

BUREAU OF THE CENSUS
REPORT OF THE DIRECTOR
TO THE SECRETARY OF
COMMERCE AND LABOR



Concerning the Operations of
the Bureau for the Year 1907-8

WASHINGTON : 1908

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REPORT
OF THE
DIRECTOR OF THE CENSUS.



Washington, November 1, 1908.

SIR: I have the honor to submit the following report upon the operations of the Bureau of the Census during the fiscal year ended June 30, 1908, and upon the work now in progress and shortly to be undertaken. The report covers the fifth year of my incumbency of the directorship, the sixth year of the existence of the permanent Office under the act of March 6, 1902, and the ninth year since its establishment as a temporary Office under the act of March 3, 1899. The present fiscal year is the last intercensal year, under the permanent census act, prior to the temporary reorganization of the Office, under legislation now pending in Congress, for the taking of the thirteenth decennial census.

This is, therefore, an appropriate occasion to express the conviction that results have demonstrated the wisdom of the legislation which determined that hereafter the Census Office is to be a permanent continuing bureau of the Federal Government, and no longer an intermittent bureau, to be assembled with the beginning and scattered at the end of each decennial enumeration. The work of the intercensal period has fully equaled in importance and value that accomplished during the decennial period proper. It has been done with a care, a completeness, and an accuracy that were impossible when these investigations were carried on simultaneously with the enumeration of population, agriculture, and manufactures. It has been demonstrated also that the existence of a permanent statistical office, organized upon a scale sufficiently broad to permit the effective handling of any statistical inquiry that may be required by Congress or by any department, is an imperative adjunct for the orderly conduct and administration of a great and expanding government like our own. No great nation of a degree of civilization at all equal to ours lacks an office of this character. As time passes and as the functions and facilities of the Census Office come to be more fully understood, it is to be expected that purely statistical compilations of every

description will be more and more concentrated in this Bureau, which will thus become, like similar bureaus abroad, the general statistical clearing house of the Government.

This conclusion may be sustained by a statement of what the permanent Census Office has done over and above the work contemplated for it when the Office was made permanent. This additional work includes the important series of monographs containing supplemental studies and analyses of the returns of the Twelfth Census; the two reports on employees and wages; the compilation and publication of the census of the Philippine Islands (1903); the two bulletins on the executive civil service of the United States; the report on marriage and divorce, covering the forty-year period from 1867 to 1906; the annual statistics of the lumber cut; the annual statistics of cities of 30,000 population and over; the compilation of the biennial official register of the United States; the census of the new state of Oklahoma (1907); the Census exhibits at the Louisiana Purchase Exposition and the Portland Exposition; the annual estimates of population; the annual reports on the world's consumption of cotton; the report on criminal judicial statistics; the compilation and tabulation of the Cuban census of 1907; and the publication of the census of 1790, besides the work now in progress undertaken at the request of Congress and the department, to which reference is made in this report.

In addition to the work accomplished, there remains as evidence of the value of the permanent Office the fact that we have in existence to-day a complete organization ready to enter upon the thirteenth decennial enumeration, with the plans for that great work fully matured, with the records in perfect order, and with much of the preliminary work already done with a care and accuracy never before possible. Still again, there remains the great movement for coordination, cooperation, and unification in the compilation of Federal statistics of every description, a movement which naturally has its center in the Census Office, and through which it will be possible not only to avoid much of the duplication, inconsistency, and contradiction which have heretofore characterized official statistics, but also to develop more fully systematic, uniform, and scientific methods of statistical compilation.

FINANCIAL STATEMENT.

Attached to this report as Appendix A is the financial statement of Mr. Thomas S. Merrill, disbursing clerk of the Bureau, showing the appropriations for the conduct of the Bureau during the fiscal year 1907-8, and the expenditures thereunder. The statement covers ex-

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penditures from appropriations made for three fiscal years, because certain unexpended balances for the fiscal year 1907 were made available for the fiscal year 1908, while certain appropriations for the fiscal year 1909 were made immediately available. The expenditures during the fiscal year (including \$147,215.04 for printing) were \$1,407,013.42 and the unexpended balances aggregated \$48,662.05. A statement of the entire cost of maintaining the Bureau from its organization in 1899 to date, apportioned between the temporary and the permanent Office, appears elsewhere in this report in connection with an estimate of the cost of the Thirteenth Census.

WORK COMPLETED DURING THE YEAR.

The work of the Bureau during the year is represented by bulletins and reports published, reports completed and awaiting publication, and reports, the fieldwork and compilation of which are in progress. The following is a list of Census publications since the last annual report:

VOLUMES.

	Page.
Mortality Statistics, 1906.....	486
Manufactures, 1905, Part III (Selected Industries).....	968
Manufactures, 1905, Part IV (Selected Industries).....	832
Register of Employees of the Department of Commerce and Labor.....	294
Transportation by Water: 1906.....	224
Statistics of Cities over 30,000: 1906.....	348
Statistics of Marriage and Divorce in the United States, 1867-1906, Part II.....	850
The Official Register of the United States: 1907:	
Volume I.....	742
Volume II.....	763
Heads of Families, First Census: 1790, Connecticut.....	228
Heads of Families, First Census: 1790, Maine.....	106
Heads of Families, First Census: 1790, Massachusetts.....	364
Heads of Families, First Census: 1790, New York.....	308
Heads of Families, First Census: 1790, North Carolina.....	292
Heads of Families, First Census: 1790, Pennsylvania.....	426
Heads of Families, First Census: 1790, Rhode Island.....	72
Heads of Families, First Census: 1790, South Carolina.....	150
Heads of families, Virginia State Enumerations made in 1782-1785.....	190

BULLETINS.

	Number.
Census of Manufactures, 1905:	
Chemicals and Allied Products.....	92
Earnings of Wage-Earners.....	93
Supply and Distribution of Cotton for the year ending August 31, 1907.....	90
Transportation by Water: 1906—United States.....	92
Statistics of Employees, Executive Civil Service of the United States: 1907.....	94
Cotton Production: 1907.....	95

These publications represent about 8,220 printed quarto pages, largely tabular matter. They include the final volumes of the census of manufactures, 1905, the report on marriage and divorce, the official register of the United States, the republication of the census of 1790, and the decennial report upon transportation by water. The bulletin summarizing this latter report was published March 16, 1908. The report also contains monographs for five subdivisions of the waters of the United States, viz: The Atlantic coast and Gulf of Mexico; the Pacific coast; the Great Lakes and St. Lawrence river; the Mississippi river and its tributaries; and canals and other inland waters.

DISTRIBUTION OF REPORTS.

The number of copies of Census publications distributed during the year was 622,305, not including bulletins of the Twelfth Census, of which no record was kept. Of the number distributed, 195,508 were bulletins of the permanent Census, 390,000 were cotton reports, and 32,861 were reports of the Twelfth and permanent censuses, divided as follows: Bound volumes of the Twelfth Census, 6,148; bound special reports of the permanent Census, 17,856; special reports of the permanent Census in paper covers, 8,857. In addition to the above, 724 four-volume sets of the Philippine census report, 827 reports of the Eleventh Census, and 213 reports of the Tenth Census were distributed.

Since the organization of the Bureau in 1899 it has compiled reports which aggregate 28,930 printed quarto pages of tables and text matter. Of these reports, 433,050 bound volumes have been printed, of which 366,655 copies have been distributed. This statement is exclusive of more than half a million bulletins printed and circulated. Unlike most Government publications, the Census reports are not distributed on the basis of a congressional "quota," but are sent out only in response to an indicated need for them.

PRESERVATION OF CENSUS REPORTS.

I have had under consideration for some time the problem arising from the deterioration of the volumes of Census reports by the action of time. Reports of the Census, both decennial and special, form statistical records, secured at great expenditure, which reflect conditions prevailing throughout the Republic in specified lines of activity at given dates. They are, indeed, an account of stock, the preservation of which is essential for the information of future generations. The Census reports from 1790 to the present time are in constant use for reference in the Census Office, and early Census reports, though

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presenting very limited statistical information, are among the most valued possessions of the large libraries of the country.

Early Census reports were printed upon paper made almost exclusively of rags, but although this material was reasonably permanent the pages of the older reports already show much discoloration and signs of disintegration. This is due to some extent to the fact that inexpensive grades of rag paper were used by the early printers. Since the introduction of paper made from wood pulp it has been the practice to use such paper purchased under contract and far less durable even than the crude rag papers used in early publications. It is therefore a matter of much concern that the reports of the last three or four censuses, filling many large volumes, will in a few decades become almost valueless because of the deterioration inevitable from the use of paper of poor quality. To permit such a state of affairs in a period when paper making has been carried to perfection is a shortsighted policy on the part of the Federal Government in connection with publications which grow more valuable with the passage of time.

