead of minor civil divisions are used as the basic component of standard metropolitan areas except in the New England States, it was felt that many more kinds of statistics could be compiled for them than for metropolitan districts. These new areas supersede not only the metropolitan districts but also the industrial areas and certain other similar areas used by other Federal agencies.

Definitions

Except in New England, a standard metropolitan area is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more. In addition to the county, or counties, containing such a city, or cities, contiguous counties are included in a standard metropolitan area if according to certain criteria they are essentially metropolitan in character and socially and economically integrated with the central city. For a description of the standard metropolitan areas in this State, if any, see p. xxx.

Criteria of metropolitan character.—These criteria relate primarily to the character of the county as a place of work or as a home for concentrations of nonagricultural workers and their dependents. Specifically, these criteria are:

1. The county must (*a*) contain 10,000 nonagricultural workers, or (*b*) contain 10 percent of the nonagricultural workers working in the standard metropolitan area, or (*c*) have at least one-half of its population residing in minor civil divisions with a population density of 150 or more per square mile and contiguous to the central city.

2. Nonagricultural workers must constitute at least two-thirds of the total number of employed persons of the county.

Criteria of integration.—The criteria of integration relate primarily to the extent of economic and social communication between the outlying counties and the central county as indicated by such items as the following:

1. Fifteen percent or more of the workers residing in the contiguous county work in the county containing the largest city in the standard metropolitan area, or

2. Twenty-five percent or more of the persons working in the contiguous county reside in the county containing the largest city in the standard metropolitan area, or

3. The number of telephone calls per month to the county containing the largest city of the standard metropolitan area from the contiguous county is four or more times the number of subscribers in the contiguous county.

Areas in New England.—In New England, the city and town are administratively more important than the county, and data are compiled locally for such minor civil divisions. Here towns and cities were the units used in defining standard metropolitan areas, and some of the criteria set forth above could not be applied. In their place, a population density criterion of 150 or more persons per square mile, or 100 or more persons per square mile where strong integration was evident, has been used.

Central cities.—Although there may be several cities of 50,000 or more in a standard metropolitan area, not all are necessarily central cities. The largest city in a standard metropolitan area is the principal central city. Any other city of 25,000 or more within a standard metropolitan area having a population amounting to one-third or more of the population of the principal city is also a central city. However, no more than three cities have been defined as central cities of any standard metropolitan area. The name of every central city is included in the name of the area, with the exception that in the case of the New York–Northeastern New Jersey Standard Metropolitan Area, "Jersey City" and "Newark" are not part of the name. Data for standard metropolitan areas located in two or more States are presented in the report for the State containing the principal central city.

Difference Between Standard Metropolitan Areas and Metropolitan Districts

Since the metropolitan district was built up from minor civil divisions and since the standard metropolitan area is usually composed of whole counties, the standard metropolitan area ordinarily includes a larger territory than the corresponding metropolitan district. There are, however, cases in which parts of the metropolitan district, as defined in 1940, do not fall within any standard metropolitan area. It is also true that in a number of cases single metropolitan districts of 1940 have been split into two standard metropolitan areas. Many metropolitan districts would have been changed, of course, had they been brought up to date for 1950.

In general then, the two kinds of areas are not comparable. Since metropolitan districts were defined almost wholly in terms of density and standard metropolitan areas include whole counties selected on the basis of more complicated criteria, the population density of the standard metropolitan areas is considerably lower on the average and shows more variation from one area to another. Differences between the two types of areas are relatively small in New England, and would have been even less had the metropolitan districts been brought up to date.

Difference Between Standard Metropolitan Areas and Urbanized Areas

The standard metropolitan area can be characterized as the metropolitan community as distinguished from both the legal city and the physical city. Standard metropolitan areas are larger than urbanized areas and in most cases contain an entire urbanized area. However, in a few instances, the fact that the boundaries of standard metropolitan areas are determined by county lines, and those of urbanized areas by the pattern of urban growth, means that there are small segments of urbanized areas which lie outside standard metropolitan areas. In general then, urbanized areas represent the thickly settled urban core of the standard metropolitan areas, with the exceptions noted above. Because of discontinuities in land settlement, there are also some cases in which a single standard metropolitan area contains two urbanized areas. The lists of urbanized areas and of standard metropolitan areas also differ somewhat because the former had to be established for cities of 50,000 or more before 1950, whereas the latter were established for cities of 50,000 or more as determined in the 1950 Census.

QUALITY OF DATA FOR SMALL AREAS

Data for the smaller areas represent the work of only a few enumerators (often only one or two). The misinterpretation by an enumerator of the instructions for a particular item may, therefore, have an appreciable effect on the statistics for a very small community—e. g., places of less than 10,000 inhabitants and particularly places of less than 2,500 inhabitants—even though it would have a negligible effect upon the figures for a large area.

MEDIANS

Medians are presented in connection with the data on age, years of school completed, and income which appear in this volume. The median is the value which divides the distribution into two equal parts—one-half of the cases falling below this value and one-half of the cases exceeding this value. In the computation of medians, cases for which the information was not reported are omitted. The median income for families and unrelated individuals is based on the total number reporting, including those reporting no income. The median income for persons is based on the distribution of those reporting $1 or more.

RACE AND COLOR

Definitions

The concept of race as it has been used by the Bureau of the Census is derived from that which is commonly accepted by the general public as reflected in the action of legislative and judicial bodies of the country. It does not, therefore, reflect clear-cut definitions of biological stock, and several categories obviously refer to nationalities. Although it lacks scientific precision, it is doubtful whether efforts toward a more scientifically acceptable definition would be appreciably productive, given the conditions under which census enumerations are carried out. The information on race is ordinarily not based on a reply to questions asked by the enumerator but rather is obtained by observation. Enumerators were instructed to ask a question when they were in doubt. Experience has shown that reasonably adequate identification of the smaller "racial" groups is made in areas where they are relatively numerous but that representatives of such groups may be misclassified in areas where they are rare.

Color.—The term "color" refers to the division of population into two groups, white and nonwhite. The group designated as "nonwhite" consists of Negroes, Indians, Japanese, Chinese, and other nonwhite races. Persons of Mexican birth or ancestry who were not definitely Indian or of other nonwhite race were classified as white in 1950 and 1940. In the 1930 publications, Mexicans were included in the group "Other races," but the 1930 data published in this report have been revised to include Mexicans in the white population.

Negro.—In addition to full-blooded Negroes, this classification also includes persons of mixed white and Negro parentage and persons of mixed Indian and Negro parentage unless the Indian blood very definitely predominates or unless the individual is accepted in the community as an Indian.

American Indian.—In addition to full-blooded Indians, persons of mixed white and Indian blood are included in this category if they are enrolled on an Indian reservation or agency roll. Also included are persons of mixed Indian blood if the proportion of Indian blood is one-fourth or more, or if they are regarded as Indians within the community. Indians living in Indian Territory or on reservations were not included in the population until 1890.

Other races.—Separate statistics are given in this volume for Japanese and Chinese. The category "All other" includes Filipinos, Koreans, Asiatic Indians, etc.

Mixed Parentage

Persons of mixed parentage are classified according to the race of the nonwhite parent and mixtures of nonwhite races are generally classified according to the race of the father.

In 1950, for the first time, an attempt was made to identify persons of mixed white, Negro, and Indian ancestry living in certain communities in the eastern United States in a special category so they might be included in the categories "Other races" and "All other" rather than being classified white, Negro, or Indian. This identification was accomplished with varying degrees of success, however. These groups are not shown separately, but they are included in the "nonwhite" total. The communities in question are of long standing and are locally recognized by special names, such as "Siouian" or "Croatan," "Moor," and "Tunica." In previous censuses, there had been considerable variation in the classification of such persons by race.

AGE

Definitions

The age classification is based on the age of the person at his last birthday as of the date of enumeration, that is, the age of the person in completed years. The enumerator was instructed to obtain the age of each person as of the date of his visit rather than as of April 1, 1950.

Assignment of Unknown Ages

When the age of a person was not reported, it was estimated on the basis of other available information such as marital status, school attendance, employment status, age of other members of the family, and type of household. Age was estimated by this procedure in the 1950 Census for 0.19 percent of the population of the United States. This method of assigning unknown ages on the basis of related information was used for the first time in the 1940 Census when estimates of age were made for 0.16 percent of the population of the United States. In previous censuses, with the exception of 1880, persons of unknown age were shown in a separate category. The summary totals for "14 years and over" and "21 years and over" for earlier censuses presented in this volume include all persons of "unknown age" since there is evidence that most of the persons for whom age was not reported were in the age classes above these limits.

Errors in Age Statistics

A considerable body of evidence exists which indicates that age is misreported in several characteristic ways and that certain age groups are less completely enumerated than others in censuses. A comparison of age distributions from the 1950 Census with age distributions based on figures from the 1940 Census and brought up-to-date from official records of births, deaths, and migration, suggests that this generalization is also true for the 1950 Census. This comparison shows that, for the United States as a whole, there appears to be an underenumeration of children under 5 of approximately 4.8 percent as compared with about 7.6 percent in 1940. Males between the ages of 18 and 24 also appear to have been relatively underenumerated. Likewise, there appears to be a deficit of persons in the age range 55 to 64 years, which, however, is more than offset by an excess over the number expected in the age group 65 years old and over.

In addition to errors in the statistics for broad-age groups arising from underenumeration and the misstatement of age, there is a tendency to report age in multiples of 5. This tendency is apparent in statistics for single years of age in which the frequencies for single years ending in 0 and 5 are frequently greater than those for the two adjoining years. This type of misreporting presumably occurs in situations in which the respondent, in the absence of specific knowledge as to his exact age or the age of the person for whom he is reporting, gives an approximate figure. The returns also exaggerate the number of centenarians, particularly among nonwhite persons. In general, the degree of inaccuracy in reported ages is greater for adults than for children.

NATIVITY

In this volume, the population is classified according to place of birth into two basic groups, native and foreign born. A person born in the United States or any of its Territories or possessions is counted as native. Also included as native is the small group of persons who, although born in a foreign country or at sea, were American citizens by birth because their parents were American citizens. Since the Republic of the Philippines was established as an independent country in 1946, persons living in the United States who had been born in the Philippine Islands were classified as foreign born in the 1950 Census whereas in earlier censuses they had been classified as native. The small number of persons for whom place of birth was not reported were assumed to be native.

Because of the declining numerical importance of the foreign-born population, nativity has not been used so extensively for cross-classifications in 1950 as in earlier censuses. Information on the nativity and parentage of the white population and country of origin of the foreign white stock will be published in a special report. The distribution of the separate nonwhite races by nativity and more detailed data on the foreign-born nonwhite population will be presented in a later publication.

