

ANNUAL REPORT

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OF THE

DIRECTOR OF THE CENSUS

TO THE

SECRETARY OF COMMERCE AND LABOR

FOR THE

FISCAL YEAR ENDED JUNE 30, 1912



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REPORT
OF THE
DIRECTOR OF THE CENSUS.

DEPARTMENT OF COMMERCE AND LABOR,
BUREAU OF THE CENSUS,
Washington, December 31, 1912.

SIR: The fiscal year ended June 30, 1912, was the last of the three years which constituted the decennial census period as defined by the Thirteenth Census act. Within this period of three years the organization and operations of the Census Bureau were governed in the main by that act, which was passed July 2, 1909. The greater part of the work of the Bureau during the year was devoted to compiling the results of the Thirteenth Decennial Census, but the annual work required under the permanent census act and its amendments was carried on as usual.

GENERAL PROGRESS OF DECENNIAL CENSUS WORK.

As forecasted in the preceding annual report, the Bureau of the Census found it necessary to defer until the fiscal year 1913 certain extensive branches of the decennial census work which under the requirements of law ought to have been completed by June 30, 1912. The Bureau had requested a deficiency appropriation of \$1,000,000 to enable it to complete the work within the prescribed time, but of this sum only \$500,000 was appropriated by Congress. It was deemed best, therefore, to defer substantially all of the work with reference to two or three large subjects and to endeavor to complete that with reference to other subjects as nearly as possible within the fiscal year 1912. The principal lines of work which were thus wholly or mainly deferred included the statistics of occupations and the statistics of institutions for defective, delinquent, and dependent classes. Work on these subjects was less advanced than that on other features of the decennial census.

Even with these branches of the work deferred, however, it was found impossible wholly to complete and publish the results of the other decennial census inquiries by June 30, 1912. Some of the reasons why the tabulation and publication of the results of the

census have required somewhat more time and expense than was originally contemplated have been set forth in the two preceding annual reports of the Director. Briefly stated, they were: The fact that certain new inquiries had been inserted in the schedules by requirement of law just before the census was taken, which added materially to the amount of labor; that the officials of the Census Bureau felt it essential, in order to bring out properly the significance of the statistics, to make certain classifications and analyses which had not been made at previous censuses; and that it was deemed wise to provide adequate analytical texts in connection with the original publication of the statistics on each subject, rather than to put out the tables with little, or merely perfunctory, comment, deferring the text analyses to a later date, as was done in large measure at the Twelfth Census. Moreover, a complete change was made in the scheme of presentation of local details derived from the census, which change made it impracticable to publish the statistics for localities—counties, cities, villages, and the like—in a piecemeal manner, one subject at a time, as was done at the Twelfth Census. The disadvantage of the slight delay due to this change in the form of publication is undoubtedly much more than offset by the added convenience of having all the results regarding any given locality presented in one place.

ENUMERATION OF UNION AND CONFEDERATE VETERANS.

It is necessary at this point to call attention to the fact that in the course of the tabulation of the Thirteenth Census it was found that the enumeration of Union and Confederate veterans, called for by law and covered by the general population schedule, had been decidedly incomplete. The error was found to be so great that the Bureau does not feel justified in publishing the statistics as part of its regular reports.

One of the thirty or more columns in the population schedule was headed as follows: "Whether a survivor of the Union or Confederate Army or Navy." Instructions to the enumerators with regard to this inquiry were as follows:

Column 30—Whether a survivor of the Union or Confederate Army or Navy.—This question should be asked as to all males over 50 years of age who were born in the United States and all foreign-born males who immigrated to this country before 1865. Write "UA" if a survivor of the Union Army; "UN" if a survivor of the Union Navy; "CA" if a survivor of the Confederate Army; and "CN" if a survivor of the Confederate Navy. For all other persons leave the column blank. (Instructions to Enumerators, par. 192.)