Paper made of wood pulp is used from motives of economy; it is cheaper than any rag paper and much cheaper than the best grades of such paper. In fact, the cost of a paper which would last without deterioration for at least one hundred years is so great that the large editions of Census reports could not be printed upon such material without an expenditure that would be open to serious criticism. So far as the reports of the Census are concerned, I am persuaded that this criticism can be avoided and the main object of permanent preservation secured, by printing a few copies of each report upon the most permanent paper which can be obtained.

The Japanese Government manufactures for its own use a material known as "imperial Japan vellum," of which limited quantities may be obtained for commercial use. After much inquiry upon this subject, I am convinced that this paper possesses lasting qualities as to both color and toughness of fiber, superior to those of any other paper now obtainable. I have therefore directed that of every future report issued by the Census 50 copies shall be printed upon this material, 10 copies to be retained for the use of the Bureau of the Census and the department, 2 copies to be deposited in the Congressional Library, 1 in the Executive Office, and 1 in the library of each executive department, the remaining copies to be deposited in the leading libraries of the large cities so far as the edition permits.

While these special copies will cost considerably more than if printed upon contract wood pulp paper, the actual expenditure will not be large, and a permanence will be secured far greater than that

attained by the early publications of the Census. This will not only insure perfect preservation of these copies of Census reports for many generations to come, but will also remove the obvious criticism that with less facilities for production and smaller resources the early publishers of Census reports in reality performed their duty to the future with greater fidelity than those of more recent years.

CURRENT WORK OF THE BUREAU.

The current work of the Bureau includes the four annual reports, the final work on the reports on criminal judicial statistics and on religious bodies, and the quinquennial report on the electrical industries. All of these reports are well advanced and will be published during this fiscal year.

The report on electrical industries covers all street and electric railways; central electric light and power stations; commercial telephone companies; mutual telephone companies, and rural or farmer telephone lines; commercial telegraph companies and telegraph lines operated for the exclusive use of steam roads; and electric police-patrol and fire-alarm systems. The last census of the electrical industries (1902) covered different periods of time, and separate canvasses were made for each branch, thus adding greatly to the expense. All branches of the industry have now been canvassed simultaneously, thus reducing the cost of the fieldwork and laying the basis for more satisfactory comparisons in the future. The report will show an enormous increase in the number of plants using electricity; but the improvement in office and field methods has permitted the canvass to be completed at a very slight increase over the cost of the previous canvass of 1902. The census will include Porto Rico, Alaska, and the Hawaiian Islands.

EXPRESS BUSINESS.

The permanent census act requires the Director of the Census to collect statistics concerning the "express business." The Interstate Commerce Commission is devising methods for the collection of statistics from the express companies and for the preparation of a uniform system of accounting to be applied to all companies engaged in interstate transportation. Therefore it was essential that arrangements be made for the two offices to work in concert. To accomplish this, one of the special examiners of the Interstate Commerce Commission was appointed a special agent of the Bureau of the Census to serve without compensation. This agent has collected reports

from practically all of the commercial express companies, and has recently completed the census report.

In view of the fact that the Interstate Commerce Commission is hereafter to make annual reports on the express business, I recommend that the census law be so amended as to relieve the Census Bureau of the duty of making a decennial report on this subject. This decennial report if retained must hereafter be only a duplication of the annual report of the Interstate Commerce Commission.

VITAL STATISTICS.

The seventh annual report on mortality statistics, 1906, was issued early in the year, and covered 658,105 deaths in the registration states and cities, which form an area including nearly one-half (48.8 per cent) of the total population of continental United States. The report for the year 1907 is now in course of compilation and will be completed at an earlier date than any previous annual report. It is important that these reports be issued as soon as possible after the reception of the complete data. They have become a welcomed source of reference to sanitary authorities and to the public generally, and are proving of much greater practical use than the mortality statistics formerly collected under the decennial system. The total number of deaths compiled for the year 1907 is 687,034.

The most important event of the year affecting vital statistics was the adoption by the state of Ohio of a registration law, modeled upon the present effective Pennsylvania law and according to the recommendations of the Bureau of the Census. A state registrar has been appointed, and preparations are being made for the thorough enforcement of the law, which should mean the early addition of Ohio to the registration states. Similar bills failed in the legislatures of Kentucky and Virginia. In the latter the failure of the bill is said to have been due to the opposition of the undertakers of the state to the provision requiring burial permits.

The aid of the American Medical Association, the Conference of Commissioners on Uniform State Laws, and the American Public Health Association has been enlisted in the movement for the extension of the registration area, and a model bill, identical with the legislation recommended by the Bureau of the Census, will be urged by these organizations at the state legislative sessions of 1909.

Several states are desirous of admission to the registration area as a result of laws recently passed, and I am pleased to announce that I have been able to authorize the admission of Wisconsin for the year 1908. This increases the population represented by transcripts

of deaths annually returned to this Bureau to over one-half (51.2 per cent) of the total estimated population of continental United States. The entire South, however, is still awaiting the coming of the first registration state, and the passage and enforcement of adequate laws for the collection of vital statistics in this part of the country is the most serious problem to be solved before we can hope to have vital statistics for the entire United States.

The foundation of mortality statistics, so far as the study of the causes of death is concerned, rests upon the accuracy of the information afforded by individual physicians in regard to the diseases or the forms of violence causing death. To secure precision it is necessary that there shall be a standard nomenclature of diseases—something which has never existed in this country. It is gratifying to report, however, that a general committee on the nomenclature and classification of diseases, whose chairman is Dr. Frank P. Foster, of New York, was appointed in 1907 by President Joseph D. Bryant, of the American Medical Association, and had its powers confirmed and extended by unanimous vote of the house of delegates at Chicago in June, 1908. This committee has associated with it auxiliary committees representing the leading national medical societies and the Government medical service (Army, Navy, and the Public Health and Marine-Hospital Service), and it is cooperating with the Bureau of the Census, which is especially concerned with proper nomenclature and classification, as it has to compile nearly seven hundred thousand statements of causes of death each year.

The first object of this committee is to assist in the decennial revision of the International Classification of Causes of Death, a classification which the Bureau of the Census adopted in 1900, placing the United States among the first countries to use it. In order that the results of the revision of this classification may be available for use in compiling the mortality statistics of the United States for the year of taking the Thirteenth Census, this Bureau has requested that the date of revision be changed from 1910 to 1909. As a result Dr. Jacques Bertillon, at the request of the Minister of Foreign Affairs of France, has issued preliminary notice that the revision will be made in 1909. A formal invitation to participate will be extended to the United States by the French Government through the Department of State, and legislation is recommended permitting the United States to be adequately represented at this meeting of the International Commission of Revision.

The organization of the section on vital statistics under the auspices of the American Public Health Association, to which I referred in my last report, has been successfully accomplished.

The Bureau of the Census supplied an interesting and effective exhibit for the International Congress on Tuberculosis, held in Washington last September. A special pamphlet, including the most important statistical data regarding the prevalence of tuberculosis in the United States, and urging the need for the extension of adequate registration methods in this country, was prepared and widely distributed.

COTTON STATISTICS.

The season of 1907-8 was the sixth consecutive year of the periodical Census reports on cotton production, based upon the quantity of cotton ginned to specified dates as reported by special agents. The results continue to receive the unqualified approval of all concerned in the growth, distribution, and sale of this important product. The plan outlined in the last annual report for promulgating these reports at 10 a. m. instead of 2 p. m., as heretofore, was successfully carried into effect, and has proved highly satisfactory both in this country and abroad. All of the anticipated advantages to follow this change in the hour of publication have been realized, and the practice will be continued without modification. During the last season the scope of the cotton reports has been somewhat extended, and it is believed that the work is now organized on a basis that will make this scope world wide. The Bureau will be able to compile complete annual reports on the world's supply of cotton, and on the distribution of the same, showing both the consumption and the remaining stocks. Nowhere else has so successful a plan been perfected or more complete data compiled. For the collection of the statistics of cotton ginned, 730 local agents are now employed, an increase from 724 at the last season. In obtaining the statistics of foreign production and consumption the Bureau has the cooperation and active support of the International Federation of Master Cotton Spinners' and Manufacturers' Associations, with headquarters at Manchester, England, and many private organizations throughout the world.

STATISTICS OF CITIES.