CITIZENSHIP

The classification of the population by citizenship embraces two major categories, citizen and alien. Citizens are subdivided into native and naturalized. It is assumed that all natives are citizens of the United States. In addition to the citizen and alien categories, there is a third group, made up of foreign-born persons for whom no report on citizenship was obtained, designated "citizenship not reported." Since it is likely that most of these persons are aliens, they are often included with "alien" in summary figures for total aliens.

MARITAL STATUS AND MARRIED COUPLES

Definitions

Marital status.—In the 1950 Census, data on marital status are based on replies to the question "Is he now married, widowed, divorced, separated, or [has he] never [been] married?" The classification refers to the status at the time of enumeration. Persons classified as "married" comprise, therefore, both those who have been married only once and those who remarried after having been widowed or divorced. Persons reported as separated or in common-law marriages are classified as married. Those reported as never married or with annulled marriages are classified as single. Since it is probable that some divorced persons are reported as single, married, or widowed, the census returns doubtless understate somewhat the actual number of divorced persons who have not remarried.

In some tables, the category "Married" is further divided into "Married, spouse present" and "Married, spouse absent." In the office processing, this classification was made for a 20-percent sample of the data collected. A person is classified as "married, spouse present" if the person's husband or wife was reported as a member of the household or quasi household in which the person was enumerated, even though he or she may have been temporarily absent on business or vacation, visiting, in a hospital, etc., at the time of the enumeration. The number of married men with wife present who are classified as heads of households is the same as the number of wives of heads of households shown in the tables on relationship to head of household, except for differences arising from sampling variation or from methods used in processing the data. The number shown as not head of household is the same as the number of married couples without own household, except for differences arising from processing methods used.

Persons reported as separated are included in the group designated as "Married, spouse absent." Separated persons include those with legal separations, those living apart with intentions of obtaining a divorce, and other married persons permanently or temporarily estranged from their spouse because of marital discord. The group "Other married, spouse absent" includes married persons employed and living for several months at a considerable distance from their homes, those whose spouse was absent in the armed forces, in-migrants whose spouse remained in another area, husbands or wives of inmates of institutions, and all other married persons (except those reported as separated) whose place of residence was not the same as that of their spouse.

Differences between the number of married men and the number of married women arise from spouses having their usual residences in different areas, from differences in the completeness of enumeration of married men and women, and from response and processing errors.

Married couple.—A married couple is defined as a husband and his wife enumerated as members of the same household or quasi household. As indicated above, this classification was made for a 20-percent sample of the data collected. Married couples are classified as "with own household" if the husband is head of the household. Other married couples, classified as "without own household," may be living in households as relatives of the head or as lodgers or employees, or they may be living in quasi households, such as large rooming houses or hotels.

Comparability

The category "Separated" was included in the question on marital status for the first time in 1950. Previously, the question included the categories single, married, widowed, and divorced. This change may have made the number of persons reported as divorced somewhat smaller in 1950 than it would have been under the earlier procedure.

In 1950, as in previous censuses, marital status was not reported for a small number of persons. For such persons marital status was estimated in 1950 and 1940 on the basis of age and the presence of spouse or children. Because of the methods used in 1950, however, some persons who would have been classified as single under the 1940 procedure were classified as "married, spouse absent" or "widowed" in 1950.

To obtain the marital status distribution of the population 14 years old and over for 1890 to 1930 it has been necessary to assume that the small number of persons under 15 years old classified as married, widowed, divorced, or with marital status not reported were 14 years old.

HOUSEHOLD AND FAMILY

Definitions

Household.—A household includes all the persons who occupy a house, an apartment or other group of rooms, or a room, that constitutes a dwelling unit. In general, a group of rooms occupied as separate living quarters is a dwelling unit if it has separate cooking equipment or a separate entrance; a single room occupied as separate living quarters is a dwelling unit if it has separate cooking equipment or if it constitutes the only living quarters in the structure. A household includes the related family members and also the unrelated persons, if any, such as lodgers, foster children, wards, or employees who share the dwelling unit. A person living alone in a dwelling unit or a group of unrelated persons sharing the same dwelling unit as partners is also counted as a household. The count of households excludes groups of persons living as members of a quasi household (see below).

The average population per household is obtained by dividing the population in households by the number of households. It excludes persons living in quasi households.

Quasi household.—A quasi household is a group of persons living in quarters not classified as a dwelling unit, for example, in a house with at least five lodgers, or in a hotel, institution, labor camp, or military barracks.

Family.—A family, as defined in the 1950 Census, is a group of two or more persons related by blood, marriage, or adoption and living together; all such persons are regarded as members of one family. The number of families was determined from the number of persons classified as heads of families; this classification was made for a 20-percent sample of the data collected. A family may comprise persons in either a household or a quasi household. If the son of the head of the household and the son's wife are members of the household they are treated as part of the head's family. A lodger and his wife who are not related to the head of the household, or a resident employee and his wife living in, are considered as a separate family, however. Thus, a household may contain more than one family. A household head living alone or with nonrelatives only is not regarded as a family. Some households, therefore, do not contain a family.

The average population per family is obtained by dividing the population in families by the number of families. In Chapter B, the population in families includes, in addition to family members, the small number (about 145,000) of unrelated individuals under 14 years old who had not been tabulated separately at the time this report was prepared.

Unrelated individual.—Unrelated individuals are those persons (other than inmates of institutions) who are not living with any relatives. In the office processing, this classification was made for a 20-percent sample of the data collected. An unrelated individual may be (*a*) a household head living alone or with nonrelatives only, (*b*) a lodger or resident employee with no relatives in the household, or (*c*) a member of a quasi household who has no relatives living with him. Thus, a widow who occupies her house alone or with one or more persons not related to her, a roomer not related to anyone else in the dwelling unit, a maid living as a member of her employer's household but with no relatives in the household, and a resident staff member in a hospital living apart from any relatives are all examples of unrelated individuals.

Institutional population.—The institutional population includes those persons living as inmates in such places as homes for delinquent or dependent children, homes and schools for the mentally or physically handicapped, places providing specialized medical care, homes for the aged, prisons, and jails. Staff members and their families are not included in the institutional population. Inmates of institutions are not counted as "unrelated individuals," largely because statistics on "unrelated individuals" are more useful to consumers of data on labor force, income, and housing statistics if they exclude such inmates.

The number of inmates of institutions is shown in the tables in Chapter B. Inmates 14 years old and over are shown in certain employment status tables in Chapters B and C and in table 90 on income in Chapter C.

Family status.—In table 90, persons 14 years old and over are classified into the categories family head, wife, or other relative of family head, unrelated individual, and inmate of institution. This classification differs from that in tables 58 and 59 which pertains to relationship to household head (see below).

Comparability

Earlier census data.—Minor changes in the instructions for identifying dwelling units in 1950 as compared with 1940 may have affected to a slight extent the increase in households between the two dates. For example, in the 1940 Census, the occupants of a lodginghouse were regarded as constituting a quasi household if the place included 11 or more lodgers; in the 1950 Census the criterion was reduced to 5 or more lodgers. As a result of this change, the number of quasi households probably doubled in many areas. In general, however, the number of households and the number of occupied dwelling units in the 1950 Census may be regarded as comparable with the number of "families," "private households," and occupied dwelling units as shown in the census reports for 1930 and 1940.

In the 1950 Census, the number of households and the number of occupied dwelling units were identical by definition; small differences between these numbers appear in the published reports, however, because the data for the Population and the Housing reports were processed independently.

The term "family" as used in the 1950 Census is not comparable with that used by the Bureau of the Census before 1947. The new definition excludes the large number of household heads with no relatives in the household who would have been classified as families under the old definition. On the other hand, the new definition includes the small number of groups of mutually related lodgers or employees in households and of mutually related persons in quasi households who would not have been classified as families under the old definition. The net effect has been to reduce the number of families.

In certain Population and Housing reports of the 1940 Census, the average population per household included the relatively small number of persons living in quasi households. Such persons were excluded in calculating the average population per household shown in the present volume.

The coverage of the institutional population in the 1950 Census is somewhat more inclusive than that in the 1940 Census. For example, patients in tuberculosis sanataria were included in 1950 but not in 1940. Furthermore, the identification of certain other types of institutions, such as nursing, convalescent, and rest homes, was probably improved in 1950 by the use of lists of such places compiled from welfare agencies.

Current Population Survey.—Estimates of the number of households and of the number of families for the United States as a whole are published annually from the Current Population Survey. The estimates based on this survey for March 1950 were higher than the figures obtained from the census in April 1950. These differences may be attributed to such factors as sampling variability, methods used in weighting the sample figures, and differences between the interviewers with respect to training and experience.

RELATIONSHIP TO HEAD OF HOUSEHOLD

Definitions

Head of household.—One person in each household is designated as the "head." The number of heads, therefore, is equal to the number of households. The head is usually the person regarded as the head by the members of the household. Married women are not classified as heads if their husbands are living with them at the time of the census.

Wife.—The total number of females shown under the heading "wife" is ordinarily somewhat less than the total number of married women with husband present, since the category "Wife" in the relationship tables includes only wives of heads of households. As indicated in the section on "Marital status," the number of "wives" is directly comparable with data in the marital status tables on the number of married men with wife present who are heads of households. Either of these figures may be used to indicate the number of "husband-wife households."

Child.—This category includes sons and daughters, stepchildren, and adopted children of the head regardless of their age or marital status. It excludes sons-in-law and daughters-in-law and, of course, any children of the head no longer living in the household.

Grandchild.—This category comprises all persons living in the household who are sons, daughters, stepchildren, or adopted children of a child of the head.

Parent.—This class comprises both parents and parents-in-law of the head if living in the household.

Other relative.—This group includes such relatives of the head as sons-in-law, sisters-in-law, nephews, brothers, aunts, grandparents, cousins, and great-grandchildren, if these are members of the household.

Lodger.—All persons in households who are not related to the head, except resident employees and their families, are counted as lodgers. Among these persons are lodgers, roomers, and boarders, and their relatives residing in the same household. Also included are partners, foster children, and wards.

Resident employee.—This category consists of all employees of the head of the household who usually reside in the household with their employer (mainly cooks, maids, nurses, and hired farm hands), and their relatives residing in the same household. In 1940, relatives of resident employees living in the same household were shown as lodgers.

Head of quasi household.—Heads of quasi households are usually managers or officers in institutions, hotels, lodginghouses, and similar establishments. If the landlady in a rooming house reported herself as the head but her husband was a member of the quasi household, he was designated as head for consistency with the treatment of married heads and wives of heads of households. The number of heads of quasi households also represents the number of quasi households.

