

ANNUAL REPORT  
OF THE 791  
**DIRECTOR OF THE CENSUS**

TO THE  
**SECRETARY OF COMMERCE**

FOR THE  
**FISCAL YEAR ENDED JUNE 30, 1920**



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1920

REPORT  
OF THE  
DIRECTOR OF THE CENSUS.

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DEPARTMENT OF COMMERCE,  
BUREAU OF THE CENSUS.  
*Washington, September 20, 1920.*

SIR: There is submitted herewith the following report upon the operations of the Bureau of the Census during the fiscal year ended June 30, 1920, and the work now in progress:

INTRODUCTION.

The fiscal year ended June 30, 1920, was the first of the three years constituting the decennial census period, as defined by the Fourteenth Census act. Within this period of three years the census must, according to the provisions of the law, be taken and its results must be compiled and published. During the three-year census period, therefore, the Bureau of the Census operates on an entirely different basis from that on which it operates during the seven-year intercensal period. Within this period the office force of the Bureau is expanded from about 700 to a maximum of approximately 6,000, and then gradually reduced, until at the close of the period the intercensal status is resumed.

For the purpose of assisting the Director of the Census in the collection, tabulation, and publication of the immense amount of statistical data involved in the decennial census work, Congress authorized for the census period an Assistant Director of the Census, who, under the terms of the census act, shall be appointed by the President, by and with the advice and consent of the Senate, and who "shall be an experienced practical statistician" and "shall perform such duties as may be prescribed by the Director of the Census." The Bureau has been fortunate in securing the appointment to this office of a former chief statistician whose 25 years' experience in the statistical work of the Census Office and whose training under an appointment to another statistical branch of the Government service have rendered him exceptionally well fitted for performing the duties of this important position. The nomination was sent to the Senate on July 28, 1919, and was confirmed on August 1, 1919. The Assistant Director took the oath of office and entered on duty on August 5, 1919.

The Fourteenth Census act provides for the appointment of a disbursing clerk and an appointment clerk during the three-year decennial census period. The position of disbursing clerk was filled by the promotion of an employee of the Bureau who had charge of its accounting section and that of appointment clerk by the

transfer of the assistant appointment clerk of the Department. The former entered on duty on July 8, 1919, and the latter on August 1, 1919.

Although during the intercensal years the Bureau is busily engaged on a number of statistical inquiries, the work on these inquiries is so arranged that none except those made annually or continuously will conflict with the decennial census work, and the work on the annual and continuous inquiries is reduced to the minimum during the census period.

The Fourteenth Decennial Census comprises three principal groups of subjects, namely: Population; agriculture, including irrigation and drainage; and manufactures, mines and quarries (including oil and gas wells), and forestry and forest products. No important changes in the scope of the census work have been made since the Thirteenth Decennial Census. The Fourteenth Census covers the same subjects as the Thirteenth and in addition the inquiries regarding drainage and forestry and forest products; and the irrigation inquiry has been amplified. In some respects, however, the inquiries, particularly those in regard to agriculture, have been simplified.

The censuses of population and agriculture, although entirely separate and distinct in regard to the compilation and publication of their results, were taken by the same field force, and accordingly these two censuses must be treated in combination in the discussion of the field work.

The censuses of manufactures, mines and quarries, and forestry and forest products are separate and distinct in every respect from the population and agricultural censuses, except that some of the population enumerators collected data for small and unimportant manufacturing establishments. The returns for all important establishments covered by the manufactures canvass were collected by field agents working entirely independently of the population enumerators and under separate supervision.

During the fiscal year 1920 the field force of the Bureau was organized, the canvasses of population and agriculture were brought substantially to completion, and the returns were shipped to the Bureau at Washington; the canvasses of manufactures, mines and quarries, forestry and forest products, and irrigation and drainage were begun and brought well toward completion; the work of compiling the returns was begun; the total populations (without detail as to age, sex, color, etc.) were announced for 15 States, the District of Columbia, 4 outlying possessions, 2,193 counties, and 9,074 incorporated places (including 1,843 cities), covering about 91,548,000 of the population; and the compilation of the detailed statistics of population and agriculture was begun.

During the fiscal year the Bureau also conducted its annual inquiries relating to births, deaths, and municipal and State finances; published quarterly statistics on stocks of leaf tobacco, edible fats and oils, and on hides, skins, and leather; made monthly and semi-monthly collections of statistics of cotton, cottonseed, and cottonseed products; and carried on the publication of weekly mortality reports for certain large cities.

The following sections describe in detail the work done by the Bureau during the fiscal year:

## CENSUSES OF POPULATION AND AGRICULTURE.

## PREPARATION OF SCHEDULES, INSTRUCTIONS, ETC.

The general scope of the census is fixed by the law, but necessarily the "form and subdivision" of the interrogatories is left to the discretion of the Director of the Census. Much time and thought were devoted at this census, as at previous ones, to the very careful consideration of the form and phraseology of the schedules of population and agriculture and of the instructions to enumerators.

The population schedule is similar in form to that used at the census of 1910, but a number of changes have been made. This schedule is a large sheet, containing spaces for 100 names and for the various data to be secured regarding each person. Aside from the columns showing the location (streets and house numbers in cities) and the order of visitation for dwellings and families, the schedule provides 24 columns of interrogatories.

The present census includes an inquiry for ascertaining the amount of encumbrances on homes occupied by their owners. A similar inquiry was made at the census of 1890, but no effort was made at the censuses of 1900 and 1910 to secure statistical information of this nature.

A tentative general population schedule was prepared and printed in March, 1919, for office use and for limited distribution. The revised edition, with slight changes, was received from the printer July 9, 1919, and was ordered to print August 18, 1919.

Requisitions were made in March, 1919, for the envelopes, stationery, and other supplies to be used by the supervisors immediately following their appointment. The general instructions to supervisors and other initial blanks were ready for distribution at the beginning of the fiscal year, and much work had also been done in the consideration and preparation of the detailed instructions to supervisors and enumerators regarding their work and of other blanks needed before and during the course of the enumeration. The preparation of the enumeration blanks was carried on vigorously in July and the months immediately following, in order that the various forms needed in the successive steps of the work of the supervisors would be in their hands in ample season for use at the appointed time. The principal enumeration blanks used in continental United States may be grouped as application forms; test outfits, including test schedules properly filled; commissions, oaths, etc.; schedules, instructions, etc., and special blanks for use in cities. The individual forms numbered 41, and the editions of these forms ranged from 30,000 to 15,000,000. The number of population schedules printed was 2,500,000, and the number of farm schedules ordered was 15,000,000.

## THE CENSUS DATE.

The date January 1, 1920, was fixed by the Fourteenth Census act as that to which the census should relate. This census is the first which has been taken in the winter, all previous enumerations having been made in the spring or summer. January 1 was recommended by the Bureau for incorporation in the law as the census date in deference to the wishes of the Department of Agriculture and of the

various interests making use of agricultural statistics. In some respects this date has decided advantages over any other for the purposes of an agricultural census. The past year's work on all farms has been finished by January 1, and the coming year's work has not as a rule been begun. Practically all farmers are occupying the farms which they operated during the preceding year, whereas a few months later many of the renters will have removed to other farms. Again, young farm animals are born in large numbers during the spring and early summer but not in December or January, and therefore a live-stock census referring to January 1 is of far more value than one taken several months later.

But against these manifest advantages must be offset the pronounced disadvantage due to the inclement weather which is apt to prevail in many sections of the country in January. It happened that the weather in January, 1920, was worse than usual. In some of the enumeration districts the cold was so extreme and the snow had drifted to so great an extent as seriously to delay the work in the rural districts, and farther south the rains were so heavy as to make the country roads well-nigh impassable.

As a result of the delays due to the severity of the weather which characterized the early months of the present year, the field work of the Fourteenth Census was protracted through a longer period than had been anticipated, although the returns began to reach the Bureau early enough and rapidly enough to make it possible to organize and train the force of clerks and machine operatives and to get the work of compilation well under way at an earlier date than had been possible at any preceding census. In this way also the change in the census date is advantageous to the Bureau, since it permits a materially earlier commencement of the work of compiling and tabulating the returns preparatory to their publication, which, under the law, must be made not later than June 30 of the second year following that in which the enumeration is made.

#### FIELD WORK.

*Appointment of supervisors.*—The Fourteenth Census law provided for the appointment of supervisors by the Secretary of Commerce upon the recommendation of the Director of the Census. Before the close of the fiscal year 1919 the machinery for the appointment of the supervisors, as described in my report for that year, was set in motion, and the supervisors were appointed as early as possible after the beginning of the present fiscal year. The first appointments of supervisors, 142 in number, were made on August 9, and by the end of the month 350 had been appointed; 15 more were appointed in September, 6 in October, and 1 on November 6. A number of changes had to be made thereafter because of resignations and deaths, and it was not until some time in December that the last of the appointments were made; but at the close of December there were no vacant districts and every supervisor's office was open and organized for the enumeration work in January.

Of the 372 supervisors originally appointed for continental United States, three were women, and later two women were appointed to fill vacancies. Two of these supervisors were appointed in Texas,

one in New York, one in Nevada, and one in Illinois. This was the first census in which women served as census supervisors, and they discharged their duties in a creditable manner.

*Supervisors' headquarters and office quarters.*—Letters of inquiry with respect to headquarters and office quarters were sent to the supervisors as soon as their commissions were issued, and at the end of September headquarters had been established for 350 supervisors and office quarters selected for 264 of them; and at the close of October headquarters had been established for all supervisors and office quarters selected for all but one. As the office quarters were finally established, 197 supervisors were located in their own offices or in Federal or other public buildings and 175 in rented offices. At the close of October all but three supervisors had been supplied with one or more assistants.

*Appointment of enumerators.*—In order to aid in the selection of competent enumerators, tests of a practical character were held throughout the country by the supervisors. These tests had been formulated in detail by the Census Bureau and consisted essentially in filling out sample schedules for population and agriculture from hypothetical data set forth in narrative form. The purpose of the examination was really twofold: First, to test the applicant's ability to perform the duties of an enumerator, and, second, to familiarize him with those duties. These tests were given, so far as practicable, by the supervisors, the supervisors' assistants, or, in some instances, by the postmasters. In many cases, however, it was not feasible to assemble the applicants for the examination, and therefore the test was given the applicant by mail, or individually, when interviewed by the supervisor or his representative. Thus, tests were not always competitive, but the problem in many cases was not to eliminate the less qualified from a number of applicants but rather to secure any applicants at all.

The date originally set for holding the tests for applicants was the week beginning October 27, but because of the great difficulty in procuring applicants it was possible to hold this test during that week in only about 60 per cent of the districts. In the remaining districts the examination was given during the week of November 3 or that of November 10, and in some cases even later.

The lists of designations for enumerators, together with the test papers and applications of the persons designated, had been received at the end of November for 236 supervisors' districts, covering a total of 28,440 enumeration districts, and at the end of December for 370 supervisors' districts, covering a total of 72,071 enumeration districts, out of a grand total of 87,234 districts. Lists were later received for the remaining two supervisors' districts and also supplemental lists covering enumeration districts vacant at the time of sending the first lists and those in which changes prior to the date of enumeration had to be made. The test papers as fast as received in the Census Bureau were examined and the supervisors notified by wire or mail as to the number approved, practically the only exceptions being made in cases where the persons designated were ineligible because they were either tax assessors or collectors or postal employees, the ineligibility in the latter case being due to a ruling of the Post Office Department.



On account of the great difficulty in obtaining competent enumerators in many parts of the country, because of the low rates of pay and temporary character of the work, some supervisors designated persons who did not come up to the rating required in the test. In these cases the supervisors were requested to have the applicants fill out second test schedules at home and were cautioned to instruct them very carefully in their duties as census enumerators.

The test schedules as soon as examined and approved were inclosed in envelopes, addressed to the persons designated, together with copies of a special circular calling attention to the most common errors made by applicants or which are likely to be made by enumerators. These envelopes were sent to the supervisors in bulk, to be distributed by them to the persons designated, either in person or by mail, but after the middle of December this was discontinued on account of the congestion in the mails.

The increase on December 1 in the rates of compensation to the maximum allowed by law aided the supervisors greatly in securing enumerators, but there were some districts in which, even with the increased compensation, it was difficult to obtain competent enumerators, and the supervisors were given blanket authority on December 18 to appoint competent enumerators and to send their names and test schedules afterwards.

*Appointment of inspectors.*—In the large cities the work, because of the great number of foreign-born persons, many of whom were inclined to be suspicious of the census, was much more difficult than in most rural regions. In those cities the supervisors were empowered to appoint assistants, designated as inspectors, whose duties were to exercise immediate supervision over the enumerators and to give them such aid and instruction as might be necessary. These inspectors were needed particularly in those sections of the cities populated largely by the foreign element, especially where tenements, apartment houses, and lodging houses were numerous. Those sections of cities which were made up chiefly of ordinary dwelling houses presented no particular difficulties. When the enumerator merely had to go from house to house and get the census information from some member of each family capable of answering the various questions on the population schedule, the work was comparatively simple and easy; but where the enumerator had to interview the proprietor or manager of a cheap lodging house, or a boarding-house keeper, or the janitor of an apartment house in order to obtain information regarding persons whom he was unable to interview directly, the difficulties were greatly increased. The inaccuracies in the census due to these difficulties do not pertain so much to the mere counting of the population as to the securing of correct and reliable data concerning the persons counted. A reasonably conscientious and intelligent enumerator has little difficulty in ascertaining the number of persons in his district who are entitled to enumeration as bona fide residents of that district on the census date. He can ascertain this number without much trouble by visiting the various dwellings and inquiring how many persons were making their usual places of abode in those dwellings on the census date. But to interview the persons themselves and to obtain the various census data as to age, citizenship, mother tongue, occupa-

tion, etc., is exceedingly difficult in some cases, although the enumerators were instructed to make every effort to obtain this information correctly.