The Bureau has compiled and published its fifth annual report (that for 1906) upon the statistics of cities. This report deals with 158 cities, each having a population of 30,000 and over. Substantial and gratifying progress is made with each year's report in the movement toward uniform methods of bookkeeping in municipal accounting, a movement which has come to be regarded as one of the most valuable practical reforms now under headway in this country; and

the Census Office is its recognized center. Since the last reference to the subject in these reports, the state of Massachusetts has passed a law requiring that annual financial returns from each city and town in that commonwealth shall be made upon uniform blanks prepared by the Chief of the Bureau of Labor Statistics. That official, in his first report under this statute, acknowledges his indebtedness to the Census Office; and he has adopted, without substantial change, the terminology, classification of accounts, and arrangement of schedule, as perfected in this Bureau. Evidences of the tendency toward the standardization of municipal accounting are constantly developing in the cities of other states; but much remains to be done in this field.¹ Fieldwork for the next report on cities is now in progress and will be completed in January. This report will include full social statistics of the municipalities, figures for which the Bureau compiles biennially.

PUBLICATION OF THE NAMES OF HEADS OF FAMILIES AT THE FIRST CENSUS.

Under authority granted in the urgent deficiency appropriation act of 1908-9, I have continued the publication of the pamphlets containing the names of the heads of families at the First Census of the United States. The pamphlets issued prior to the close of the last fiscal year concerned the states of New Hampshire, Vermont, and Maryland. As stated in the report submitted to Congress by the Director of the Census on December 2, 1907, the total cost of printing 2,000 copies of each of these pamphlets and binding half of the edition was \$6,566.24, while the receipts to and including December 1, 1907, amounted to \$1,306.

The publication of the remaining parts is now completed. This series includes the following states: Maine, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, Virginia, North Carolina, and South Carolina. I estimated originally that these pamphlets would cost approximately \$30,000. The cost of publication will, however, exceed this figure, owing to changes in the method of

¹ Comparative municipal statistics have been compiled in Europe for many years. Financial statistics for the English local poor-law authorities have been compiled since 1834, and following the establishment of the local government board, in 1871, reports from all local authorities have been published annually. France and Italy publish annual statements of receipts and expenditures of communes. M. Neeff, director of the statistical office of Breslau, has compiled annually since 1890 the statistics of German cities of 50,000 population and over in the *Statistisches Jahrbuch deutscher Städte*. A similar series is issued by the Austrian statistical central commission, the *Oesterreichisches Städtebuch*. The Bureau of Industries of the Department of Agriculture compiles an annual report on the municipal statistics of Ontario.

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computing charges by the Government Printing Office instituted after the estimate was made.

Upon the publication of the parts for New Hampshire, Vermont, and Maryland, in accordance with the law requiring sale, I established a price of \$1 per part, which represented the average cost per copy. The variation in the charges made by the Government Printing Office and the great variation in the size of the succeeding parts would have resulted in a decided difference in price for each of these parts under the original policy of charging the cost. It seemed best, therefore, to maintain the uniform price of \$1 per part, a figure which will at least result in a return to the Government of a large proportion of the total expenditure for publication. The total receipts to date are approximately \$7,000.

The publication of these interesting documents seemed an appropriate occasion for the preparation of a bulletin concerning the First Census. The returns of that census were printed exactly as sent in by the marshals, in a little book of scarcely more than 50 pages. For some of the states the returns were presented by towns under counties, but for a number of the states the returns were published by counties only. Consequently the volumes now being issued furnish information never before available concerning the population in 1790 by minor civil divisions.

Certain limited statistical classifications were employed at the First Census, such as sex, size of family, one age detail, and number of slaves, and these permit some statistical comparisons which are proving of value. The bulletin will present a discussion of the general conditions prevailing at the First Census; the facts connected with the origin of the census; some discussion of the areas included in towns, counties, and states, in comparison with the areas included at the present time; number and distribution of slaves by families owning specified numbers; a comparison between 1790 and 1900 in respect to the population, and to the agricultural, manufacturing, and general material resources of the states and minor areas enumerated at the First Census; and a discussion of the rise and growth of other areas either not inhabited in 1790 or not then the property of the United States. It will also include some analyses of family names.

THE OFFICIAL REGISTER.

The Official Register of the United States for 1907, the first issue produced by the Census Bureau, was published in accordance with the plan outlined in my last annual report. In deference to the wishes of the Post Office Department, instead of the proposed single

volume, two small volumes were published, the second containing a separate presentation of the many thousands of post office employees. The first contained 742 pages, and was delivered to Senators and Representatives at the opening session of the Sixtieth Congress; the second volume contained 764 pages, and was issued four weeks later. The total cost of printing and binding both of these volumes was \$25,656.62.

The radical changes introduced in the Register caused much comment—most of it highly commendatory. Even those who preferred the form previously in use were unable to offer a defense for the continuance of a form of production which resulted in a production of such bulk that the two volumes weighed 30 pounds and the cost of printing and binding exceeded \$70,000. The only criticism which I have considered worthy of serious attention has been the occasional assertion that failure to find the employees of a given department under the name of that department has caused inconvenience. Nearly all the Executive Departments, however, now publish registers of their employees. These registers are issued at frequent intervals. The Bureau of the Census, by your direction, has prepared for the Department of Commerce and Labor a special register of this character, which contains a complete list of all the employees of the department. It is entirely possible and convenient to prepare registers for each department and to publish the same as supplemental to the general, or Official Register, of the United States, and still effect a great saving over the expenditure required by the previous form of issue. This, however, is a matter which might with propriety be referred to Congress.

It is significant that the popular demand for the Register in its revised form has greatly increased, suggesting that as a book of reference it is proving more serviceable than the former expensive and unwieldy publication. The Register is issued under the printing law of 1895, by which the edition is limited to 3,000 copies, of which a specified number are available for Senators and Representatives and for the use of the various departments and bureaus, while the remainder of the edition is deposited with the Superintendent of Documents for distribution to libraries and for sale. The only copies, approximately 100, available for popular use are those in the hands of the Superintendent of Documents. Previous Registers have cost between \$5 and \$6; the present Register costs \$1 per volume. The supply in the hands of the Superintendent of Documents was soon exhausted, and it is not now possible to procure copies. Since the publication has become thus popularized, it seems important

that the law should be amended so as to make the Register subject to distribution by the Director of the Census, at a fixed price.

The preparation of the next issue of the Register will begin July 1, 1909, and the work will be much simplified, because the general form and scope of the publication are now clearly defined and will vary little from the issue of 1907.

MISCELLANEOUS WORK.

The above description covers the main work of the Bureau during the year past; a large amount of subsidiary and incidental work has also been carried on. Much of this work has been concentrated in the division of manufactures, under the general supervision of Mr. William M. Steuart, chief statistician. At the request of the select committee of the House of Representatives, this division tabulated the voluminous reports secured by that committee from newspaper publishers and wood pulp manufacturers, covering statistics in regard to the prices of news paper, methods of sale, capital invested in the wood pulp industry, persons employed, value of product, etc.

The division has also continued, in cooperation with the Forest Service of the Department of Agriculture, the annual investigation to ascertain the quantity of lumber, veneer stock, cooperage stock, cross-ties, poles, etc., manufactured during the year. This canvass is almost entirely made by correspondence, and is becoming more effective year by year. For the year 1906 reports were received from 22,398 lumber, lath, and shingle mills, while for the year 1907 the number was increased to 28,850 mills. These reports are of great value in connection with the study of the conservation of our natural resources.

At the last session of Congress a bill was introduced and strongly advocated by the Forest Service as well as by representative lumber interests of the country, directing the Bureau of the Census to conduct an investigation of the amount of standing timber remaining in the United States. The pressing need for a thorough investigation of this subject is generally conceded.

WATERPOWERS OF THE UNITED STATES.

In further aid to the work undertaken by the National Commission on the Conservation of Natural Resources, the Census Bureau has been engaged during the last six months, by direction of the President, in the preparation of a report upon the developed waterpowers of the United States, mainly utilizing data drawn from the Census

schedules of manufactures and the electrical industries. Mr. Henry Gannett, of the Geological Survey, was designated as a special agent in immediate supervision of this work, and the report is nearly ready for submission to the Commission.

The latest authentic statistical information regarding the undeveloped waterpowers of the United States is that contained in the report of Prof. George F. Swain, of the Massachusetts Institute of Technology, compiled for the Tenth Census, 1880. The edition of this report was long since exhausted, but the Census Office is in daily receipt of requests for copies. The Swain report is recognized as the standard authority on the subject. Admirable as it is, it embodies knowledge of our waterpower resources that is now 28 years old, and is wholly inadequate to the requirements of the present situation. In response to the demand of engineers and experts, a bill was introduced at the last session of Congress directing the Census Office to compile a new report on the subject of waterpower that shall bring the data down to date.