RESIDENCE IN 1949

Definitions

The data on residence in 1949 were derived from answers to several questions asked of a 20-percent sample of persons of all ages. The first question was, "Was he living in this same house a year ago?" Those persons who were not living in the same house were asked, "Was he living in this same county a year ago?" and if not, "What county and State was he living in a year ago?"

Residence in 1949 is the usual place of residence one year prior to the date of enumeration. As indicated by the categories of table 23, residence in 1949 was used in conjunction with residence in 1950 to determine the extent of mobility of the population. Persons who had changed residence from 1949 to 1950 were classified into two groups according to their 1949 residence, viz., "Different house, same county" and "Different county or abroad." Residence abroad includes residence in all foreign countries and all Territories and possessions of the United States. The group whose 1949 residence was "Same house as in 1950" includes all persons 1 year old and over who were living in the same house on the date of enumeration in 1950 as on the date one year prior to enumeration. Included in this group are persons who had never moved during the 12 months as well as persons who had moved but by 1950 had returned to their 1949 residence. Persons 1 year old and over for whom complete and consistent information regarding residence in 1949 was not collected, are included in the group "Residence not reported."

The number of persons who were living in different houses in 1950 and 1949 is somewhat less than the total number of moves during the year. Some persons in the same house at the two dates had moved during the year but by the time of enumeration had returned to their 1949 residence. Other persons made two or more progressive moves. Furthermore, persons in a different house in the same county may actually have moved between counties during the year but by 1950 had returned to the same county of residence as that in 1949.

Comparability

A similar set of questions on mobility was first asked in the 1940 Census. These questions, however, applied to residence five years earlier rather than one year earlier.

For the United States as a whole, figures from the Current Population Survey of March 1950 on residence in March 1949 and figures on this same subject from the 1950 Census as of April 1, 1950, indicate appreciable differences both in the proportion of persons who were living in a different house in 1949 and in 1950 and in the proportion of migrants, that is, persons who were living in a different county in 1949 and 1950. The figures from the Current Population Survey indicate a greater extent of total mobility (any change of usual residence) than those from the census but a relatively smaller extent of migration. These differences apparently arise from the somewhat different periods covered by the two sets of figures, the different methods used in collecting and processing the data, and sampling variability. Furthermore, members of the armed forces are largely excluded from the Current Population Survey.

COUNTRY OF BIRTH OF FOREIGN-BORN WHITE

Definitions

The statistics on this subject are based on the respondent's answer to the question, "What State (or foreign country) was he born in?" In case questions arose in the interview involving changes in international boundaries, the enumerator was instructed to decide on the basis of the international boundaries as of April 1, 1950. In coding and editing, the list of countries used was that officially accepted by the United States as of April 1, 1950.

In view of the numerous changes in boundaries which have occurred in Europe in the period of time during which statistics on country of birth have been collected by the Bureau of the Census, and the fact that many foreign-born persons at any given census are likely to report in terms of the boundaries at the time of their birth or emigration or in accordance with national preferences, there may have been considerable departure from the rule specified in the instructions.

Comparability

In 1940 the classification of the population by country of birth was based on the political boundaries of January 1, 1937. The corresponding 1930 data are based on the political boundaries of that year, which were, in most respects, identical with those of January 1, 1937.

For the censuses from 1860 to 1900, figures on country of birth are shown for the total foreign-born population. From 1910 to 1940, however, this item is presented for the foreign-born white only. Although the 1950 statistics on country of birth are presented only for the foreign-born white population in this report, subsequent reports will contain information on the country of birth of the nonwhite population.

SCHOOL ENROLLMENT

Definitions

The data on school enrollment were derived from answers to the question, "Has he attended school at any time since February 1?" This question was asked of a 20-percent sample of persons under 30 years of age.

"Regular" schools.—In the instructions to the enumerators, enrollment was defined as enrollment in "regular" schools only. Such schools are public, private, or parochial schools, colleges, universities, or professional schools, either day or night—that is, those schools where enrollment may lead to an elementary or high school diploma, or to a college, university, or professional school degree. Enrollment could be full time or part time.

If a person was enrolled in such a school subsequent to February 1, 1950, he was classified as enrolled even if he had not actually attended school since that date. For example, he may not have attended because of illness.

If a person was receiving regular instruction at home from a tutor and if the instruction was considered comparable to that of a regular school or college, the person was counted as enrolled. Enrollment in a correspondence course was counted only if the course was given by a regular school, such as a university, and the person received credit thereby in the regular school system.

Kindergarten.—Children enrolled in kindergarten were reported separately in 1950 and were not counted as enrolled in school. The statistics on kindergarten enrollment were tabulated only for children 5 and 6 years old. Nursery schools were not regarded as kindergartens or schools.

Schools excluded.—Persons enrolled in vocational, trade, or business schools were excluded from the enrollment figures unless such schools were graded and considered a part of a regular school system. Persons receiving on-the-job training in connection with their work were not counted as enrolled in school. Persons enrolled in correspondence courses other than those described above were not counted as enrolled in school.

Editing of 1950 Data

In 1950, as in prior censuses, persons for whom there was no report as to school enrollment are not shown separately. In both 1940 and 1950, the editing rules were determined largely on the basis of information on ages of compulsory attendance as compiled by the U. S. Office of Education. Additional information used included other items on the schedule and results of Current Population Surveys showing the enrollment rates for various age groups. In general, persons 5 through 17 years of age not reporting on school enrollment were treated as enrolled, whereas those 18 through 29 years old were considered not enrolled.

Comparability

Earlier census data.—The corresponding question in the Censuses of 1910, 1920, and 1930 applied to a somewhat longer period, the period since the preceding September 1. The census dates were April 15 in 1910, January 1 in 1920, and April 1 in 1930. Furthermore in these censuses the question was not restricted as to the kind of school the person was attending.

In 1940 the question referred to the period from March 1 to the date of the enumeration, which began on April 1. There are indications that in some areas the schools closed early (i. e., before March 1) for such reasons as lack of funds, flood conditions, or crop sowing. For such areas the enrollment rates would, therefore, have been relatively low. In order to insure more complete comparability among areas in 1950, it was therefore considered advisable to increase the reference period to that between February 1 and the time of the enumeration.

In 1950, for the first time in a decennial census, kindergarten enrollment was separately identified. In earlier censuses no specific instructions were given about kindergarten and, therefore, enrollment figures for children 5 and 6 years old undoubtedly included some children enrolled in kindergarten.

As mentioned in the section on "Usual place of residence," college students were enumerated in 1950 at their college residence whereas in previous years they were generally enumerated at their parental home. This change in procedure should not have affected the comparability of the 1950 and 1940 national totals on school enrollment, but it may affect the comparability of 1950 and 1940 figures on school enrollment at college age for some States and local areas.

Current Population Survey.—In each year starting with 1945, the Census Bureau has collected statistics on school enrollment for the United States as a supplement to the Current Population Survey for October. The basic definitions used in these supplements are the same as those of the 1950 Census. The figures are not strictly comparable, however, because the supplement is taken in October rather than in April and relates to enrollment in the current term. Although the April 1950 Census figures and the October 1949 survey figures on enrollment both pertain to the same school year, 1949–1950, the April 1950 figures may be properly compared with those for October 1949 only if some allowance is made (*a*) for those persons who left school between October 1949 and February 1950, either by dropping out or graduation; and (*b*) for those persons who entered school after October.

For younger children, particularly those 5 and 6 years old, a comparison of October and April enrollments is misleading. Many school systems operate under the policy of permitting children to start the first grade only if they have attained a certain age by the beginning of the school year. This requirement maximizes enrollments for these ages in the fall, whereas by April many children have attained the given age but are not yet enrolled.

Data from school systems.—Data on school enrollment are also collected and published by Federal, State, and local governmental agencies. These data are obtained from reports of school systems and institutions of higher learning and are only roughly comparable with the enrollment data collected by the Bureau of the Census by household interviews. The census enrollment figures tend to be lower, largely because they refer to shorter time periods and count a person only once, although he may attend more than one school during the reporting period.

YEAR OF SCHOOL IN WHICH ENROLLED AND YEARS OF SCHOOL COMPLETED

Definitions

The data on year of school in which enrolled were derived from the answers to the first of the following two questions, and those on years of school completed from the combination of answers to both questions: (*a*) "What is the highest grade of school that he has attended?" and (*b*) "Did he finish this grade?" These questions were asked of a 20-percent sample of persons of all ages.

The questions on educational attainment applied only to progress in "regular" schools, as defined in the section on "School enrollment."

Highest grade of school attended.—The question called for the highest grade attended, regardless of "skipped" or "repeated" grades, rather than the number of full school years which the person had spent in school.

In some areas in the United States, the school system has, or used to have, 7 years of elementary school rather than the more conventional 8 years. For the sake of comparability, persons who had progressed beyond a 7-year elementary school system were treated as though they had progressed beyond the usual 8-year system. Junior high school grades were translated into their elementary or high school equivalents.

In the case of persons whose highest grade of attendance was in a foreign school system, the enumerator was instructed to obtain the approximate equivalent grade in the American school system or, if that were too difficult to determine, the number of years the person had attended school. Persons whose highest level of attendance was in an ungraded school were treated in similar fashion. Persons whose highest level of training was by a tutor and whose training was regarded as qualifying under the "regular" school definition were also given the approximate equivalent in the regular school system.

Completion of highest grade.—The second question on educational attainment was to be answered "Yes" if the person had completed the full grade. If the person was still attending school in that grade, had completed only a half grade, or had dropped out of or failed to pass the last grade attended, the required answer was "No." In the case of persons who failed to report on completion of the grade, those classified as enrolled were assumed not to have finished and those not enrolled were assumed to have finished.

Comparability

Year of school in which enrolled and years of school completed.—In the present volume, the year of school in which enrolled is shown for enrolled persons 5 to 29 years old, and the years of school completed are shown for all persons 5 years old and over.

For 1950, statistics on educational attainment for persons enrolled in school are shown in terms of the school year in which they were enrolled, whereas in the 1940 reports statistics were shown in terms of the highest grade they had completed. The present procedure was adopted because it provides statistics in a form that should be generally more useful to those interested in school systems.

Generally, for persons enrolled in school the grade in which they were enrolled is one grade higher than the highest grade completed. Data from a preliminary sample of the 1950 Census, however, indicate that, by the time of the census enumeration, about 15 percent of the "enrolled" population 5 to 29 years old had completed the same grade in which they had been enrolled. This apparent contradiction occurs because the question on enrollment referred to "any time since February 1" whereas the completion question referred to the date of enumeration. Thus, highest grades of school completed for the enrolled population obtained by subtracting one grade from the grade in which enrolled must be considered only approximately correct.

