

REPLY OF THE DIRECTOR OF THE CENSUS TO THE QUESTIONS OF THE INTERDEPARTMENTAL STATIS- TICAL COMMITTEE.



INTRODUCTION.

The Bureau of the Census is the chief statistical bureau of the Government. It has no administrative powers, and its sole function is the collection, compilation, publication, and distribution of statistics on a great variety of subjects, as provided by law or by executive or departmental order. It compiles more statistical data than all the other bureaus of the Government combined, and is undoubtedly the largest statistical office in the world, whether judged by the number of its employees or by the volume of its product. During the intercensal periods it carries on its rolls about 1,300 persons—clerks, field agents, experts, etc.—and at the decennial census periods the number of clerks employed in Washington expands to about 3,500 and the field force swells to an army of 60,000 persons, increasing in number at each census. Since the organization of the Office in 1899 it has published 28,909 quarto pages of statistical matter and analytical and interpretative text, and it has printed 460,000 bound volumes of reports, 374,155 copies of which have been distributed to persons requesting them. It has also printed a proportionately large number of advance and final bulletins.

Until the Twelfth Census the Office was a temporary one, assembled hastily with the recurrence of each decennial census, and abandoned upon the completion of the decennial work. The demand for the establishment of a permanent Census Office began to be insistent during the census of 1870, and it gathered strength and headway from decade to decade, until the law was finally enacted on March 6, 1902. The report upon which this action was based declared that—

Under our political system, with its wide distribution of jurisdiction among states, counties, cities, and towns, and with the vast private initiative which characterizes American life, the data, upon whose collection and incorporation into one homogeneous whole, all sound statistical generalization and scientific deduction depends, are so fragmentary and scattered that the need of centralization of statistical inquiry is sorely felt. Such centralization can only be effected by the National Government, and the Government itself is powerless to accomplish this result without the intervention of a central bureau, thoroughly scientific in its character and methods. The Census Office could be made such a bureau.

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The debates regarding this legislation clearly establish a general recognition by Congress of the need for a central statistical bureau of the Government, always officered by trained statistical experts, in which should be concentrated from time to time, and as rapidly as it could be effected, the compilation of all statistical material not intimately allied with or growing out of the administrative work of any branch or bureau of the Government.

This underlying idea was further emphasized in the debates that preceded the establishment of the Department of Commerce and Labor, of which the Census Office was made a part, with the avowed intention of concentrating the official statistics of the Government, so far as possible, in the new Department and in the permanent Census Office, just established; and it was in order that this plan might be made feasible and effective that the unusual authority was conferred upon the Secretary of the Department of Commerce and Labor to consolidate statistical bureaus of the Department, or to transfer statistical work from one bureau to another. Some progress has been made in that direction, but much remains to be done.

REPLY TO THE QUESTIONS OF THE COMMITTEE.

1.

1. What statistical work is done by any bureau, division, or agencies of your department?

NOTE.—In answering the above question, please classify, so as to show separately, the statistical compilations that are published and those that are not published, and in such manner as to indicate which are regarded primarily as a means of disseminating statistical and scientific information and which are kept for guidance in legislative recommendations or for assistance in departmental administration. What the committee desires is a careful and discriminating statement of the work for which your department is responsible.

The more important of these subjects are listed alphabetically in the following table. In a great majority of the topics indicated the Census returns are the only official statistics compiled by the Federal Government. Where similar statistics are partially or fully compiled by one or more other bureaus, the fact is indicated by an asterisk.

* Agriculture.

Crops.

Farms.

Fruits.

Live stock.

* Aliens in the United States.

* Animal products.

Apportionment of Members of House of Representatives.

* Area of United States.

Benevolent institutions.

Blind, statistics of.

- Building trades.
- * By-products, utilization of.
- Canals and canalized rivers.
- Capital invested in industries.
- Capitalization of incorporated companies.
- Causes of death, publication and interpretation of the International Classification of.
- Center of agriculture.
- Center of manufactures.
- Center of population.
- * Child labor.
- Cities, statistics of.
 - Financial.
 - General.
 - Mortality.
- Citizenship.
- * Copper, lead, and zinc, smelting and refining.
- * Cotton, consumed and exported.
- Cotton ginning, statistics of.
- Criminal judicial statistics.
- Deaf, statistics of.
- Divorces.
- Dwellings and families.
- * Earnings of wage-earners.
- Electric light stations (central).
- Electric power stations (central).
- * Electric railways.
- Electrical industries.
- Electrical machinery, apparatus, and supplies.
- Employees and wages, all industries.
- Employees of the Federal Government: Age, appointment, compensation, employment, and birthplace.
- Executive civil service of the United States, statistics of.
- * Express business.
- * Farms.
 - Number.
 - Acreage.
 - Value of property.
 - Value of products.
 - Expenditures.
 - Tenure.
- Feeble-minded in institutions.
- Ferryboats.
- * Fertilizers.
- * Fisheries.
- Food and kindred products.
- * Forest products.
- * Freight transportation.
- * Government vessels.
- * Governmental expenditures and revenues.
- Hand trades.
- Indebtedness, public.

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- Insane in hospitals.
- * Irrigation.
 - Juvenile delinquents in institutions.
- * Liquors and beverages.
- * Lumber and timber products.
 - Manufactures, all classes.
 - Marriages.
 - Materials used, cost of, all industries.
 - Metal working machinery.
 - Migration, interstate.
- * Mines and quarries.
 - Mortality.
 - Municipal electric fire alarm systems.
 - Negroes in the United States.
 - Occupations, all classes.
 - Paupers in almshouses.
- * Petroleum refining.
 - Philippine Islands, census of.
 - Police patrol systems.
 - Population, United States, by—
 - States and territories.
 - Cities.
 - Counties.
 - Minor civil divisions.
 - Classified by—
 - Age.
 - Conjugal condition.
 - Literacy.
 - Nativity.
 - Nativity of parents.
 - Occupation.
 - Race.
 - Sex.
 - Density of.
 - Elements of growth of.
- * Porto Rico.
 - Insular and municipal finances.
 - Mineral industries.
 - Water transportation.
- Poultry and eggs.
- Power employed in manufactures.
- Prisoners.
- Proprietorship of homes.
- Railway operating property, commercial valuation of.
- Railway shipping.
- Revenue systems of state and local governments.
- Religious bodies in the United States, statistics of.
- * Savings banks and other savings institutions.
- Taxation and revenue systems.
- Telegraphs.
- Telephones.
- Territory, accessions of, by the United States.

Transportation by water.

Unemployed, months, of persons engaged in gainful occupations.

Wastes, utilization of.

Wealth, national.

* Women at work.

By a more minute subdivision of topics, this list might be indefinitely extended. Of more than one hundred principal topics here enumerated, nearly half represent statistical data collected in the intercensal period, suggesting a noteworthy balance between the two census periods, since in the decennial census period the time allotted is brief, but the clerical force is large, and in the intercensal period the time available is much longer and the clerical force much smaller.

The statistical compilations of the Census Office are published for, and have no other purpose than the dissemination of, statistical and scientific information for the use of the public, and for the guidance of Congress in economic, sociological, and other legislation.

There is scarcely any statistical subject the interpretation of which does not depend upon the Census figures, or depend upon them for intelligent interpretation.

Moreover, a vast amount of subsidiary statistical work is done by the Bureau, which does not reach the general public, or reaches it only indirectly.

This arises from the fact that the Census Office has rapidly come to be recognized as the general information bureau of the Government. The correspondence of the Bureau, involving inquiry of one kind and another, is enormous. Fully one-fourth of the inquiries received are those referred to the Census from some other bureau or department. This fact illustrates the confusion which exists in the public mind as to where to apply for statistical information from the Government, and indicates an existing evil for which the committee should seek a remedy.

It is the aim of the Census Office to respond to every request for statistical data that can be supplied. This constitutes the chief duty of one considerable division of the Bureau.

But the most important demand upon the Bureau for subsidiary statistical compilation comes from Congress, and the committees and the individual members of both houses. During the sessions of Congress requests are received daily for special tabulations or derivative tables, for use in debate, or for the guidance of committees having bills under consideration. Compliance with these requests involves a large amount of work, which is steadily increasing. The Bureau is now engaged in such tabulations for the civil service committees of both houses, in connection with the plan submitted by the Keep Commission of pensioning superannuated clerks. It is com-

piling the results of the investigation of the paper and wood pulp manufacture, by the special committee of the House of Representatives. It has also compiled a series of tables, derived from the manufacturing reports of 1900 and 1905, for the use of the Ways and Means Committee, in connection with tariff legislation.

The Census Office has also done considerable work "for assistance in departmental administration," as illustrated by the work now in progress, at the request of the Secretary of the Treasury, in tabulating the state, county, and municipal bonds available for use under the new currency act.