That the returns were exceedingly incomplete is evidenced from the fact that the number of survivors of the Union Army and Navy reported on the schedules was only 435,508, while there were on the pension rolls of the Federal Government at the close of the fiscal year

1910, 562,615 surviving Union veterans of the Civil War. Since not all of the veterans are on the pension rolls, the total number is somewhat greater than this, and the number reported by the enumerators probably does not exceed seven-tenths of the correct figure.

The reason for this deficiency in the enumeration of veterans is entirely clear. Most of the columns of the population schedule apply to every individual in the population, and most of the others apply to a very large proportion of the population. On the other hand, it was obvious that this inquiry did not apply to women, and that practically no man under 60 years of age in 1910 could be a veteran of the Civil War. In other words, this question was applicable to only a very small proportion of the persons enumerated. The enumerators, not having any occasion to ask this question regarding the great majority of persons, evidently fell into the habit in many cases of not asking it of persons to whom it might be applicable and left the column blank when an answer should have been given. There was no inducement in the form of extra compensation for asking the question, whereas at the census of 1890, when a similar inquiry was made, an additional compensation of 5 cents was offered for detailed information regarding the service of each veteran.

There were thus special reasons for the failure of this inquiry to elicit complete returns, and it must not be supposed that the large margin of error in the statistics as to veterans is at all typical of the margin of error with respect to other inquiries on the population schedule. It is true, however, that for about 10 per cent of the foreign-born population the inquiries as to citizenship and as to date of immigration were left unanswered by the enumerators; and doubtless there is an appreciable margin of error due to incorrect answers to some of the inquiries which are uniformly or almost invariably answered. The census returns of 1910 were quite as complete and accurate as those of any previous census, as can readily be demonstrated by careful analysis. As to most subjects the census statistics are accurate enough to permit substantially correct conclusions to be drawn. Nevertheless, the margin of error in the population statistics, as well as in the agricultural statistics, is distinctly higher than it should be, and suggests the desirability of radical changes in the method of enumeration, as well as of simplifying the schedules. This subject is more fully discussed in another section of the present report.

PUBLICATION OF REPORTS.

The general scheme of publications adopted by the Bureau in connection with the Thirteenth Census was described in detail in the preceding annual report. That scheme has been carried out essentially as outlined. The two main new features are the amplification and improvement of the Abstract of the Census, the only census

report which can be extensively distributed, and the scheme of State supplements to the abstract, containing the details for the individual State in which the person receiving it resides.

The complete reports of each census are published in large quarto volumes containing a large number of details regarding the counties, cities, villages, and other minor civil subdivisions of the country, together with highly elaborate analyses of the statistics for each State as a whole and for each large city. These volumes, on account of their great bulk, can not be issued in large editions, and, moreover, very few persons have any occasion to refer to the larger part of the contents of the reports. The business man, the farmer, even the professional statistician, ordinarily desire a more condensed report summarizing the census results; or if they wish local details they usually desire them only for their own communities or immediately neighboring communities. Consequently an Abstract of the Census, which summarizes the statistics, is by all odds the most useful census publication. Consequently also it is desirable that a method of publishing the local details should be adopted which will enable any person to obtain conveniently the statistics for his own locality and neighboring localities without thrusting upon him a mass of similar details for localities in which he has no interest.

ABSTRACT OF THE CENSUS.

At preceding censuses it has been the practice to publish all or nearly all the large general reports of the census before publishing the abstract. At the present census the abstract is the first bound volume which has been issued. The first edition of the abstract was published in the latter part of December, 1912, which was about a month earlier than the date of publication of the Abstract of the Twelfth Census. It should, however, be borne in mind that the census of 1910 was taken six weeks earlier than that of 1900.

The Abstract of the Thirteenth Census is a much larger volume than that of the Twelfth Census. Not taking into account the statistics of mortality, a subject not covered by the Thirteenth Census, the Abstract of the Census of 1900 contained about 400 pages of octavo size; whereas the Abstract of the Thirteenth Census, not counting the State supplement, contains about 560 pages of quarto size, which is double the octavo. In fact, the new abstract contains fully three times as much material as its predecessor. While the volume is thus a trifle less convenient to handle, the additional material greatly increases its value and makes it, with the appropriate supplement, the only census publication which ninety-nine persons out of a hundred would care to possess.