The 1940 Census reports included data on highest grade of school completed for the population 5 to 24 years old not enrolled in school. As a result of the facts noted above, similar data for 1950 could only be approximated. Two steps would be involved: First, one grade should be deducted from the grade in which enrolled (as given in table 63) in order to approximate the highest grade completed for persons enrolled in school; second, the number of enrolled persons who have completed a given grade should be subtracted from the total number of persons who have completed the grade (as given in table 64).

Quality of 1940 and 1950 data.—In 1940 a single question was asked on highest grade of school completed. Previous censuses

had included one or more inquiries on illiteracy but none on educational attainment.

Analysis of the data from the 1940 Census and from surveys conducted by the Bureau of the Census using the 1940 type of question indicated that respondents frequently reported the year or grade in which they were enrolled, or had last been enrolled, instead of the one completed. The 1950 questions were designed to reduce this kind of error.

Data from a preliminary sample of the 1950 Census for persons of elementary and high school ages show larger proportions in 1950 than in 1940 in both the modal grade and the next lower grade for a particular age, and smaller proportions in each of the first two grades above the mode. It seems reasonable to assume that, as a result of the change in questionnaire design, there was also relatively less exaggeration in educational attainment in 1950 than in 1940, even for older persons.

Median School Years

Median educational attainment (i. e., either median year of school in which enrolled or median school years completed) is expressed in terms of a continuous series of numbers. For example, the fourth year of high school is indicated by 12 and the first year of college by 13. For the sake of comparability, the first year of high school is uniformly represented by 9, although, as previously noted, there are some areas with only 7 years of elementary school.

The procedure used in both 1950 and 1940 for calculating the median years of school completed makes allowance for the fact that many persons reported as having completed a given full school year have also completed part of the next higher grade. It is assumed, for example, that persons who reported six full years of school completed had actually completed 6.5 grades. At the time of enumeration, persons enrolled in school had probably completed somewhat more than one-half grade beyond their last full year, on the average, whereas persons who had left school had probably completed less than one-half year beyond their last full year, on the average. A similar procedure was followed in the computation of the median school year in which enrolled.

EMPLOYMENT STATUS

Definitions

Census week.—The 1950 data on employment status pertain to the calendar week preceding the enumerator's visit. This week, defined as the "census week," is not the same for all respondents, because not all persons were enumerated during the same week. The majority of the population was enumerated during the first half of April. The 1940 data refer to a fixed week for all persons, March 24 to 30, 1940, regardless of the date of enumeration.

Employed.—Employed persons comprise all civilians 14 years old and over who, during the census week, were either (*a*) "at work"—those who did any work for pay or profit, or worked without pay for 15 hours or more on a family farm or in a family business; or (*b*) "with a job but not at work"—those who did not work and were not looking for work but had a job or business from which they were temporarily absent because of vacation, illness, industrial dispute, bad weather, or layoff with definite instructions to return to work within 30 days of layoff. Also included as "with a job" are persons who had new jobs to which they were scheduled to report within 30 days.

Unemployed.—Persons 14 years old and over are classified as unemployed if they were not at work during the census week but were either looking for work or would have been looking for work except that (*a*) they were temporarily ill, (*b*) they expected to return to a job from which they had been laid off for an indefinite period, or (*c*) they believed no work was available in their community or in their line of work. Since no specific questions identifying persons in these last three groups were included on the census schedule, it is likely that some persons in these groups were not returned by the census enumerators as unemployed. Unemployed persons are separated in some tables into new workers and experienced workers. When information on the schedule was insufficient for this distinction to be made, the unemployed person was classified as an experienced worker, since the great majority of persons seeking work have had previous work experience.

Labor force.—The labor force includes all persons classified as employed or unemployed, as described above, and also members of the armed forces (persons on active duty with the United States Army, Air Force, Navy, Marine Corps, or Coast Guard). The "civilian labor force" comprises the employed and unemployed components of the labor force. The "experienced labor force" consists of the armed forces, employed workers, and the unemployed with previous work experience. The "experienced civilian labor force" comprises the two latter groups.

Not in labor force.—Persons not in the labor force comprise all civilians 14 years of age and over who are not classified as employed or unemployed, including persons doing only incidental unpaid family work (less than 15 hours during the census week). Persons not in the labor force are further classified in this report into the following categories:

1. *Keeping house.*—Persons primarily occupied with their own home housework.

2. *Unable to work.*—Persons who cannot work because of a long-term physical or mental illness or disability. There is some evidence, however, that some persons were reported as "unable to work" who were only temporarily ill or who, although elderly, were not permanently disabled.

3. *Inmates of institutions.*—Persons, other than staff members and their families, living in institutions. (See definition of institutional population on page xviii.) Staff members of institutions and their families are classified into employment status categories on the same basis as are persons living outside of institutions.

4. *Other and not reported.*—Persons in this general category include the following two groups which were combined for the purpose of this report:

a. Persons not in the labor force other than those keeping house, unable to work, or in institutions. This group includes students, the retired, those too old to work, the voluntarily idle, and seasonal workers for whom the census week fell in an "off" season and who were not reported as unemployed.

b. Persons for whom information on employment status was not reported. Although the number of persons classified as "not reported" was not tabulated separately for this report, it is estimated on the basis of preliminary data that the number in this group is approximately 1.2 million for the United States as a whole, or about 1 percent of the total United States population 14 years old and over. Analysis of the characteristics (sex, age, color, marital status, school enrollment, and urban-rural residence) of persons in this group suggests that approximately half a million might have been added to the labor force had the necessary information been obtained. There may be considerable variation from State to State, however, in the proportion of persons classified as "not reported" and, within this group, in the number who might have been labor force members. Persons included in the "Other and not reported" category are further classified by age in this volume in order to indicate the approximate number in this group who were probably students and the number who were probably retired or too old to work. It is estimated that, for the United States as a whole, approximately 90 percent of the persons in this category who were 14 to 19 years old were enrolled in school.

Basis for Classification

The employment status classification is based primarily on a series of interrelated "sorter" questions designed to identify, in this sequence: (*a*) Persons who worked at all during the census week; (*b*) those who did not work but were looking for work; and (*c*) those who neither worked nor looked for work but had a job or business from which they were temporarily absent. The four questions used for this purpose are described below:

1. *"What was this person doing most of last week—working, keeping house, or something else?"* This question was designed to classify persons according to their major activity and to identify the large number of full-time workers. Persons unable to work at all because of physical or mental disabilities were also identified here.

2. *"Did this person do any work at all last week, not counting work around the house?"* This question was asked of all persons

except those reported in the previous question as working or unable to work. It was designed to identify persons working part time or intermittently in addition to their major activity.

3. *"Was this person looking for work?"* Asked of persons replying in the previous question that they did not work at all, this question served to obtain a count of the unemployed.

4. *"Even though he didn't work last week, does he have a job or business?"* Persons temporarily absent from their job or business were identified by means of this question, which was asked of persons neither working nor looking for work.

Problems in Classification

Classification of the population by employment status is always subject to error. Some of the concepts are difficult to apply; but, more important for certain groups, the complete information needed is not always obtained. For example, housewives, students, and semiretired persons, who are in the labor force on only a part-time or intermittent basis, may fail to report that they are employed or looking for work unless carefully questioned. In many cases, enumerators may assume that such persons could not be in the labor force and will omit the necessary questions. As a result, the statistics will understate the size of the labor force and overstate the number of persons not in the labor force. See also paragraph below on "Current Population Survey."

Comparability

Statistics on gainful workers.—The data on the labor force for 1940 and 1950 are not exactly comparable with the statistics for gainful workers presented in this report for 1920 and 1930 because of differences in definition. "Gainful workers" were persons reported as having a gainful occupation, that is, an occupation in which they earned money or a money equivalent, or in which they assisted in the production of marketable goods, regardless of whether they were working or seeking work at the time of the census. A person was not considered to have had a gainful occupation if his work activity was of limited extent. In contrast, the labor force is defined on the basis of activity during the census week only and includes all persons who were employed, unemployed, or in the armed forces in that week. Certain classes of persons, such as retired workers, some inmates of institutions, recently incapacitated workers, and seasonal workers neither working nor seeking work at the time of the census, were frequently included among gainful workers; but, in general, such persons are not included in the labor force. On the other hand, the census included in the labor force for 1940 and 1950 persons seeking work without previous work experience, that is, new workers. At the time of the 1920 and 1930 Censuses such new workers were probably, for the most part, not reported as gainful workers.

In 1920, the census date was January 1, whereas in 1930, 1940 and 1950 it was April 1. For this additional reason, the number of gainful workers reported for 1920, especially in agricultural areas, may not be altogether comparable with the statistics for later years.

1940 Census.—During the period 1940 to 1950, various changes were developed in the questionnaires and in interviewing techniques, designed to obtain a more nearly complete count of the labor force.[2] Although the changes in questionnaire design were incorporated into the 1950 Census schedule and interviewing techniques were stressed in training, the quality of the 1950 statistics does not appear to have been much improved relative to that for 1940 by these measures.

The 1940 data for employed persons in this volume vary in some cases from the figures originally published in the 1940 reports. The appropriate 1940 figures for the employed shown in the present report have been adjusted to exclude the estimated number of men in the armed forces at that time. This was done to achieve comparability with the 1950 employed total which is limited to civilians.

[2] See U. S. Bureau of the Census, *Current Population Reports*, "Labor Force, Employment, and Unemployment in the United States, 1940 to 1946," Series P-50, No. 2, September 1947.

Statistics for persons on public emergency work in 1940 were originally published separately; but in this report they have been combined with those for persons seeking work in the figures on unemployed for 1940.

Current Population Survey.—The estimated size of the civilian labor force in the United States based on the Current Population Survey is about 5 percent above the corresponding figure from the 1950 Census. An investigation of the reason for the discrepancy is being conducted. Examination of the census returns for a sample of households that were also included in the Current Population Survey for April 1950 indicates that although differences of all kinds were found, on balance, the Current Population Survey enumerators, who are much more experienced than were the temporary census enumerators, reported more completely the employment or unemployment of teen-agers and of women 25 years old and over. This difference is reflected in higher labor force participation rates and unemployment rates for those groups and a more accurate reporting of persons employed in industries, such as agriculture, trade, and personal services, where part-time or occasional work is widely prevalent. These are the groups for whom variability in response is relatively great in labor force surveys. On the other hand, the differences were at a minimum for men and young women—the major components of the "full-time" labor force.