The Census Office is the most effective bureau to aid other bureaus and departments in work of this character, because its large force of trained clerks can be concentrated in an emergency upon a single undertaking, thus producing results in the quickest time, at the least cost, and with the greatest accuracy.

Other directions in which the Census facilities are advantageously utilized are shown in the work now in progress, by direction of the President, for the National Conservation Commission, and for the Commission on the Improvement of Country Life. More than one hundred clerks have been engaged, at one time and another, in compiling tables for the use of these two commissions.

In 1902 the Director of the temporary Office predicted that as the decennial period drew to a close the permanent Office force would have shrunk to not over two hundred people, and that the tasks assigned to it by Congress would have been so fully completed that the force could be reduced even below that number. This prediction has proved at fault. Although it is true that the inquiries ordered by Congress in the Twelfth Census act could have been completed easily with a much smaller clerical force than the one available, Congress and the President have constantly added to the work of the Bureau. So great has become the volume of this additional work that the clerical force at the close of the decennial period is three times the number predicted by Director Merriam, and is still below the pressing requirements of the Bureau at the date of this report.

Thus far the Census Office, with its large force and complete organization, has been able to respond to these requirements without seriously delaying the regular work of the Bureau. I can foresee that pressure of special work for the various branches of the Government may become so great as to cause serious delay in regular Census work; but these are administrative questions which have not yet arisen, and for which there is time for consideration, should they arise.

2.

2. Do you consider that any of the statistical work now done in your bureau should be eliminated? If so, describe the character of the same, and submit reasons for such belief.

The answer to this question is given in detail under question 13, in which the question of duplication of statistical work is considered.

Apart from possible instances of duplication therein referred to, no statistical work now undertaken by the Census Office, in compliance with law, should be eliminated.

3 AND 4.

3. How frequently are statistics intended for public information published?

4. How frequently are statistics not intended for publication compiled?

The statistics collected by the Census Office are grouped as follows, from the point of view of periodicity:

I. *Decennial*, which includes the census, and all the subjects a ten-year enumeration of which is required by law.

II. *Quinquennial*, which includes the five-year census of manufactures and of electrical industries. A five-year census of agriculture is contemplated by the pending census bill.

III. *Biennial*, which includes the Official Register of the United States.

IV. *Annual*, which includes the mortality reports of registration areas; the statistics of cities having a population of 30,000 and over; the census of the lumber cut; and the census of cotton production and consumption.

V. *Semimonthly*, which includes the reports of cotton ginned, subsequently consolidated into an annual report.

VI. A fifth group of reports, covering a large volume of the work of the Census Office, relates to investigations made in compliance with acts of Congress, such as the report upon marriage and divorce; or by order of the President, such as the census of Oklahoma and the work the Bureau is now doing for the Conservation Commission and the Country Life Improvement Commission; or by order of the Secretary of the Department of Commerce and Labor, such as the Civil Service bulletins.

In answer to question 4, what has already been stated may be repeated, that statistical compilations are made for special purposes, whenever required by Congress, congressional committees, Members of Congress, or official organizations authorized to request them.

5 AND 6.

5. From what sources are these statistics derived?

6. How are they collected?

The statistics secured and published by the Census Office are collected from different sources, according to the nature of the case, and through different agencies.

The 60,000 enumerators required for the Thirteenth Census will go direct to the people for all information regarding population and agriculture.

Twenty-five hundred special agents will be appointed to secure the statistics of manufactures, direct from the books of the manufacturers.

Seven hundred and twenty-five cotton agents go direct to 32,000 cotton ginneries to secure returns from ginneries' record books, with which each ginner has been previously provided by the Census Office.

The mortality reports are copied from the official records of the states and municipalities by clerks employed in the offices of state and municipal boards of health, who are paid by the Census Bureau for making the transcription.

The judicial statistics and the statistics of divorce are compiled from the court records by special agents of the Census or by detailed Census clerks.

Institutional statistics—that is, statistics of the insane, criminal, indigent, defective, etc.—are compiled from the records of the institutions by 7,500 special agents appointed for this purpose, generally wardens, bookkeepers, or superintendents. The municipal statistics are collected by special agents.

Thus the Census Office has continuously at its command a large force of field agents, located in all parts of the United States, upon whom it can call at any time for any information desired; but during a decennial enumeration this number is increased to about 60,000, which includes supervisors, enumerators, interpreters, special agents, and district clerks.

7.

7. What are your methods of tabulation?

All known methods of tabulation are in use in the Census Office, and are applied in accordance with the requirements of each particular branch of the work. The punched-card system, and the electrical tabulating apparatus of an improved type, invented and owned by the Census Office, are employed in the population census,

in the tabulation of vital statistics and statistics of the Civil Service, and in other branches of work.

This system is now applied to the internal administration of the Office in the analysis of the cost of each separate inquiry. It can be extended, with economy and advantage, to much statistical work performed in other bureaus and departments. Furthermore, I am positive that the application of the Census system of cost accounting, irrespective of statistics, to many branches of the Government would prove of great advantage in the direction of economy of administration.

The Bureau possesses a great number of adding machines. In this battery all the models having practical value are represented. The Office possesses typewriter adding machines, permitting the simultaneous tabulation and addition of tables containing ten or more columns, slide rules, percentage calculators, and other mechanical devices for quickening and simplifying arithmetical calculations.

Every new mechanism of this character which appears in the market is immediately tested, and if found to possess actual merit is added to the equipment.

8.

8. What means are used for testing the accuracy of information received for purposes of tabulation?

All tabulations made in the Census Office are verified; they are not permitted to leave the producing division until their accuracy has been fully tested, and the names of clerks responsible for verification indicated upon the manuscript. All percentages are worked in duplicate, and columns of figures are re-added in proof. The plans and tabular presentations for every report undertaken by the Bureau are submitted to the editorial division known as the "division of revision and results," in advance of actual compilation, for careful study and criticism. Suggestions resulting from this study are returned for consideration to the division in charge of the work. If a difference of opinion arises as to the proper form of tables, or otherwise, the question is submitted to the Director for final determination.

Upon the completion of any report, the text and tables are again submitted to the division of revision and results, and again undergo a careful scrutiny of statements and general method of presentation.

After this second revision the copy for each report is sent to the publication division, where it undergoes final scrutiny, with special reference to typographical requirements and limitations.

The system thus established and enforced insures accuracy in the tabular work, uniformity in method of presentation, and consistency

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in general results. The testing of the work on every report is continuous from stage to stage, both before and after the completion of the original copy. The absence of serious errors in the Census publications is remarkable and gratifying.

9.

9. In what form are the statistics published? Send samples.

Census statistics are published in two forms—advance bulletins, presenting completed results at the earliest dates, in condensed form; and volumes containing the more detailed presentation of the results of the inquiry, together with analyses and interpretation of the complete statistics.

Both bulletins and volumes are printed in quarto form, of uniform typography. Specimens of both are submitted.

10 AND 11.

10. What statistics previously published by any other bureau are republished by your bureau, and from what other bureau or bureaus do they emanate?

11. Why are the statistics referred to in the last question republished by your bureau?

No statistics published by any bureau of the Government are republished by the Census Office. Frequent use is made, however, in the text of Census reports of the statistical results compiled by other bureaus for the purpose of completing, verifying, or interpreting Census figures. The statistics of imports and exports, compiled by the Bureau of Statistics of the Department of Commerce and Labor, are utilized in the census of manufactures to indicate the percentage of different forms of American manufactures exported. This is in no sense a duplication, but is a correlation and coordination of statistics. A somewhat similar use is made of the statistics compiled by the Commissioner-General of Immigration, of the statistics of the Internal Revenue Bureau of the Treasury Department, of the Bureau of Statistics of the Department of Agriculture, and the Bureau of Navigation and the Steamboat Inspection Service of the Department of Commerce and Labor.

12.

12. Are any of the original statistics published by your bureau republished by any other bureau? If so, what are they, and by what other bureaus are they republished?

I am not aware of any instance in which the Census statistics are bodily republished by other bureaus of the Federal Government. But of necessity they are constantly quoted and utilized, in one form or another, by practically every bureau of the Government, because

the population figures are at the basis of all statistics which relate in any way to the affairs of the people. Furthermore, since most of the wide range of inquiry conducted by the Census results in original statistics forming the sole and official returns for the nation, use of statistics relating to any of these subjects necessarily involves the repetition of Census figures. This also is correlation and coordination, and not duplication.

13.

13. Is any of the ground covered by original statistical investigations and publications by your bureau also covered by original work in any other bureau? If so, by what other bureau, and what is the scope and character of the statistics in which work is being duplicated?

The decennial census of the mining industry is partially covered by the annual mining reports of the Geological Survey. To some extent its five-year reports on manufactures are also covered by the same reports.