*Shipment of schedules and supplies.*—The first shipment of letter-heads, envelopes, and miscellaneous supplies to supervisors was made on August 20, and by the end of that month 266 supervisors had been furnished with these supplies. These shipments were completed as fast as the supervisors were ready to receive them, and were followed by the supply of application blanks and other forms needed for the appointment of enumerators.

The first shipment of agricultural schedules in boxes was made September 15, and the last was sent early in November. In all, 360 supervisors, representing a total of 46,452 enumeration districts, were supplied with agricultural schedules. The estimated number of schedules needed for each enumeration district were made into a separate package, and these packages were mailed in large wooden boxes to each supervisor for distribution to the enumerators in his district. Boxes of the proper dimensions were manufactured for this purpose, 2,763 such boxes being required for the shipment of the agricultural schedules.

The portfolios containing the population schedules, instructions, and other blanks and supplies to be used by the enumerators were shipped during November, the first consignment being sent on November 3. Separate portfolios were made up for each of the 87,234 enumeration districts and were forwarded to the respective supervisors for distribution, in person or by mail, to the enumerators. A total of 4,032 boxes, specially manufactured, were required for this purpose. In addition to the 6,795 boxes used for the shipment of the agricultural and population schedules, there were sent to supervisors through the mails more than 50,000 packages of miscellaneous blanks and supplies. For the receipt, preparation, and shipment of schedules and supplies to supervisors an average force of 130 persons was employed from August to December, and a smaller force thereafter for the shipment of additional schedules and supplies needed by the supervisors during the continuation of the enumeration.

*Conferences with supervisors.*—A conference was held in my office on November 29 with the supervisors for a number of near-by States. This conference was of a general character and was attended by the director, the assistant director, the chief statisticians for population and agriculture, the geographer, and the disbursing clerk. Of the 30 supervisors invited, all but 3 were present. On December 2, 1919, a conference was held by the director and assistant director in New York City, which was attended by 13 supervisors or their representatives. The chief statistician for population then made a tour of the eastern and central sections of the country for the purpose of holding conferences with supervisors. These conferences were held in Boston, Syracuse, Cincinnati, Chicago, Minneapolis, Kansas City, Dallas, New Orleans, and Atlanta, the final one taking place on December 22.

The 11 conferences covered a total of 336 supervisors (of whom all but 34 were present), or more than nine-tenths of all those in continental United States.

*Enumeration.*—The enumeration began, as required by the Fourteenth Census act, on January 2, but in many of the supervisors' districts it was impossible to commence work with a full corps of enumerators, because of the difficulty, especially in rural localities, of inducing persons to accept employment as enumerators at the rates of compensation which the Bureau was able to offer. In many cases it became necessary to assign two or more enumeration districts to one enumerator, a procedure which necessarily delayed the completion of the enumeration.

It was the duty of the enumerators, under the law, to commence their work on January 2 unless deferred by reason of climatic or other conditions which would materially interfere with the proper conduct of the work, and to complete their canvass in rural districts within 30 days and in urban districts within 2 weeks from the date of commencement. Although in the majority of the enumeration districts throughout the country the work was commenced on January 2, it was impossible to bring it to completion, except in a relatively small number of districts, within the time specified by the law, by reason of the prevalence of extremely severe weather conditions and of pandemics of influenza.

On January 19 a circular telegram was sent to supervisors asking them to mail to the Bureau, if possible, one box (50 schedules or more) of completed enumerators' portfolios by the close of the week (Jan. 24); and on January 28 another circular telegram was sent to those supervisors who had neither replied to the first telegram nor sent in any portfolios, directing them to telegraph immediately when the first consignment would be sent.

Although in a considerable number of urban districts the enumerators had completed their canvass before the close of January, it took some time for the supervisors to examine and correct the schedules before forwarding them to Washington, for which reason not many returns reached the Bureau until February.

The work of enumeration was still in progress during February and March in many enumeration districts, and at the end of March the work remained unfinished in about 1,800 districts, out of a total of 87,234; and for a considerable number of districts the returns were still in the office of the supervisor undergoing examination or were in transit to the Bureau. The number of unfinished districts had been reduced at the end of April to 980, at the end of May to 738, and at the end of June to 245. It is regrettable that, six months after the census date and five months after the date on which the canvass was required by law to be completed, there should still remain any district in which the work was still in progress. This unfortunate condition could not, however, be avoided. The Bureau used every means at its command to bring this work to a close. It authorized supervisors to offer, where necessary, the highest rate of pay fixed by law, but even with this rate of compensation the supervisors experienced great difficulty in obtaining persons competent and willing to complete the work in certain particularly difficult districts.

*Completion of work by supervisors.*—At the close of February, three supervisors had brought the work to completion throughout their entire districts, had forwarded their returns to Washington, and had closed their offices. These three districts were the District of Colum-

bia; the first district of Ohio, comprising Hamilton County, including the city of Cincinnati; and the fifth district of Kentucky, comprising Jefferson County, including the city of Louisville. At the close of March the supervisors' work had been completed in 61 districts, at the close of April in 149 districts, at the close of May in 187 districts, and at the close of June in 281 districts.

*Census of Alaska.*—In pursuance of arrangements made with the Commissioner of Education, a field agent of the Bureau of Education, in charge of the Alaskan division, with headquarters at Seattle, Wash., was designated to take charge of the field work in Alaska. The plan of cooperation between the Bureau of the Census and the Bureau of Education, which was approved by the Secretary of Commerce on June 3, 1919, and by the Secretary of the Interior on June 14, 1919, provided for the employment of six district superintendents of schools in Alaska as special agents in charge of the enumeration work in their school districts, and of the local teachers as enumerators wherever practicable. The schedules, blanks, and other supplies for the Alaskan census were shipped to Seattle July 17, 1919, ready for transportation to Juneau, Alaska, where the headquarters of the special agent in charge of the Alaskan census were established. The first consignment of returns was received on September 3, 1920, and the remaining returns are expected to reach the Bureau any day.

*Census of Hawaii.*—The census of Hawaii was taken by an expert special agent on the permanent force of the Bureau who was detailed for this purpose. The territory was divided into 186 enumeration districts. The schedules, instructions, and other blanks and supplies were shipped on October 9, 1919. The special agent left Washington on the following day, and returned on May 28, 1920. The completed schedules for population and agriculture were received April 26, and those for manufactures, mines, and quarries reached the Bureau May 29, 1920.

The entire cost of the field work connected with the census of Hawaii for 1920 was \$34,711.27, or \$38.52 less than was expended for this part of the work in 1910, although the population increased 33.4 per cent and the number of farms increased 22.5 per cent during the decade.

The first announcement of population was made at Honolulu on March 16, 1920, and included the inhabitants of the entire group of islands, except those who were dwelling on military reservations and at naval stations. The printed bulletin was ready for distribution on July 12, 1920.

The Federal and territorial officials in Hawaii cooperated with the supervisor and rendered much valuable assistance in connection with the enumeration, and the attitude of both press and people was very helpful.

*Census of Porto Rico.*—The census of Porto Rico was taken by a member of the Bureau's permanent staff—the chief statistician for the division of statistics of cities—who was detailed for the purpose. The territory was divided into 1,173 enumeration districts. The schedules, instructions, and other blanks and supplies were shipped on October 16, 1919, and the official in charge left on November 5, 1919, and returned on April 12, 1920.

The entire cost of the field work connected with the census of Porto Rico was \$127,044.35, an increase over such cost for 1910 of

\$13,315.50, or only 11.7 per cent, although the population increased 16.3 per cent during the decade. The figures for 1920, moreover, include the cost of the disbursing force, which was maintained in Porto Rico in that year, while in 1910 disbursements were made directly from Washington.

The first announcement of population was made for Guayama, one of the seven senatorial districts, on February 19, 1920; the population of the entire island, by minor civil divisions, was announced on February 26, 1920, and the printed bulletin was ready for distribution on May 26, 1920.

As in the case of Hawaii, the Federal and insular officials in Porto Rico cooperated with the supervisor, and the attitude of the press and the public was cordial and helpful.

*Censuses of Guam, Samoa, and the Panama Canal Zone.*—Under the Fourteenth Census act the scope of the decennial census of the United States was extended to include for the first time the Panama Canal Zone and the islands of Samoa and Guam, the act providing that the censuses of these possessions should be taken by the respective governors thereof in accordance with plans prescribed or approved by the Director of the Census. Schedules, instructions, and other blanks were accordingly prepared by the Bureau of the Census to harmonize with the main census of the United States and were duly forwarded to the several governors, who appointed the enumerators and organized the work of taking the census. There are no manufacturing plants, mines, or quarries in operation in any of these possessions and practically no agriculture in the Canal Zone. But in Guam and Samoa the census included live stock and agricultural products, as well as population.

The completed returns for Samoa were received in Washington on April 13, 1920, those for the Canal Zone on May 8, and those for Guam on June 9. In each instance the returns indicated that the census had been well organized and carefully taken; and I take this opportunity to express my appreciation of the assistance and cooperation which the Bureau has received from the governor of each of these possessions in connection with this work.

*Military and naval population.*—Steps were taken in July, 1919, toward providing, through the War and Navy Departments, for the proper enumeration of all persons in the military and naval services who, because of the war or for other reasons, were likely to be absent from their usual place of residence at the time the census was taken in January, 1920. This also applied to civilians engaged in or identified with war work who were likely to be absent from this country during the enumeration period and for whose enumeration special provision would have to be made. Lists to be used in preparing for the enumeration of the military and naval population were secured in October, 1919, from the War and Navy Departments, these lists showing the location and strength of the various units of the Army and Navy stationed both at home and abroad. Further conferences with representatives of the War and Navy Departments were held in November and December, and a formal order regarding the taking of the census was issued by the Secretary of War on December 23, 1919, and by the Secretary of the Navy on January 5, 1920. The schedules and other supplies were sent in December to the various

commanding officers of the military forces and naval vessels and stations abroad.

*Other persons stationed abroad.*—Arrangements were completed in December with the Consular Bureau of the State Department to forward "absent family" schedules to the diplomatic and consular forces abroad, in order that they and their families, and also such of their employees as were citizens of the United States, might be included in the enumeration. Similar arrangements were made with the Department of Foreign Personnel of the American Red Cross to have its representatives stationed in foreign countries enumerated.

*Cost of field work.*—The cost of the field work in connection with the enumeration of population and agriculture (exclusive of the expenditure for printing schedules, instructions, etc.) will reach approximately \$9,345,000, consisting of about \$7,650,000 for enumerators and approximately \$1,695,000 for salaries and traveling expenses of the supervisors and of the clerks and special agents employed to assist the supervisors and for the rental and maintenance of supervisors' offices.

The Bureau's original intention had been to pay the large majority of the enumerators at rates below the maximum fixed by the census act. This maximum was 4 cents for each name where payment was made entirely on the per capita basis, \$6 a day where payment was made entirely on the per diem basis, or a mixed rate of not more than \$2 a day in addition to not more than 3 cents per capita. To these were added, in the case of the agricultural districts, various rates of compensation for the return of farm schedules, live-stock schedules, etc. It became apparent, however, in December, 1919, that it would be utterly impossible to obtain enumerators in many districts throughout the country unless the maximum rates were paid, and such rates were therefore established. All the enumerators (except those in institutions, who received 3 cents a name) who were compensated on the per capita basis were accordingly paid 4 cents a name and all those paid on the per diem basis were given \$5 to \$6 a day. In addition, in the rural districts it was necessary in some cases to make an allowance of from \$1 to \$4 per diem in lieu of subsistence.

Thus the cost of the enumeration was very materially increased as compared with the corresponding cost in 1910. Nevertheless, the increase is not as great as the average increase in wages in various industries or in the cost of the necessaries of life between 1910 and 1920. That is to say, the total cost of the enumeration in 1920 would purchase a smaller amount of the necessaries of life than could have been purchased by a sum equal to the total cost of the enumeration in 1910. Moreover, the population of the country has increased since 1910, and therefore the per capita cost of the enumeration represents a still greater reduction when measured in commodity units.

*Cost of supervision.*—In particular, the cost of supervision of the field work has shown a notable decrease when measured in commodity units. The basic compensation of each supervisor, \$1,500, was the same as in 1910; the number of supervisors bore about the same ratio to the total population; and the additional compensation of \$1 for each thousand or major fraction of a thousand of population enumerated represents the same per capita rate as in 1910.

*Enumerators' rates of compensation.*—The following tables show, for 1920 and 1910, the various classes of piece-price and mixed rates which were paid and the number of enumeration districts in continental United States in which each rate was paid:

## RATES OF PAY OF ENUMERATORS IN CONTINENTAL UNITED STATES: 1920.

Designation.	Description.							Number of enumeration districts.	Per cent of total number of districts.
	Per diem.	Per inhabitant.	Per farm.	Per establishment of productive industry.	Per irrigation enterprise.	Per drainage enterprise.	Per barn or inclosure containing live stock not on farm.		
Piece-price rates:		<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>		
A.....		2	20	30	20	20	10		
B.....		2½	22½	30	27½	27½	10		
C.....		3	25	30	35	35	10	975	1.1
D.....		3½	27½	30	42½	42½	10		
E.....		4	30	30	50	50	10	71,457	82.0
Total.....								72,462	83.1
Mixed rates:									
F.....	\$1.00	2	15	20					
G.....	1.25	2	15	20					
H.....	1.50	2½	17½	20					
I.....	1.75	2½	17½	20					
J.....	2.00	3	20	20				2,207	2.5
Total.....								2,207	2.5
Per diem rates:									
\$3.....	3.00								
\$3.50.....	3.50								
\$4.....	4.00							32	(1)
\$4.50.....	4.50							3	(1)
\$5.....	5.00							659	.8
\$5.50.....	5.50							697	.8
\$6.....	6.00							11,174	12.8
Total.....								12,565	14.4
Grand total.....								87,234	100.0

<sup>1</sup> Less than one-twentieth of 1 per cent.

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RATES OF PAY OF ENUMERATORS IN CONTINENTAL UNITED STATES: 1910.