The additional bulk of the new abstract is due to several causes. In the first place, with respect to practically every subject it con-

tains comparative statistics for one or more preceding censuses, by States and leading cities as well as for the country as a whole. Such comparative statistics were very much less numerous in the abstracts of the censuses of 1900 and 1890. The great interest which attaches to changes in conditions from one census to another makes such comparative data an essential part of a report intended for general use. Again, the Abstract of the Thirteenth Census contains innumerable percentages and averages designed to facilitate comparison between censuses, between statistical classes, such as races and other population groups or farms of differing tenures, and between different sections of the country, States, and cities. It is all but impossible to grasp such comparisons with reference to many subjects except by means of averages and percentages. It is obvious, for example, that statistics showing the absolute number of illiterates have little significance except when compared with the total population within which the illiterates are included, and that such a comparison when extended to different classes of the population or different areas can only be comprehended by means of percentages.

The Abstract of the Census of 1910 also contains a condensed and yet comprehensive text analysis of the statistics. This text serves the purpose of calling attention to the more important results of the census inquiries, and it is hoped that it will make the census abstract a volume which will be read for general information by large numbers of people and not merely one occasionally consulted when some particular item of information is desired. This text is not intended to be an exhaustive analysis of the statistics. It is confined mainly to a discussion of the statistics concerning the United States as a whole and the main geographic divisions of the country, with only occasional reference to individual States or cities. It should, however, serve as a guide in the interpretation of the figures for such smaller geographical units. A text is particularly necessary in connection with census statistics in order to prevent erroneous conclusions, which are not infrequently drawn from the consideration of isolated tables without taking into account their relation to other census data.

Another new feature of the abstract is the extensive use of maps and diagrams which present graphically the more important facts ascertained by the census. A much clearer picture of conditions can often be secured by means of such maps and diagrams than by means of tables of figures. At previous censuses very extensive use was made of this method of presentation, but no maps or diagrams were included in the abstract. The method, however, is one peculiarly adapted to popular use, and should therefore be utilized in the volume which has the widest circulation.

THE STATE SUPPLEMENTS TO THE ABSTRACT.

Another important new feature of the census publications, however, as already intimated, is the State supplement appended to the abstract. The first edition of the abstract, issued in December, 1912, contained a supplement for Maine, being intended chiefly for distribution in that State. Editions containing supplements for other States will follow. The supplements for all the States are in proof, and it is hoped to issue the entire series within two or three months. The supplement for Maine contains about 80 pages, while those for some of the States with more numerous subdivisions will be correspondingly larger.

Each State supplement contains all the details which the Census Bureau will ever publish with regard to the counties, smaller cities, and other minor civil subdivisions of the State; and in the final census reports the presentation of statistics for all such areas within the entire United States will be made merely by binding together the chapters of the several State supplements. There is also in each State supplement a detailed presentation and analysis, with text comment, of the statistics for the State as a whole and for its larger cities.

For all ordinary purposes the State supplement for any given State is a complete presentation of census results for that State. It contains comparative figures from previous censuses with reference to practically every item relating to the State as a whole, together with numerous comparative figures regarding the subdivisions of the State. A large number of percentages and averages are also included, even with respect to the smaller areas such as counties or minor cities. It is believed that these will render the local statistics much more valuable than those published at previous censuses, when even in the large general volumes percentages and averages relating to small areas were almost wholly lacking. An idea of the completeness of the presentation of local statistics may be gained from the statement that as to each county there appear no fewer than 164 entries regarding the number, composition, and characteristics of the population, and no fewer than 233 entries with regard to its farms and their products. The items for any given county are arranged one below another in the same column, so as to be conveniently examined. The local statistics at former censuses were available only in unbound preliminary bulletins or in the large general volumes of reports. Comparatively few people could obtain the large volumes, and even if they did so it was difficult to assemble all the information regarding any given locality from the very numerous tables scattered through the several volumes.