The Public Health and Marine-Hospital Service, prior to the establishment of the permanent Census Office, was in the habit of printing death rates based upon local calculations. These publications continued after the Census, in its annual mortality reports for the registration areas, established official death rates for the principal cities of the country. The attention of the Surgeon-General being called to the matter, he has since abandoned his own computations and accepts those established by the Census.

The Treasury Department makes an annual estimate of the population of the United States, in the intercensal years, mainly for use in computing the money circulation per capita. The Census Office also makes estimates in order to establish death rates, and for numerous other purposes. The two estimates never agree. The attention of the Treasury Department was called to the fact some years ago by the Director of the Census, but the practice of making independent estimates continues.

Such intercensal estimates being a statistical necessity for per capita computations, they should be made only by the Census Office. This Office is the only bureau which has any legal authority to deal with statistics of population. It is the only bureau which possesses the data upon which such estimates must be based. It is the only bureau which compiles the results of the fourteen intermediate state censuses, and it is therefore in a position to correct the estimates in accordance with the latest censuses of population.

The Bureau of Corporations constantly makes elaborate statistical inquiries along lines of work committed by law to the Census Office, as instanced by its recent collection of data on water transportation.

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14 AND 15.

14. Is any effort made to eliminate unnecessary duplication of original statistical work referred to in the preceding question? If so, what effort?

15. Is any effort made to avoid conflicting results in the work referred to in question 13? If so, what effort?

The Census Office, since its permanent establishment, has initiated and carried out systematic plans to eliminate unnecessary duplications in statistical work and to bring official statistical data into harmony. In these steps it has met with the cordial and sympathetic cooperation of the bureaus and departments approached.

The standardization of official statistics was accepted as one of the most important of the functions devolving upon the permanent Census Office. The plan pursued to this end is very simple. It rests upon the proposition that the Census Office is a sort of general statistical clearing house for the Government. There is hardly a point at which its work does not come in touch, more or less close, with the statistical work done by other Government offices. Whenever and whenever this contact arises, it is the policy of the Census Office, by cooperation, study, and comparison, to bring the joint results into harmony.

To this end, the Census Office has been in cooperation and collaboration with the following bureaus and offices :

INSTANCES OF CENSUS COOPERATION TO UNIFY STATISTICS AND AVOID DUPLICATION.

Treasury Department.	Department of Commerce and Labor.
Loans and Currency.	Bureau of Fisheries.
Bureau of the Mint.	Bureau of Immigration.
Internal Revenue Bureau.	Bureau of Navigation.
Public Health and	Bureau of Statistics.
Marine-Hospital Service.	Bureau of Labor.
War Department.	Steamboat Inspection Service.
Philippine Census.	Smithsonian Institution.
Cuban Census.	Both Houses of Congress.
Post Office Department.	Government Printing Office.
Department of the Interior.	Interstate Commerce Commission.
Geological Survey.	Civil Service Commission.
Bureau of Education.	Conservation Commission.
Department of Agriculture.	Agricultural Commission.
Bureau of Statistics.	
Forest Service.	

I am gratified to call your attention to the fact that the initiative of cooperation and collaboration has not been confined to this Office, but it has come as well from other departments and bureaus. This fact forms another gratifying illustration of the harmony with which the various bureaus and departments have worked with the Census

during the past few years. The variety of inquiry made necessary under the census act has led this Bureau, in pursuance of the policy of cooperation, to turn to one bureau or department and then to another for assistance and advice. In this particular the Bureau is unique, since, of necessity, work of other departments and bureaus is of a specific and uniform character.

COOPERATION WITH THE TREASURY DEPARTMENT.

The Loans and Currency Division.—Cooperation with this division is at present under way in connection with the bonding provisions of the new currency act.

The Mint.—Cooperation with the Bureau of the Mint occurred in 1902 in connection with the statistics of the production of gold and silver, as compiled for the census of mines and quarries. The statistics of gold and silver production, as compiled by the Census, the Mint, and the Geological Survey, now harmonize, and they are more accurate than ever before, because of the benefit of the combined knowledge, facilities, and experience of all three offices.

The Internal Revenue Bureau.—Cooperation with this bureau has resulted in establishing uniformity in the reports of the two bureaus on the production of malt and spirituous liquors and of the manufactured forms of tobacco. The reports of both bureaus now harmonize in these respects for the first time.

The cooperation with the Public Health and Marine-Hospital Service has already been referred to.

COOPERATION WITH THE WAR DEPARTMENT.

The census of the Philippine Islands in 1903 and that of the Republic of Cuba in 1907 were taken by the War Department. In both instances, by order of the President, the complete returns were turned over to the Census Office for tabulation, and the supervision of the printing of the report was in both instances intrusted to the Census Office.

COOPERATION WITH THE POST OFFICE DEPARTMENT.

As the task of computing the "average haul" in connection with the cost of mail transportation proved too great for the Post Office Department, the Postmaster-General requested the Census Office to make the computation, and this undertaking, involving the addition by machine of many hundred thousand items, was promptly and successfully accomplished. Subsequently the Post Office Department organized a large special division for this work.

COOPERATION WITH THE DEPARTMENT OF THE INTERIOR.

Geological Survey.—In 1900 the census of manufactures, so far as it related to industries regarding which the Geological Survey makes annual reports, was largely intrusted to experts detailed from that bureau. In 1902 the census of mines and quarries was made in active cooperation with the Geological Survey, including an interchange of facilities and clerical services, so that the annual report of the Survey and the decennial report of the Census Office on the production of minerals were for the first time in accord.

Bureau of Education.—The Census Office in its annual municipal report gathers many statistics relating to the public schools of the cities. Plans are now in progress for coordinating these statistics with those compiled by the Bureau of Education.

COOPERATION WITH THE DEPARTMENT OF AGRICULTURE.

Bureau of Statistics.—Complete coordination exists between this bureau and the Census Office with respect to all statistical inquiries where the work of the two bureaus runs along parallel lines. This arrangement has been especially effective and advantageous in respect to the statistics of the production, distribution, and consumption of cotton. The reports of the two bureaus were in frequent conflict before a working agreement was reached; this conflict resulted in much confusion in the commercial world, which in turn led to severe, and in some respects merited, criticism of the Federal Government. Cooperation has led to the universal acceptance, as authoritative and final, of the reports of both bureaus, each working in its own well-defined field. In this instance, instead of each discrediting the figures of the other, and thus creating distrust of both, the two bureaus exchange information and assist each other to secure the best and most accurate results.

The Forest Service.—The annual statistics of the amount of lumber cut, required by the Forest Service, are now compiled by the Census Office, in cooperation with that bureau, and harmonized with the five-year censuses of the lumber industry, which the Census is required by law to make. Under this arrangement, the Forest Service furnishes the expert knowledge and supervision necessary in connection with this inquiry, and the Census Office performs the mechanical work, with the expert statistical experience required to harmonize the methods with those employed in kindred Census inquiries. This instance of cooperation is perhaps the best illustration of that practical cooperation in compiling statistics which was one of the important objects in view when the Census Office was made permanent. It

utilizes the expert knowledge of both bureaus, each in its own line, and thus secures results which would be impossible of achievement were each bureau to pursue its own work, by its own methods, without regard to the methods of the other. It is worthy of the committee's attention that while harmony in the statistical work of Federal bureaus is obviously proper and indeed necessary, it results incidentally in considerable saving of money.

COOPERATION WITHIN THE DEPARTMENT OF COMMERCE AND LABOR.

Bureau of Fisheries.—Plans are now completed for the cooperation of the two bureaus in the decennial census of the fisheries required by law. There is no reason to doubt that all the advantages referred to in connection with the Forest Service cooperation will be realized in this instance also.

Bureau of Immigration.—Early in the history of the Department of Commerce and Labor an effort was made by Secretary Cortelyou to coordinate the statistical work of the Immigration Service with that of the Census Office. A general order dated July 29, 1903, directed that on and after January 1, 1904, the statistics of immigration be compiled by the Census Office.¹

The statistics of immigration were compiled by the Census Office for nearly two years. A marked improvement in the methods of presenting the figures was effected during this period. But the fact that the Immigration Service was unwilling to permit the manifests to be sent to Washington for transcription resulted in delay and embarrassment, while double transcription involved considerable increase in the cost of the work. For these reasons the Director of the Census acquiesced in the urgent recommendation of the Commissioner-General of Immigration, and the work was retransferred to the Immigration Bureau in November, 1905.