Designation.	Description.					Number of enumeration districts.	Per cent of total number of districts.
	Per diem.	Per inhabitant.	Per farm.	Per establishment of reproductive industry.	Per barn or enclosure containing live stock not on farm.		
<b>Piece-price rates:</b>							
A.....		Cents. 2	Cents. 20	Cents. 30	Cents. 10	9,864	14.3
B.....		2½	22½	30	10	26,123	37.8
C.....		3	25	30	10	16,898	24.4
D.....		3½	27½	30	10	6,227	9.0
E.....		4	30	30	10	1,321	1.9
Total.....						60,433	87.5
<b>Mixed rates:</b>							
F.....	\$1.00	2	15	20		169	.2
G.....	1.25	2½	17½	20		71	.1
H.....	1.50	2½	17½	20		225	.3
I.....	1.75	2½	20	20		184	.3
J.....	2.00	3	20	20		332	.5
Total.....						981	1.4
<b>Per diem rates:</b>							
\$3.....	3.00					36	.1
\$3.50.....	3.50					36	.1
\$4.....	4.00					516	.8
\$4.50.....	4.50					885	1.3
\$5.....	5.00					3,454	5.0
\$5.50.....	5.50					949	1.4
\$6.....	6.00					1,755	2.5
Total.....						7,641	11.1
Grand total.....						69,425	100.0



The following table presents, by States, for 1920 the items shown in the preceding table for the United States as a whole:

NUMBER OF ENUMERATION DISTRICTS, CLASSIFIED BY RATES OF COMPENSATION ESTABLISHED, BY STATES: 1920.

[NOTE.—For description of the rates designated by the several letters, see table on page 17.]

States and District of Columbia.	Grand total.	Piece-price rates.			Mixed rate (J).	Per diem rates.					
		Total.	C	E		Total.	\$4	\$4.50	\$5	\$5.50	\$6
Alabama.....	1,750	1,729	9	1,720	8	13	2	5		6	
Arizona.....	285	31	5	26	51	293	8			195	
Arkansas.....	1,349	1,250	1	1,258	7	83		2		51	
California.....	2,787	1,934	80	1,854	17	836				836	
Colorado.....	1,043	502	7	495	18	523				523	
Connecticut.....	872	842	9	833	23	7		2		5	
Delaware.....	205	205	3	202							
District of Columbia.....	367	367	22	345							
Florida.....	724	582	7	575	30	112	1	2	10	1	
Georgia.....	2,077	2,027	12	2,015	5	45	1			44	
Idaho.....	492	96	8	88	2	394				394	
Illinois.....	5,658	5,502	55	5,507	54	42	1	11	1	29	
Indiana.....	2,818	2,794	25	2,769	8	16		13		3	
Iowa.....	2,278	2,168	12	2,156	93	17		10		7	
Kansas.....	1,708	1,215	17	1,198	51	437		1		436	
Kentucky.....	2,067	2,054	9	2,045	2	11				11	
Louisiana.....	1,128	936	14	922	9	183		7		176	
Maine.....	636	538	5	533	34	64	1		1	55	
Maryland.....	1,056	927	34	893	94	35	4	5		26	
Massachusetts.....	2,821	2,643	43	2,600	65	113	12	68	2	31	
Michigan.....	3,081	2,625	20	2,605	3	453		22	181	256	
Minnesota.....	2,134	1,120	15	1,105	276	738		21	338	379	
Mississippi.....	1,120	1,112	3	1,109	7	1		1			
Missouri.....	3,685	2,992	41	2,951	22	71		1		70	
Montana.....	688	180	7	173		508				508	
Nebraska.....	1,311	811	8	803	43	457		13	67	377	
Nevada.....	100	18		18		82				82	
New Hampshire.....	379	321	7	314	28	30		1	4	25	
New Jersey.....	1,929	1,799	26	1,773	67	63				63	
New Mexico.....	455	58	4	54		397				397	
New York.....	8,738	7,801	161	7,640	392	145	1	60	1	82	
North Carolina.....	1,720	1,622	9	1,613	14	84		6		78	
North Dakota.....	741	90	3	87		651				651	
Ohio.....	5,026	4,772	32	4,740	220	34		31		3	
Oklahoma.....	1,933	499	6	493		1,434		6		1,428	
Oregon.....	941	351	8	343		590				590	
Pennsylvania.....	7,034	6,587	100	6,487	318	129	1	84		44	
Rhode Island.....	365	345	7	338	18	2				2	
South Carolina.....	1,051	1,003	10	993	34	14		6		8	
South Dakota.....	800	138	4	134	7	655				655	
Tennessee.....	1,997	1,984	9	1,975	8	5		4	1	5	
Texas.....	3,409	2,446	35	2,411	3	960		1	1	958	
Utah.....	416	195	5	190	24	197			11	186	
Vermont.....	368	219	3	216	51	38		18		20	
Virginia.....	1,626	1,529	16	1,513	55	42		8		34	
Washington.....	1,573	843	18	825	5	725				725	
West Virginia.....	1,049	774	3	771	15	269		4		256	
Wisconsin.....	2,266	1,800	35	1,765	26	440		228	62	129	
Wyoming.....	243	17	3	14		226				226	
Continental United States, total.....	87,234	72,462	975	71,487	2,207	12,565	32	3	659	657	11,174

OFFICE WORK—POPULATION CENSUS.

The office work on the population census consists, in brief, of the following steps: (1) The count direct from the schedules returned by the enumerators, as the result of which the population of the

various cities, counties, county subdivisions, States, and ultimately of the United States as a whole, are announced; (2) such editing of the schedules as is necessary to prepare them for the punching-machine operators, particularly with reference to mother tongue and occupations; (3) the punching of a card for each person enumerated, indicating all the facts ascertained by the enumerator, this punching being done by means of a mechanical device; (4) the comparing of the punched cards with the original schedules, so far as may be found necessary for the purpose of verification; (5) the further verification of the punching work by running the cards through two sets of electrical machines which reject all incompletely or imperfectly punched cards, all cards on which apparently inconsistent items of information are indicated, and also certain other classes of cards for purposes of verification and completion; (6) the sorting of the cards by means of electric machines into main groups—for example, by color or race, nativity, parentage, age, occupation—several different sortings being required at the various stages of the work; (7) the tabulation of the facts indicated on the cards in regard to the characteristics of the population by means of electric machines, it being necessary to run the cards through the machines several times in order to record all the facts indicated on them; (8) the assembling and publication of the results of the tabulations.

*Training of new clerks.*—In January, 1920, and thereafter, all new clerks, and also all clerks who had previously been engaged in the shipment of schedules and supplies to supervisors, were given copies of the test schedules to fill out, together with the book of instructions to enumerators and the illustrative example of the test schedule properly filled. After filling out the test schedule the clerks were given copies of the 1910 schedule and instructed to prepare 1920 schedules from them in accordance with the Fourteenth Census book of instructions to enumerators. This work was given to these clerks in order to familiarize them with the 1920 schedule and instructions in preparation for the examination of the Fourteenth Census schedules as returned by the census enumerators. Most of the clerks were also given a few days' practice in the examination of schedules before assignment to actual work.

*Receipt of schedules.*—The first completed schedules were received January 15, 1920, from the first district of New York. At the end of February more than half of the schedules had been received, at the end of March more than six-sevenths, and at the end of April more than nine-tenths, as shown by the following summary:

Month, 1920.	Received during month.	Received to date.
January.....	8,573	8,573
February.....	37,230	45,803
March.....	29,443	75,246
April.....	8,943	84,189
May.....	2,099	86,288
June.....	831	87,119
July.....	134	87,253
August.....	93	87,346

At the close of September 15 there were only five enumeration districts for which the schedules had not been received, one each in Iowa, Minnesota, Nebraska, Texas, and Wyoming. The work in these districts has been delayed for various causes, but telegraphic advices have been received promising early completion.

*Examination of schedules.*—Upon the receipt of the schedules in the office an examination is made sufficient to determine whether the work of the enumerator was properly done, and particularly whether the entry of the civil divisions in the headings of the schedules was in accordance with the description given in the plan of division as finally approved or as amended while the enumeration work was in progress. This work was begun on January 17 and at the close of August had been completed for all but 26 districts, as shown by the following summary:

Month, 1920.	Examined during month.	Examined to date.
January.....	7,464	7,464
February.....	35,738	43,202
March.....	29,978	73,180
April.....	10,695	83,875
May.....	2,131	86,006
June.....	928	86,934
July.....	181	87,115
August.....	93	87,208

A force of from 7 to 10 clerks has been engaged since March 12 in a special examination of the schedules for evidence of padding or irregularities in the enumeration, particular attention being paid to booster, tourist, and winter-resort cities. At the end of August this special examination had been completed for 73 cities, but no serious discrepancies had been discovered.

*Hand count of schedules.*—This count is made direct from the schedules and consists of a count according to the number of blanks and entries on each sheet (which contains spaces for the entry of 100 names), comparison with a similar count made in the office of the supervisor and forwarded with the completed schedules, and elimination of all differences between the two counts by a reexamination of the schedules in question where necessary.

The hand count of population was begun January 19, and at the close of August had been completed for all but 28 districts, as shown by the following summary:

Month, 1920.	Counted during month.	Counted to date.
January.....	4,503	4,503
February.....	33,082	38,485
March.....	32,085	71,470
April.....	11,884	83,354
May.....	2,543	85,897
June.....	1,017	86,914
July.....	197	87,111
August.....	95	87,206

The checking of the hand count for possible differences was begun January 23, and at the close of August had been completed for all but 28 districts.

*Final-result work.*—Outlines of the tables to be included in the first and second series of State bulletins were considered in conference with the joint advisory committee, and the tables were brought into final form before the close of August.

*Editing work.*—Clerks showing ability in examining schedules, and who were therefore considered likely to possess the qualifications needed in "editing" (that is, preparing) the population schedules for the card-punching work, were gradually transferred to the editing work, until in May, 1920, a total force of 381 clerks were engaged on this work. Detailed indexes to the country-of-birth and mother-tongue classifications were prepared and issued in either printed or photostat form for the use of the editing clerks. At the close of the fiscal year 367 clerks were assigned to this work, the editing had been completed for 73,152 enumeration districts, and the returns for 67,843 districts had been released for punching. The editing work was completed at the close of August, except for a few scattering districts.

*Punching machines.*—The electric punching-machine equipment used for punching the population cards of the Thirteenth Census proved to be unsatisfactory, as a result of which it was necessary to punch about one-third of the cards with pantograph machines. In an effort to overcome the difficulty with the card feed on the electric machines and to salvage as much of this equipment as possible, one of these machines was rebuilt in the Bureau's mechanical laboratory in 1916. The effort was not successful, however, owing to inherent defects in the original design, and the rebuilt machine proved to be little, if any, better than the ones used during the Thirteenth Census.

At a conference of the officials and mechanical experts of the Bureau it was recommended that the electric machines be discarded and, if a better punch could not be obtained, the old pantograph machine be used. To avoid discarding this equipment, I consulted the Director of the Bureau of Standards, who suggested that a machine be turned over to his bureau for improvement and adjustment, which was done. One of the pantograph machines used during the Thirteenth Census was rebuilt in the Bureau's mechanical laboratory and fitted with a punch control or mechanical device to prevent omissions and double punching. Commercial concerns engaged in the manufacture of labor-saving devices were invited to submit models of punching machines to be given a practical test in the Bureau. On account of the enormous demand for machinery and equipment of all kinds, such concerns did not care to take up experimental work. One concern, however, submitted two machines of the same type, and these machines, together with an electric machine improved by the Bureau of Standards, a pantograph machine with the punch control, and a plain pantograph machine, were given a 10 weeks' competitive test from April 10 to June 24, 1919. At the expiration of the period I appointed a committee of officials and mechanical experts of the Bureau to make a careful study and analysis of the test and furnish me a report of their findings, together with an appropriate recommendation. The committee unanimously recommended that the pantograph machine with the punch control be adopted for the punching of the population cards of the Fourteenth Census.

The Bureau drew up the plans and specifications for the rebuilding of 311 old pantograph machines, which were on hand, and the construction of 304 new punches, all of which were to be provided with the mechanical device to prevent omissions and double punching. After bids were invited a contract was made with a commercial concern for the building of the machines. The machines were delivered in lots as completed. The first shipment reached the Bureau on January 5, 1920, and the last on May 1, 1920.

Subsequently, in order to expedite the work of punching as much as possible, an order was given the manufacturer for 205 additional machines. The first lot of these machines was received on May 11, 1920, and the last on May 19, 1920.

*Tabulating machines.*—At the Thirteenth Census the Bureau used 96 semiautomatic tabulating machines (fed by hand), with an average output of 15,000 cards a day each. The Bureau has had constructed in its own mechanical laboratory 31 automatic tabulating machines (self-feeding) for use in tabulating the population statistics of the Fourteenth Census. Each of these machines is capable of handling 500 cards a minute, records from 1 to 60 different statistical items, and automatically prints the result on a sheet of paper. One of these machines, in use in the division of vital statistics of the Census Bureau, recently tabulated 207,221 cards in a seven-hour day, at the rate of 29,603 cards an hour, or 493 a minute.

*Sorting machines.*—At the Thirteenth Census the Bureau used 17 sorting machines, which averaged 75,000 cards each per day. Twenty-three sorting machines have been rebuilt or constructed in the mechanical laboratory of the Bureau for use in the population division during the Fourteenth Census. These machines have an average daily output of 100,000 cards each, which exceeds by 33½ per cent the output of the machines used at the Thirteenth Census.

*Punching of general population cards.*—The first punch cards were received from the Printing Office on January 16, 1920, and at the close of the fiscal year 101,762,000 cards had been received out of a total of 125,000,000 ordered.