DATA FOR URBAN AND RURAL COMMUNITIES.

Attention may also be called to the fact that in the presentation of population statistics in the new Abstract of the Census, the data regarding each subject are given for urban and rural communities separately. This distinction is also carried into the analysis of the statistics for individual States contained in the various supplements. Fundamental differences in industrial and social life between cities and rural districts result in marked differences in the composition and characteristics of the population. In many cases it is impossible to understand the differences between States or sections of the country with respect to population statistics except by taking account of this distinction between urban and rural communities. Conditions in the rural districts of one State, for example, may be substantially similar to those in the rural districts of another, and conditions in the cities of the two States may likewise be substantially similar; but in the population of the two States as a whole radical differences may appear because the one contains a much larger proportion of urban population than the other. The tabulation of the statistics in such a manner as to distinguish urban from rural communities as to every population subject has involved a considerable increase of labor and expense, but the value of the results much more than justifies the cost.

PUBLICATION OF BULLETINS.

Prior to the publication of the Abstract of the Census a large number of bulletins had been issued by the Bureau. These bulletins, unlike most of those published at previous censuses, were not merely preliminary announcements, but in general constituted separate sections of the final census reports. They contained text, maps, percentages, and averages, and were, in fact, in such form as to furnish an adequate final presentation of the material. This policy was believed desirable, both in order to save expense of reprinting and in order to prevent misuse of the statistics for lack of proper explanation.

Six separate series of State bulletins have been published or are being published. The first series consisted of a bulletin for each State showing the population by counties, cities, and minor civil divisions, together with the density of population and the number dwelling in urban and rural communities, by counties. This series was published before the end of the calendar year 1911. A second series of State bulletins, part of which have already been issued, presents data as to the composition and characteristics of the population of each State and its subdivisions, covering such subjects as sex, color, nativity, citizenship, illiteracy, and school attendance. The first series of State agricultural bulletins, the last of which was

issued on March 1, 1912, contains statistics by counties regarding the number, acreage, and value of farms; the number and value of the various classes of domestic animals; the acreage and production of the principal crops, and the tenure of farms. A second series of agricultural bulletins, all of which have been issued or are now being printed, reproduces all of the details contained in the first series, and presents all of the remaining county statistics of agriculture, including those relating to dairy and other animal products, those relating to minor crops, and those relating to domestic animals not on farms. A series of State bulletins on manufactures giving all the statistics on that subject was issued, the last of which appeared in July, 1912. State bulletins regarding mining are now being issued, but for most of the States these are far less important than those regarding agriculture and manufactures.

The several bulletins for any given State are combined to form the supplement for that State to the Abstract of the Census, the same type being used for both publications. The same bulletins, bound up in another form, will constitute several of the final census volumes intended for libraries and the few persons who have need of details for localities through the entire country.

In addition to these State bulletins, a number of bulletins giving statistics for the United States as a whole and by States and principal cities have been issued. Most of these constituted separate sections of the Abstract of the Census, subsequently published. The object in the publication of such bulletins is partly to furnish information in advance of the publication of bound volumes whenever practicable, and partly to afford a convenient means of furnishing any person with information regarding some particular subject in which he is interested without the necessity of supplying a larger report covering other subjects as well.

TABULATING MACHINERY.

As fully explained in previous reports of this Bureau, the population statistics of the Thirteenth Census, like those of the two preceding censuses, have been tabulated by means of a punched-card system. Prior to the Thirteenth Census the punching machines, electrical card-sorting machines, and electrical tabulating machines required in connection with this method of tabulation were rented from private concerns. Those used at the Thirteenth Census, on the other hand, were devised by experts employed by the Bureau, and were either constructed in the machine shop of the Bureau or by outside concerns under contract. Thus the Census Bureau now owns its tabulating machinery.