Notwithstanding this experience, the Director is still earnestly of the opinion that the statistics of immigration should be compiled in the Census Office. By the utilization of an automatic electric punch,

¹This was one of the most obvious and important of the statistical reforms made possible by the establishment of the Department of Commerce and Labor. The immigrants to the United States become immediately an integral part of our population, and it is essential that their social statistics shall be gathered upon arrival, in conformity with the population schedule of the Census. This can be done without any modification of the existing requirements of the law regarding alien manifests. An immediate advantage of the transfer will be the harmonizing of the tables showing the country of the immigrant's birth, with the Census tables showing birthplace of the foreign born. By the use of the electric tabulating machines and the punched-card system, the statistics of immigration can be presented in much greater detail than heretofore, at a much smaller cost for compilation.—*Report of the Director of the Census, 1903.*

recently invented in the Census Office for use at the Thirteenth Census, the transcription of the immigration returns could be made with great rapidity, and with greater accuracy than is possible under the hand tally system now employed in the immigration offices. It would permit the addition of much important detail now omitted. There would be no increase whatever over the present cost of the work. Indeed some economy might result.

Bureau of Statistics.—The statistics of imports and exports have been so reclassified that they more nearly harmonize with the Census statistics of manufactures. It is now possible to determine, for every great line of manufacture, with each recurring five-year census, just what proportion of the product is exported and what proportion is consumed at home. This is an important step in the direction of the coordination of official statistics, in some respects the most important, for it had reached the point at which the need for it, from a commercial point of view, was most urgent. The initiative in bringing about this coordination was taken by the Chief of the Bureau of Statistics. There is much that remains to be done in this particular field, but I am confident that the wide experience of the Chief of the Bureau of Statistics may be relied upon to work out the problem of unifying the figures of imports and exports of the United States, with the similar figures of foreign countries, and with the Census statistics of American manufactures. It is a great work, upon which also a special committee of the International Institute of Statistics is now engaged, in concert with the statistical offices compiling commercial figures throughout the world.

Bureau of Navigation.—The Census Office collaborated with the Bureau of Navigation throughout the preparatory work and the compilation of the decennial report on transportation by water. Its field-work, so far as concerned documented craft, was based upon the records of that bureau, and every effort was made, within the limitations surrounding the work of the two bureaus, to avoid inconsistencies. Direct use of the statistical tables of the Bureau of Navigation was made in the Census report wherever it was possible. The assistance and cooperation of the Bureau of Navigation were most helpful, cordial, and effective.

Steamboat Inspection Service.—Similar collaboration occurred between the Census Office and the Steamboat Inspection Service in the preparation of the transportation report. A number of the statistical tables of that bureau appeared in the text of the Census report, and were essential to a complete presentation of the subject. Cordially acknowledging the great value of the aid given by the Steamboat

Inspection Service, it may fairly be inferred that the benefits were reciprocal.¹

Bureau of Labor.—The manner in which the Census Office can be of assistance to other bureaus of the Government in emergencies was illustrated in 1904, when the Bureau of Labor called for help to compile its report on "Wages and Hours of Labor." From April 2 to June 22 the Census Office, by direction of the Secretary, assigned about sixty-five clerks, at a cost for salaries of \$22,193, to this work, to make the computations of the schedules, and to complete the additions, averages, and percentages for the final tables. The publication of the report was thus advanced about eight months over what would otherwise have been possible.

Civil Service Commission.—At the request of the Civil Service Commission, the Census Office compiled in 1904 a bulletin upon the Executive Civil Service of the United States. This bulletin was compiled principally from the records of the commission. The successful performance of this duty led Congress to transfer to the Census Office the compilation of the biennial Official Register of the United States, previously compiled by the Department of the Interior. Application to this overgrown publication of the experience and methods of an office devoted exclusively to all varieties of statistical work, resulted in sweeping reforms and condensation.²

¹A representative of the Census Office spent several days in examining the methods employed by the Inspection Service in reporting the transportation of passengers and discovered considerable lack of uniformity, as between the several local inspection districts, in returning this information. Furthermore, in a letter received from the Supervising Inspector-General the statement was made that "it is a matter of discretion with the master of the steamer as to which board he may report," and "a steamer running between Buffalo and Cleveland, for instance, may report to Buffalo the whole number of passengers carried both ways, or she may report some at Buffalo and some at Cleveland." With such latitude allowed it would not be surprising if some masters failed occasionally to report, or if some reported twice, at the port of departure and the port of distribution, as there appears to be no system of checking these returns. A comparison of the returns on file in several of the more important districts disclosed several instances of duplication, amounting in the aggregate to 600,000 passengers at least, which explains that degree of difference.—*Extract from Census report on Transportation by Water.*

²In making preparations for the Register for 1907 it became evident that radical steps must be taken to reduce the size of the volumes. The civil service has been increasing so rapidly that the Official Register has grown from a volume of 175 pages in 1816, when the first issue appeared, to two volumes of 1,756 and 2,480 pages, respectively, a total of 4,236 pages, in 1905.

The two volumes required to present the material contained in the last Official Register weighed together nearly 30 pounds. The space required to include merely the index is sufficient to form a large volume.

The Director of the Census therefore consulted with the Printing Commission of Congress and obtained its cordial approval to plans for reducing the bulk, and at the same time increasing the usefulness of the Official Register. The most radical feature of the plan was that which disposed of the necessity for an index by printing the names of all Federal employees, irrespective of the department in which employed, in alphabetical order, under appropriate symbols indicating their official location.—*Annual Report of the Director, 1907.*

In the preparation of the second bulletin upon the Executive Civil Service, which was compiled in connection with the Official Register, the advice and expert assistance of the commission in classification and innumerable details were again sought and the commission cooperated promptly and effectively.

Interstate Commerce Commission.—The Census Office has been in intimate touch with the statistical division of the Interstate Commerce Commission ever since the establishment of the permanent Office, and an interchange of information is constantly in progress. In 1904, in connection with the decennial report upon wealth, debt, and taxation, the Census published a bulletin entitled “The Commercial Valuation of Railway Operating Property.” The expert and technical supervision of this undertaking was placed wholly in charge of Prof. Henry C. Adams, the statistician of the commission.

In the present year the decennial report upon express business, which the law requires the Census to make, was compiled in cooperation with the Interstate Commerce Commission, which, under the new railroad rate law, is required to make annual reports on this subject. In order to avoid unnecessary duplication of statistical inquiries, the Director of the Census has recommended an amendment to the census law which shall relieve him hereafter of the duty of making an inquiry upon this subject.¹

Smithsonian Institution.—In the preparation of the decennial report on mines and quarries, 1902, the expert services of Dr. George P. Merrill, head curator of the National Museum, were utilized by the Census, thus imparting to the work the highest scientific authority. In connection with the manufacturing census of 1905, it utilized the services of Dr. Marcus Benjamin, editor, in the preparation of the special report on the pottery industry.

Government Printing Office.—In 1908 the investigation of the affairs of the Government Printing Office, ordered by the President

¹The 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 is now engaged in the preparation of 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 must hereafter always be a duplication of the annual report of the Interstate Commerce Commission.—*Annual Report of the Director of the Census, 1908.*

for his information and that of Congress, disclosed the pressing need for statistical tabulations relating to labor, wages, plant, and appropriations. At the request of the President's representative, twelve expert clerks of the Census Bureau were loaned to make the required tabulations, and this force prepared the tables of operation statistics subsequently transmitted to the President and by him to Congress. The cooperation of the Census Bureau in this investigation was said to have made possible compilation of data never before tabulated in the Government Printing Office and indispensable in a comprehensive survey of the affairs of the office.

From the details here presented of collaboration with various branches of the Government, it is evident that the cooperation of the Census has not been of a perfunctory character, and that it has varied greatly with different departments and bureaus.

In the cases of the Bureau of Labor and the Government Printing Office, above noted, cooperation consisted in the loan of clerks; in the cases of Congress and seven departments or bureaus it consisted in securing results desired by the employment of a considerable clerical force, working in the Bureau of the Census upon definitely assigned tasks, the object of which was to secure certain tables, figures, or computations. In other cases it consisted in the loan of experts from this Office, and in still other cases in the employment by the Bureau of the Census of experts attached to other branches of the Government. The variety here noted in the method of cooperation is one of the most gratifying features of collaboration, since it indicates the adaptability both of this Office and of other branches of the Government, and also the entire willingness of both parties to meet conditions in a practical manner. It is from an attitude such as this that the best possible results can be obtained.

In seeking these cooperative arrangements with every bureau or department of the Government with whose work its statistical reports come in touch, the Census Office has three distinct purposes in view, each of the highest importance, viz:

1. To reduce duplication of work to the minimum.
2. To eliminate inconsistencies and incongruities in official figures.
3. To impart to Census reports the highest scientific authority.

Not all the duplication has disappeared, but it has been greatly curtailed since the establishment of the permanent Census Office. The inconsistencies and discrepancies have been still more reduced; and the Federal statistics harmonize with each other more nearly since the permanent Office came into existence than ever before. There is still much to be done in this direction.