The organization of the punching force was begun on February 2, 1920, and at the end of February 89 clerks had been assigned to the punching section, of whom 32 were being trained for supervisory positions. The employees selected for supervisory work were first given instructions and training in editing schedules and later in card punching, in order that they might become thoroughly familiar with both editing and punching before attempting supervisory work. The punching-machine operatives themselves were given a day or two in which to study the instructions and two or three days of practice work before being placed on actual punching work. The cards first punched by them in actual work were all verified and errors were returned to the punchers for correction, and if necessary further instructions were given regarding points not made clear at first, and thereafter a certain number of cards from the work of each operator were daily selected at random and verified.

The actual punching work was begun on March 1. On May 12 a night force, working from 6 to 10 p. m., was organized, and on June 9 a second night force, working from 4 to 11.30 p. m., was organized. The force working from 6 to 10 p. m., however, was practically disbanded early in July, as it was found that the "turnover" was too

great to permit satisfactory results. (See section headed "General organization of office force.")

The total number of cards punched up to August 31, inclusive, was 91,369,503, distributed by months as follows:

Month, 1920.	Total cards punched.	Daily average per month.
March.....	1,563,123	57,893
April.....	7,696,184	292,545
May.....	10,705,694	436,967
June.....	19,234,889	789,395
July.....	24,423,059	1,023,721
August.....	27,536,554	1,146,211
Total.....	91,369,503	603,953

At the close of September 15 there had been punched a total of 101,685,428 cards. The punching of the general population cards for continental United States, about 106,000,000 in number, will be completed by September 30.

*Machine verification.*—After the cards are punched they are run through two sets of machines for verification. By the use of these machines there are rejected all incompletely or imperfectly punched cards, all cards on which apparently inconsistent facts are recorded, and also certain other classes of cards for purposes of verification. This work was begun in a preliminary way on April 1, when two operators were assigned to the work of testing the machines and punching the test cards. The actual work of verification was begun April 17, and by the close of the fiscal year 26,609,304 had been handled by the first set of machines and 25,880,344 by the second set of machines; and at the close of September 15 a total of 76,707,228 and 75,414,208 cards, respectively, had been handled by the two sets of verification machines.

*Card verification.*—The work of verifying and correcting the cards rejected by the verification machines was begun on April 30, and by the close of the fiscal year 926,537 cards had been verified, an average force of 143 having been employed in May and June on this part of the work; and at the close of September 15 a total of 5,875,075 cards had been verified.

*Occupations.*—Because of the great number of occupations to be covered by the report on this subject it was necessary to prepare, for the use of the compilers, an index to occupations. This index comprehends about 20,000 occupation designations and is printed in two sections, one showing the occupations in alphabetical order and the other presenting them by groups in classified form. The alphabetical section covers 473 printed pages, and the classified index, which is printed in smaller type, comprises 173 pages. In addition, a list of 530 of the numerically more important occupations and of 225 of the more important industries has been prepared and printed. The actual work of classifying occupations was not begun until after the close of the fiscal year, but it was well under way at the end of July, 1920.

*Complaints of defective enumeration.*—At the census of 1910 the Bureau experienced some little difficulty because of attempts in a considerable number of localities to inflate the population returns through the listing of names of transients and other nonresidents.

The most flagrant of these cases of attempted fraud were discovered by the Bureau, and all or the greater part of the "padding" was eliminated. Prosecutions of the guilty persons were later instituted, which resulted in the conviction of a number of enumerators and a few of the others implicated; and the effect seems to have been a wholesome one, as no serious efforts to pad the census of 1920 have been discovered.

At this census a different difficulty has arisen. Because of the fact that the rate of increase in the population of the United States has been materially smaller for the past decade than for any preceding one in the history of the country (this decline being due primarily to the almost complete cessation of immigration in 1914, and to a less extent to the ravages of the influenza pandemics and the effects of the war), many cities and towns have been disappointed with the census figures and have filed protests questioning their accuracy. In a very few cases these protests were justified, the enumeration having been defective; and in all these cases proper measures have been taken to remedy the defects in the original enumeration through recanvasses, for checking purposes, of the areas in which the work of the enumerators was found to be faulty to any serious extent.

Most of the complaints, however, were due merely to the disappointment of ambitious cities and towns at the showing made by them in the census returns. As a matter of fact, local estimates of population are invariably too high, and therefore the census returns are never satisfactory to the "booster" element. It is significant that, although complaints were received from the officials of a few large or medium-sized cities, the majority of the protests from such cities were made by chambers of commerce or other commercial organizations. From some of the very small places, in which there are no commercial organizations, complaints have been received from the village or town officials.

In no large or medium-sized city has the enumeration been found, upon investigation, to be defective to such an extent as to have any considerable effect on the population total or on the rate of increase shown during the past decade, although a few cases of defective enumeration in certain localities in large cities have been discovered and corrected. In a few of the smaller cities and towns, however, the complaints have had some foundation; but the number of places in which the enumeration has been found defective to any material extent is very small in proportion to the total number of cities, towns, villages, and other civil divisions for which the population has been announced.

The work of correcting the defects in the original enumeration is still under way in a few places, but is being brought to a close as rapidly as possible. Since in the great majority of cases complaints are not received until after the announcements of population have been issued, naturally the work will continue until some time after the last of the announcements has been published.

When it is considered that the total number of cities, counties, and subdivisions of counties for which the population has been announced is about 40,000, the receipt of complaints from less than 300 places and the finding of errors sufficiently serious to justify corrective measures in a score or more of small places are by no means surprising.

In fact, when the unusual difficulties under which the enumeration was made are taken into consideration it is a source of gratification that the number of complaints received has been relatively so small.

The method employed in handling complaints of defective enumeration has been to place the burden of proof and the initial work upon the complainant in each case, where they properly belong. If the Bureau had followed the plan of making the initial investigation in each case at its own expense and through its own employees, the amount of work to be done and the expense entailed would have been very greatly increased and the compilation and tabulation of the results of the census would have been materially delayed. Moreover, this extra work would have proved to be wholly unnecessary in the majority of cases.

The plan adopted in handling complaints from cities of any considerable size was to require a test canvass of a selected area—preferably a few streets or blocks—to be made for the purpose of securing the names and addresses of all persons who, on January 1, 1920, were bona fide residents within that area and who believed themselves to have been missed by the enumerators or were in doubt as to whether they had been enumerated. A list of these names and addresses was then to be submitted to the Bureau for comparison with the enumerators' returns. Upon such comparison a part of the names—sometimes the greater part—would be found already upon the returns, and therefore would be stricken from the list submitted. If the number remaining on the list was large enough to justify further action, the supervisor of census for the district in which the complaining city or town was located would be directed to make a canvass, through a sworn census employee or employees, of the persons whose names remained on the list, for the purpose of officially enumerating such of them as might be found to have been bona fide residents on January 1, 1920, at the addresses given.

If in this manner a city could demonstrate that any significant proportion of the inhabitants of the area selected for the test had been missed, the Bureau would then take whatever measures might appear necessary to correct the enumeration in the area selected for the test, and also in any other sections of the city in which there appeared to be reason to believe the original enumeration had been defective. In no case was it necessary to make a check or investigation of the enumeration throughout an entire city of more than a few thousand inhabitants.

In dealing with complaints received from small cities and towns, and particularly those having not more than 2,500 inhabitants, the Bureau adopted the plan of suggesting to the complainants that they make a complete canvass of their city or town as of January 1, 1920, and send the results to the Bureau in the form of a list of names and addresses (if any) of the persons canvassed. If, upon comparison of this list with the official returns, it appeared that the unofficial canvassers had listed all, or practically all, the persons officially enumerated, and in addition any considerable number of other persons, the Bureau would make a canvass of these additional persons for the purpose of officially enumerating such of them as might be found to have been bona fide residents of the city or town in question.



on January 1, 1920. On the other hand, if the complainants either made no effort to conduct their canvass as of January 1, or, making the effort, were unsuccessful, and sent the Bureau a list which failed to include a considerable proportion of the names returned by the official enumerator, the Bureau would decline to take any further action, even though the total shown by the unofficial canvass might be somewhat greater than that returned by the official enumerators. For example, the official total for a certain town might be 2,000. The unofficial canvasser might list 2,200 persons, but it might be found, upon comparing his list with the official returns, that he had enumerated only 1,500 of the 2,000 persons officially enumerated, and in addition 700 other persons. In such a case the Bureau would take the position that, since a thorough investigation of the matter would involve at least a canvass of the 700 persons not officially enumerated, and preferably a canvass also of as many as possible of the 500 persons who were officially enumerated but not unofficially canvassed, the amount of work to be done would be so great as to justify the Bureau in declining to pursue the matter further. A further consideration was the probability that, since the population "turnover" during the period between the official and the unofficial canvasses was so great (assuming that neither the official nor the unofficial canvasser listed any persons who were not actually residents of the town at the time each made his respective canvass), the results of the unofficial canvass were of little value for comparison with those of the official canvass and had little bearing on the completeness or incompleteness of the original enumeration.

It is significant that in nearly all cases where complete lists of the inhabitants of small cities and towns were sent to the Bureau by complainants, these lists were found not to include more than 80 or 85 per cent—and in some cases considerably smaller proportions—of the names listed by the original enumerators, although the total shown would be somewhat larger than the official total.

#### THE BLIND AND THE DEAF.

The Fourteenth Census act provides for an enumeration of the blind and deaf in connection with the population census. To carry out this provision of the law the population enumerators secured on a supplemental schedule the name and address of each blind person or deaf-mute. This represented a change from the procedure in 1910, when the enumerators carried no separate schedules for these classes of the population, but merely noted cases of blindness and deaf-mutism in columns provided for that purpose on the main population schedule.

This supplemental schedule was used as a mailing list for sending out the special schedules to the blind or deaf in order to secure the data regarding the cause of the defect, degree of education, economic status, etc. These special schedules follow in general the forms used at the census of 1910.

By August 31 about 100,000 names had been received on the supplemental schedules and about 93,000 special schedules had been mailed. Of the latter about 26,000 schedules for the blind and about 23,000 schedules for deaf-mutes had been filled out and returned, 11,513 others having been returned unclaimed.

## OFFICE WORK—CENSUS OF AGRICULTURE.

Preparations for the taking of the decennial census of agriculture were begun on July 1, 1917, when the division of agriculture, which had been discontinued by its consolidation with the division of statistics of cities on July 1, 1914, was reorganized and placed under the charge of a chief statistician. From that date until the returns began to reach the Bureau from supervisors a vast amount of preliminary Fourteenth Census work was accomplished. Comparative information sheets were made up and changes made later, where necessary, because of revision of the schedule; 1910 figures were entered wherever possible, instructions for the use of enumerators, special agents, and the office force were compiled and printed, and the various forms necessary for the prompt dispatch of the work were decided upon and multigraphed. As a result of the early attention given to the organization of this division, it was as well prepared to begin its Fourteenth Census work as were other divisions of the Bureau engaged on that work, the organizations of which were kept intact during the intercensal period.

At the present census a card-punching system of tabulation has been substituted for the adding-machine system employed at the census of 1910 for the agricultural work. The machines as well as the cards used are entirely different from those used by the population division in its tabulation work. The punching machines used were purchased and the tabulating and sorting machines were leased. By August 31, 1920, 488 punching machines, 47 punch verifiers, 53 tabulating machines, 3 card-counting tabulators, 68 sorting machines, and 16 gang punches were in operation in the division of agriculture.

The first consignment of agricultural schedules reached the office from the field on January 19, 1920, and the preliminary examination and editing were commenced immediately. All of the editing has been completed. The total number of farm schedules received at the close of August 31 was 6,481,785, and in addition 84,516 schedules, covering 1,799,758 inclosures for live stock not on farms or ranges, were received. At the close of August 31, 78,469,687 cards had been punched, and the successive runs of the cards through the sorting and tabulating machines represent one sorting of 130,524,634 cards and one tabulation to date of 95,792,729 cards. The average number of cards punched for each farm was 24.

The agricultural work reached its peak July 9, at which time there were 1,545 employees in the office and 62 special agents in the field. Since that time a number of employees have resigned and a number have been transferred to other branches of the census work.

*Publication of agricultural statistics.*—The first publication of agricultural statistics resulting from this census has been by means of press announcements, giving certain basic statistics for various counties of the United States. These press statements have been released at the rate of two or more daily since June 1, 1920. Complete reports for individual States will be prepared for publication in bulletin form as rapidly as possible. Two of these publications—those for New Hampshire and Delaware—are at present in the hands of the printer.

**CENSUSES OF MANUFACTURES, MINES AND QUARRIES (INCLUDING OIL AND GAS WELLS), AND FORESTRY AND FOREST PRODUCTS.**

The census of manufactures, which has been taken quinquennially heretofore in conformity with the acts of March 6, 1902, and July 2, 1909, and acts amendatory thereof and supplemental thereto, will be taken biennially hereafter beginning with the year 1921. The act of March 3, 1919, provides for the biennial census of the products of the manufacturing industries for the years 1921, 1923, 1925, 1927, and every tenth year thereafter. Hence the next census of manufactures to follow the biennial censuses will relate to the year 1929, and under the provisions of law will conform in scope and character to the regular decennial census of manufactures which covers capital, persons employed, salaries and wages, materials, products, etc. In its organization, however, the manufactures census is quite distinct from the censuses of population and agriculture, being taken in the main by different agencies and following a different procedure.

The current census of manufactures is the tenth comprehensive census of this kind taken in the United States, the first one being in 1850, and one being taken thereafter every tenth year until the establishment of the permanent Census Office in 1902, when the law placed this branch of census work on a quinquennial basis.

The scope of the census of manufactures as defined by the act providing for the Fourteenth Census is substantially the same as in previous censuses. It is confined to "manufacturing establishments conducted under what is known as the factory system, exclusive of the so-called neighborhood, household, and hand industries," and includes as subjects of inquiry the name and location of each establishment; character of organization, whether individual, corporate, or other form; character of business or kind of goods manufactured; amount of capital actually invested; number of proprietors, firm members, copartners, and officers and the amount of their salaries; number of employees and the amount of their wages; quantity and cost of materials used in manufactures; principal miscellaneous expenses; quantity and value of products; time in operation during the year; character and quantity of power used, and character and number of machines employed.