It is probable that no work as yet undertaken by the permanent Office has greater economic importance than that contemplated by this bill (S. 5749). If it should be enacted at the coming session of Congress it will be possible to complete the report prior to the compilation of the Thirteenth Census.

POPULATION AND INDUSTRIAL CENTERS.

Another work upon which the division of manufactures is engaged, with the cooperation of the geographer, is a study of the population and industrial centers of the United States. It has been the practice of the Bureau, in presenting the statistics of cities, to confine the figures to the population, manufactures, etc., located within the corporate limits. Considerable dissatisfaction has existed in consequence, many municipalities complaining, and justly, that no true conception of their relative size and industrial importance can be obtained unless cognizance is taken of contiguous and suburban population and industries. For practical purposes these contiguous places are just as much a part of the municipal center as though they were embraced within the actual corporate limits. Their existence is due to the facilities of the great city around which they flourish and to whose business and prosperity they contribute. A number of American cities have widely extended their corporate limits so as to include many of these contributing places; others, which have not done so, insist that the Census statistics do not truly represent the actual and relative conditions in comparison with cities

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which have. To meet this criticism, and to establish the actual economic conditions of the leading American municipalities, the Census will shortly publish a bulletin presenting the statistics of what may be called the population and industrial centers. It is not expected that the first essay in this direction will be complete or wholly satisfactory to the localities involved, but the criticism and suggestion which will follow should enable the Bureau to perfect the plan for use at the Thirteenth Census.

RETIREMENT OF CIVIL SERVICE EMPLOYEES.

At the request of the Senate Committee on Civil Service and Retrenchment and the House Committee on Reform in the Civil Service, the Secretary of Commerce and Labor directed the Bureau of the Census to prepare an estimate of the amount it will cost if the plan for the retirement of aged employees in the civil service devised by Mr. Herbert D. Brown and approved by the Keop Commission shall be adopted. As a result of its work in compiling the Official Register for 1907, the Census has in its possession cards giving the age, length of service, and compensation of practically every person in the classified service on July 1, 1907. These data, which are being tabulated under the supervision of Mr. Brown, who has been appointed a special agent for this purpose, will furnish the basis for the desired estimate.

The results will be embodied in a bulletin to contain the tabulation, and a complete exposition of the proposed retirement plan by which—at the mere cost of administering a large savings bank—the Federal Government will avoid the great expense of maintaining superannuated clerks. The features of especial interest to be covered by the bulletin are, the amount of the annuities payable at the age of retirement, the deductions to be made from salaries to purchase these annuities, the provisions for withdrawal of the accumulated savings in cases of separation from the service, and the choice of the mortality table to be used in computing the amount of deductions from salaries and in estimating the cost of annuities for past services to clerks already employed. Some discussion will be included concerning adequate provision for the investment of the large fund which will accumulate.

The bulletin will also contain information concerning the methods adopted by various foreign countries for the retirement of superannuated civil employees. Through the courtesy of the Department of State, this information is being collected by the Diplomatic and Consular Service by means of a schedule of interrogatories prepared by the Bureau of the Census.

The bulletin will also describe the plans of retirement adopted in this country by various city governments, railroads, and industrial concerns.

MUNICIPAL BONDS.

At the request of the Secretary of the Treasury the Census Office has been directed to compile certain information with reference to the character and value of state, county, and municipal securities which may be accepted by the Treasurer of the United States as the basis for the additional circulation authorized by the act of Congress approved May 30, 1908, entitled "An act to amend the national banking laws." A large part of this information was already on record in the Bureau, having been collected in connection with the decennial report on wealth, debt, and taxation, and the annual reports on the financial statistics of cities having 30,000 population and over. The utilization of these data for the purposes of the Treasury Department has avoided much duplication of work. This and the other instances cited indicate the practical directions in which the facilities of the Census may be utilized by all departments of the Federal Government to aid and expedite those branches of their work which rest upon a statistical foundation. The Bureau welcomes all such opportunities to cooperate in the unification of official statistics.

WORK OF THE COMING YEAR.

All of the "special reports" assigned by law to the Census Office during the intercensal period have now been made except two—the census of fisheries, in cooperation with the Bureau of Fisheries, and the report on savings banks and other savings institutions.

During the year that remains the clerical force of the Bureau can be largely employed upon preliminary work for the Thirteenth Census. Three branches of this work are already under way. The geographer's division is engaged in collecting the data required for platting the enumeration districts, a work which includes correspondence to ascertain every change in the boundaries of the minor civil divisions which has occurred since the Twelfth Census. The division of manufactures is preparing index cards, giving the names and addresses of manufacturers and of mines and quarries, preliminary to the census of these industries. The division of population has begun the preparation of a complete index of the titles under which 53,650 enumerators of the Twelfth Census returned the occupations of persons gainfully employed. The object of this work is to ascertain the exact terms or designations, and to determine their numerical impor-

tance. Based upon it, exact definitions will be formulated of all the significant terms and designations, with particular reference to local usage in different sections of the country. In all countries the subject of "occupations" is the most complicated and obscure with which the census has to deal. The International Statistical Institute appointed a special commission at its last session to coordinate the occupation terminology employed in the censuses of the several countries, and the Census Office will be able to furnish material aid to this commission. The United States has not hitherto been able to contribute aid of scientific value in this study, because there has been no opportunity, in the absence of a permanent office, to subject the enumerators' returns to critical analysis. This opportunity has now arisen; and I look for results, as the outcome of the present work, which will constitute one of the most valuable contributions the United States has yet made to the science of statistics.

THE CUBAN CENSUS.

On January 30 last the President issued an order directing the Director of the Census to compile, tabulate, and publish the Census of the Republic of Cuba, taken as of the year 1907, by the provisional governor of Cuba, under the experienced supervision of Mr. Victor H. Olmsted, Chief of the Bureau of Statistics, Department of Agriculture, detailed to act as Director of the Cuban census. The order was issued upon representation that no facilities for the rapid tabulation of the census existed in the island, and with the proviso that all expenses incurred were to be paid from the Cuban treasury. The schedules arrived at the Census Office about May 1. Fifteen clerks were transferred from the Census rolls to supervise the work in its several branches and stages, and 136 temporary clerks were appointed to edit the schedules, to punch, sort, and tabulate the cards, and to compile the tables. The work of tabulation and compilation was completed October 1, to the entire satisfaction of the authorities in charge. The cost to the Cuban Government was \$42,655, or about \$0.02 per capita, based upon an ascertained population of 2,048,980 persons. The per capita cost of tabulating the last Cuban census (1899), taken under the direction of the United States War Department, was \$0.035 by private contract.

The compilation of the Cuban census has been a useful experience in two ways. It has permitted the Census Office to test the plan for piece-price payment for mechanical work, which is incorporated in the pending bill for the Thirteenth and subsequent censuses. The results have been eminently satisfactory. The test has demonstrated that in the punching of cards and the operation of the tabulating

machines, differing degrees of aptitude and industry may be so compensated that each operator can be paid according to product, none receiving less than a fair day's pay, while the especially apt may receive a much larger compensation than would otherwise be possible, the total cost of the work being at the same time materially reduced.

The Cuban census has also permitted a thorough testing of several of the new designs of tabulating apparatus invented in the Office for the Thirteenth Census. The results have exceeded my most sanguine expectations. Notwithstanding the fact that the machines had to be hurriedly constructed to meet a contingency unforeseen, and that at the start many mechanical difficulties, impossible to foresee, had to be overcome, the machines did their work perfectly, and indicated beyond question that they are adapted to handle the great work of a decennial enumeration more quickly, more economically, and more satisfactorily than any mechanisms heretofore employed for this purpose.

AN INDEPENDENT TABULATING SYSTEM.