It may be estimated on the basis of this analysis that perhaps 3 percent of the total population 14 years old and over in April 1950 were actually in the labor force but were classified outside the labor force in the census returns. This percentage will vary from State to State and between one population group and another. For example, misclassification was somewhat greater for nonwhite than for white persons.

Other data.—Because the 1950 Census employment data were obtained by household interview, they differ from statistics based on reports from individual business establishments, farm enterprises, and certain government programs. The data based on household interviews provide information about the work status of the whole population, without duplication. Persons employed at more than one job are counted only once as employed and are classified according to the job at which they worked the greatest number of hours during the census week. In statistics based on reports from business and farm establishments, on the other hand, persons who work for more than one establishment may be counted more than once. Moreover, other data, unlike those presented here, generally exclude private household workers, unpaid family workers, and self-employed persons, and may include workers less than 14 years of age. An additional difference arises from the fact that persons with a job but not at work are included with the employed in the statistics shown here, whereas only part of this group is likely to be included in employment figures based on establishment payroll reports. Furthermore, the household reports include persons on the basis of their place of residence regardless of where they work, whereas establishment reports relate persons to their place of work regardless of where they live; the two types of data may not be comparable for areas where a significant number of workers commute to or from other areas.

For a number of reasons, the unemployment figures of the Bureau of the Census are not directly comparable with the published figures for unemployment compensation claims or claims for veterans' readjustment allowances. Certain persons such as private household and government workers are generally not eligible for unemployment compensation. Further, the place where claims are filed may not necessarily be the same as the place of residence of the unemployed worker. In addition, the qualifications for drawing unemployment compensation differ from the definition of unemployment used by the Census Bureau. For example, persons working only a few hours during the week and persons with a job but not at work are sometimes eligible for unemployment compensation but are classified by the Census Bureau as employed.

HOURS WORKED DURING CENSUS WEEK

The data on hours worked were derived from answers to the question "How many hours did he work last week?" asked of persons who reported they had worked during the week prior to their enumeration. The statistics refer to the number of hours actually worked during the census week and not necessarily to the number usually worked or the scheduled number of hours. For persons working at more than one job, the figures relate to the combined number of hours worked at all jobs during the week. The data on hours worked presented in Chapter C provide a broad classification of young employed persons into full-time and part-time workers. The proportion of persons who worked only a small number of hours is probably understated because such persons were omitted from the labor force count more frequently than were full-time workers.

WEEKS WORKED IN 1949

Definitions

The statistics on weeks worked are based on replies to the question, "Last year, in how many weeks did this person do any work at all, not counting work around the house?" This question was asked of a 20-percent sample of persons 14 years old and over. The data pertain to the number of different weeks during 1949 in which a person did any work for pay or profit (including paid vacations and sick leave) or worked without pay on a family farm or in a family business. Weeks of active service in the armed forces are also included. It is probable that the number of persons who worked in 1949 is understated, because there is some tendency for respondents to forget intermittent or short periods of employment.

Comparability

In 1950, no distinction was made between a part-time and a full-time workweek, whereas in 1940 the enumerator was instructed to convert part-time work to equivalent full-time weeks. A full-time week was defined as the number of hours locally regarded as full time for the given occupation and industry. Further differences are that, in the 1940 reports, the data were shown for wage and salary workers only and were published in terms of months rather than weeks.

OCCUPATION, INDUSTRY, AND CLASS OF WORKER

In the 1950 Census of Population, information on occupation, industry, and class of worker was collected for persons in the experienced civilian labor force. All three items related to one specific job held by the person. For an employed person, the information referred to the job he held during the census week. If he was employed at two or more jobs, the job at which he worked the greatest number of hours during the census week was reported. For an experienced unemployed person, the information referred to the last job he had held.

The classification systems used for the occupation and industry data in the 1950 Census of Population are described below. These systems were developed in consultation with many individuals, private organizations, and government agencies, and, in particular, the Joint Committee on Occupational Classification (sponsored by the American Statistical Association and the United States Bureau of the Budget).

Occupation

The occupation information presented here was derived from answers to the question, "What kind of work was he doing?"

Classification system.—The occupational classification system developed for the 1950 Census of Population is organized into 12 major groups, which form the basis for the occupation data in Chapter B of this volume. The system consists of 469 items, 270 of which are specific occupation categories; the remainder are subgroupings (mainly on the basis of industry) of 13 of the occupation categories. For the detailed occupation tables in Chapter C, certain of the categories were combined, and the detailed occupation list used here consists of 446 items (tables 73 and 74). The composition of each of the detailed categories is shown in the publication, U. S. Bureau of the Census, *1950 Census of Population, Classified Index of Occupations and Industries*, Washington, D. C., 1950.

In the presentation of occupation data for cities of 50,000 to 100,000 in Chapter C, as well as in the cross-classifications of occupation by urban-rural residence, age, race, class of worker, and income, intermediate occupational classifications of 158 items for males and 67 items for females have been used (tables 75 to 78). These intermediate classifications represent selections and combinations of the items in the detailed system. A listing of the relationships between the two levels of classification can be obtained by writing to the Director, Bureau of the Census, Washington 25, D. C. This listing will also appear in the United States summary part of Volume II.

In the separation of "Managers, officials, and proprietors (n.e.c.)" by class of worker into salaried and self-employed components, the small number of unpaid family workers in this occupation is included in the self-employed component. Since the data presented in the occupation tables refer only to civilians, the category "Members of the armed forces" shown in table 73 is limited to experienced unemployed persons whose last job was as a member of the armed forces.

Relation to DOT classification.—The occupational classification of the Population Census is generally comparable with the system used in the *Dictionary of Occupational Titles* (DOT).[3] The two systems, however, are designed to meet different needs and to be used under different circumstances. The DOT system is designed primarily for employment service needs, such as placement and counseling, and is ordinarily used to classify very detailed occupational information obtained in an interview with the worker himself. The census system, on the other hand, is designed for statistical purposes and is ordinarily used in the classification of limited occupational descriptions obtained in an interview with a member of the worker's family. As a result, the DOT system is much more detailed than the census system; and it also calls for many types of distinctions which cannot be made from census information.

Industry

The industry information presented here was derived from answers to the question, "What kind of business or industry was he working in?"

Classification system.—The industrial classification system developed for the 1950 Census of Population consists of 148 categories, organized into 13 major groups. For the detailed industry tables in Chapter C of this volume, a few of the categories were combined, and the detailed industry list used here consists of 146 categories (tables 79 and 80). The composition of each of the detailed categories is shown in the publication, U. S. Bureau of the Census, *1950 Census of Population, Classified Index of Occupations and Industries*, Washington, D. C., 1950.

Although certain of the industry data in Chapter B are limited to the 13 major groups, most of the industry data in Chapter B are based on a condensed classification of 41 groups. Furthermore, in Chapter C, an intermediate classification of 77 categories has been used in the presentation of industry data for cities of 50,000 to 100,000, as well as in the cross-classifications of industry by age, race, class of worker, major occupation group, weeks worked, and income (tables 81 to 86). Both the 41-item and 77-item classifications represent selections and combinations of the categories in the detailed system. The relationships among these three levels of classification are shown in list A.

[3] See U. S. Department of Labor, Bureau of Employment Security, *Dictionary of Occupational Titles*, Second Edition, Vols. I and II, Washington, D. C., 1949.

List A.—RELATIONSHIPS AMONG CONDENSED, INTERMEDIATE, AND DETAILED INDUSTRIAL CLASSIFICATION SYSTEMS USED IN THE 1950 CENSUS OF POPULATION

[Figures in parentheses in third column are code designations in the Standard Industrial Classification; see text for explanation]

Condensed classification—41 items	Intermediate classification—77 items	Detailed classification—148 items
Agriculture	Agriculture	Agriculture (01, 07 exc. 0713).
Forestry and fisheries	Forestry and fisheries	Forestry (08). Fisheries (09).
Mining	Coal mining	Coal mining (11, 12).
	Crude petroleum and natural gas extraction	Crude petroleum and natural gas extraction (13).
	Mining and quarrying, except fuel	Metal mining (10). Nonmetallic mining and quarrying, except fuel (14).
Construction	Construction	Construction (15–17).
Furniture, and lumber and wood products	Logging	Logging (241).
	Sawmills, planing mills, and mill work	Sawmills, planing mills, and mill work (242, 243).
	Miscellaneous wood products	Miscellaneous wood products (244, 249).
	Furniture and fixtures	Furniture and fixtures (25).
Primary metal industries	Primary iron and steel industries	Blast furnaces, steel works, and rolling mills (331). Other primary iron and steel industries (332, 339[1]).
	Primary nonferrous industries	Primary nonferrous industries (333–336, 3392[1], 3399[1]).
Fabricated metal industries (incl. not specified metal)	Fabricated metal industries (incl. not specified metal)	Fabricated steel products (19 exc. 194, 341–343, 344 exc. 3444, 346[2], 348[2], 3491–3495). Fabricated nonferrous metal products (3444, 3463[2], 347, 3489[2], 3496, 3497, 3499). Not specified metal industries.[3]
Machinery, except electrical	Machinery, except electrical	Agricultural machinery and tractors (352). Office and store machines and devices (357). Miscellaneous machinery (351, 353–356, 358, 359).
Electrical machinery, equipment, and supplies	Electrical machinery, equipment, and supplies	Electrical machinery, equipment, and supplies (36).
Motor vehicles and motor vehicle equipment	Motor vehicles and motor vehicle equipment	Motor vehicles and motor vehicle equipment (371).
Transportation equipment, exc. motor vehicle	Aircraft and parts	Aircraft and parts (372).
	Ship and boat building and repairing	Ship and boat building and repairing (373).
	Railroad and miscellaneous transportation equipment	Railroad and miscellaneous transportation equipment (374, 375, 379).
Other durable goods	Glass and glass products	Glass and glass products (321–323).
	Stone and clay products	Cement, and concrete, gypsum, and plaster products (324, 327). Structural clay products (325). Pottery and related products (326). Miscellaneous nonmetallic mineral and stone products (328, 329).
	All other durable goods	Professional equipment and supplies (194, 381–385). Photographic equipment and supplies (386). Watches, clocks, and clockwork-operated devices (387). Miscellaneous manufacturing industries (39).
Food and kindred products	Meat products	Meat products (201).
	Bakery products	Bakery products (205).
	Other food industries	Dairy products (202). Canning and preserving fruits, vegetables, and sea foods (203). Grain-mill products (0713, 204). Confectionery and related products (207). Beverage industries (208). Miscellaneous food preparations and kindred products (206, 209). Not specified food industries.[3]
Textile mill products	Knitting mills	Knitting mills (225).
	Yarn, thread, and fabric mills	Yarn, thread, and fabric mills (221–224).
	Other textile mill products	Dyeing and finishing textiles, except knit goods (226). Carpets, rugs, and other floor coverings (227). Miscellaneous textile mill products (228, 229).
Apparel and other fabricated textile products	Apparel and other fabricated textile products	Apparel and accessories (23 exc. 239). Miscellaneous fabricated textile products (239).
Printing, publishing, and allied industries	Printing, publishing, and allied industries	Printing, publishing, and allied industries (27).
Chemicals and allied products	Chemicals and allied products	Synthetic fibers (2825). Drugs and medicines (283). Paints, varnishes, and related products (285). Miscellaneous chemicals and allied products (281, 282 exc. 2825, 284, 286–289).
Other nondurable goods	Tobacco manufactures	Tobacco manufactures (21).
	Paper and allied products	Pulp, paper, and paperboard mills (261). Paperboard containers and boxes (267). Miscellaneous paper and pulp products (264–266, 269).
	Petroleum and coal products	Petroleum refining (291). Miscellaneous petroleum and coal products (29 exc. 291).
	Rubber products	Rubber products (30).
	Footwear, except rubber	Footwear, except rubber (313, 314).
	Leather and leather products, except footwear	Leather: tanned, curried, and finished (311). Leather products, except footwear (312, 315–317, 319).
Not specified manufacturing industries	Not specified manufacturing industries	Not specified manufacturing industries.[3]
Railroads and railway express service	Railroads and railway express service	Railroads and railway express service (40).
Trucking service and warehousing	Trucking service and warehousing	Trucking service (421, 428). Warehousing and storage (422–425, 429).
Other transportation	Street railways and bus lines	Street railways and bus lines (41, 43 exc. 433).
	Water transportation	Water transportation (44).
	Air transportation	Air transportation (45).
	All other transportation	Taxicab service (433). Petroleum and gasoline pipe lines (46). Services incidental to transportation (47).
Telecommunications	Telecommunications	Telephone (wire and radio) (481). Telegraph (wire and radio) (48 exc. 481).