The census of mines and quarries, included in the main decennial census but not taken in any other year, is similar in scope and character to the census of manufactures and is conducted under the same general organization. In fact, the line of division between mining and manufacturing is not easy to draw.

The census of forestry and forest products is included in the decennial census for the first time.

**PREPARATORY WORK.**

*Schedules.*—The schedules which have been prepared in order to obtain the information called for by the census act include a general schedule applicable to all manufacturing industries, a similar general schedule for mines and quarries, and a series of 129 special or supplemental schedules covering certain selected manufacturing or mining industries. There is also an administrative and general office schedule for securing reports in cases where two or more distinct

establishments are operated under a central ownership. The general schedule covers the data as to capital, employees, expenses, value of products, power used, and fuel consumed, etc., while the main object of the special or supplemental schedule is to obtain a more detailed statement of material consumed and of production in units of quantity. This necessitates having a separate supplemental schedule for each selected industry in order to enumerate the various classes of materials and products, the list which is appropriate for one industry being obviously inapplicable to another.

The general manufactures schedule, in tentative form, was submitted to the National Association of Manufacturers and other organizations for suggestions regarding its preparation, and likewise the various supplemental schedules in process of formation were submitted to the leading industrial organizations and individual manufacturers for criticism and suggestions. In this way valuable information was obtained as to the nature of the data that would be most beneficial to manufacturing industries.

*Card index.*—Preliminary to taking the census of manufactures a card index was prepared giving the name and address and the character of products of every known establishment which seemed to come within the scope of that census. The names were obtained from the schedules of the previous census and from trade lists, membership lists of commercial or industrial associations, and similar sources. When the provisional index, including the names of about 844,000 establishments, had been completed, circulars were mailed to all these establishments for the purpose of ascertaining whether they were still in operation and properly came within the scope of the census and to establish the correct name, location, and principal products of each. As a result of this circularization the number of establishments on the index was reduced by 259,000, leaving about 585,000 establishments to be covered in the census.

In order to secure as many reports as possible by correspondence, thus reducing the cost of the field work, schedules were mailed to the establishments listed in the index, accompanied by the request that they be filled out and returned directly to this office. Experience shows, however, that in the great majority of cases satisfactory schedules can not be secured without a field canvass.

*Cooperation with commercial and industrial organizations.*—Through the efforts of the census officials, the Bureau has enlisted at this census to a greater degree than ever before the cooperation not only of other bureaus and agents of the Government, but also of chambers of commerce, boards of trade, industrial associations, manufacturers, and statistical experts throughout the country. The spirit of cooperation thus cultivated in these organizations was helpful in the preparation of the manufactures schedules and has greatly facilitated the collection of the reports from the individual manufacturers.

#### FIELD WORK.

In preparation for the canvass the territory of continental United States was divided into 607 districts, and routes of travel for the field force were outlined in each. Most of these districts were covered either by local men appointed as special agents for that purpose or by employees of the office detailed from Washington. In those

counties, however, where there is relatively little manufacturing it was arranged to have the schedules collected by the census enumerators who were engaged in taking the censuses of population and agriculture.

In 24 of the large metropolitan districts the special agents carried on their work of filling out and collecting schedules under the direction of a chief special agent, who was usually an experienced employee detailed from the Washington office. In such districts, offices or headquarters are necessary, and the Bureau endeavored to secure, so far as possible, accommodations in the Federal buildings, so as to save rent. This had been done very generally at previous censuses; but this time it was found that the Federal buildings were so crowded that no space could be secured, so that it was necessary to rent rooms or offices in private buildings, thus involving a considerable increase in the item of rent as compared with previous censuses.

*Appointment of special agents.*—Under date of November 15, 1919, the Bureau issued a circular of information regarding the appointments of local special agents for the field work on manufactures and mines and quarries, and as the result of this announcement approximately 3,000 persons applied for employment. A number of the Bureau's trained employees were sent into the field early in the year to interview these applicants and recommend for appointment those deemed to be best fitted for the work. A practical test was given, consisting of the filling out of a sample schedule. The field work requires men of good address and considerable intelligence, and preferably those who have had some experience along accounting or statistical lines; but it proved very difficult to secure a sufficient number of properly qualified agents, as the period of service was short, averaging only about three months, and the Bureau's appropriation did not permit it to offer a rate of compensation comparable with that which competent persons could obtain in outside employment.

Up to June 30, 1920, appointments for the field canvass had been offered to 1,629 persons, of whom 473 had declined to accept. The highest number of local special agents on the rolls at any one time was 1,002, the number shown by the report for June 30, 1920.

The great majority of the agents were paid on a piece-price basis at the rate of \$1 for each acceptably correct schedule for an establishment listed on the Bureau's card index, or \$1.50 for each establishment not so listed, with the proviso that the compensation should average at least \$3.50 a day based upon the total number of days actually employed. Under this arrangement the most competent agents were able to earn from \$4 to \$6 a day. When traveling through their districts and away from headquarters, agents were allowed, in addition to actual traveling expenses, a per diem of \$4 to cover subsistence.

*Progress of the work.*—The change in the date of the decennial census of population and agriculture from April 15 to January 1 had the effect of delaying somewhat the organization of the field work for the manufactures census. Formerly that work began soon after the 1st of January—the statistics relating to the preceding calendar year—and was practically completed before the time arrived for taking the censuses of population and agriculture. This time, however, on account of the change of date, the censuses of population

and agriculture had to be taken in January, and demands of that work were so great and the importance of completing it promptly so urgent that the Bureau felt justified in drafting the services of the trained employees in the manufactures division to aid in the organization and conduct of the enumeration. For this reason it was not practicable to get the field work of the manufactures census well under way until after the 1st of February. Another cause of delay was the refusal of many of the applicants for employment as special agents to accept the appointments tendered them—in many cases on the ground of too little compensation or too much work, and not infrequently after considerable time had been spent by the office employees in instructing them in their prospective duties. Still further delay was occasioned during the progress of the canvass by the resignation of 260 of the local agents before they had completed their work, necessitating the appointment or transfer of others to take their places. In 65 of these cases the resignations of the agents were requested by the office on account of the unsatisfactory character of their work.

Notwithstanding these hindrances, the canvass has progressed satisfactorily and is now nearing completion. Up to August 31, 433,580 schedules had been secured in continental United States, representing 399,947 manufacturing establishments and 33,633 mines and quarries. Of this number, 134,560 were received by mail directly from the establishments, 273,761 were secured by special agents and detailed clerks, and 25,259 were turned in by the population enumerators. The schedules are now being checked with the office lists and daily reports of the field agents.

#### OFFICE WORK.

While the field work is in progress it is necessary to employ a large force of clerks in the Washington office for outlining routes of travel; keeping records of the applications, resignations, and appointments of the field force; preparing, checking, and binding lists of establishments for use in the office and field; preparing maps showing the progress of the work; examining vouchers; assembling and mailing supplies; and opening and distributing the correspondence incident to the securing and correcting of the reports.

The schedules on being received in the office are given a preliminary examination, and if "incomplete" are returned to the special agents in the field for correction. Where, however, only slight changes or additions are required the schedules are "accepted," subject to correction by direct correspondence with the establishment.

Up to August 31, 430,929 of the 433,580 schedules then received had undergone a preliminary examination in the office. Of this number, 321,601 were accepted as complete or capable of being perfected by correspondence with the establishments represented, 67,034 were found to be so defective as to necessitate their return to the field agents for correction, and 42,294 (the greater number of which had been secured by mail) were thrown out as not coming within the scope of this census.

Work incident to the preparation of the statistics was also well under way at that time; 131,648 schedules had been classified, by being assigned to generic groups of industries according to the values

of their chief products, and 80,367 had been edited and prepared for tabulation.

*Use of electrical machinery.*—At this census for the first time electrical tabulating machines, leased from a tabulating machine company, are being used in tabulating the data relating to manufactures and mining. A careful test demonstrated the superiority of these machines in the saving of time and labor as compared with the long-carriage tabulating typewriters used at former censuses.

#### INDUSTRIAL ZONES.

A feature of the census of manufactures for 1920 will be the presentation of statistics for the larger manufacturing districts by industrial zones. This method of presentation was employed at former censuses for 15 metropolitan districts having population of 500,000 or over; but because of the increasing demand for statistics along this line the Bureau at the present census has extended the zone method to about 70 districts having 100,000 population and over or manufactured products valued at \$100,000,000 or more per annum. An industrial zone for the purposes of this supplemental survey comprises the area within the corporate limits of an important manufacturing city or group of contiguous municipalities, together with the suburban area industrially tributary thereto. In some cases the county is taken as the zone unit.

#### BIENNIAL CENSUS OF THE PRODUCTS OF MANUFACTURING INDUSTRIES.

The recent census act provides that in addition to the decennial census of manufactures there shall be hereafter a biennial census of the products of manufacturing industries, an inquiry which is obviously much more limited in its scope than the general census of manufactures, but being taken at more frequent intervals will furnish more nearly up-to-date figures and supply a better index of current production and of the trend of development in manufacturing industries of the country.

*Record cards.*—The first of these biennial censuses will cover the year 1921. In connection with this work the Bureau is preparing a set of manufactures record cards to form a convenient and readily accessible record of production covering all establishments reporting products to the value of \$20,000 or more. These cards, which provide for six census years (two quinquennial and four biennial), from 1914 to 1927, inclusive, record the names and locations of plants and central offices with statistics relating to capital, wage earners, materials, products, and horsepower.

#### CENSUS OF IRRIGATION AND DRAINAGE.

The Fourteenth Census act included specific provisions for censuses of irrigation and drainage, the latter being an entirely new investigation. At the census of 1910 the farmers were asked to furnish information to the enumerators concerning crops grown by irrigation, and the more detailed reports concerning irrigation enterprises were collected by special agents on special schedules. At the present

census the irrigated crops are reported on the farm schedules, but otherwise only one schedule was used for the collection of information concerning irrigation and one for the drainage data. These inquiries, although forming a part of the census of agriculture, were treated as separate and distinct from the remaining agricultural inquiries. About 40,000 irrigation schedules and 100 drainage schedules were, however, collected by enumerators; and 20,000 additional irrigation schedules and nearly 32,000 drainage schedules were secured by special agents appointed for this purpose.

The drainage investigation is a new one from the census viewpoint, and no precedents existed which could be followed in the canvass of these enterprises. On August 31, 95 per cent of the irrigation enterprises of the country had been canvassed and about 85 per cent of the drainage enterprises. All schedules received for both irrigation and drainage have been given a preliminary examination and about 45,000 schedules for irrigation have been edited.

#### JOINT ADVISORY COMMITTEE OF THE AMERICAN STATISTICAL AND ECONOMIC ASSOCIATIONS.

The joint advisory committee, representing the American Statistical Association and the American Economic Association, which, as explained in my report for last year, was organized at the invitation of the Secretary to advise with him and the Director of the Census regarding the work of the Fourteenth Census, has continued its activities, holding four meetings at Washington in the course of the last fiscal year. One temporary change was made in the membership of the committee, owing to the circumstance that an exchange of professorships for the university year was arranged between Prof. E. R. A. Seligman and Prof. Carl C. Plehn, of the University of California. The latter gave Prof. Seligman's courses at Columbia University, and likewise took his place on the joint advisory committee. I wish to express again my appreciation of the valuable services and helpful cooperation of this committee.

#### PUBLICITY WORK.

Recognizing the importance of preparing the public for the approaching census, enlisting their interest and cooperation and disarming suspicion, especially on the part of the foreign born, the Bureau prepared numerous leaflets and press stories setting forth the importance of the census, explaining its purpose and featuring the work of enumeration as a public service which should appeal to the patriotism of the people. A large amount of material of this character was distributed to newspapers, schools, and religious and other organizations. The press in particular rendered valuable assistance in bringing to public attention the importance of the census.

The first preliminary announcement of Fourteenth Census figures was made on February 21. During May the announcement of the county population was begun. Up to September 15 the press information section had released population figures for 9,074 incorporated places (including 1,843 cities), for 2,193 counties, and for 15 States—Connecticut, Colorado, Delaware, Georgia, Indiana, Maine, Maryland, Massachusetts, New Hampshire, Oregon, Rhode



Island, Tennessee, Utah, Vermont, and Washington—and the District of Columbia, Hawaii, Porto Rico, Canal Zone, and Samoa; also agricultural announcements for 107 counties and 1 State (New Hampshire), irrigation figures for 86 counties, and drainage figures for 51 counties and 2 States (Florida and South Carolina).

ANNUAL AND OTHER INQUIRIES HAVING NO RELATION TO THE  
DECENNIAL CENSUS.

VITAL STATISTICS.

*Birth statistics.*—Beginning with 1915, the Bureau of the Census has made annual collections of birth statistics from a registration area made up of the District of Columbia and those States having adequate registration systems. Since 1915 this area has grown very rapidly, as in that year it comprised only 10 States and the District of Columbia, which included about 31 per cent of the total population of the United States. Thirteen States have been admitted to the birth registration area since 1915, as follows: 1916, Maryland; 1917, Indiana, Kansas, Kentucky, North Carolina, Ohio, Utah, Virginia, Washington, and Wisconsin; 1919, California, Oregon, and South Carolina, making in all 23 States and the District of Columbia and including 58.4 per cent of the total population of the United States. It is hoped, and the prospects seem bright, that several more States will be admitted during the years 1920 and 1921.

The birth statistics show for the registration area and its subdivisions the number of births by sex, color, and month of occurrence; births of white children by country of birth of father and mother; total deaths (exclusive of stillbirths); births per 100 deaths; birth and infant mortality rates; deaths (exclusive of stillbirths) from important causes for 12 subdivisions of the first year of life; legitimacy; plural births; ages of father and mother; and total number of children born to each mother and the number surviving.

A special press summary on infant mortality in the 12 largest cities in the birth registration area was issued in June. The usual summary of the annual report for 1918 was issued in May, 1920, and showed a total of 1,363,649 live births, with a rate of 24.4 per 1,000 population. Of this total number of infants born alive, 1,288,711 were white and 74,938 were colored. The total number of deaths in the same area was 1,014,620, or 18.2 per 1,000 population, the births thus exceeding the deaths by 34.4 per cent. The final report was sent to the printer on April 5.