RECENT IMPROVEMENTS IN TABULATING MACHINES.

While the new machines devised by the Bureau proved more satisfactory than those used at previous censuses, experience demonstrated that the card-tabulating machines could be still further greatly improved. For reasons already stated, it was found necessary, about the beginning of the calendar year 1912, to defer for some months the tabulation of occupation statistics. During a considerable interval of time, therefore, practically no use was made of any of the tabulating machines. The opportunity was accordingly taken to devise some important modifications of the tabulating machines and to remodel a sufficient number of them to tabulate the occupation statistics.

The changes made have a twofold purpose—first, to provide for printing in more convenient form the results appearing on the counters, and, second, to provide for carrying forward cumulative or grand totals.

The tabulating machines used at the Twelfth Census had dial counters only, and the figures indicated by the dials had to be copied off by hand. The machines heretofore used at the Thirteenth Census were equipped with printing counters, and to that extent were a marked improvement over the machines previously used. The results were, however, printed in very inconvenient form. They appeared upon strips of paper about 3 feet long and 1 inch wide. Each of these long strips contained only ten items. In order to assemble and totalize the items for different groups of cards, the figures had to be copied from the strips by hand upon posting sheets of convenient form, since totals could not be obtained conveniently by direct addition of the figures appearing on separate strips.

A device has now been perfected and applied to a number of the tabulating machines by which the results are recorded on large sheets of convenient form. In a width of about 12 inches the ten items which on the strips required nearly 3 feet are printed side by side, and the results for a considerable number of different groups of cards, which would have required as many different strips, now appear one below another on a single sheet.

Not only does this change do away entirely with the first process of posting the results from strips upon tabulating sheets, but a further improvement enables the tabulating machines to carry forward cumulative totals and thus greatly to reduce the work of addition. For example, if ten counters only are being used and tabulations are being made by counties, ten different items with regard to each of fifty or more counties can be entered, one row below another, and the grand total for all of the counties printed at the bottom. This is accomplished by means of duplicate counters, both of which are actuated

at the same time by the electric contacts through the holes in the cards. The results on the counters designed to give totals for primary groups of cards are printed and the counters set back to zero as soon as a given group of cards has been run through the machine. The cumulative counters, however, are not set back to zero, but continue to operate until numerous groups of cards have been tabulated.

These are the most important mechanical improvements which have been made since electric tabulating machines were first introduced in census work. The saving of labor in the posting of the results and the preparation of group totals is a greater saving than that secured by substituting the printed strips for the recording dials, or than that secured by substituting an automatic method of feeding the cards to the tabulating machines for a hand method. As stated in previous reports of this Bureau, most of the tabulating machines used at the present census had to be fed by hand, but the Bureau during the progress of the census perfected an automatic machine which was used on part of the work. While these automatic machines, which will be used almost entirely in connection with the tabulation of occupation statistics, operate several times as rapidly as the hand-feed machine, yet the economy in cost resulting from their use is much less than that effected by the introduction of the new recording and cumulating mechanism. As a matter of fact, so long as the results were recorded only on strips, the entire cost of putting the cards through the tabulating machines even by hand was less than the cost of the primary posting and primary addition of the results after the machines had completed their work, processes now performed by the machines in the first instance.

USE OF MACHINES AT FUTURE CENSUSES.

As the result of the expenditures of the Census Bureau during the past few years for devising and constructing tabulating machinery, the Bureau now has in its possession machines which can be used with little additional investment for future censuses. In other words, a considerable fraction of the large expenditures for machinery at the Thirteenth Census could properly be considered as assignable to future censuses or as representing a permanent investment rather than current expense. The present tabulating machines of the Census Bureau will, with little modification, prove adequate to the needs of the Bureau for several censuses to come. Some minor improvements in detail may perhaps be found desirable at the next census, but none of a fundamental character. It will be necessary to remodel a somewhat greater number of tabulating machines than will be required for the completion of the occupation statistics of the Thirteenth Census.