In this connection I desire to summarize the work thus far done in the development of an independent tabulating system for use in the Thirteenth and subsequent censuses, and in the current work of the Bureau. On July 1, 1905, the apparatus owned and operated by the Tabulating Machine Company was withdrawn from the Office, owing to failure to reach agreement as to the rental to be paid for the use of these mechanisms. It was the contention of the Director that the royalties demanded were excessive and that the Government could not properly be longer committed to these payments. The withdrawal of the machines compelled the Director to ask Congress for an appropriation for experimental work in developing new mechanisms to be owned, controlled, and operated by the Government. He was hopeful of practical results, in view of the fact that the original patents on the hand machines by which both the Eleventh and Twelfth censuses were tabulated expired on January 8, 1906, and they became public property from that date. To avoid the possible criticism that the purpose existed to infringe in any way upon the patent rights of any private individual or corporation, the first step was the transfer from the Patent Office of an expert skilled in the patent law and especially conversant with electrical patents. Mr. H. H. Allen was recommended for this post, and subsequent events have fully demonstrated his notable fitness for this difficult duty. His instructions were that the Census Office would undertake no mechanical work which it was not lawfully free to

manufacture and use in every part and feature. None of the mechanisms since invented and perfected infringe, in any degree, at any point, upon any live patent of any individual or corporation. To accomplish this, in developing the automatic machines, it has been necessary to devise many new and ingenious mechanisms. In connection with his patent studies, Mr. Allen developed such rare knowledge and skill that he was shortly designated as chief expert, in charge of the whole work, and I hope he may be induced to remain in the post until the completion of the Thirteenth Census. He is assisted by Mr. Charles W. Spicer, foreman of the machine shop, Mr. Eugene Le Boiteaux, assistant foreman, and eight mechanics, electricians, and apprentices.

The experimental work began in July, 1905, in a small room in the mechanical laboratory of the Bureau of Standards, by the courtesy of Director Stratton. This room was not equipped with the apparatus required, and in the spring of 1907 it became necessary to construct and equip a machine shop in the Census building. This shop has been enlarged during the past year so as to include the necessary stock and storage rooms. The construction and equipment of the machine shop cost \$17,483; it is one of the most complete shops of its kind in the country and admirably adapted not only for experimental work, but for the construction, testing, and repairing of the tabulating machines.

That the work has already passed beyond the experimental stage is proved by the successful utilization of the so-called "semi-automatic machine" in the Cuban census. This machine carries an improvement upon the hand machine used at the Eleventh and Twelfth censuses by the substitution of an electrical button for the old-fashioned hand lever. Its operation is therefore no strain upon the clerk, and its capacity is nearly 50 per cent greater than that of its prototype. Its capacity is further increased by the use of automatic printing counters, a most ingenious device, and the first successful attempt to adjust a large number of counters so that they can all be set back to zero by one simple motion of the operator. The printing attachment does away with the necessity for transcribing each reading of the counters, and thus eliminates a troublesome source of error.

An automatic machine, of marvelous rapidity and constructed on an absolutely novel principle, has also been invented; and two model machines, still subject, however, to certain minor improvements, have rewarded the efforts of the Census experts. The principles involved in the construction of an automatic sorting machine have also been worked out, and a working model is now under construction.

In December, 1907, Mr. James Powers, one of the experts, was detailed to work out an automatic card-punching machine, the design for which he had invented. His first experimental machine was set up in June and was a great improvement over the hand punches previously used. The test developed certain further improvements possible, and these were worked out by Mr. Powers in a new machine, which is now in successful operation in the Census Office. It reduces the physical labor of punching the cards to an absolute minimum, substituting electrical power for that of the human hand.

So far as concerns the machinery required to tabulate the next population census, the plans of the Bureau are now practically complete. The new mechanisms invented are novel in plan and design, are of greater speed and efficiency than those they supersede, and can be built and operated at a large saving in money, as compared with previous expenditures for this purpose. They are now in daily use in the current work of the Office.

The appropriations made for the experimental work to June 30, 1908, aggregate \$70,000, of which amount \$68,068.87 have been expended and the balance, \$1,931.13, turned back into the Treasury. It is not possible to estimate accurately the cost of the machinery necessary to tabulate the Thirteenth Census until bids have been called for and contracts made, but it is already clear that by reason of the saving in clerk hire alone, due to the greater efficiency of the new machines, the work can be done for less money than was expended for this purpose at the Eleventh and Twelfth censuses. The cost of tabulating apparatus was \$204,046.33 in the former and \$462,799.24 in the last census. Hereafter the Census will own its own tabulating apparatus instead of renting it, and the initial cost will be the only cost.

462,799.24
204,046.33
~~666,845.57~~

THE THIRTEENTH CENSUS.

At the commencement of the next fiscal year the Census Office must pass from the permanent organization of the intercensal period to the temporary organization of the three-year decennial period, preliminary to the great work of the thirteenth enumeration of the population required by Article I, section 2, of the Constitution. The actual work of the enumeration will be completed before the end of the next fiscal year. The plan and method of this transformation, and of the automatic operation of two distinct codes of census laws, periodically superseding each other, were described in the last annual report of the Director. While the legislation under which the Twelfth Census was taken provides also for subsequent censuses, just

as the Eighth and Ninth censuses were taken under the law for the Seventh, the experience of the Bureau has developed many points at which the law should be radically modified; and these changes will greatly reduce the cost and increase the accuracy of the Thirteenth Census. Accordingly a bill for the taking of the Thirteenth Census was introduced in the House of Representatives in December last by the Hon. E. D. Crumpacker, chairman of the Committee on the Census, and shortly thereafter hearings were held on the bill by that committee, extending over several weeks. On February 11 an amended bill was unanimously reported by the committee. This bill was considered in Committee of the Whole House on two subsequent days, and thereafter did not again come up for consideration during the session. Being a bill to carry into effect a constitutional provision, it now occupies the position of highest privilege on the calendar of the House. The census bill can be further considered immediately upon the reassembling of Congress in December, and should pass the House before the holidays, so that full consideration can be given it by the Senate, and legislation secured as early as possible, prior to the final adjournment on March 4. Every day the enactment can be expedited will correspondingly reduce the cost of the Thirteenth Census.

The technical sections of this bill have been carefully studied by the men who have devoted their lives to census work, and embody the matured conclusions of their combined experience. The bill contemplates many new methods to increase accuracy and to decrease the per capita cost of the enumeration.

Perhaps the most radical change is that the date of the enumeration has been advanced from June 1 to April 15, 1910. The first four censuses of the United States, to and including that of 1820, were taken as of August 1; all subsequent censuses have been taken as of June 1. The reasons underlying the change now proposed appeal to all students of census problems, and I have nowhere observed any criticism. The habits of the American people have so changed that it is no longer possible to enumerate the residents of our large cities on a date as late as June 1 with any accuracy. Considerably more than one-half of our population is now living under urban or semi-urban conditions. The difficulties attending the count of the summer absentees from urban homes can no longer be overcome by ordinary expedients, such as the "prior schedule" and resort to the mails. The necessity for advancing the date of the enumeration will increase from decade to decade; and the sooner

the change is made the better. The bill contains a provision for adjusting the date of actual enumeration to climatic and other conditions, in sections of the country where this may be necessary.

The ideal date for a census of population and agriculture would be October 1, thus permitting an enumeration of the crops just harvested, instead of those of the previous year, as has always been the case. But every other decade the census comes in the year of a presidential election; and the organization of a force of 65,000 enumerators on the eve of a national election, might easily be converted into a vast political machine; whether or not this particular danger were ever realized, the chance for misapprehension and suspicion would be greatly increased, and might seriously endanger the success of the work. The complete divorce of the decennial census from partisan politics is a vital prerequisite of its success.

The pending bill effects a material modification in the four great inquiries of previous censuses, by omitting vital statistics. This schedule has been carried by the enumerators since the census of 1850. The annual report on mortality statistics now compiled under the provisions of the permanent Census act does away with any need for a mortality schedule in the registration states and cities, which now comprise over one-half of the population of continental United States. As for the remainder, experience has established the fact that the statistics of births and deaths obtained by enumerators at the end of the year are untrustworthy and inaccurate—generally so inaccurate as to be grossly misleading. They are therefore better omitted altogether. The omission of this schedule from the Thirteenth Census is likely to sharply direct public attention to the fact that 30 of the 46 states have still made no provision for accurate mortality reports; if it has this result, it will stimulate the movement for effective registration laws in these derelict commonwealths.

The bill permits the enumeration of the manufacturing industries wholly by special agents. This is made possible and economical by the definite abandonment of the attempt to canvass the neighborhood, hand, and household industries, so called—following the precedent established by the manufacturing census of 1905, a precedent which has commended itself to statisticians and the public.

It will thus happen that the enumerator in 1910 will carry but two schedules—population and agriculture—in the country districts, and only one in the cities. In the Twelfth Census he was required to carry five schedules, and at the Eleventh Census no less than twelve. It is not possible to overestimate the gain that will arise, in accuracy, expedition, and economy, from this radical simplification of the work of the enumerator. He can concentrate his whole attention upon the

mastery of instructions relating to but two subjects, and his mind will not be confused by the technical difficulties of the special schedules.