It is expected that the report for the calendar year 1919 will be placed in the hands of the printer some time during November of this year.

*Mortality statistics.*—The series of annual mortality reports published by the Bureau of the Census was begun in 1900. For that year a death registration area was created, comprising the six New England States, Indiana, Michigan, New Jersey, New York, and the District of Columbia, and containing approximately 40.5 per cent of the total population of the United States. Since 1900 the following States have been admitted to the death registration area: 1906, California, Colorado, Maryland, and Pennsylvania; 1908, Washington and Wisconsin; 1909, Ohio; 1910, Minnesota, Montana, and

Utah; 1911, Kentucky and Missouri; 1913, Virginia; 1914, Kansas; 1916, North Carolina and South Carolina; 1917, Tennessee; 1918, Illinois, Louisiana, and Oregon; 1919, Delaware, Florida, and Mississippi. There are also 18 registration cities in nonregistration States, making a total of 33 States, the District of Columbia, and the 18 cities before mentioned, or about 80.4 per cent of the total estimated population of the United States. A test of death registration has just been completed in Nebraska, which demonstrated that the State was eligible for admission to the death registration area in 1920. Only five States remain with unsatisfactory registration laws—West Virginia, which is surrounded by registration States; Iowa, which is bordered on three sides by registration States and on the fourth side by Nebraska, which will soon be admitted to the area; and South Dakota, Nevada, and Arizona. This leaves 10 States with satisfactory laws which will be ready for admission as soon as they can show 90 per cent complete registration.

A press summary showing the total number of deaths during the calendar year 1918, as well as deaths and death rates for certain principal causes, was issued February 2, 1920, and gave the total number of deaths in the registration area (exclusive of Hawaii) as 1,471,367, which represented a rate of 18 per 1,000 population. This is the highest death rate on record for the registration area, and it was caused by the influenza pandemic. In 1918 influenza and pneumonia (all forms) took a toll of 477,467 deaths, or 32 per cent of the total number of deaths in the registration area.

The annual mortality report for 1918 was completed and sent to the printer in January, 1920. It is expected to complete the report for the calendar year 1919 and have it in the hands of the printer before the last of November of this year.

*Weekly Health Index.*—The publication of the Weekly Health Index, which was inaugurated in October, 1917, with 46 of the cities of 100,000 population or over reporting, has been enlarged by the addition of 12 cities which now have over 100,000 population. These cities report weekly the total number of deaths (stillbirths excluded) and the number of deaths of children under 1 year of age, which are published with death rates and percentages. There is also published weekly in the index a statement from 10 of the largest industrial insurance companies, showing the total number of policies in force, number of death claims, and number of death claims per 1,000 policies in force (annual rates) for comparison with weekly death rates. After the issue of May 29 the publication of the number of deaths from influenza and pneumonia was discontinued, as the deaths from these causes had dropped to normal.

*Special tables of mortality from influenza.*—A special bulletin on deaths from influenza during the great pandemic of 1918 was issued for the States of Indiana and Kansas and the city of Philadelphia through funds furnished by the United States Public Health Service.

*Standard nomenclature of diseases and pathological conditions, injuries, and poisonings for the United States.*—The preparation of a uniform nomenclature for the use of physicians was undertaken by the Bureau of the Census at the request of the Council of National Defense, and the necessary funds were provided by the President of the United States. This publication was issued in the early spring

of 1920, and it has proved of value, as indicated by letters of commendation and the demand for copies.

*Need of Federal legislation providing for registration of births and deaths.*—In the United States the birth and death registration has been left to the control of the individual State governments, many of which have failed to establish and maintain adequate systems of recording births and deaths. The practice of the Census Bureau is to admit to the "birth registration area" those States and to the "death registration area" those States and those cities in nonregistration States in which the Bureau's tests indicate the registration to represent at least 90 per cent of all births or of all deaths, as the case may be, and in which the registration systems are such as to justify the expectation of a still more nearly complete registration in the future.

Thus far the only legislative action taken by the Federal Government toward the improvement of our vital statistics is found in a joint resolution of Congress approved February 11, 1903, requesting the State authorities to cooperate with the Census Bureau in securing a uniform system of birth and death registration. The Bureau itself has achieved some success in arousing the interest of the States in the matter. Under present conditions, however, it is likely to be many years before the last one of the 48 States enacts and properly administers adequate registration laws. It will thus be necessary, if the birth and mortality records of every municipality and county are to be made reliable, permanent, and readily available for reference at any time in the near future, to provide for a comprehensive system of Federal control and supervision. I recommend, therefore, the enactment of such legislation as may be necessary to secure these ends.

#### FINANCIAL STATISTICS OF CITIES AND STATES.

*Cities of 30,000 population and over.*—The annual report presenting financial statistics of cities having more than 30,000 inhabitants has been compiled for the fiscal year 1919. As the per capita revenues, costs, and indebtedness are regarded as important measures of financial transactions and conditions, the publication of the report has been delayed until the population of each city as disclosed by the Fourteenth Decennial Census could be determined. This course seemed especially desirable because of the unusual increase in the population of many of the cities due to conditions incident to the war. The preparation of data, excepting those based upon population, was practically completed in June, 1920. Computations have been made from time to time as population figures became available, and the report will be ready for the press soon after the announcement of the population of the last city of the group.

Reports on this subject have been published annually since the organization of the Bureau on a permanent basis in 1902. The report presents statistics in regard to (1) total and per capita receipts from the various sources of revenue; (2) total and per capita payments for expenses, interest, and outlays; (3) total value of city properties; (4) total and per capita indebtedness, purpose of issue, and rate of interest; and (5) assessed valuation of property, basis of assessment, tax levies, rates, and methods of assessment. Definitions of ac-

counting terms employed in the report are given in the introduction to the volume. The report for 1919 is for the fiscal year of each city ending prior to July 1, 1919.

The statistics presented in the report are derived from the records of the finance offices of the several cities, and are so arranged as to admit of comparisons of the various classes of revenues and expenditures; property valuation, tax rates, and levies, and method of assessment; and of the various classes of indebtedness and possessions.

*States.*—The fifth annual report on financial statistics of States for the fiscal period ending prior to July 1, 1919, was transmitted to the printer on May 26, 1920, and the volume appeared on August 10, 1920. This report is similar in scope to the report on financial statistics of cities having a population of over 30,000, the general classification being the same, and the only changes being those made for the purpose of showing data in regard to functions exercised by State governments that are not generally exercised by municipal governments. The reports have been well received by the State officials and contain the only statistics which permit the several States to compare their revenues, expenditures, and other financial transactions of their governments. The value of these reports and of those presenting the financial data of cities is evidenced by the early exhaustion of original editions, public officials regarding them as very helpful in the solution of the grave financial problems confronting them.

#### COTTON AND COTTONSEED.

During the fiscal year ending June 30, 1920, the Bureau conducted its regular inquiries in regard to cotton and cottonseed. The reports issued comprise 10 relating to cotton ginned to specified dates during the ginning season; 12 published monthly during the year relating to cotton consumed, imported, exported, and on hand, and of active consuming cotton spindles; 12 published monthly during the year relating to cottonseed received, crushed, and on hand, and of cottonseed products manufactured, shipped out, and on hand; an annual bulletin on Cotton Production and Distribution for the Season of 1918-19, and an annual pamphlet giving the statistics of cotton ginned from the crop of 1919.

The periodical reports of cotton ginned, the monthly reports relating to cotton consumed, etc., and the monthly reports pertaining to cottonseed and cottonseed products are issued in the form of post cards, which are mailed to a number of growers, ginners, dealers, manufacturers, and others interested in the cotton and cottonseed industries. The annual bulletin presents, in detailed form, the statistical material contained in the post-card reports for the year preceding, together with data relative to cotton production and consumption in foreign countries and other information concerning the cotton industry. It also includes statistics concerning the cottonseed-products industry. The final figures on cotton ginned from the crop of 1919 were issued in pamphlet form and distributed in time to be of use in making comparisons of cotton ginned from the crop of 1920.

## STOCKS OF LEAF TOBACCO.

During the past year there were published four reports of leaf tobacco held by certain classes of manufacturers and dealers coming within the scope of the act of Congress approved April 30, 1912. These reports present data concerning leaf tobacco held on the 1st day of July and October, 1919, and January and April, 1920.

Bulletin 143, Stocks of Leaf Tobacco, etc., was prepared during the fiscal year and was sent to the printer June 26. It follows the same lines as Bulletin 139, the data being brought up to date. It contains comparative data concerning stocks of leaf tobacco collected at each enumeration since the inauguration of these reports in October, 1912. In addition to the statistics of leaf tobacco held the bulletin contains data regarding the production, consumption, imports, and exports of tobacco; the prices obtained for the staple by the growers; the quantities of the several products manufactured therefrom, and the revenue on tobacco collected by the Government of the United States. Data are also shown relative to the world's production of tobacco and of the international trade in unmanufactured tobacco. The bulletin is designed to assemble statistics for the different phases of the tobacco industry published by the several governmental bureaus and to present them in a convenient form for ready reference.

## STATISTICS OF FATS AND OILS.

The conservation of our foodstuffs and the efficient distribution of the same among our people and those in the associated countries during the war with Germany and Austria resulted in the Food Administration collecting monthly reports concerning the production, consumption, and stocks of the several foodstuffs, among others being fats and oils. The collection of the data by that office ceased with December, 1918. To meet the demand for reliable information concerning these commodities during the period following the war, the Secretary of Commerce authorized the collection of quarterly reports during the calendar years 1919 and 1920. The data concerning the production, consumption, and stock of fats and oils for the four quarters of 1919 and the first quarter of 1920 have been collected and published.

The statistics of fats and oils, as just stated, are now being collected under an order of the Secretary of Commerce, and without further authorization will cease with the quarter ending December 31, 1920. There is a considerable demand for the data collected by the Census Bureau in this connection. It is deemed advisable to continue this series of reports, and I would urge the enactment of such legislation as may be necessary to authorize the Bureau to continue the compilation of these statistics. The vegetable-oil industry in the United States has attained some importance during the last few years, and should it not be deemed expedient to continue the collection of complete information concerning fats and oils, it appears desirable to continue the collection of the data similar to those now being collected concerning vegetable oils.

## CENSUS OF ACTIVE AND IDLE WOOL MACHINERY.

Monthly reports of active and idle wool machinery, which during the war period were issued by the Bureau of Markets of the Department of Agriculture, were compiled and published during the fiscal year 1920 by the Bureau of the Census, under the authorization of the Secretary of Commerce. This action was taken at the request of the Bureau of Markets, there being no funds available in that bureau for the continuation of the work, and upon the representations of the American Association of Woolen and Worsted Manufacturers and the National Association of Wool Manufacturers that these reports were of much value, in that they constituted a reliable index to the conditions within the industry. The reports show the total number of active and idle looms, cards, combs, and spinning spindles, the percentage that the idle machinery is of the total reported, and the number of machines in operation by single and double shift. The number of establishments from which returns are received is something over 900, varying somewhat, of course, from month to month.

I would urge the enactment of such legislation as may be necessary to authorize the Bureau to continue the collection of monthly reports of active and idle wool machinery.

## LEATHER STATISTICS.

*Statistics of leather stocks and manufactured leather.*—Statistics of leather stocks and of boots, shoes, and other manufactured leather goods, which formed a part of the comprehensive census of war commodities undertaken by this Bureau, were compiled monthly during the second half of the calendar year 1918, and, in view of the value of the information for conservation purposes, were continued thereafter on a quarterly basis until the close of the fiscal year 1919. The last compilation of these statistics covering stocks on hand or in transit on June 30, 1919, and including summaries of the statistics previously published, was issued early in September, thus completing this statistical inquiry and marking the termination of the war work carried on by the Bureau.

*Monthly census of hides, skins, and leather.*—The act of Congress approved June 5, 1920, authorizes and directs the Director of the Census to compile and publish monthly statistics of hides, skins, and leather.

In compliance with the provisions of this act, the Bureau will take over and continue a statement of monthly statistics of hides and skins, formerly compiled by the Bureau of Markets of the Department of Agriculture, and to this will be added statistics relating to the leather industry and trade. The purpose of this census is to aid in stabilizing the hide and leather industries by furnishing official monthly statistics of materials, production, and consumption. The information to be collected will include stocks on hand of hides, skins, and leather at the close of each month, quantities and classes of hides and skins disposed of, hides and leather in process of tanning and manufacture, and quantities and classes of leather produced and consumed during each month.

This work is being organized in the division of manufactures, where a card index has been prepared, listing about 7,400 establishments covering tanners, packers, abattoirs, hide importers and dealers, and manufacturers of leather and leather goods. These include the larger class of dependable and representative establishments which made monthly reports to this Bureau at the special census of war commodities, or to the Bureau of Markets during the years 1918 and 1919, and may be relied upon to furnish accurate and regular returns.

It is expected that the first report will relate to stocks on hand and in transit October 1, 1920, and the quantities consumed during the preceding month.

#### OFFICIAL REGISTER.

During the year the Official Register for 1919 was compiled by the Bureau. It contains 325,000 names, requiring 1,704 pages, compared with 166,000 names in the 1917 volume of 896 pages. The printing cost of the Register charged to the Bureau was \$28,665. The total printing cost, which includes the editions ordered by the various departments and services of the Government, was \$35,715.33. As explained in the preface, there were omitted the names of all officials and employees of the Postal Service, of all temporary employees, and of all persons who had not the status of regular employees. In addition, all commissioned officers of the Army, Navy, and Marine Corps were omitted, to prevent the expense of duplicating these names, which are printed in the registers of the various services.