CENSUS COORDINATION WITH STATES AND MUNICIPALITIES.

This field of cooperation and coordination is even wider and more important than that relating to strictly Federal statistics; the work already accomplished by the Census Office in this field is probably its most important contribution to the standardization of statistics.

The need for centralization of statistical inquiry in the United States has been increasingly and urgently apparent for many years.¹

The policy pursued by the Census Office to establish effective cooperation with state and municipal statistical offices thus far chiefly relates to four general lines of investigation.

I. *Industrial statistics.*—The need for some concert of action in respect to statistics of this character is greater, perhaps, than in any other field. Nearly every state in the Union makes frequent reports on the statistics of industry, more or less along the lines of the Federal census of manufactures, but with little uniformity in schedule or method, and without any coordination.

To meet this situation the Census Office arranged for uniform schedules of inquiry with a number of the state bureaus, and this

¹An extraordinary development has taken place in the official statistics published by the several states of the Union, surpassing in bulk and variety the simultaneous growth in Federal statistics. This development dates from about 1869, when the first bureau of labor statistics, that of Massachusetts, was organized. In the intervening thirty years, thirty such bureaus have been established, all of them engaged in statistical work within their state limits, along lines more or less similar to those of the Census Office and the Department of Labor, and together turning out every year a mass of material almost as large as that of the Twelfth Federal Census.

These bureaus of labor statistics represent only a small portion of the statistical work regularly done by state bureaus, much of it touching closely, at some point, the work assigned by Congress to the permanent Census Office. There are mining bureaus, or boards of mining inspectors, in many states; boards of agriculture; state geologists; state boards of charities; boards which compile statistics of the criminal, delinquent, and defective classes; railroad and electric light commissions; forestry commissions; and boards of vital statistics. There is a quantity and variety of statistical data, required by law and compiled under many different authorities, in the forty-five states and seven territories of the Federal Union, of which few of us, I think, have had any conception. This enormous mass of statistical material is growing so rapidly from year to year that it is no longer possible for any private library to find room for it, and very few public libraries can do so, while the individual student of statistics or any branch of statistics is overwhelmed and lost when he seeks to secure by personal research all the available data.

In a scheme for the national unification of official statistics each state should contribute its proportionate share to an orderly statistical view of the whole nation. Thus every state inquiry would become a link in a long chain of statistical data, every link of which would fit perfectly into every other link. The realization of this scheme involves no larger expenditure of money than is already made. It only means that the expenditure shall be intelligently and uniformly made.

At every point where the Census work touches the statistical work of any bureau, board, or commission in any state, there the effort should be made to secure uniformity in schedules of inquiry, uniformity in methods of tabulation, uniformity in date of investigation, and thus uniformity in results and a basis

cooperation was legalized and facilitated by act of Congress in connection with the census of manufactures for 1905.¹

By virtue of this authority, the census of the manufactures of Michigan was made jointly by the Census Office and the Michigan secretary of state, with an equitable division of the expense, resulting in a presentation of the industrial statistics of that state which was identical in every respect. Had the two offices done the work separately, their reports would not have agreed at any point. Similar arrangements were made with the state bureaus of Massachusetts, Rhode Island, and New Jersey, with results equally satisfactory. It is expected that at the Thirteenth decennial Census it will be possible to carry out this plan of cooperation with a number of additional states.

II. *Vital statistics.*—In the second field a remarkable success has attended cooperative work between the Federal census and state and municipal offices.

The permanent Census Office law makes provision for annual reports on vital statistics in registration areas having sufficiently complete and satisfactory records. The data for these statistics are registered under local laws and ordinances, but there is no uniformity in these laws and ordinances, in the forms of returns or records, or in the degree of certainty with which the essential facts are reported; and the Census Office, which has to struggle with the problem of reducing

for the comparative use of the statistics. Thus every state canvass would supplement every national canvass, and the actual practical value of both would be multiplied many times. Thus, also, the Census would be saved the expense of making many canvasses which the states also make—a saving to be divided between them. But the question of economy is of little importance compared with the intrinsic improvement of official statistical work.

The Census Office has had several opportunities already to demonstrate the practicability of a working arrangement with the state boards. In the recent investigation of street railroads cooperation was effected with the five state railroad commissions, whereby the reports submitted to the latter, by all the street railroad corporations in their several states, were placed at the service of the Census Office, thus saving the Office many thousands of dollars in fieldwork and bringing the state and the Census Office reports into harmony with each other.—*Extract from address of the Director of the Census at the Nineteenth Convention of the Commissioners of State Bureaus of Statistics, 1903.*

¹ *Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the Director of the Census is hereby authorized and empowered to cooperate with the secretary of state of the state of Michigan in taking the census of manufactures and shall equitably share the expenses thereof, the results of which may be accepted by the United States as its census of manufactures for that state for the year nineteen hundred and five: *Provided,* That the expenditures incident to this cooperation shall not exceed twenty thousand dollars, such expenditures to be paid from the fund appropriated for the expenses of the fieldwork of the census for the fiscal year ending June thirtieth, nineteen hundred and five. And the Director of the Census may, in his discretion, cooperate with the officials of other states which take a like census in so far as it may aid in the collection of statistics of manufactures required by existing law.

Approved, March 1, 1904.

the heterogeneous mass to comparable statistics, has no control over the machinery of registration. All that it can do to bring order and system out of chaos—to increase the quantity and improve the quality of the recorded data—must be through cooperative measures that appeal to local interest. It involves the adoption of new legislation in some states, the repeal or amendment of existing laws in others, and changes in forms of returns, records, and long-established methods of practice all along the line.

As registration is governed by legislation, the first step was to determine and fix the essential requirements of a comprehensive law that should include the good features and avoid the defects of existing laws, as an authoritative guide for those contemplating such legislation; and the registration of deaths was selected as the most practicable subject for illustration. Copies of all laws and ordinances on this subject were secured and abstracts made; then a circular was prepared outlining the essential requirements of a law and prescribing a "standard form" of a certificate to be used in reporting deaths, with an extended explanation of the importance, necessity, and use of the different details or items of information required concerning each death.

This standard certificate is now in use by most of the states and cities whose mortality records are accepted as sufficiently accurate to justify their inclusion in the registration area. The progress made in the standardization of mortality statistics in the six years that have elapsed since this work was undertaken is most gratifying. In 1900 there were only ten states included in this area, covering 40 per cent of the total population of continental United States. The states of California, Colorado, Maryland, Pennsylvania, South Dakota, Washington, and Wisconsin have since been added, which brings the total up to 51 per cent. When the new registration law of Ohio goes into effective operation nearly 65 per cent of the total population of the United States will be included in the mortality reports of the Census. The United States is behind, and far behind, every other great civilized nation in the field of vital statistics—the field that touches the people most closely because of its intimate relation to the public health. It is unnecessary to dwell upon the far-reaching importance of this branch of the work of the Census in connection with the physical welfare and sanitary protection of the American people.

III. *Municipal accounting.*—The third field in which the Census Office is actively at work is that of the standardization of municipal accounting. When the work of compiling the statistics of cities was

transferred to the Census in 1904, confusion worse confounded was found to exist in the methods of bookkeeping in existence in most of these cities. No two municipalities kept their financial accounts in such a form that the expenditures of any one city for any particular purpose could be compared with those of any other city. By establishing a uniform classification of expenses and a standard terminology, the Census Office has been able gradually to evolve order out of much of this confusion.

To each of the 157 cities of the United States having a population of 30,000 and over, a representative of the Census goes every year, and so classifies the receipts and expenditures for every purpose that each city now knows just what it costs, in comparison with the cost in other cities of its class, to maintain schools, police, fire department, streets, sewers—every important item of municipal expense.

A number of these cities have reorganized their bookkeeping, so that it accords strictly with the Census schedules; and every year increases the number.

IV. *Population statistics.*—Another fruitful field for cooperation between the Bureau of the Census and the states is in the collection of statistics of population, midway in the Federal census period. The expense of a Federal census is such that an enumeration made at shorter intervals than ten years is not likely soon to be attempted. On the other hand, changes in the population, especially in the composition of population, are occurring with rapidity, the study of population conditions is exciting greater interest, and the necessity for accurate population figures at more frequent periods, for the purpose of computing rates in connection with other forms of statistics, has greatly increased. Fourteen states have already recognized this requirement in connection with internal administration. In these a state census is made in the "five" year. These returns have proved of great assistance to the Census Bureau in connection with the estimates of population for the remaining states and territories; but even in these instances, lack of uniformity makes the statistics of varying degrees of usefulness. It will be in the future an important task for this Office to persuade the states which do not take such a midcensus to pass laws authorizing a state enumeration, and to adopt a schedule, however simple, which shall be reasonably uniform with the schedules adopted in other states having similar laws, and with the Federal census.