The bill provides that the mining census shall be taken simultaneously with that of manufactures. The most serious defect in the Twelfth Census law was the requirement that the mining census should not be undertaken until after the completion of the other inquiries. Mining processes have been so changed and developed with the advance of technological science that it is no longer possible to draw a hard and fast line between mining and manufacturing—the two have become so interwoven that in the case of many of the metals they are simultaneously conducted, as parts of one operation. The difficulties which necessarily attend the separate enumeration of these industries will be greatly reduced by the simultaneous canvass. †

Among the minor modifications of the Twelfth Census act is the provision permitting payment for mechanical work on the piece-price basis, already referred to, which involves a saving of several hundred thousand dollars in the cost of the tabulation; the graduated adjustment of the compensation of the supervisors, so that these officials may be paid in accordance with the measure of their responsibilities; the readjustment of the method of paying enumerators, on a somewhat similar basis; the revision of the penal provisions of the law, so that they bear a due relationship to each other and to the offenses penalized; the correction of the curious error in previous census laws, whereby persons refusing to make reports were penalized for failing to perform acts which the law did not make it their duty to perform; the requirement that all apartment, lodging, and tenement houses shall be freely accessible to duly accredited representatives of the Census Office; and the proper safeguarding of all industrial reports made to the Bureau under the pledge of confidential treatment.

The bill contains a provision for a five-year census of agriculture, along limited lines, in accordance with the earnest recommendation of the Secretary of Agriculture. As originally reported it also contained a provision, substantially copied from the census law of 1880, to encourage the several states to take quinquennial censuses of population, by the repayment to the states from the Federal Treasury of a generous proportion of the cost of enumeration,¹ as determined by the cost of the last prior Federal enumeration of the state. This provision recognizes the need for more frequent enumerations of the

¹ A sum equal to fifty per centum of the amount which was paid to all supervisors and actual enumerators within such state or territory of the United States census, next preceding, increased by one-half the percentage of gain in population in such state or territory between the two United States censuses next preceding. Statutes at Large, vol. 20, page 480.

population than once in ten years, but proposes that the several states, which are equally benefited by these enumerations, shall pay a fair proportion of the cost.

Five-year censuses of a rapidly shifting population like our own are regarded by statisticians, sociologists, and economists as essential to an intelligent understanding of the progress of a nation, and to the legislation demanded by that progress. They are already taken by France and Germany, and the movement for a five-year census in Great Britain is increasingly insistent. President Grant, in his fourth annual message to Congress, earnestly advocated a national census in 1875, and this recommendation he renewed in the following year. Gen. Francis A. Walker, superintendent of the Ninth and Tenth censuses, and regarded as the greatest authority on the census the world has yet produced, recognized the need as long ago as 1880, and was himself the author of this plan for encouraging the several states to bear their proper share of the additional expense involved. Several states took advantage of it in 1880, but the provision was omitted from the census acts of 1890 and 1900, chiefly because at those dates there was no permanent Census Office, and therefore no machinery for the tabulation of these intermediate state censuses. That fatal objection having been removed, it is greatly to be desired that the provision of the law of 1880 shall be reenacted, in the modified form proposed in the census bill as originally reported.

THE CIVIL SERVICE AND THE CENSUS.

X One other feature of the census bill calls for comment in this report, that relating to the method of making temporary clerical appointments during the decennial census period. The President in his special message of December 31, 1907, earnestly urged Congress to include these appointments within the rules of the civil service act. The bill as it stands effects something in the nature of a compromise between the President's recommendation and the wide open door that has distinguished previous censuses. It provides for a noncompetitive examination, to be held by the Civil Service Commission. This is an improvement over previous laws, because it insures that no appointments will be made of persons not capable of securing the lowest ranking which establishes eligibility under civil service regulations. It also relieves the Director of the wholly extraneous duty of conducting examinations. But it does not relieve him from the overwhelming pressure to obtain clerkships, which has heretofore proved the most vexatious and difficult task connected with the decennial work, occupying during the first year and a half the time

and thought of the Director that ought to be wholly given to the enormously difficult work for which he is responsible. A "noncompetitive" examination means that every one of the many thousands who may pass the examination will have an equal right to appointment, and that personal and political pressure must in the end, as always before, become the determining factor with reference to the great body of these temporary employments. I can not too earnestly urge that the Director of the Census be relieved from this unfortunate situation.

If these clerks can be appointed as needed, in the order certified from a competitive examination, a better service will be secured than will otherwise be possible, the efficiency of the force will be greatly increased, and the cost of the census correspondingly reduced.

Two other features of this section of the bill commend themselves. One waives the geographical apportionment and the other permits the employment, without examination, of former Census clerks whose records in the Office establish their efficiency. The first provision permits the employment of clerks resident in the District of Columbia, the quota of which is overfilled, and residents of which would otherwise be excluded. It does not seem wise, where a service is temporary in character, averaging less than two years, to draw so large a body of clerks from distant parts of the country, whither most of them will have to return. The District contains several hundred men and women who have been employed in one or two censuses, and who would be glad to take up the work again. They are trained in it, and their service will be more effective than that of inexperienced people.

A mistaken impression prevails in some quarters that the supervisors and enumerators ought also to be appointed as the result of civil service examinations. In the case of the 330 supervisors this would be unwise, for a supervisor, to render the most effective service, must be a man of standing in his community, well known, and experienced in affairs—in the class of men who do not take civil service examinations, and whose acceptance of the position may involve some personal and business sacrifice. Of course this is the ideal supervisor, not always secured—perhaps not often—but he can not be obtained by the methods adopted for the selection of ordinary clerks. Moreover, it is impracticable for the Civil Service Commission to hold simultaneous examinations in 330 districts of which these supervisors must be severally resident.

In like manner, it would be physically impossible to hold civil service examinations to determine the selection of 65,000 local enu-

merators by the competitive method. These examinations would of necessity have to be held in every city and township in the United States at practically the same date, and the civil service machinery would break down of its own weight.

Yet it is obvious that the accuracy and the value of a decennial census depend primarily upon the fitness and the qualifications of the supervisor and the enumerator. In the case of the former no appointments should be made except upon demonstrated capacity to discharge important duties properly. The training of the supervisor, after his appointment, should take place in the Census Office itself.

The enumerator is, however, the most troublesome problem connected with a decennial census. The pay is small, the duties strenuous, the conditions exacting, the service quickly over. The theory has generally prevailed that any person who happens to be out of a job can do the work as well as any other. In fact, the enumerator should be above the average in intelligence, should possess a good education, should know his district thoroughly, and should command the respect of his neighbors. It is only possible to get the right persons for enumerators by securing a practical test of qualification in each individual case—a plan inaugurated and partially carried out at the Twelfth Census. A pass examination, substantially competitive in character, should precede the appointment of every enumerator, and every person desiring to take it should be permitted to do so, and be furnished with the necessary papers. These would consist of a sample schedule, accompanied by the instructions, to be filled out by the applicant, who should also be required to answer certain questions framed to test his comprehension of the instructions, the whole to be certified under oath as his own unaided work. The bill should be so amended as to require this examination whenever practicable, and to make a false certification a penal offense, with proper penalty.

In the choice of enumerators preference should be given to students in institutions, both men and women, wherever their services can be obtained. The enumerator at the prior census, if he did satisfactory work, should always be selected when his services are available. The existence of the permanent Census Office, permitting much earlier preparation for the enumeration than heretofore, will make it possible to secure the most competent and trustworthy body of enumerators ever brought together. It is clear that the accuracy of the census, no matter with what perfection the returns may be tabulated at Washington, depends absolutely upon the intelligence, character, training, and fidelity of the enumerators. The opportunity now exists to materially improve the service, over any that has heretofore existed, at this crucial point.

to the Secretary of Commerce and Labor

THE COST OF THE THIRTEENTH CENSUS.

I estimate that the cost of the Thirteenth Census, including the cost of conducting the four annual investigations and the two biennial reports that the Census Office is required to make simultaneously with the taking of that census, will be \$14,117,000. The lump sum appropriation to be provided in the appropriation act for the next fiscal year should be not less than \$14,000,000. The larger part of this sum will be expended in the fiscal year ending June 30, 1910. In this year will fall all the expenses of the supervisors and enumerators, together with the maximum employment of temporary clerks. These items, together with the preliminary printing, the purchase of cards, and the construction of tabulating machinery, will involve an expenditure of approximately \$9,000,000.

I submit below a statement of the cost of the Twelfth Census and the estimated cost of the Thirteenth Census, originally prepared for the House Census Committee, and since somewhat modified:

ESTIMATED COST OF THE THIRTEENTH CENSUS AS COMPARED WITH THE APPROXIMATE COST OF THE TWELFTH CENSUS.