I do not believe that the usefulness of this publication in its present form justifies the great amount of time and expense involved in its compilation and publication, and I again renew my recommendations for changes in the scope of the Official Register which appear on page 39 of my annual report for 1917, were repeated in my annual reports for 1918 and 1919, and are printed in the preface to the 1919 Register. With the modification that the proposed list of employees include all administrative and supervisory officials regardless of the salary received, and all statistics of general interest concerning Government departments and personnel, thus providing for a complete picture of the organization of the Federal service.

To obviate the necessity for again compiling information concerning the Federal employees to be published in the present unsatisfactory and expensive form, legislation along the lines suggested should be enacted by the present Congress, as it will be necessary to begin preparation for the 1921 Register early in the coming year.

#### STATISTICAL DIRECTORY OF STATE INSTITUTIONS.

During the fiscal year the Statistical Directory of State Institutions for the Defective, Dependent, and Delinquent Classes was issued, a publication which had been delayed by conditions in the Bureau arising out of the war. This volume of 257 pages shows for each State the name of each State institution devoted to the continuous care of any of these classes, with information as to the location, number of inmates and employees, value of plants, appropriations and expenditures for maintenance and operation, and other items,

together with a map showing the location of the several institutions listed, tables giving general statistics for the State, a classified list of institutions, and a statistical summary.

#### ORGANIZATION OF OFFICE FORCE.

Provision for the organization of the office force of the Fourteenth Decennial Census is made in section 7 of the census act, which specifies that the appointments of the temporary employees during the Fourteenth Census period shall be made through examinations held by the United States Civil Service Commission, or from the reemployment registers established by Executive order of November 29, 1918, or by transfer from other branches of the departmental classified service of persons who have had previous experience in census work. Provision is also made for the employment, without examination, for not exceeding six months, of persons who have had previous experience in operating mechanical appliances in census work and whose efficiency records were satisfactory.

In accordance with this provision of the census act, the Civil Service Commission, at the request of the Bureau, held first-grade clerical examinations throughout the country on October 18 and November 15, 1919, and on May 22, 1920, and second-grade clerical examinations for the purpose of establishing eligible registers for the position of card-punching-machine operative on October 22, November 19, and December 10, 1919. As these examinations did not yield a sufficient number of eligibles, it was necessary for the commission to hold additional first-grade, second-grade, and third-grade examinations for the purpose of establishing supplemental registers for clerks and operatives. The examinations were similar in scope to the clerk and minor clerk examinations usually held for the departmental service at large; but because the number of inexperienced clerks and operatives obtained from the first examinations was so large, the Bureau, with the approval of the Civil Service Commission, amended the later examinations so as to require three months' clerical experience before applicants would be admitted to the tests. Age limits were found to be necessary in the interest of good administration and were fixed at 18 to 49 years, inclusive, in the case of clerks and subclerical employees, and 18 to 44 years, inclusive (later reduced to 35 years), in the case of operatives.

I wish to express the Bureau's full appreciation of the Civil Service Commission's cooperation in making every possible effort to furnish promptly the unusually large number of eligibles required to meet the Bureau's needs.

A few appointments were made by the transfer of former census employees from other departments and by temporary appointments, not to exceed six months in duration, of former employees who had operated mechanical appliances at previous censuses.

A large number of appointments were made from the reemployment registers, which consist of the names of employees released from the several departments on account of reduction of force.

The Bureau's statutory force at the beginning of the decennial census period, July 1, 1919, numbered 809. At the close of the fiscal year ended June 30, 1920, the total force in Washington, D. C. (exclusive of 329 special agents who are paid on a per diem basis, and



324 persons employed on the four-hour night force), had reached 5,502.

Because of the change in the date of taking the census, from April 15 to January 1, it was necessary to appoint the temporary office force earlier than in the Thirteenth Census; and owing to the abnormal conditions existing as a result of the war, great difficulty was experienced in organizing this force and keeping the maximum number of employees required on duty.

The following table shows, by months, the number of persons who called at the Bureau seeking information or employment during the last fiscal year, the large majority of whom had not passed any civil-service examination or were not otherwise eligible for appointment:

July.....	50	February.....	2,125
August.....	1,032	March.....	2,054
September.....	1,385	April.....	2,112
October.....	1,455	May.....	8,528
November.....	1,092	June.....	7,345
December.....	978		
January.....	2,083	Total.....	31,068

While the Bureau's entrance salary of \$900 per annum was 50 per cent higher than in 1910, its appropriation did not permit it to pay salaries, even with the bonus of \$240 added, equal to the compensation applicants had apparently been receiving in the business world or in the war bureaus. Persons outside of Washington, therefore, declined, in view of the high cost of living and conditions generally, to accept employment, while many of those already in Washington preferred to return to their homes rather than to accept positions in the Census Bureau at lower salaries.

In order to keep the census work under way as rapidly as has been deemed desirable, a night force has been employed. This force is made up of persons appointed in the usual manner, through examination, who work from 4 to 11.30 p. m. daily. In addition, a four-hour force, working from 6 to 10 p. m., composed of persons employed during the day in other Government departments, was organized. This four-hour force, however, has been practically disbanded, as it was found that the "turnover" was so great as to prevent satisfactory results. Of the 828 persons who were appointed on it during May and June, 501 resigned or had been dropped from the rolls by June 30.

The following table shows the appointments in detail from July 1, 1919, to June 30, 1920, inclusive:

Classes of appointments.	Clerks.	Operatives.	Subclerical.	Total.
Probational (having permanent status).....	750	12	83	855
Reinstatements.....	40		4	53
Transfers from other bureaus or departments.....	36		11	50
For census period only.....	1,455	13		1,468
Limited (1, 3, or 6 months).....	645	2,428	58	3,653
7-hour night force.....	51	657	2	715
4-hour night force.....		828		828
Total.....	3,600	3,939	161	7,922

In addition to the 7,022 original appointments, there were 628 reappointments of clerks, 30 reappointments of operatives, and 39 of subclerical employees. In connection with the appointments, positions were also tendered to 4,299 eligibles, 598 of whom declined, and the balance, 3,701, failed to respond or to report for duty.

The following table shows the separations in detail from July 1, 1919, to June 30, 1920, inclusive:

Month, 1919-20.	Permanent.		Temporary.			Total.
	Clerks.	Subclerical employees.	Clerks.	Operatives.	Subclerical employees.	
July.....	5	1	3			9
August.....	8	2	14			24
September.....	14	2	29		4	49
October.....	15	2	53			72
November.....	10	1	34			45
December.....	15	2	14		3	34
January.....	12		40	5	2	59
February.....	20	2	26	7	1	56
March.....	53	10	54	38	1	156
April.....	47	2	31	78	1	159
May.....	67	5	18	673	1	764
June.....	89	3	3	284	2	381
Total.....	355	32	322	1,081	15	1,805

The foregoing table shows 1,805 separations from the service during the year, or 25.7 per cent of the total number appointed. This turnover has retarded the progress of the work and has been exceedingly expensive.

#### PROMOTIONS AND DEMOTIONS.

In order to stabilize the force it has been necessary to give relatively frequent promotions to employees who entered the service at \$900 and \$960 per annum and whose services have been satisfactory. These promotions range from \$60 to \$180 per annum, the majority being at the rate of \$60 per annum, and are based on the relative efficiency of the employees and the nature of the work upon which they are engaged. An effort has been made to adjust the rates of pay for clerks so that employees engaged on similar work in the various divisions shall receive like compensation. The pay of the operatives, which ranges from \$900 to \$1,380 per annum, has been readjusted semimonthly in accordance with scales of wages based upon the number of cards punched. This class of employees also receives the \$240 bonus.

#### SPECIAL AGENT FORCE.

The following statement shows, in detail, the number of special agents appointed for all inquiries from July 1, 1919, to June 30, 1920:

Special agents, of "known and tried experience in statistical work".....	18
Special agents, including experts, agents for general field work, etc.....	396
Special agents, census of irrigation and drainage.....	85
Special agents, censuses of Alaska, Samoa, Guam, Porto Rico, Hawaii.....	51
Special agents, census of manufactures (local).....	1,156
Special agents, to assist supervisors.....	15
Special agents, cotton statistics.....	173
Total.....	1,894

## OFFICE AND FIELD EMPLOYEES JUNE 30, 1920.

The following statement shows the nature and distribution of the office and field force on June 30, 1920:

## OFFICIALS.

Director.....	SAM. L. ROGERS.
Assistant director.....	WILLIAM M. STEUART.
Chief clerk.....	THOMAS J. FITZGERALD.
Chief statisticians:	
Population.....	WILLIAM C. HUNT.
Agriculture, cotton and tobacco.....	WILLIAM L. AUSTIN.
Manufactures.....	EUGENE F. HARTLEY.
Statistics of cities.....	STARKE M. GROGAN.
Vital statistics.....	WILLIAM H. DAVIS.
Revision and results.....	JOSEPH A. HILL.
Disbursing clerk.....	FRED A. GOSNELL.
Appointment clerk.....	WALTER S. GILCHRIST.
Geographer.....	CHARLES S. SLOANE.
Expert chiefs of divisions:	
Administrative.....	TIMOTHY F. MURPHY.
Appointment.....	EMILY I. FARNUM.
Agriculture.....	BOWEN CRANDALL.
Cotton and tobacco.....	THOMAS A. DEVOR.
Geographer.....	WESLEY E. CILLEY.
Manufactures.....	EVELYN L. YEOMANS.
Population.....	JOHN H. DALY.
Revision and results.....	EDWARD B. WHITE.
Statistics of cities.....	WILLIAM A. RUFF.
Vital statistics.....	WILLIAM W. SAWYER.
Chief, mechanical laboratory.....	EDWARD W. KOCH.
	WILLIAM B. CRAGG.
	OLIVE M. RIDDLEBERGER.
	GEORGE B. WETZEL.
	HARRY H. PIERCE.
	LEMUEL A. CARRUTHERS.
	JOHN B. MITCHELL.
	E. M. LABOITEAUX.

## CLERICAL FORCE.

Statistical experts. \$2,000.....	8	Clerks—Continued.	
Sterographers:		\$960.....	953
\$1,800.....	2	\$600.....	27
\$1,500.....	1	Total.....	2,777
Clerks:		Operatives:	
\$1,800.....	31	\$1,380.....	102
\$1,680.....	52	\$1,320.....	50
\$1,600.....	28	\$1,260.....	74
\$1,560.....	52	\$1,200.....	90
\$1,440.....	33	\$1,140.....	222
\$1,400.....	25	\$1,080.....	79
\$1,380.....	107	\$1,020.....	208
\$1,320.....	103	\$960.....	749
\$1,260.....	58	\$900.....	385
\$1,200.....	315	Piece-price.....	613
\$1,140.....	215	Total.....	2,872
\$1,080.....	329		
\$1,020.....	429		
\$1,000.....	9		

SUBCLERICAL FORCE.

Photostat operators, \$1,200.....	2	Unskilled laborers, \$720.....	28
Skilled laborers:		Messengers, \$840.....	9
\$1,000.....	6	Assistant messengers, \$720.....	25
\$960.....	1	Messenger boys, \$450.....	27
\$900.....	2		
\$840.....	6	Total.....	111
\$720.....	5		

MECHANICAL LABORATORY.

Experts:		Mechanical draftsman, \$1,800.....	1
\$2,500.....	1	Pressman and machinist, \$1,500....	1
\$2,250.....	2	General mechanic, \$1,200.....	1
\$1,800.....	1	Wireman, \$1,200.....	1
Mechanician, \$1,800.....	1	Machinists, \$1,200.....	2
Tabulating mechanicians:		Machinist's helper, \$1,200.....	1
\$1,800.....	2	Carpenter, \$1,200.....	1
\$1,600.....	2	Shop apprentices:	
\$1,500.....	1	\$1,000.....	1
\$1,400.....	2	\$840.....	1
\$1,200.....	1	\$720.....	3
Electricians:		Total.....	36
\$1,800.....	1		
\$1,400.....	9		

SPECIAL AGENT FORCE.

Special agents, of "known and tried experience in statistical work".....	18
Experts, and for general field work.....	311
Employees of other Government bureaus who are serving without compensation.....	93
Special agents, vital statistics, checking incomplete returns of births and deaths.....	29
Local special agents, census of manufactures.....	1,092
Total.....	1,453

SUMMARY.

Officials.....	30	Mechanical laboratory force.....	36
Clerical force.....	2,777	Special agents.....	1,453
Operatives.....	2,872		
Subclerical force.....	111	Total.....	7,279

In addition, there are employed throughout the cotton belt 650 local special agents to collect statistics of cotton and cottonseed. These agents perform their work only at intervals and are paid on a piece-price basis.

QUARTERS.

Steps to secure additional space for the housing of the Fourteenth Census force were taken in the early part of November, 1918. As a result of the early attention given this matter, Building D (one of the temporary war buildings at Four-and-a-half Street and Missouri Avenue NW.) was assigned to this Bureau. This is a three-story frame structure with eight wings and a head house on each floor, and, exclusive of corridors, aisles, toilets, etc., contains 237,000 square feet of floor space. To make the building suitable for the Bureau's use it was necessary to construct four loading platforms, reinforce the floors of four wings on the first floor, construct six bridges connecting adjoining wings on the first floor, and to install three freight elevators.

A fireproof vault, 60 feet 2 inches by 44 feet 2 inches, in which to store the 1920 population schedules, was also constructed at the north end of the fourth wing. All of this work was completed opportunely without interfering in any way with the work of this Bureau or of the Air Service, which occupied part of the building until the close of the year 1919.

On July 1, 1919, one-half of the building was turned over to this Bureau, and on July 1 and 2 the divisions of population and agriculture, on August 12 the geographer's division, and on November 4 the division of cotton and tobacco were removed to Building D. In January, 1920, the entire building, except approximately 1,800 square feet occupied by the Congressional Joint Commission on Reclassification of Salaries, was turned over to this Bureau. On February 17 the administrative division, on March 17 the division of revision and results, and on May 5 the division of statistics of cities were also removed to Building D. The division of vital statistics, a section of the geographer's division, and the division of manufactures, the office force of which latter division has been greatly expanded during the census period, are still housed in the Commerce Building, at Nineteenth Street and Pennsylvania Avenue NW.