Moreover, the punching and sorting machines now owned by the Census Bureau can be used, with a little additional expense for adjustment and improvements, at the next census. It may be deemed wise, however, to abandon the use of the present punching machines in favor of machines of very much simpler character. The punching machines used for most of the Thirteenth Census work are elaborate. Each contains 240 keys corresponding to all the possible facts to be recorded regarding any given individual in the population. Each key is labeled with an abbreviation of the item to be recorded, save only that in the case of occupations arbitrary combinations of numbers have to be used to designate the very large number of possible classes. Much simpler punching machines were used in connection with the agricultural census of 1900, and the Bureau owns a large number of them. Each such machine has only twelve keys, numbered serially. A hole is punched in the first column of the card, and the card then moves forward to the next column, and so on. Such a machine is peculiarly adapted to tabulating numbers. This simpler machine has not heretofore been used on population work, because most of the data are not expressed in numbers. Such facts as sex, marital condition, and birthplace would have to be indicated by arbitrary numerical symbols. It was considered that the designation of the proper symbols would require a preliminary editing of the schedules coming from the enumerator, which would involve too great expense.

Experience seems to indicate, however, that the expense connected with the use of these machines would not be greater than that with the 240-key machines. A large part of the population returns, such as those relating to sex, race, marital condition, citizenship, illiteracy, and school attendance, are so simple that the punching clerk could memorize the numerical symbols, and preliminary marking of symbols on the schedules would be necessary only as to a few items. The schedules in any case have to be edited so as to indicate symbols for occupations, and the additional cost of indicating symbols for other items would not be very great. These small punching machines can be operated somewhat more rapidly and accurately than the present elaborate machines, and are much less likely to get out of order. Careful tests of the relative cost and efficiency of these two methods of card punching should be made before the next census.

DESIRABILITY OF CONSTRUCTING INTEGRATING TABULATING MACHINES.

There are two types of card-tabulating machines. The one merely counts the holes in the punched cards and is sufficient for all population work, as well as for the tabulation of vital statistics and of certain other classes of data. The other adds the numbers

indicated by holes punched in the cards and is commonly spoken of as an integrating type of machine. Machines of this character accomplish by means of holes punched in cards results similar to those accomplished by an ordinary adding machine operated by hand.

The Census Bureau used integrating card machines, rented from a private concern, in connection with the agricultural census of 1900, but for various reasons it was deemed more economical at the present census to tabulate the agricultural statistics by means of ordinary adding machines without the use of punched cards. Experience proved conclusively that the change was a wise one, at least as regards the great bulk of the agricultural data. The office work of the agricultural census cost much less at the Thirteenth than at the Twelfth Census. Nevertheless, it is believed that the interests of the Government as a whole would be greatly promoted if the Census Bureau should devise a satisfactory integrating machine which could be constructed by the Government and used for the various purposes to which such a machine is adapted. The Census Bureau itself would probably have less occasion to use these machines than other bureaus of the Department of Commerce and Labor and of other departments. Even with highly perfected machines, owned by the Government, it would hardly be profitable to use the punched-card method in connection with any great part of the agricultural and manufacturing statistics of the census, although they might perhaps be used for some minor branches of the work on those subjects and for certain other census statistics. Machines of this type, however, would, almost beyond question, be extremely advantageous in the tabulation of statistics of exports and imports by the Bureau of Foreign and Domestic Commerce, in the tabulation of money-order and other postal statistics, in cost accounting throughout the Government service, and for many other purposes. Integrating card machines are, indeed, now employed extensively in the Post Office Department, being rented from a private concern.

The experts of the Census Bureau have already made a thorough investigation of the patent situation with reference to integrating machines and have reached the conclusion that machines can be constructed which will in no way infringe upon existing patents. Designs for such machines are well under way. With a view to completing these designs, constructing a model machine, and beginning the construction of others for actual use, the Bureau of the Census has included in its estimates for the fiscal year 1914 an item of \$20,000 for its machine shop.