<i>Decennial census.</i>		
	Estimated cost of the Thirteenth Census.	Approximate cost of the Twelfth Census.
Office force (compensation)-----	\$4, 800, 000	\$5, 655, 000
Enumerators (compensation)-----	4, 500, 000	3, 540, 000
Supervisors (compensation, clerk hire, travel, and other expenses)-----	910, 000	670, 000
Special agents (compensation, travel, and other expenses)-----	700, 000	645, 000
Administrative (travel, telegraph, furniture, machines, etc.)-----	300, 000	250, 000
Stationery-----	200, 000	150, 000
Rent-----	125, 000	100, 000
Tabulating machinery-----	250, 000	395, 000
Cards for tabulating machines-----	100, 000	95, 000
Alaska-----	85, 000	70, 000
Porto Rico-----	160, 000	¹ 130, 000
Printing-----	800, 000	820, 000
Total -----	12, 930, 000	12, 520, 000

¹ Cost of census taken by War Department in 1899.

*Report of the Director of the Census**Annual and biennial reports during the three years, 1909-1912.*

Cotton production and consumption, costing \$227,000 a year-----	\$681,000	
Financial statistics of cities, costing \$70,000 a year-----	210,000	
Mortality statistics, costing \$70,000 a year----	210,000	
Forest statistics, costing \$12,000 a year-----	36,000	
Official Register, 2 issues, costing \$25,000 each-----	50,000	
		\$1,187,000
Total-----	14,117,000	\$12,520,000

NOTE.—On the basis of an increase in cost proportionate to the estimated increase in population, i. e., 20 per cent, the Thirteenth Census proper will cost approximately \$15,000,000, to which amount should be added the cost of the annual and biennial reports for the decennial census period, \$1,187,000, making a total of \$16,187,000.

There has been much criticism of the rapid increase in the cost of the decennial censuses, and this criticism has led to a careful investigation of the subject.

The total sum appropriated by Congress for the Twelfth Census was \$13,516,210. Of this sum \$11,770,051.78 had been expended by June 30, 1902, when the permanent census act went into effect. The date of effectiveness of that act has generally been accepted as marking the completion of the Twelfth Census, and the expenditures to that date as its actual cost. As a matter of fact, the permanent office was largely engaged for more than a year in finishing the Twelfth Census work. The four expensive volumes, *Employees and Wages*, the *Supplementary Analysis*, the *Statistical Atlas*, and *Occupations*, together with the revised edition of the *Abstract*, were all compiled and published subsequent to the reorganization of the Bureau as a permanent office. The whole expense of the first year of the permanent Office (\$1,350,271.08) was met from the unexpended balance of the Twelfth Census appropriation, and the remainder of that balance (\$395,887.14) was reappropriated to pay for the tabulation of the Philippine census, and to defray other census expenses. It is therefore impossible to state the exact cost of the Twelfth Census, or, rather, of that portion of the decennial work (the main reports) which was so described in the census act. I regard it a fair adjustment of the accounts, as thus complicated by the reorganization of the Office, to estimate the cost of the Twelfth Census in round numbers at \$12,500,000. This involves an addition of \$729,948.22 to the amount that had been expended at the date of the reorganization.

Such an estimate is conservative, for the main reports of the Twelfth Census doubtlessly cost somewhat more than twelve and a half million.

to the Secretary of Commerce and Labor

The amount expended at the census of 1890 was \$11,547,127.13, but this included not only the cost of the main reports but also the cost of the special reports, as follows:

Mortgages	\$1,347,435.24
Fish and fisheries.....	140,432.99
Insurance.....	47,718.84
Indians (estimated).....	20,000.00
Transportation by land (estimated).....	100,000.00
Churches	47,179.78
Mines and quarries.....	196,236.16
Wealth, debt, and taxation.....	192,849.89
Pauperism and crime.....	63,573.11
Total	2,155,426.01

Deducting the cost of these special reports from the total expenditures at the Eleventh Census leaves \$9,391,701.12 as the cost of the main reports, as compared with \$12,500,000, the estimated cost of the main reports at the Twelfth Census—an increase at the latter census of \$3,108,298.88, or 33.10 per cent. It seems proper to submit this detailed analysis, as the Eleventh Census has been criticised as unduly expensive.

The total cost, the amount and per cent of increase in cost over the preceding census, and the per capita cost is shown in the following table for each of the censuses from 1790 to 1890, and for the main reports of the censuses of 1890 and 1900:

Total cost of each census, 1790 to 1890, and cost of main reports at censuses of 1890 and 1900.

CENSUS.	TOTAL COST.			Per capita cost.
	Amount.	Increase over preceding census.		
		Amount.	Per cent.	
1790	\$44,377.28			\$0.0112
1800	66,109.04	\$21,731.76	48.97	.0124
1810	178,444.67	112,335.63	169.92	.0246
1820	208,525.99	30,081.32	16.86	.0216
1830	378,545.13	170,019.14	81.53	.0294
1840	833,370.95	454,825.82	120.15	.0488
1850	1,423,350.75	589,979.80	70.79	.0618
1860	1,969,376.99	546,026.24	38.36	.0626
1870	3,421,198.33	1,451,821.34	78.72	.0887
1880	5,790,678.40	2,369,480.07	69.26	.1153
1890	11,547,127.13	5,756,448.73	99.41	.1833
1890 (main reports)	9,391,701.12			.1491
1900 (main reports)	12,500,000.00	3,108,298.88	33.10	.1638

It will be seen that the average increase in cost from census to census has been considerably more than 50 per cent, and that on this

basis the cost of the main reports at the Thirteenth Census would reach \$18,750,000. The estimated cost of these reports at the Thirteenth Census, however, exclusive of the cost of the four annual and two biennial reports to be made during the same period (\$1,187,000), is only \$12,930,000, an amount slightly in excess of their cost at the Twelfth Census. If the work can be accomplished for this sum, it will be the first time in the history of the nation that a census has been taken and compiled at practically the same cost as the prior enumeration. I am led to believe that this is possible by many considerations, the most important of which is the existence of the permanent Office. Much of the cost of the preliminary work is included in the expenditures annually made for the permanent Office. Furthermore, the fact that the Office is now organized at the highest point of efficiency, that no time will be lost in getting ready, in testing the aptitude of green clerks, and in developing new systems means fully a million dollars' saving in the organization of the Thirteenth Census.

The other considerations are the provisions of the pending census bill which eliminate the vital statistics, reduce the number of schedules, and permit the piece-price method of paying for machine work; the omission of the hand, household, and neighborhood industries from the manufacturing census; and the fact that the Bureau will build and own the necessary tabulating apparatus, instead of renting it as heretofore.

Exclusive of the Twelfth Census appropriations, those specifically made for the maintenance of the permanent Office to July 1 next have been \$7,104,540 (exclusive of printing). This sum is only slightly in excess of the normal increase in the cost of the main reports at the Thirteenth Census over the Twelfth.

In a word, the saving that can be effected in the cost of these reports at the coming census, as compared with their cost at the last, will very nearly equal the entire cost of maintaining the permanent Census Bureau between the two censuses.

To realize the full significance of this statement, account must be taken of the fact that during the interval between censuses the office has completed various branches of statistical work, assigned to it by law or by order of the Secretary, and never before undertaken, which have involved an expenditure of at least \$3,200,000.

Such of these statistical reports as are annual in character, and must continue from year to year during the progress of the Thirteenth Census, involve the expenditure of approximately \$379,000 each year, in addition to which sum \$50,000 will be required for the

compilation of two Official Registers, a total expenditure, during the three-year decennial period, of \$1,187,000. Even with this sum added to the cost of the Thirteenth Census—since it must be simultaneously incurred—the total lump sum appropriation for the Bureau, during the three-year decennial period, estimated above at \$14,000,000, is a large decrease in the per capita cost of the work.

In making these statements I realize that the difficulties of census taking in the United States have been enormously increased in recent decades, and that certain costs must inevitably increase correspondingly. The difficulties attending the enumeration of our rapidly increasing foreign born population are vastly greater than ever before. The inclusion of the island of Porto Rico in the decennial census will add \$160,000 to the expenses previously necessary. The extraordinary development of Alaska in the last decade will add even more. Other outlying territory may also be included in the law when finally enacted. Increased cost of living has made it necessary to provide a slightly increased compensation for supervisors and enumerators. All these factors have been taken into account in the estimate submitted, but it may well be that the Director is too sanguine in his expectation of what can be done for a given sum of money. He should be left as unhampered as possible if he is expected to succeed; and it is especially important that the entire appropriation for the Thirteenth Census shall be made at once and not in annual installments, so that he may know from the very beginning just what Congress and the country expect as to the cost of this work.