Although the force of the Bureau is probably better housed than it ever has been during a decennial census, it is highly desirable that by the time the next census is taken the Bureau be provided with a fireproof building in which to house the office force. A large part of the important records of the 1920 census are constantly exposed to destruction by fire in the present building. Two fires, which, fortunately, were quickly discovered and extinguished, occurred during the year. One of them occurred in a toilet room a half hour after the force had been dismissed for the day, and it was only through good luck that it was discovered before it gained headway. In view of the enormous cost of collecting census schedules, their preservation should be insured by having them housed and handled in a fireproof building.

#### TRANSPORTATION.

Until the Bureau secured adequate motor transport of its own every effort was made to obtain the use of transportation facilities of other Government bureaus and departments wherever possible instead of hiring trucks from commercial firms. As a result the total expense to the Bureau for hauling and truck hire for the year has been only \$150.33. This small expense indicates a substantial saving to the Government in view of the immense amount of hauling done during the year. Approximately 50,000 sacks of mail and supplies and 6,795 boxes of schedules and portfolios were shipped to supervisors for use in connection with the field work on population and agriculture, and an equal number of boxes of schedules and portfolios were returned to the Bureau by the supervisors. In addition to other miscellaneous hauling, six divisions were moved from the Commerce Building to Building D. This moving was performed by the Zone Transportation Office of the War Department, under the supervision of Capt. C. N. Wickens, deputy zone transportation officer. The work was performed very efficiently and with comparatively little disturbance to the work of the divisions. I wish to acknowledge

here the splendid cooperation and assistance received from Capt. Wickens in the moving of the several divisions of the Bureau.

The Bureau now owns a 1½-ton Garford truck. It also has the use, through the courtesy of the Post Office Department, of a small Ford truck. Outside of the maintenance and repair of this equipment, it is not anticipated that the Bureau will be under further expense for hauling.

#### PURCHASE OF SUPPLIES AND EQUIPMENT.

At the beginning of the Fourteenth Census period a purchasing section was organized under the supervision of the chief clerk, and during the past fiscal year the Bureau has done its own purchasing. Eight hundred and eighty-six supply requisitions were received, 1,977 purchase orders were written, and 111 proposals issued.

Much difficulty was experienced in procuring necessary supplies on account of the unsettled economic condition of the country, and especially because of the lack of raw materials and fuel, and delay in transportation. In order that this should not impede the progress of the census work, the Bureau rendered every possible assistance to contractors and manufacturers in the production and delivery of orders. On some occasions the Bureau procured coal for the manufacture of articles on order, obtained freight cars for their shipment, and had the shipments expedited.

As a result of the termination of the war the Bureau was enabled to obtain a large part of its equipment from the General Supply Committee. This committee cooperated with the Bureau to the fullest possible extent and contributed largely to its success in securing such equipment as was necessary for the steady and uninterrupted prosecution of the census work.

#### PUBLICATIONS ISSUED.

Following is a list of the publications issued during the fiscal year and since its close:

Class and title.	Date issued.	Pages.	Edition.
JULY 1, 1919, TO JUNE 30, 1920.			
Reports (cloth bound and of quarto size, except as otherwise indicated):			
Birth statistics for the registration area of the United States: 1917 (paper).....	Dec. 3, 1919	299	5,000
Census of manufactures, 1914—Vol. II, reports for selected industries and detailed statistics for industries by States.....	July 2, 1919	1,917	1,500
Electric railways: 1917 (cloth and paper).....	May 8, 1920	177	4,000
Financial statistics of cities having a population of over 30,000: 1918.....	Oct. 9, 1919	337	5,200
Financial statistics of States: 1918 (cloth and paper).....	Sept. 18, 1919	123	4,500
Influenza and pneumonia, from special tables of mortality, in Indiana, Kansas, and Philadelphia, Pa., Sept. 1 to Dec. 31, 1918 (paper—octavo).....	Mar. 20, 1920	181	4,600
Mortality statistics: 1917.....	Nov. 20, 1919	597	5,000
Mortality statistics: 1918.....	June 16, 1920	603	3,200
Municipal markets in cities of over 30,000: 1918 (paper).....	July 23, 1919	56	6,000
Official register: 1919.....	Mar. 24, 1920	1,704	25
Religious bodies—Part I, 1916—Summary and general tables.....	Jan. 2, 1920	534	5,000
Religious bodies—Part II, 1916—Separate denominations.....	Nov. 11, 1919	727	5,000
Standard nomenclature of diseases and pathological conditions, injuries, and poisonings: 1919.....	Apr. 17, 1920	317	2,500
Statistical directory of State institutions: 1919.....	Feb. 2, 1920	257	3,000
Telegraphs and municipal electric fire-alarm and police-patrol signaling systems: 1917 (paper).....	July 19, 1919	61	3,000
Telephones: 1917 (paper).....	Mar. 11, 1920	52	4,000
Transportation by water: 1919.....	Mar. 10, 1920	230	4,000
Total.....		7,412	65,525

<sup>1</sup> The various reports bound together in this volume have previously been published separately.

Class and title.	Date issued.	Pages.	Edition.
JULY 1, 1919, TO JUNE 30, 1920—Continued.			
Bulletins—Permanent Census (quarto):			
No. 139—Stocks of leaf tobacco: 1918 (octavo).....	Sept. 11, 1919	46	20,000
No. 140—Cotton production and distribution, season of 1918-19.....	Feb. 6, 1920	135	34,500
No. 141—Mortality statistics: 1918.....	Feb. 27, 1920	92	2,600
Total.....		273	57,100
Bulletins—Fourteenth Census (quarto):			
Porto Rico, population, number of inhabitants by municipalities and minor civil divisions, English.....	May 26, 1920	12	500
Porto Rico, population, number of inhabitants by municipalities and minor civil divisions, Spanish.....	June 21, 1920	12	1,500
Total.....		24	2,000
Miscellaneous publications:			
Annual report of the Director of the Census to the Secretary of Commerce, fiscal year 1919 (octavo).....	Nov. 4, 1919	40	2,500
Physicians' pocket reference to the international list of causes of death, 1919—fifth edition (size 3 by 6).....	May 22, 1920	28	25,000
Religious bodies, by States—Statistics of denominations: 1916 (reprint of Table 62 from Part I of report on religious bodies, 1916, pages 150 to 237).....	June 6, 1920	89	1,500
Religious bodies, by counties—Number of members in selected denominations, 1916 (reprint of Table 63 from Part I, religious bodies, 1916, pages 235 to 329).....	May 29, 1920	93	1,500
Thirty-four reports, in card form, relating to cotton and cottonseed.....	June 14, 1919 to July 29, 1919	34	1,360,000
Four reports, in card form, relating to stocks of leaf tobacco.....	Apr. 29, 1920 to Sept. 30, 1919	4	82,500
Three reports, in sheet form, relating to fats and oils.....	Dec. 1, 1919	3	24,000
Total.....		291	1,497,000
Total reports, bulletins, and miscellaneous publications for July 1, 1919-June 30, 1920.....		8,000	1,621,625
Census of war commodities (quarto), boots, shoes, and manufactured leather.....	Aug. 25, 1919	19	2,000
Grand total, July 1, 1919, to June 30, 1920.....		8,019	1,623,625
JULY 1 TO AUG. 31, 1920.			
Reports (cloth bound and of quarto size, except as otherwise indicated):			
Birth statistics for the registration area of the United States: 1917 (paper).....	July 9, 1920	312	4,500
Central electric light and power stations with summary of the electrical industries: 1917 (cloth and paper).....	Aug. 26, 1920	184	3,250
Financial statistics of States: 1919 (cloth and paper).....	Aug. 6, 1920	119	4,200
Total.....		615	11,950
Bulletins—Permanent Census:			
No. 142, Religious bodies: 1916 (quarto).....	Aug. 6, 1920	192	2,000
Bulletins—Fourteenth Census (quarto):			
Number of inhabitants by minor civil divisions—			
Delaware.....	Aug. 6, 1920	6	600
District of Columbia.....	July 21, 1920	4	500
Hawaii.....	July 12, 1920	3	500
Samoa, population and agriculture.....	July 29, 1920	7	1,000
Total.....		20	2,600
Miscellaneous publications:			
Advance tables of cotton production in the United States, crop of 1919 (octavo).....	Aug. 11, 1920	39	33,250
Grand total, July 1 to Aug. 31, 1920.....		866	49,500

## ESTIMATES AND APPROPRIATIONS.

The estimate originally made for taking the Fourteenth Decennial Census and carrying on the annual and other investigations of the Bureau for the three-year census period ending June 30, 1922, was \$20,500,000. After the original estimates were prepared provision for an additional inquiry relating to encumbrances on homes was inserted in the census bill by the Senate. It is estimated that this inquiry will add approximately \$1,000,000 to the cost of taking the Fourteenth Census. An increase of \$50,000 in the estimates was made to provide for the construction of a fireproof vault, the strengthening of floors, etc., in Building D, at Four-and-a-half Street and Missouri Avenue NW. An economy was effected through the elimination of the items of \$300,000 for rent of buildings in the District of Columbia and \$35,000 for fuel, as a result of the assignment of Building D to this Bureau. These changes are equivalent to a net increase of \$715,000, making the revised estimate \$21,215,000. This estimate was based on the assumption that prices and rates of compensation would have made some progress toward a return to normal conditions by the time the census was to be taken. However, the reverse has been the case.

Acting under the authority contained in the Fourteenth Census act, I established the rates of pay of enumerators, basing the rates upon the amount paid for similar work at the census of 1910 and giving due regard to the general increase in the rates of wages that had occurred during the past 10 years. The supervisors were advised of the rates of pay thus established, and there was a general protest throughout the country against their insufficiency. In deference to this protest an increase was granted, but the supervisors were still unable to secure a full quota of enumerators. In order that there would be no delay in starting the census promptly, it then became necessary to allow the maximum rates of compensation to enumerators throughout the United States. As a result it was necessary to send to Congress a deficiency estimate of \$2,550,000 for the fiscal year 1920, making the revised estimates for the Fourteenth Decennial Census period \$23,765,000, of which \$21,394,000 was to cover the cost of the decennial census inquiries and \$2,371,000 the cost of the annual and other nondecennial work to be done during the three-year census period (July 1, 1919, to June 30, 1922).

To meet the cost of the Fourteenth Census and other work to be performed during the three-year census period, Congress has thus far made the following appropriations: \$15,000,000 in the legislative, executive, and judicial appropriation act, approved March 1, 1919; \$2,550,000 in the urgent deficiency act, approved March 16, 1920; and \$5,000,000 in the legislative, executive, and judicial appropriation act, approved May 29, 1920—a total of \$22,550,000. These appropriations, which continue available until June 30, 1922, are \$1,215,000 less than the Bureau's estimates.

The financial statement of the Bureau is given on the following page.



## FINANCIAL STATEMENT, FISCAL YEAR 1920.

Division.	Expenditures and estimated liabilities.		
	Amount expended fiscal year 1920.	Estimated liabilities July 1, 1920.	Total.
Director's, Assistant Director's, and Chief Clerk's offices.	\$83,668.71	None.	\$83,668.71
Appointment.....	35,486.29	None.	35,486.29
Disbursing.....	54,111.23	None.	54,111.23
Geographer.....	126,583.99	None.	126,583.99
Revision and results.....	45,034.88	None.	45,034.88
Total.....	344,885.10	None.	344,885.10
Enumeration:			
Supervisors and clerks to supervisors—Salaries, traveling and miscellaneous expenses.....	1,434,216.36	\$261,000.00	1,695,216.36
Enumerators—Salaries and traveling expenses.....	7,547,544.46	103,000.00	7,650,544.46
Total.....	8,981,760.82	364,000.00	9,345,760.82
Population, including mechanical laboratory:			
Office.....	\$43,849.77	42,000.00	\$85,849.77
Agriculture:			
Office.....	467,383.84	None.	467,383.84
Irrigation and drainage:			
Office.....	36,035.45	None.	36,035.45
Field.....	29,894.52	20,000.00	49,894.52
Total.....	65,929.97	20,000.00	85,929.97
Manufactures:			
Office.....	393,054.82	None.	393,054.82
Field.....	398,908.55	200,000.00	598,908.55
Total.....	791,963.37	200,000.00	991,963.37
Vital statistics:			
Office.....	145,385.88	None.	145,385.88
Field.....	69,049.08	25,000.00	94,049.08
Total.....	214,434.96	25,000.00	239,434.96
Statistics of cities and States:			
Office.....	35,408.45	None.	35,408.45
Field.....	35,926.44	5,000.00	40,926.44
Total.....	71,334.89	5,000.00	76,334.89
Cotton and tobacco:			
Office.....	45,724.94	None.	45,724.94
Field.....	230,994.88	1,000.00	231,994.88
Total.....	276,719.82	1,000.00	277,719.82
General expenses:			
Equipment, stationery, etc.....	345,939.19	65,000.00	410,939.19
Rent and purchase of tabulating machines and purchase of cards.....	172,629.75	20,000.00	192,629.75
Total.....	518,568.94	85,000.00	603,568.94
Printing.....	360,948.38	186,000.00	546,948.38
Integrating counter:			
Office.....	2,272.04	None.	2,272.04
Miscellaneous divisions:			
Traveling expenses.....	1,099.72	None.	1,099.72
Grand total.....	12,941,151.62	928,000.00	13,869,151.62

APPROPRIATIONS.

Expenses of the Fourteenth Census.....	\$22, 550, 000. 00
Recoveries.....	2, 823. 00
Total.....	<u>22, 552, 823. 00</u>
Expenditures and liabilities incurred to June 30, 1920.....	<u>13, 869, 151. 62</u>
Available for fiscal years 1921 and 1922.....	8, 683, 671. 38

Respectfully,

SAM. L. ROGERS,  
*Director of the Census.*

To Hon. JOSHUA W. ALEXANDER,  
*Secretary of Commerce.*

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