I look forward to the encouragement of such a movement as one of the greatest reported to be undertaken for the next intercensal period.

16.

16. What are the needs of your office in regard to new lines of statistical inquiry not now undertaken by any branch of the Government?

At the present time, and in view of the near approach of the Thirteenth Census, which will require the combined energies of the Office for three years, it would be unwise to submit any suggestions for "new lines of inquiry" to be undertaken by the Census Office. There are, however, certain lines of statistical work in fields now untouched, which the Federal Government ought to undertake, but in the nature of things, legislation to this end should be delayed until we approach the completion of the greatest and most difficult statistical undertaking of any government in the world—the decennial census of the population, agriculture, manufactures, and mining industries of the United States.

17.

17. Have you any recommendations to submit regarding the preparation and the place of publication of the Statistical Abstract of the United States?

NOTE.—It is the sentiment of this committee that the Statistical Abstract referred to in the Executive order should be made the authoritative depository of the significant results of all important statistical compilations carried on by the several departments of the Government, and any suggestions relative to a plan for the satisfactory compilation, publication, and dissemination of such an Abstract will be thankfully received and carefully considered.

The Statistical Abstract of the United States, as now compiled, is open to serious criticism, both for what it omits and what it contains. It has been a gradual growth in a small bureau, otherwise devoted exclusively to trade statistics, and without the wider outlook and experience required to perfect a publication of this character. That it should receive the study and attention of the best expert statisticians of the Government is conceded—was in fact the chief reason for the establishment of this committee.

The Statistical Abstract should be compiled and published in the Census Office. The reasons why this transfer should be made appear in the diversity and breadth of interests indicated in the preceding statements of this report, and may be summarized as follows:

I. The Abstract has a more natural relationship to the work of the Census Office than to that of any other bureau.

In justification of this statement I submit, as Appendix A, an analysis of the contents of the Abstract for the year 1907, classified by the official sources, if any, from which its statistical presentations are obtained. It appears that four offices supply 542 pages out of the 700 which make up the volume. Of these 542 pages, 33 are from reports of the Bureau of Labor, 68 from the Treasury Department,

107 from the Census reports, and 334 from the Bureau of Statistics in which the Abstract is compiled. Of the latter, 281 pages consist of the statistics of imports and exports, in various forms adapted from the monthly Commerce and Navigation publications of the Bureau of Statistics. To persons desiring full details of imports and exports the figures contained in the Abstract are not sufficiently complete; to others, desiring only the general facts such as are ordinarily sought in an abstract, the volume contains much greater detail than is necessary or desirable. If the Census figures of population were treated in the same detail, they would fill more than 500 pages of the Abstract.

II. The Census Office is the chief statistical bureau of the Government. It is the natural source from which should emanate the only Government publication which summarizes all official statistics, just as the Year Book of the German Empire emanates from the Imperial Statistical Office (the Census Office of Germany). The correspondence of the Bureau indicates that many persons desiring the Statistical Abstract, and not familiar with the particular office which compiles it, assume that it is a Census Office publication, and write to this Office to obtain it. The assignment of the compilation to the bureau from which public opinion naturally expects it to emanate would be good administration.

III. The Census Office is concerned with the compilation of a larger variety of statistical data than is any other bureau, its experience thus covering the statistics of the widest fields of inquiry. Hence it is the proper office to undertake the duty of bringing all these statistics together in a harmonious and properly apportioned compendium.

IV. The Census Office has at its command the services of the largest body of trained statistical experts in any one office in the Federal service, with the widest experience in handling general statistical data. It is able to bring to the compilation of the Abstract a degree of expert assistance and advice greater than that of any other one bureau, or even of any interdepartmental committee.

V. The Census Office, having inaugurated and successfully carried out systematic plans and methods for the compilation of official statistics along uniform lines, with a view to the avoidance of duplications, inconsistencies, and discrepancies, is the natural and proper bureau to compile the general governmental publication in which all the statistics officially compiled are brought together in summary form. It is the bureau which has the greatest facilities for eliminating and rectifying these inconsistencies.

VI. The Census Office is the only bureau of the Government which maintains constant and intimate relations with the various statis-

tical bureaus of the several states of the Union, with a view to bringing their statistical methods into harmony with those adopted by the Federal Government. Its activities in these directions extend to the statistical work of every state, county, and municipal government in the United States, covering boards of health, labor statistics, financial offices, etc. The whole scheme of unifying national and state statistics, so that all of them may be comparable at every point, turns today upon the energies and the efforts of the Census Office, and it has no other recognized or possible center. To turn over to the Census Office the compilation of the general summary publication, concentrating in one volume the best results of this general movement for statistical coordination, would advance the science of official statistics more effectively than any other step it is now possible to take.

While the question as to which bureau shall compile the Statistical Abstract is minor and relatively unimportant, in comparison with the great question of the unification and coordination of the official statistics of the United States and the forty-six independent states of the Federal Union, the compilation of the Abstract is a part of the work of statistical coordination and standardization. It should be undertaken by the bureau which has organized and is most successfully developing the work of coordination and standardization.

Numerous suggestions for widening the scope and increasing the usefulness of the Statistical Abstract might be made; but I assume that this report is not the place for them.

RECOMMENDATIONS.

In response to the supplementary question of the committee, submitted by letter, I first call attention to the necessity for a radical change in the nomenclature of certain bureaus of the Government charged with the compilation of official statistics. There is abundant evidence of a hopeless confusion in the public mind as to how and where to apply for statistical information from the Government. Letters are sent hit or miss, and the red tape of circumlocution is appalling. For instance, we have a Bureau of Manufactures in the Department of Commerce and Labor, and at the same time a division of manufactures in the Census Office. The latter takes a complete census of manufacturing industries every five years, and alone can answer the bulk of the inquiries which pour in upon the Bureau of Manufactures. We have a Bureau of Statistics in the Department of Commerce and Labor, which deals only with the statistics of foreign and domestic commerce, and receives many letters which must be referred to the Census. To make confusion worse confounded, we have another Bureau of Statistics in the Department of Agriculture.

This bureau is of course concerned only with agricultural investigations.

Thus there exists a veritable babel in the designations of the bureaus that handle Government statistics. This confusion is the outcome of a gradual but disjointed and haphazard development, which was the natural consequence of the fact that, prior to the establishment of the permanent Census Office, there existed no general statistical bureau to which the accretions of statistical work could appropriately be attached.

Second. I refer you to the report of the departmental committee appointed by Secretary Straus, of which Hon. L. O. Murray was the chairman. I am convinced that the main recommendation of this committee—that for the consolidation of the Bureau of Manufactures with the Bureau of Statistics of the Department of Commerce and Labor—is an indispensable step for the improvement of the Government statistical service.

Third. A radical reorganization of the methods of compiling the statistics of transportation is desirable. These statistics, so far as they relate to steam railroads, are now compiled annually by the statistical division of the Interstate Commerce Commission. Those relating to transportation by water (decennial) and the street and electric railways (every five years) are compiled by the Census Office. These several methods of transportation are becoming so interwoven and interdependent, under modern methods, that a complete statistical picture of the progress of transportation in the United States can be obtained only by consolidating all branches of transportation statistics into one report, which shall reveal the total volume of our internal traffic in freight and passengers, and studying the development of each method of transportation in connection with the others. It is impossible, from the present separate and unrelated reports, to obtain coordinated knowledge of the magnitude of our transportation interests and of their relative development. The end in view could be secured by creating a new division in the Census Office, to be known as the "division of transportation," and concerned only with the compilation of statistics of this subject. As the functions of the Interstate Commerce Commission become more distinctly judicial in character, the anomaly of including statistical work among the increasing duties of that body becomes more striking. The task of collecting the schedules of the steam roads might still be left to the commission, which possesses exceptional powers for enforcing accurate and complete returns; but the work of tabulating these returns, and of coordinating them with those of the electric and water transportation companies, can well be transferred to the bureau whose sole business it is to do work of this character.

Fourth. I may summarize the preceding recommendations by expressing the judgment that they make for more exact statistics—that is to say, for the standardization of statistics. Hence I recommend the concentration of the statistical work of the Government, so far as practicable and wherever separated from administrative functions, in one central bureau, under one general supervision, and with a general unity of method.

There must always be exceptions; but what we may call the general, nonadministrative statistics of the Government—statistics collected primarily for the sake of the knowledge they give of general sociological and economic conditions—can always be handled to the best advantage in one office, whose business it is to do nothing else, which has no executive functions, which is under constant spur to do this one thing better and better, which can measure and test the results secured in one branch of statistical work by those obtained in others, and can coordinate, unify, and verify the whole.

That the Census Office is the logical and natural bureau in which to concentrate, so far as concentration is desirable and possible, all the miscellaneous statistical work of the Government, appears from the facts above stated.