Aside from the economy to the Government which would certainly result from the perfection of an integrating machine, it is desirable that an appropriation of this character should be made to enable

the Bureau to continue the employment of as large a part of its force of patent experts, inventors, and mechanics as possible. Should the Bureau lose the services of all or the greater part of its present mechanical force, it would be almost impossible to secure competent men for the expert mechanical work which will have to be performed in connection with the census of 1920. There are very few persons in the country who have given attention to the subject of tabulating machinery, and it would be unfortunate if the Bureau should lose the benefit of the long and successful experience of the men now in its employ.

FURNISHING OF CENSUS STATISTICS TO LOCAL GOVERNMENTS AND PRIVATE ORGANIZATIONS AND INDIVIDUALS.

One of the difficult questions confronting the Bureau of the Census is the extent to which census statistics shall be tabulated and published with reference to small areas. Naturally it is proper that more details should be published for the United States as a whole and for the States as units than for such areas as counties, villages, or wards of cities. The drawing of the line with respect to the amount of detail to be tabulated for small areas has for the most part been left by Congress to the judgment of the Director of the Census. The constantly increasing demand for local information has led to a gradual increase from census to census in the amount of such data published, and, in the judgment of the Director, the Federal Government can scarcely afford, at its own expense, to go further in that direction than it now does.

Nevertheless, State or local governments and individuals frequently express a strong and legitimate desire for local information which might be derived from the schedules but which in the ordinary course of the work is not compiled or, if compiled, is not published by the Census Bureau. In some cases information is desired for small areas which are not distinguished at all by the Bureau in its reports. For example, the demand has come from certain States for agricultural statistics by townships, whereas the smallest area for which the Bureau tabulates such statistics is the county. From several of the large cities of the country has come the request for the tabulation of population statistics according to areas smaller than wards (or assembly districts), which are the smallest units for which such statistics have hitherto been published in the census reports. Some persons have gone so far as to request a considerable number of items as to population for individual city blocks, but the needs of most persons would be satisfied by data for somewhat larger areas. It is pointed out that the wards in great cities often contain many times as much population as the average county, for which statistics are separately presented, and that conditions often vary greatly in different parts

of a single ward. In particular, it is urged that the boundary lines of wards are frequently changed, so that comparisons can not be made between the results of one census and those of another as published in the reports. It is urged, therefore, that the Census Bureau lay out permanent areas of moderate size—say about 40 acres each in the more densely populated parts of the cities—and tabulate and publish statistics for each successive census according to those areas.

The Census Bureau has not thought itself justified in incurring the expense necessary to satisfy all these local demands for statistical information. It greatly increases the cost of tabulation, whether of agricultural or population statistics, to add materially to the number of areas of tabulation; and the cost of printing is substantially proportionate to the number of areas distinguished. Moreover, if the Bureau should, at the expense of the Federal Government, meet the demand of some one locality for such detailed information, a similar demand would quickly arise from other localities; in fact, there would be an obvious unfairness in furnishing relatively more information for one community than for another.

In view of this situation, the suggestion has often been made that the Census Bureau should compile and publish detailed information, when desired, at the expense of the local governments or individuals desiring it. The Bureau already has authority of law for doing so. This authority is contained in section 32 of the Thirteenth Census act, which reads as follows:

That the Director of the Census is hereby authorized, at his discretion, upon the written request of the governor of any State or Territory, or of a court of record, to furnish such governor or court of record with certified copies of so much of the population or agricultural returns as may be requested, upon the payment of the actual cost of making such copies, and one dollar additional for certification; and that the Director of the Census is further authorized, in his discretion, to furnish to individuals such data from the population schedules as may be desired for genealogical or other proper purposes, upon payment of the actual cost of searching the records and one dollar for supplying a certificate; and the amounts so received shall be covered into the Treasury of the United States, to be placed to the credit of, and in addition to, the appropriations made for taking the census.