See footnotes at end of table.

List A.—RELATIONSHIPS AMONG CONDENSED, INTERMEDIATE, AND DETAILED INDUSTRIAL CLASSIFICATION SYSTEMS USED IN THE 1950 CENSUS OF POPULATION—Con.

Condensed classification—41 items	Intermediate classification—77 items	Detailed classification—148 items
Utilities and sanitary services	Electric and gas utilities	Electric light and power [4] (491). Electric-gas utilities [4] (493). Gas and steam supply systems (492, 496).
	Water supply, sanitary services, and other utilities	Water supply (494). Sanitary services (495). Other and not specified utilities [3] (497).
Wholesale trade	Wholesale trade	Motor vehicles and equipment (501, 5111). Drugs, chemicals, and allied products (502, 5112). Dry goods and apparel (503, 5113, 5132). Food and related products (504, 505, 5114, 5133, 5134, 514). Electrical goods, hardware, and plumbing equipment (506, 507, 5116). Machinery, equipment, and supplies (508, 5118, 5136). Petroleum products (512). Farm products—raw materials (5096, 5135). Miscellaneous wholesale trade (5091–5095, 5097–5099 [5], 5115, 5117, 5119, 5137–5139 [5]). Not specified wholesale trade.[3]
Food & dairy products stores, and milk retailing	Food and dairy products stores, and milk retailing	Food stores, except dairy products (54 exc. 545). Dairy products stores and milk retailing (545).
Eating and drinking places	Eating and drinking places	Eating and drinking places (58).
Other retail trade	General merchandise and five and ten cent stores	General merchandise stores (53 exc. 533). Five and ten cent stores (533).
	Apparel and accessories stores	Apparel and accessories stores, except shoe stores (56 exc. 566). Shoe stores (566).
	Furniture, home furnishings, and equipment stores	Furniture and housefurnishings stores (571). Household appliance and radio stores (572).
	Motor vehicles and accessories retailing	Motor vehicles and accessories retailing (55 exc. 554).
	Gasoline service stations	Gasoline service stations (554).
	Drug stores	Drug stores (591).
	Hardware, farm implement, & building material retailing	Hardware and farm implement stores (525). Lumber and building material retailing (52 exc. 525).
	All other retail trade	Liquor stores (592). Retail florists (5992). Jewelry stores (597). Fuel and ice retailing (598). Miscellaneous retail stores (593–596, 599 exc. 5992). Not specified retail trade.[3]
Finance, insurance, and real estate	Banking and other finance	Banking and credit agencies (60, 61). Security and commodity brokerage, and investment companies (62, 67).
	Insurance and real estate	Insurance (63, 64). Real estate [6] (65). Real estate-insurance-law offices [6] (66).
Business services	Business services	Advertising (731). Accounting, auditing, and bookkeeping services (737). Miscellaneous business services (732–736, 739).
Repair services	Automobile repair services and garages	Automobile repair services and garages (75).
	Miscellaneous repair services	Miscellaneous repair services (76).
Private households	Private households	Private households (88).
Hotels and lodging places	Hotels and lodging places	Hotels and lodging places (70).
Other personal services	Laundering, cleaning, and dyeing services	Laundering, cleaning, and dyeing services (721, 722, 727 [7]).
	All other personal services	Dressmaking shops (7271 [7]). Shoe repair shops (725). Miscellaneous personal services (723, 724, 726, 729).
Entertainment and recreation services	Entertainment and recreation services	Radio broadcasting and television (77). Theaters and motion pictures (78, 792). Bowling alleys, and billiard and pool parlors (793). Miscellaneous entertainment and recreation services (791, 794–796, 799).
Medical and other health services	Medical and other health services	Medical and other health services, except hospitals (80 exc. 806). Hospitals (806).
Educational services, government	Educational services, government	Educational services, government } (82, 84).
Educational services, private	Educational services, private	Educational services, private } (82, 84).
Other professional and related services	Welfare, religious, and membership organizations	Welfare and religious services (866, 867). Nonprofit membership organizations (861–865, 869).
	Legal, engineering, and misc. professional services	Legal services (81). Engineering and architectural services (891). Miscellaneous professional and related services (89 exc. 891).
Public administration	Postal service	Postal service } (90 [8]).
	Federal public administration	Federal public administration } (90 [8]).
	State and local public administration	State public administration Local public administration } (90 [8]).
Industry not reported	Industry not reported	Industry not reported (99).

NOTE: See Executive Office of the President, Bureau of the Budget, *Standard Industrial Classification Manual*, Vol. I, *Manufacturing Industries*, Part 1 (November 1945 edition); and Vol. II, *Nonmanufacuring Industries* (May 1949 edition), Washington, D. C.

[1] Components of SIC categories 3392 and 3399 are allocated between "Other primary iron and steel industries" and "Primary nonferrous industries" on a ferrous-nonferrous basis.
[2] Components of SIC categories 3463 and 3489 are allocated between "Fabricated steel products" and "Fabricated nonferrous metal products" on a ferrous-nonferrous basis.
[3] In the Population Census system, "not specified" categories were set up within certain groups to take care of schedule returns which were not sufficiently precise for allocation to a specific category within the group.
[4] "Electric light and power" and "Electric-gas utilities" are combined into a single category in the Volume II tables on detailed industry.
[5] Components of SIC categories 5099 and 5139 are allocated by type of merchandise to the appropriate Population Census wholesale trade category, wherever possible.
[6] "Real estate" and "Real estate-insurance-law offices" are combined into a single category in the Volume II tables on detailed industry.
[7] Dressmaking shops are shown separately from the rest of SIC category 7271, which is included in "Laundering, cleaning, and dyeing services."
[8] See text for explanation of basic difference between SIC and Population Census in classification of government workers.

Relation to Standard Industrial Classification.—List A shows for each Population Census category the code designation of the similar category or categories in the Standard Industrial Classification (SIC). This relationship is presented here for general information purposes only and does not imply complete comparability. The SIC, which was developed under the sponsorship of the United States Bureau of the Budget, is designed for the classification of industry reports from establishments. These reports are, by their nature and degree of detail, considerably different from industry reports obtained from household enumerations such as the Population Census. As a result, many distinctions called for in the SIC cannot be observed in the Population Census. Furthermore, the needs which the Population Census data are designed to meet frequently differ from the needs which the establishment data meet. Perhaps the most basic difference between the two systems is in the allocation of government workers. The SIC classifies all government agencies in a single major group, whereas the Population Census industrial classification system allocates them among the various groups according to type of activity, as explained in the next paragraph.

Definition of "Public administration."—The major group "Public administration" includes only those activities which are uniquely governmental functions, such as legislative and judicial activities and most of the activities in the executive agencies. Government agencies engaged in educational and medical services and in activities commonly carried on also by private enterprises, such as transportation and manufacturing, are classified in the appropriate industrial category. For example, persons employed by a hospital are classified in the "hospitals" category, regardless of whether they are paid from private or public funds. The total number of government workers appears here in the data on class of worker; of particular significance in this connection is the cross-classification of industry by class of worker (table 83).

Relation to certain occupation groups.—In the Population Census classification systems, the industry category "Agriculture" is somewhat more inclusive than the total of the two major occupation groups, "Farmers and farm managers" and "Farm laborers and foremen." The industry category includes, in addition to all persons in these two major occupation groups, (*a*) other persons employed on farms, such as truck drivers, mechanics, and bookkeepers, and (*b*) persons engaged in agricultural activities other than strictly farm operation, such as crop dusting or spraying, cotton ginning, and landscape gardening. Similarly, the industry category "Private households" is somewhat more inclusive than the major occupation group "Private household workers." In addition to the housekeepers, laundresses, and miscellaneous types of domestic workers covered by the major occupation group, the industry category includes persons in occupations such as chauffeur and secretary, if they work for private households.

Class of Worker

The class-of-worker information, as noted above, refers to the same job as does the occupation and industry information. The allocation of a person to a particular class-of-worker category is basically independent, however, of the occupation or industry in which he worked. The classification by class of worker consists of four categories which are defined as follows:

1. *Private wage and salary workers.*—Persons who worked for a private employer for wages, salary, commission, tips, pay-in-kind, or at piece rates.

2. *Government workers.*—Persons who worked for any governmental unit (Federal, State, or local), regardless of the activity which the particular agency carried on.

3. *Self-employed workers.*—Persons who worked for profit or fees in their own business, profession, or trade, or who operated a farm either as an owner or tenant. Included here are the owner-operators of large stores and manufacturing establishments as well as small merchants, independent craftsmen and professional men, farmers, peddlers, and other persons who conducted enterprises of their own. Persons paid to manage businesses or farms owned by other persons or by corporations, on the other hand, are classified as private wage and salary workers (or, in some few cases, as government workers).