In addition to the fact that it has the largest clerical force and the most complete mechanical outfit, there appears the yet more important reason that the Bureau maintains a staff of trained and expert statisticians such as exists in no other bureau of the Government. These statisticians are men who have spent their lives in statistical work, and devote their time exclusively to the study of statistics and statistical methods and results. They meet in frequent conference; discuss problems as they arise; assist each other by advice and suggestion; and generally combine their efforts for the improvement and advancement of the work of the Office in its relation to the whole science of statistics. It is the only body of men in the Government service engaged in the exclusive study of statistical science in all its forms and applications; and it is a fair inference that statistical data emanating from a bureau thus officered will receive more scientific treatment than can be given them by other bureaus in which statistics are a by-product, or incidental to other work.

Moreover, the Census Office has the benefit of the advice, criticism, and suggestion of an advisory committee, duly appointed for that purpose, and consisting of the best known statisticians and economists of the United States, viz, Hon. Carroll D. Wright, president of Clark College, and for twenty years the Commissioner of Labor; Prof. Walter F. Willcox, professor of statistics and economics at Cornell University; Prof. Davis R. Dewey, in charge of the same depart-

ment at the Massachusetts Institute of Technology; Mr. Henry Gannett, the geographer of three Federal censuses; and Prof. Willett F. Hayes, the Assistant Secretary of Agriculture. This committee holds sessions at the call of the Director, when problems arise in handling statistical material; and their advice and criticism regarding the work and methods of the Office are constantly sought.

Of even greater importance is the fact that the census law permits the Director to include in his consulting staff a number of experts in different lines of statistical inquiry who are not in the Government service, and who are recognized as being at the head of their several professions. The services of these experts are obtained, whenever desirable, for a week, a month, or a year, as the case may be, and as the technological character of the work in progress may require. For example, Prof. Charles E. Munroe, of the George Washington University, has served for several inquiries as the chemical expert; Mr. T. C. Martin, as the electrical expert; Mr. Edward Stanwood, as the textile expert; and the names of many distinguished scientists have appeared during the past decade upon the Census special agent rolls, in connection with statistical inquiries in their acknowledged fields.

The Census Office is the only Government bureau whose organization and resources permit it to keep in this intimate touch with the most advanced knowledge of the outside world on all the subjects with which its statistics deal.

In these as in other respects the Census organization most nearly resembles that of the Imperial Statistical Office of the German Empire, in which the centralization of statistical work has been in progress since the founding of the Empire.

The organization and functions of the Imperial Statistical Office of Germany so closely resemble those of the United States Census Office, that I have included, as Appendix B, a translation of a description of its work submitted to the International Institute of Statistics at its ninth meeting, held in Berlin in 1903. A study of this paper will reveal the close parallel that exists in the work and the methods of the Census Office and of the German Imperial Statistical Office. It is the only statistical bureau in Europe which encounters conditions somewhat similar to those which exist in the United States; it handles not only the general statistics of the German Empire, but is called upon to deal with the statistical material of the several German kingdoms and states of which that Empire is composed. In a word, it is confronted with the same problem of coordination and standardization that falls to the United States Census Office; and its methods of procedure, in dealing with the problem, are very similar to those described in this paper.

Reply of the Director

CONCLUSION.

In conclusion, permit me to say that I am keenly aware of the responsibility which necessarily accompanies the conduct of an office having such diverse and widely distributed interests. An earnest and continuous effort has been made to apply both scientific and business methods to the conduct of this Office, and in particular to adopt a hearty and helpful attitude toward collaboration and cooperation, and toward furnishing statistical information to all inquirers as promptly and effectively as possible.

Nothing in this statement of the activities of the Office and its relations to other branches of the Government, or to state governments, is to be construed as indicating a belief that there does not remain much still to be accomplished, both in methods and results. In both of these particulars the advice and assistance of the Interdepartmental Committee will be most gratefully welcomed. The highest value of the Census would be seriously impaired by any attitude other than absolute open-mindedness and an ever-present desire to improve the work of the Bureau.

All of which is respectfully submitted.

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

DECEMBER 1, 1908.

APPENDICES

APPENDIX A.

Statistical Abstract, 1907—sources of information, according to departments and bureaus of the Government, together with number of pages to be credited to sources outside of the Government.

SUBJECT.	Table numbers.	Total printed pages.	NUMBER OF PAGES SUPPLIED BY—															Number of pages supplied from sources outside of the Government. ¹						
			Bureau of the Census.	Bureau of Statistics.	Treasury Department.	Department of Agriculture.	Land Office.	Bureau of Education.	Indian Office.	Bureau of Immigration and Naturalization.	Forest Service.	Bureau of Fisheries.	Patent Office.	Bureau of Navigation.	Pension Office.	War Department.	Navy Department.		Post Office Department.	Bureau of Labor.	Geological Survey.	Interstate Commerce Commission.	Reclamation Service.	
Aggregate		700	1040	334	68	202	6	122	1	91	4	3	24	22	8	1	2	2	33	40	4	2	503	
States and territories:																								
Organization and acquisition																								
Areas	1-6	7					6																	
Disposition of public lands																								
Irrigation	7, 8	2																						
Indian reservations																								
Indian reservations																								
Congressional apportionment	9	1																						
Population:	10	1																						
Native and foreign																								
School and college	11-22	30																						
Illiterate	32-38	10																						
Dependent and delinquent	23-25	4																						
Immigrants	27-30	4																						
Emigrants	31	2																						
Agriculture	39-52	26																						
Forestry, including production and consumption of lumber.																								
Fishes	53-58	7																						
Manufactures	60, 61, 67-78	32																						
Mining products																								
Fats	62-66	8																						
Fur	79, 80	2																						
Occupations	81-87	19																						
Strikes and lockouts	88-107	22																						
Wages and hours of labor	108-110	3																						
Post routes and Railway Mail Service.	111, 112	2																						
Telegrams and telephones.	113-115	3																						
Public roads	116	1																						

APPENDIX B.

THE IMPERIAL STATISTICAL OFFICE OF GERMANY.¹

The Imperial Statistical Office came into existence July 23, 1872. Before that date the central bureau of the Zollverein had presented regularly up to the year 1870 such returns respecting trade and population as were demanded. The Imperial Statistical Office is in the Imperial Ministry of the Interior, which has taken the place of the former office of the Imperial Chancellor. In the standing order of 1872, which is still in force, its field is described as follows:

The office:

1. When required by law or by order of the Imperial Chancellor, shall collect, examine, tabulate, and publish the returns required for imperial statistics.
2. When required by order of the Imperial Chancellor, shall prepare statistical returns and present reports on statistical questions.

The new office at first took up the statistical work which up to that time had been performed by the central bureau of the Zollverein, namely, the statistics of population in which the results of the census of 1871 were to be tabulated; then the statistics of foreign trade, as well as those of customs and indirect imposts; and finally, statistics of mines and mining. To these were shortly added returns upon the movement of population, marriages, births, and deaths; statistics of agriculture; the traffic on German waterways and the condition of German inland shipping, as also the preparation of a detailed description of German inland waterways; statistics of maritime traffic, and, in particular, information as to the condition of German merchant vessels; statistics of the ships coming into and going out of German ports; statistics of the traffic of German vessels between foreign ports; statistics of disaster to German seagoing ships and of wrecks on the German coasts; statistics of transoceanic migration; and lastly, statistics of profit and loss on state and crown property (discontinued in 1882).

Even in the seventies a comprehensive extension of this list of duties set in. The office was charged with collecting annual statistics on the following subjects: The fruit harvests (until 1877); the enrollment and withdrawal of seamen (until 1889 or 1901); the education of recruits; explosions of steam boilers; harvests and

¹See *Statistics of the German Empire for 1897* (Statistics of the German Empire, published by the Imperial Statistical Office, new series, vol. 101); the first quarterly report of the years 1898-1903. Compare also Fr. Zahn, *Statistics of the German Empire in the hand dictionary of Political Sciences*, second edition, vol. 6, page 1014 and following (1901).

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wholesale prices. Single reports were also made in the industrial census of 1875 upon the industrial conditions of the German Empire, in 1878 upon the utilization of the ground, and in 1879 upon steam boilers and steam engines in use. Finally, in 1878, the Imperial Statistical Office was charged with superintending the so-called tobacco enquête, and it also shared in the investigations made in the same year into the iron, cotton, and linen industries of the Empire.

In 1880 a fundamental change was made in the statistics of foreign trade. Before that time the Imperial Statistical Office was charged only with the duty of compiling the summaries prepared by the highest customs officials of the several states. At that date it was charged with preparing the summary tables directly from the returns of the individual customs officers. With this change the tabulations which it prepared were greatly extended, and also attention was given to a more exact determination of the value of imports and exports through expert inquiries. During the decade 1880 to 1890, the office was charged with making annual returns on the statistics of crime, on statistics of insurance against sickness, and on statistics of the traffic on the lines of mail steamers subsidized by the Empire. Single reports were also made in 1882 on the census of occupations and trades, and in 1885 on the statistics of the utilization of the soil and of the public relief of the poor.