In referring to the cost of the decennial enumeration Gen. Francis A. Walker once wrote that "the people of the United States can well afford to pay for the very best census they can get." He made this remark in connection with a frank confession of his own short-sightedness in underestimating the cost of the Tenth Census. He should have allowed for all possible contingencies. "Had the Director done this," he wrote, "Congress would without a murmur have voted the sum asked, which would have been in excess of the aggregate amount of the appropriations actually made for the service; all deficiencies would have been avoided, and the Census Office saved much embarrassment and not a little discredit. As it was, the Director actually undertook to conduct a very elaborate census of 50,000,000 people for less money than had been expended in 1870 upon a far simpler enumeration of 38,000,000. Doubtless the additional labors, the annoyance, the embarrassments, the distress which he brought upon himself during the three years following were only a proper punishment for his ambitious folly."

PROPER ACCOMMODATIONS FOR THE THIRTEENTH CENSUS.

If the Thirteenth Census is to be completed for the sum of money indicated, it is imperative that every possible facility shall be afforded to that end. It will be clearly impossible to accomplish it, unless Congress shall promptly take the necessary steps for the proper housing of the large temporary force that must be employed during the three-year decennial period. The imperative requirement for an additional building was dwelt upon in my last annual report and earnestly presented to the Committees on Buildings and Grounds at the last session, but nothing was done. There is still time to meet the emergency, if the matter is given immediate attention upon the reassembling of Congress. I will briefly restate the emergency and the plan by which it can be met.

The privately owned building which the Census now occupies, although especially constructed for the Twelfth Census, was wholly inadequate for its needs, and during the height of the work could accommodate few more than one-half of the clerks employed. At the next census the number of employees will be increased, while the accommodations afforded by the present building have decreased at least one-half. This is due to the fact that all the prior census records, previously stored in the Department of the Interior, have been removed to the Census building, and many additional records have also accumulated. The Census machine shop has been installed in the building and will shortly require much more space than at present. All the publications, not only of the Twelfth, but of all prior censuses, are now stored in the building. It follows that the available floor space is sufficient to accommodate only about one-third of the clerical force required to handle the Thirteenth Census. The great majority of the force must be housed here and there throughout the city wherever rented quarters can be obtained. Nothing can be more detrimental to efficient administration, economical expenditure, and rapid work. This has been demonstrated in three decennial censuses with which I have been officially connected. In my own work at the Twelfth Census—the report on manufactures—one-half the clerical force was located in the present Census building and the other half in the old Globe Building on Pennsylvania avenue, four blocks distant. The confusion, the delay, the embarrassment thus caused added greatly to the cost and enormously to the difficulty of the work.

These difficulties will now be accentuated in all branches of the work, unless steps are immediately taken to remedy them. The only effective remedy that presents itself, that can be carried out within

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the limited time remaining, is an adequate addition to the present Census building on the vacant lot which adjoins it on the north. A plain, seven-story, fireproof building can be here erected which, if supplemented by the purchase of the old Business High School building directly east of the vacant lot, will meet all the requirements of the situation.

In my last annual report I presented figures indicating the cost of the purchase of the present site and building, the purchase of the adjoining lot and the construction of the proposed building thereon, and the purchase of the Business High School building, under the existing options. The total expenditure involved, in order to give the Government a permanent home for the permanent Census Office, adequate for the decennial census for at least twenty years to come, is \$674,126. This figure is \$40,000 less than the estimate in my last annual report. While the option price of a portion of the property under consideration has advanced \$10,000 within a year, I have found that through certain economies the cost of the proposed new building can be materially reduced. That the Government should own all the property, and not seek a compromise whereby it shall be partly owned and partly rented, is obvious.

The property in question is the most desirable site for a permanent Census Office now available in the city of Washington, and at the option price it is considerably cheaper than the real estate recently purchased by the Government in this immediate vicinity. The block of which it comprises one-half is included in the plans of the Park Commission looking to the future development of the national capital. It is therefore a property which the Government will ultimately purchase, irrespective of the immediate and pressing needs of the Census. It can never be secured so cheaply as at present, while existing options hold good. As a purely business proposition, it has everything to commend it.

The alternative is an attempt to rent, in different sections of the city, the necessary buildings for the coming emergency. It is calculated that the additional rentals, added to those already paid, will amount to \$125,000 during the decennial census period. It is also calculated that by the time the Fourteenth Census is completed, the Government will have paid out in rentals, for the accommodation of the Census, a total sum of money equal to the entire cost of purchasing this property and constructing the additional building proposed.

There is thus a threefold argument in favor of immediate action by Congress: To meet the imperative requirements of the Census Office; to secure possession of a property which the Government must

ultimately own, at the lowest price; and to pay for it and a suitable building with the rental money that must otherwise be expended. It is proper to add that a failure to make suitable provision for the accommodation of the Thirteenth Census will inevitably increase the cost of that census, as estimated in this report, by more than the cost of acquiring the property and constructing the building herein recommended.

Respectfully submitted.

S. N. D. NORTH, *Director.*

Hon. OSCAR S. STRAUS,
Secretary of Commerce and Labor.

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APPENDIX A.

REPORT OF THOMAS S. MERRILL, DISBURSING CLERK, BUREAU OF THE CENSUS.

Expenditures during the fiscal year ended June 30, 1908.

Title of appropriation.	Expenditures. ¹	Remarks.
Salaries, 1908.....	\$695,982.91	The amount appropriated was \$706,860. The unexpended balance (\$10,877.09) and the amount received for transcripts of census records (\$70.50) will be covered into the General Treasury.
Collecting statistics, 1907-8.....	110,278.81	The amount appropriated was \$150,000. Of this, \$39,721.69 was disbursed during the fiscal year ended June 30, 1907.
Collecting statistics, 1908.....	375,000.00	The entire amount appropriated.
Collecting statistics, 1908-9.....	4,457.16	The amount appropriated was \$30,000. The unexpended balance (\$25,542.84) is available for the fiscal year ending June 30, 1909.
Tabulating statistics, 1908.....	30,000.00	Amount appropriated.
Stationery, 1908.....	6,000.00	Amount appropriated.
Library, 1908.....	1,000.00	Amount appropriated.
Rent, 1908.....	22,080.00	Amount appropriated.
Miscellaneous expenses, 1908.....	15,000.00	Amount appropriated.
Printing allotment, 1908.....	147,215.04	Amount appropriated, \$185,000.
Total expenditures during the fiscal year ended June 30, 1908.	1,407,013.42	

¹ Including disbursements and outstanding liabilities.

Report of the Director of the Census

APPENDIX B.

Office force.

Chief clerk.....	William S. Rossiter.	
Disbursing and appointment clerk.....	Thomas S. Merrill.	
Chief statisticians:		
Population.....	William C. Hunt.	
Manufactures.....	William M. Steuart.	
Agriculture.....	Le Grand Powers.	
Vital statistics.....	Cressy L. Willbur.	
Geographer.....	Charles S. Sloane.	
Expert chiefs of division:		
Population.....	Edward W. Koch.	
	Joseph D. Lewis.	
	Daniel C. Roper.	
Manufactures.....	Frank L. Sanford.	
	Jasper E. Whelchel.	
Agriculture.....	Hart Momsen.	
Vital statistics.....	Richard C. Lappin.	
Disbursements and appointments.....	George W. Crane.	
Publication (acting).....	William S. Rossiter.	
Patent expert.....	Harry Hayward Allen.	
Foreman, machine shop.....	Charles W. Spicer.	
Total.....		17
Stenographer.....		1
Clerks, class 4.....		4
Clerks, class 3.....		7
Clerks, class 2.....		25
Clerks, class 1.....		340
Clerks, \$1,000.....		142
Clerks, \$900.....		15
Mechanical experts.....		8
Expert map mounter.....		1
Engineer.....		1
Electricians.....		2
Skilled laborers, \$1,000.....		2
Skilled laborers, \$900.....		4
Watchmen.....		10
Messengers.....		5
Firemen.....		2
Assistant messengers.....		5
Skilled laborers, \$720.....		12
Unskilled laborers, \$720.....		7
Messenger boys.....		4
Machinist's helper.....		1
Apprentice boys.....		2
Charwomen.....		24
		<u>624</u>
Total.....		641
	<i>Special agents.</i>	
Expert special agents.....		14
Regular fieldwork.....		9
Cotton agents.....		728
		<u>751</u>
Total number of employees.....		1,392