4. *Unpaid family workers.*—Persons who worked without pay on a farm or in a business operated by a member of the household to whom they are related by blood or marriage. The great majority of unpaid family workers are farm laborers.

The relatively small number of persons for whom class of worker was not reported has been included among private wage and salary workers unless there was evidence on the census schedule that they should have been classified in one of the other class-of-worker categories.

Quality of Data

The omission from the labor force of an appreciable number of workers (mainly youths, women, and part-time workers), as explained in the section on "Employment status," has probably resulted in some understatement in many of the occupation, industry, and class-of-worker figures. Another factor to be considered in the interpretation of these data is that enumerators sometimes returned occupation and industry designations which were not sufficiently specific for precise allocation. One cause may have been the enumerator's carelessness or his lack of knowledge of how to describe a particular job on the census schedule. Another possible cause was lack of adequate knowledge about the worker's job on the part of the housewife or other person from whom the enumerator obtained the information. Indefinite occupation and industry returns can frequently be assigned, however, to the appropriate category through the use of supplementary information. For example, in the case of occupation, the industry return on the census schedule is often of great assistance. In the case of indefinite industry returns, helpful information can frequently be obtained from outside sources regarding the types of industrial activity in the given area. The basic document used in the allocation of the schedule returns of occupation and industry to the appropriate categories of the classification systems is the publication, U. S. Bureau of the Census, *1950 Census of Population, Alphabetical Index of Occupations and Industries*, Washington, D. C., 1950.

It can be expected that the application of detailed occupational and industrial classifications to approximately 60 million workers will be subject to some error. Although the number of misclassifications probably does not have any serious effect on the usefulness of most of the data, there are a few cases where relatively small numbers of erroneous returns may produce what might be regarded as a serious misstatement of the facts. These cases relate mainly to the numbers of women and children shown in occupations which are unusual for such persons, and to the government workers shown in industries that are ordinarily not carried on by government agencies. Some of the more obvious misclassifications have been adjusted, but it was not possible to perform a complete review of the data for small discrepancies.

Comparability

1940 Census data.—The changes in schedule design and interviewing techniques for the labor force questions, as explained in the section on "Employment status," do not affect comparability between 1940 and 1950 for most of the occupation, industry, and class-of-worker categories. There is evidence, however, that, for the categories which include relatively large proportions of female unpaid family workers ("Farm laborers, unpaid family workers," "Agriculture," and "Unpaid family workers"), the 1940 data are sometimes understated by an appreciable amount relative to 1950.

For experienced unemployed persons the 1950 occupation data are not comparable with the data shown in the 1940 Third Series bulletins. The occupation data for public emergency workers (one of the two component groups of the unemployed in 1940) refer to "current job," whereas the "last job" of the unemployed was reported in 1950.

The occupational and industrial classification systems used in 1940 are basically the same as those of 1950. There are a number of

differences, however, in the title and content for certain items, and in the degree of detail shown for the various major groups. A complete analysis of classification differences between 1940 and 1950 is in preparation. The 1940 classification system for class of worker is comparable with the 1950 classification system.

The 1940 occupation and industry data shown in this volume include adjustments which take account of the differences between the 1940 and 1950 classification systems. These adjustments were based mainly on estimates developed from figures for the country as a whole, rather than from a detailed evaluation of the various classification differences in each State.

In addition, satisfactory numerical information was not always available on the effect of some classification changes, even on a national level. Furthermore, there were certain differences between the 1940 and 1950 coding and editing procedures which could not be measured statistically. Caution should be exercised, therefore, in interpreting small numerical changes. Caution should also be exercised with regard to large relative increases in the numbers of women engaged in occupations which are unusual for women. Although it is certainly true that women have expanded the range of their occupational activities during the last decade, the figures shown here may, in some cases, tend to overstate this expansion because more intensive checking of questionable returns of this type was performed in 1940 than in 1950; this is particularly true of the railroad occupations.

The 1940 data on occupation, industry, and class of worker shown in this volume have been revised to eliminate members of the armed forces, in order to achieve comparability with the 1950 figures for the employed which are limited to civilians. In the occupation tables of the 1940 reports, the armed forces were mainly included in the major group "Protective service workers." In the industry tables, the armed forces were all included in the major group "Government." In the class-of-worker tables, the armed forces were all included in the category "Government workers" (or in the total "Wage or salary workers").

The 1940 major occupation group figures presented in Chapter C of this volume may differ in some cases from the corresponding figures presented in Chapter B. The revised figures shown in Chapter C were developed by a more detailed analysis of the 1940–1950 classification differences than were the figures in Chapter B.

1930 and earlier census data.—Prior to 1940, the census data on the economically active population referred to "gainful workers" rather than to "labor force." The differences between these two concepts are described in the section on "Employment status." The effects of this variation in approach on the various occupation and industry categories are virtually impossible to measure. For most categories, the number of gainful workers is probably equivalent to the number of persons in the experienced civilian labor force. For certain categories, particularly those with relatively large numbers of seasonal workers, the gainful worker figures are probably somewhat greater than the labor force figures.

The occupational and industrial classification systems used in the 1930 Census and earlier censuses were markedly different from the 1950 systems. The relationship between the present and earlier systems is being analyzed, and the results of the study will be made available by the Census Bureau. For information on occupation and industry data from 1930 and earlier censuses, see the publication, U. S. Bureau of the Census, Sixteenth Census Reports, Population, *Comparative Occupation Statistics for the United States, 1870 to 1940*, Washington, D. C., 1943.

Other data.—Comparability between the statistics presented in this volume and statistics from other sources is frequently affected by the use of different classification systems, as well as by many of the factors described in the paragraphs on comparability with Current Population Survey data and other data in the section on "Employment status."

INCOME

Definitions

Components of income.—Income, as defined in the 1950 Census, is the sum of money received from wages or salaries, net income (or loss) from self-employment, and income other than earnings. The figures in this report represent the amount of income received before deductions for personal income taxes, social security, bond purchases, union dues, etc.

Receipts from the following sources were not included as income: money received from the sale of property, unless the recipient was engaged in the business of selling such property; the value of income "in kind," such as food produced and consumed in the home or free living quarters; withdrawals of bank deposits; money borrowed; tax refunds; gifts and lump-sum inheritances or insurance payments.

Information was requested of a 20-percent sample of persons 14 years of age and over on the following income categories: (*a*) The amount of money wages or salary received in 1949; (*b*) the amount of net money income received from self-employment in 1949; and (*c*) the amount of other money income received in 1949. If the person was the head of a family, these three questions were repeated for the other family members as a group in order to obtain the income of the whole family. The composition of families is as found at the time of interview, although the time period covered by the income statistics is the calendar year 1949. Specific definitions of these three categories are as follows:

1. *Wages or salary.*—This is defined as the total money earnings received for work performed as an employee. It includes wages, salary, armed forces pay, commissions, tips, piece-rate payments, and cash bonuses earned.

2. *Self-employment income.*—This is defined as net money income (gross receipts minus operating expenses) from a business, farm, or professional enterprise in which the person was engaged on his own account or as an unincorporated employer. Gross receipts include the value of all goods sold and services rendered. Expenses include the costs of goods purchased, rent, heat, light, power, depreciation charges, wages and salaries paid, business taxes, etc.

3. *Income other than earnings.*—This includes money income received from sources other than wages or salary and self-employment, such as net income (or loss) from rents or receipts from roomers or boarders; royalties; interest, dividends, and periodic income from estates and trust funds; pensions; veterans' payments, armed forces allotments for dependents, and other governmental payments or assistance; and other income such as contributions for support from persons who are not members of the household, alimony, and periodic receipts from insurance policies or annuities.

Statistics on the income of families and unrelated individuals are presented in Chapter B. Unrelated individuals are shown by the amount of their own income; for family groups, however, the combined incomes of all members of each family are treated as a single amount. In Chapter C, data are presented for all persons 14 years of age and over, tabulated by the amount of their own income.

Quality of the Income Data

The figures in this census, as in all field surveys of income, are subject to errors of response and nonreporting. In most cases the schedule entries for income are based not on records but on memory, usually that of the housewife. The memory factor in data derived from field surveys of income probably produces underestimates, because the tendency is to forget minor or irregular sources of income. Other errors of reporting are due to misunderstanding of the income questions or to misrepresentation.

A possible source of understatement in the figures on family income was the assumption in the editing process that there was no other income in the family when only the head's income was reported. It is estimated that this assumption was made for about 5 percent of the families. This procedure was adopted in order to make maximum use of the information obtained. In the

large majority of the fully reported cases, the head's income constituted all or most of the total family income.

The income tables in Chapter B include in the lowest income group (under $500) those families and unrelated individuals who were classified as having no 1949 income, as defined in the census. For the country as a whole, about 6 percent of the families and unrelated individuals were reported as having no income. Many of these were living on income "in kind," savings, or gifts, or were newly created families or families in which the sole breadwinner had recently died or left the household. A relatively large proportion, however, probably had some money income which was not recorded in the census.

Although the 1950 Census income data are subject to these limitations, they appear to be of about the same quality as those obtained from the Current Population Survey, which has provided a consistent series of national estimates of the distribution of consumer income each year since 1944.

Comparability

1940 Census data.—In 1940 all persons 14 years of age and over were asked to report (*a*) the amount of money wages or salary received in 1939 and (*b*) whether income amounting to $50 or more was received in 1939 from sources other than money wages or salaries. Comparable wage or salary income distributions for 1940 and 1950 are presented in table 94 of this report. All of the other 1950 Census income data shown in this report relate to total money income and are more inclusive than are the statistics from the 1940 Census.

Income tax data.—For several reasons, the income data shown in this report are not directly comparable with those which may be obtained from statistical summaries of income tax returns. Income as defined for tax purposes differs somewhat from the Bureau of the Census concept. Moreover, the coverage of income tax statistics is less inclusive because of the exemptions of persons having small amounts of income. Furthermore, some of the income tax returns are filed as separate returns and others as joint returns; and, consequently, the income reporting unit is not consistently either a family or a person.

Bureau of Old Age and Survivors Insurance wage record data.—The wage or salary data shown in this report are not directly comparable with those which may be obtained from the wage records of the Bureau of Old Age and Survivors Insurance for several reasons. The coverage of the wage record data for 1949 is less inclusive than the 1950 Census data because of the exclusion of the wages or salaries of such groups as domestic servants, farm laborers, governmental employees, and employees of nonprofit institutions. Furthermore, no wages or salaries received from any one employer in excess of $3,000 in 1949 are covered by the wage record data. Finally, as the Bureau of the Census data are obtained by household interviews, they will differ from the Old Age and Survivors Insurance wage record data which are based upon employers' reports.