In 1892 there was established a commission for labor statistics, in the work of which the Imperial Statistical Office has always had a considerable share. In 1893 and 1900 investigations were made into the utilization of the soil and into the number of domestic animals. In 1894 an attempt was made to measure statistically the influence of workmen's insurance upon poor relief. In 1895 a census of occupations and trades was taken and also an investigation was made into conditions in the hand trades. The last decade has also added to the work of the office the following regular tasks: In 1893 statistics of bankruptcies; in 1895 statistics of suicides and of traffic on the "Kaiser Wilhelm Canal;" in 1897 the statistics of the issue of paper money; in 1898 statistics of strikes and lockouts; in 1897 also the reports on the prices of grain were extended so that daily returns of market prices were received and published. In 1898 the publication twice a month of figures regarding the imports and exports of grain and of flour began. The census of 1900, marking the close of the century, has been taken and tabulated with especial detail.

The new century, finally, has introduced an important innovation in that the commission for labor statistics, established ten years before, was dissolved April 1, 1902, its place being taken by a special division for labor statistics in the Imperial Statistical Office. As a result the work of this commission for labor statistics, which con-

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sisted of statistical investigations into the conditions of the laboring classes, has been entirely transferred to the Imperial Statistical Office. Its functions have received important extensions in that the new division is charged with the duty of making reports into the condition of the labor market, which have led to the establishing of a monthly periodical, called "The Imperial Labor Paper," dating from April 21, 1903.

The Imperial Statistical Office, therefore, is an entirely different institution at the present time from what it was when it was established. From a small office equipped only with one director, two members, and eight bureau officials, it has become an office which, according to the budget of 1903, includes a president, a director, 11 members, 248 permanent and 146 per diem officials, not including the extra staff which has to be employed for the performance of special enumerations. The total outlay at ordinary times, which was reckoned in 1872 as about 96,000 marks (\$19,000), has risen to an expenditure in 1903 of 1,313,920 marks (\$328,480). The work done by the Imperial Statistical Office may be classified, in accordance with the manner of its collection and tabulation, into four groups.

1. Centralized statistics, in which the tabulation is done exclusively in the Imperial Statistical Office, based upon returns which are sent to the office directly by the officers collecting them. This class includes the statistics of foreign trade, criminal statistics, statistics of bankruptcies, statistics of sick insurance, statistics of strikes, and the work of the division for labor statistics.

2. Federal statistics, including primarily the returns regarding the population and agriculture; in these cases the first tabulation is done by the central offices of the German states. These submit their results to the Imperial Statistical Office in completed tables and the latter combines them for the entire Empire. The uniformity of the returns and of the tabulation is secured by appropriate regulations enacted by the Bundesrath. But the several states have the power of adding supplementary questions to those determined by Imperial authority. As a rule, the publications of the state offices go more thoroughly into the subject and give returns in greater geographic detail, while the work of the Imperial Office for the most part is restricted to publishing the figures for Prussia by provinces, and in other cases for the federal state as a unit. It is only in exceptional cases and to obtain an explanation or additional information regarding the results thus secured that the Imperial Statistical Office investigates the subject in geographic detail.

3. A subdivision of this class occurs where a number of the federal states hand over to the Imperial Statistical Office the collection and

tabulation of the material which it is their duty to gather, while the larger federal states, which have special statistical offices of their own, perform this duty for themselves, just as is done by all states for investigations of the second class. In this class belong the censuses of occupations and trades, the returns regarding harvests, the returns on planting, cultivation, and harvests, and the statistics of prices.

4. This group includes those investigations in which the Empire has no immediate control over the collection of the material. On the contrary, the Imperial Statistical Office undertakes only the compilation of the summaries obtained independently by the various state offices. The uniformity and comparability of the figures of the different states are secured only by voluntary agreements between the statistical offices and by corresponding orders of the state governments, not by enactments of the Imperial Bundesrath. In this group are included financial statistics, statistics of savings banks, and of public schools.

There are two councils which serve to advise the Imperial Statistical Office: a commission for ascertaining trade values and a commission for labor statistics.

The commission for ascertaining trade values was appointed in 1880. It is its duty to appraise the value of the imports and exports which are returned only according to amount and weight. This commission consists of 114 eminent specialists in trade, industry, and agriculture. It sits in seven groups, and although it meets but once a year it keeps in constant touch with the office.

The council for labor statistics was established by the Bundesrath in 1902.¹ It combines the work of the former commission for labor statistics, its duty being "to support the Imperial Statistical Office in the performance of its duties in the field of labor statistics, especially (1) to express its opinion regarding proposals for the collection of statistics regarding the laboring men, their preparation, tabulation, and results; (2) in case it appears necessary in order to supplement the statistical basis of the inquiry, to give a hearing to experts; (3) to submit to the Imperial Chancellor proposals for instituting or carrying out the collection of labor statistics."

This council consists of the president of the Imperial Statistical Office as chairman and 14 members, 7 of them taken from the Bundesrath and 7 from the Reichstag. To these may be added as adjunct members with deliberative vote an equal number of employers and employees. Meetings are held at the call of the chairman.

¹ Central-Blatt für das Deutsche Reich, 1902, page 100.

A p p e n d i x

The publications of the Imperial Statistical Office now consist of seven periodicals, as well as of certain summaries published from time to time. In the statistics of the German Empire (*Statistik des Deutschen Reichs*) are published either annually or at regular intervals the detailed returns of the regular investigations and the results of the most important special inquiries. Since 1873, 212 volumes of this series have appeared, volumes 1 to 63, published between 1873 and 1883, being called the first series. With 1884 a new series began, the first 63 volumes of which are distinguished from the corresponding volumes of the first series by the letters N. F. The volume last published, that on strikes and lockouts in 1903, was 158.

Alongside of this great source there has been published since 1892 the statistical quarterly for the German Empire (*Vierteljahrshefte zur Statistik des Deutschen Reichs*). A publication of the same title was made also during the years 1873 to 1876. This quarterly covers the whole field of the Imperial Statistical Office and publishes, along with the abstracts of the contents of the more extended series, especially the statistics of less detail, also preliminary statements from the more extended investigations and at times statistical treatises or tables which cover a long period of time or extend into the international field.

Since 1902 there have been published also monthly returns regarding the foreign trade of the German Customs Union, together with returns regarding wholesale prices and the production of sugar and brandy. This periodical is not to be confused with one published between 1877 and 1891, which took the place of the first series of the quarterly and was again displaced by the second series of that periodical, namely, *The Monthly Journal for Statistics of the German Empire*, the field of the latter corresponding more to that of the quarterly. The present monthly returns, usually spoken of as trade returns, give in addition to the alphabetical catalogue of the goods a summary of the special trade of the German Empire, classified according to groups and kinds of goods. Since 1898 this has been extended by detailed returns regarding the trade in grain and flour. The Journal concludes with tables regarding wholesale prices of important goods in many markets and the wholesale price of grain abroad, as well as returns regarding the profits in sugar and brandy. In every case the most recent figures are supplemented by those in the two preceding years.

Similar municipal returns regarding the trade in grain and flour have been regularly published since 1898 in the *Government Gazette*, which also returned the daily and monthly prices of the grain markets according to the classification of the Imperial Statistical Office. To

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these four series of publications the establishment of a division for labor statistics has added two others, namely, Publications of the Imperial Statistical Office, Division for Labor Statistics; and the Imperial Labor Journal. The former are a continuation of the Publications of the Commission for Labor Statistics; the latter serve primarily as a current report regarding the condition of the labor market and other labor conditions. They are published on the 21st of each month.

Finally, the Statistical Year Book for the German Empire serves as a means of publishing the entire statistics of the Empire. In its preparation the Imperial Statistical Office avails itself also of the tabulations prepared by other offices. Graphic illustrations and a systematic survey of the entire work of the Imperial Statistical Office are regularly included in this volume.

Besides these seven serials other works are published occasionally: for example, under the title "Cultivation of the Soil in the German Empire," an atlas of the way in which the land was used in 1878, with tables and explanatory text, appeared in 1881; a map of the German Customs Union as it stood on the 1st of May, 1894; and an alphabetical list of the important harbors and trading places outside of Germany, published in 1900. A treatise regarding the German industries at the close of the nineteenth century was published in 1900, and a survey of the foreign trade of the German Customs Union, 1889 to 1900, was published in 1901. This shows that most of the statistics dealing with the conditions of the Empire are centralized in the Imperial Statistical Office, but certain special fields are dealt with by other offices.

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