Office of Business Economics State income payments series.—The Office of Business Economics of the Department of Commerce publishes data on the aggregate income received by the population in each State. If the aggregate income were estimated from the income distributions shown in this report, it would be smaller than that shown in the State income payments series for several reasons. The Bureau of the Census data are obtained by household interview, whereas the State income payments series is estimated largely on the basis of data derived from business and governmental sources. Moreover, the definitions of income are different. The State income payments series includes some items not included in the income data shown in this report, such as income in kind, the value of the services of banks and other financial intermediaries rendered to persons without the assessment of specific charges, and the income of persons who died or emigrated prior to April 1, 1950. On the other hand, the Bureau of the Census income data include contributions for support received from persons not residing in the same living quarters.

RELIABILITY OF SAMPLE DATA

SAMPLE DESIGN

Some of the data in the tables which follow are indicated by asterisks or by headnotes as being based on information asked of a representative 20-percent sample of the population. A separate line was provided on the population schedules for each person enumerated, with every fifth line designated as a sample line. Within each enumeration district, the schedules were divided approximately equally among five versions. On each version the sample constituted a different set of lines so that each line on the schedule was in the sample on one of the five versions. The persons enumerated on these sample lines were asked all of the pertinent sample questions.[4]

Although the procedures used did not automatically insure an exact 20-percent sample of persons in each locality, they were unbiased and for large areas the deviation from 20 percent was expected to be quite small. Small biases, however, arose when the enumerator failed to follow his sampling instructions exactly. These biases were usually in the direction of a slight underrepresentation of adult males, particularly heads of households, with the result that the sample of all persons was very slightly under 20 percent. In the United States as a whole, the proportion of the total population enumerated in the sample was 19.95 percent, the proportion of household heads 19.73 percent, and the proportion of all other persons 20.04 percent. The proportion of the total population in the sample, by regions, was 19.94 percent in the Northeast, 19.93 in the North Central, 19.97 in the South, and 19.96 in the West. Among States, the proportions in the sample ranged from 19.86 percent to 20.00 percent.[5]

Estimates of the number of persons with specified characteristics based on sample data have in all cases been obtained by multiplying the number of persons in the sample with these characteristics by five. Estimates of percentages have been obtained in each case by using the sample values for both the numerator and denominator.

SAMPLING VARIABILITY

The figures based on the 20-percent sample are subject to sampling variability which can be estimated from the standard errors shown in tables A and B. These tables do not reflect the effects of the biases mentioned above. The standard error is a measure of sampling variability. The chances are about 2 out of 3 that the difference due to sampling variability between an estimate and the figure that would have been obtained from a complete count of the population is less than the standard error. The amount by which the standard error must be multiplied to obtain other odds deemed more appropriate can be found in most statistical textbooks. For example, the chances are about 19 out of 20 that the difference is less than twice the standard error, and 99 out of 100 that it is less than 2½ times the standard error.

Illustration: Let us assume that for a particular city with a population of 100,000 table 62 shows that there were an estimated

[4] In 19 counties of Michigan and Ohio, the sample consisted basically of every fifth household and the pertinent sample questions were directed to all persons in the household. A household sample of this type was used as an experiment to determine the feasibility of such samples in future censuses of population.

[5] In the experimental areas of Michigan and Ohio, biases due to the underenumeration of household heads did not exist, although some other small problems arose, because some enumerators made errors in the selection of the sample in institutions.

900 persons 10 years of age who were enrolled in school (90 percent of the 1,000 in this age group). Table A shows that the standard error for an estimate of 900 in areas with 100,000 inhabitants is about 70. Consequently, the chances are about 2 out of 3 that the figure which would have been obtained from a complete count of the number of persons 10 years of age who are enrolled in school in this city differs by less than 70 from the sample estimate. It also follows that there is only about 1 chance in 100 that a complete census result would differ by as much as 175, that is, by about 2½ times the number given in the table. Table B shows that the standard error of the 90 percent on a base of 1,000 is 2 percent. For most estimates, linear interpolation will provide reasonably accurate results.[6]

The standard errors shown in Tables A and B are not directly applicable to differences between two sample estimates. These tables are to be applied differently in the three following types of differences:

1. The difference may be one between a sample figure and one based on a complete count, e. g., arising from comparisons between 1950 data and those for 1940 or earlier years. This standard error of a difference of this type is identical with the variability of the 1950 estimate.

2. The difference may be one between two sample estimates, one of which represents a subclass of the other. This case will usually occur when a residual of a distribution is needed. For example, an estimate of the number of persons 7 to 13 years of age not enrolled in school can be obtained by subtracting the estimate of the number enrolled as shown in table 18 from the sample estimate of the total number in that age group. Tables A and B can be used directly for a difference of this type, with the difference considered as a sample estimate.

3. The standard error of any other type of difference will be approximately the square root of the sum of the squares of the standard error of each estimate considered separately. This formula will represent the actual standard error quite accurately for the difference between estimates of the same characteristic in two different areas, or for the difference between separate and uncorrelated characteristics in the same area. If, however, there is a high positive correlation between the two characteristics, the formula will overestimate the true standard error.

Some of the tables present estimates of medians (e. g., median years of school completed, median income) as well as the corresponding distributions. The sampling variability of estimates of medians depends on the distribution upon which the medians are based.[7]

[6] A closer approximation of a standard error in table A may be obtained by using $2.1(x)\sqrt{\frac{1}{x}-\frac{.9}{T}}$ where x is the size of the estimate and T is the total population of the area; in table B, the approximation is $2.1\sqrt{\frac{P(1-P)}{y}}$ where P is the percentage being estimated and y the size of the base. For example, the approximation provided by the above formula of the standard error of an estimate of 100,000 (x) in an area with a total population of 150,000 (T) is 420; linear interpolation would yield about 295.

[7] The standard error of a median based on sample data may be estimated as follows: If the estimated total number reporting the characteristic is N, compute the number $N/2-\sqrt{N}$. Cumulate the frequencies in the table until the class interval which contains this number is located. By linear interpolation, obtain the value below which $N/2-\sqrt{N}$ cases lie. In a similar manner, obtain the value below which $N/2+\sqrt{N}$ cases lie. If information on the characteristic had been obtained from the total population, the chances are about 2 out of 3 that the median would lie between these two values. The chances will be about 19 out of 20 that the median will be in the interval computed similarly but using $\frac{N}{2}\pm 2\sqrt{N}$ and about 99 in 100 that it will be in the interval obtained by using $\frac{N}{2}\pm 2.5\sqrt{N}$.

RATIO ESTIMATES

It is possible to make an improved estimate of an absolute number (improved in the sense that the standard error is smaller) whenever the class in question forms a part of a larger group for which both a sample estimate and a complete count are available. This alternative estimate is particularly useful when the characteristic being estimated is a substantial part of the larger group; when the proportion is small, the improvement will be relatively minor. The improved estimate (usually referred to as a "ratio estimate") may be obtained by multiplying a percentage based on sample data by the figure which represents the complete count of the base of the percentage.

The effect of using ratio estimates of this type is, in general, to reduce the relative sampling variability from that shown for an estimate of a given size in table A to that shown for the corresponding percentage in table B. Estimates of these types are not being published by the Bureau of the Census because of the much higher cost necessary for their preparation than for the estimates derived by multiplying the sample result by five.

Table A.—Standard Error of Estimated Number

[Range of 2 chances out of 3]

Estimated number	Population of area [1]							
	1,000	10,000	25,000	100,000	250,000	1,000,000	5,000,000	15,000,000
50	10	10	10	10	10	10	10	10
100	20	20	20	20	20	20	20	20
250	30	30	30	30	30	30	30	30
500	30	50	50	50	50	50	50	50
1,000	20	60	60	70	70	70	70	70
2,500	------	90	100	100	100	100	100	100
5,000	------	110	130	140	140	150	150	150
10,000	------	60	160	200	200	210	210	210
15,000	------	------	170	240	250	250	250	250
25,000	------	------	90	290	310	320	330	330
50,000	------	------	------	340	420	450	460	460
75,000	------	------	------	310	480	550	560	560
100,000	------	------	------	180	520	620	650	650
250,000	------	------	------	------	200	910	1,010	1,030
500,000	------	------	------	------	------	1,070	1,390	1,440
1,000,000	------	------	------	------	------	570	1,870	2,000
2,500,000	------	------	------	------	------	------	2,400	3,010
5,000,000	------	------	------	------	------	------	1,280	3,850
10,000,000	------	------	------	------	------	------	------	4,060
15,000,000	------	------	------	------	------	------	------	2,220

[1] An area is the smallest complete geographic area to which the estimate under consideration pertains. Thus the area may be the State, city, county, standard metropolitan area, urbanized area, or the urban or rural portion of the State or county. The rural-farm or rural-nonfarm population of the State or county, the nonwhite population, etc., do not represent complete areas.

Table B.—Standard Error of Estimated Percentage

[Range of 2 chances out of 3]

Estimated percentage	Base of percentage							
	500	1,000	2,500	10,000	25,000	100,000	500,000	5,000,000
2 or 98	1.3	0.9	0.6	0.3	0.2	0.1	------	------
5 or 95	2.0	1.4	0.9	0.5	0.3	0.1	0.1	------
10 or 90	2.8	2.0	1.2	0.6	0.4	0.2	0.1	------
25 or 75	4.0	2.8	1.8	0.9	0.6	0.3	0.1	------
50	4.6	3.3	2.1	1.0	0.7	0.3	0.1	------

STANDARD METROPOLITAN AREAS AND CONSTITUENT PARTS

The Denver Standard Metropolitan Area comprises Adams, Arapahoe, Denver, and Jefferson Counties.
The Pueblo Standard Metropolitan Area comprises Pueblo County.

LIST OF CORRECTIONS

This volume has been prepared primarily by assembling and binding the statistical portions of previously issued bulletins which constituted preprinted chapters. This publication plan was adopted to conserve public funds. The corrections appearing below represent changes which would ordinarily have been made if the volume had been prepared by reprinting the contents of the bulletins.

Table	Page (prefix 6)	Item
9	20	DENVER URBANIZED AREA: Add "(part)" to Cherry Hills Village town, precinct 32 (part), Arapahoe County.
		Change name of precinct 25, Jefferson County, from Northeast Arvada to Northwest Arvada.
9	20	PUEBLO URBANIZED AREA: Delete "(part)" following precinct 36, Pueblo County.