This section has been interpreted as authorizing the Bureau not merely to furnish copies of original schedules or extracts therefrom, but also to furnish, at the expense of those desiring them, compilations and tabulations from the schedules. As a matter of fact, however, since the expiration of the Thirteenth Census period it has become impracticable for the Bureau to perform any extensive work of this character at the expense of others, even under the provisions of this section, for the reason that the number of clerks who can be employed by the Bureau is fixed by law. During the Thirteenth Census period, when the appropriations for the Census Bureau were in lump sums, it was possible to use any moneys paid in from outside

sources for the employment of additional clerks to do the additional work, but this can not be done under present appropriation acts. In other words, any sum received by the Bureau in payment for such work must be turned into the Treasury of the United States, and, although nominally credited to the appropriations of the Bureau, most of the sum ordinarily remains unused and ultimately lapses.

Appropriations are obviously made to enable the Bureau to perform its regular official work, and there could apparently be no desire on the part of Congress that the performance of work at the expense of private individuals or local governments should reduce the amount of clerical labor available for such regular work. It appears, therefore, desirable that an amendment should be made to this section of the Thirteenth Census act which would permit the Bureau of the Census to employ additional clerks, provided the amount of salaries paid to such clerks, together with other expenses, should not exceed the amount received from outside sources for work performed. If it were thought desirable to restrict more or less closely the amount of such outside work, a limit to the number of such additional clerks who could be employed at any one time, or, preferably, a limit to the amount which could be expended in any one year, could be fixed by the law.

It will probably never be possible, however, for the Census Bureau fully to meet all such demands for special information regarding particular localities. Some of the demands are scarcely reasonable, and others would involve greater expense than individuals or local governments are likely to be willing to meet. If when the tabulation of any given census began the Bureau knew in advance all the local demands which would be made, the original tabulations could be adjusted—although usually, of course, only at some increase of expense, which should be borne by those concerned—so that the data could be obtained as incidental to the compilation of the statistics regularly published by the Government. When, however, a demand for such local details is received after the regular tabulations have been made, it usually becomes necessary to do the work substantially *de novo*. Even in the case of the population statistics, where the data regarding each individual are punched on a separate card, it is practically impossible, after the regular tabulations are completed, to segregate the cards for any small area, since they have become intermingled with those for other areas and sorted according to numerous complicated classifications. It may be that at future censuses arrangements for cooperation on a more or less extensive scale can be made between the Federal Government and such of the States and cities as desire special tabulations, the expense being properly distributed between the Federal and the local governments.

Meantime, to a limited extent the Census Bureau is now in a position to furnish to local governments and individuals, at little cost, statistical details more elaborate than those actually published in the census reports. When, as often happens, the scheme of census reports includes items on various topics for small units, say counties, and at the same time fuller details on the same topics for States, it is sometimes most economical to obtain both sets of statistics by a single tabulation. In such cases, as incidental to the process, more or less numerous details for the smaller areas may be obtained on the tabulation sheets which are not published in the reports. To assemble such data from the tabulation sheets for any particular locality, and to furnish them to individuals in manuscript form involve comparatively little expense. It is rather to provide for doing work of this limited character for outside parties than to permit new and extensive original tabulations that an amendment to the existing law, such as is above suggested, seems desirable. It is also desirable in connection with the frequent requests for genealogical information and other data concerning individuals.

PROPOSED WORK FOR THE FISCAL YEAR 1914.

As already stated, a considerable amount of Thirteenth Census work was deferred from the fiscal year 1912 to the fiscal year 1913 on account of the shortage of appropriations. In view of the fact that substantially the full amount of appropriation requested by the Bureau for the fiscal year 1913 was granted by Congress, including an appropriation of \$120,000 for the employment of temporary clerks to complete the Thirteenth Census work, it should be possible substantially to complete that work during the present fiscal year. However, as elsewhere more fully set forth, the probability of doing so will be the greater if Congress grants the authority requested to employ a larger number of temporary clerks under the appropriation of \$120,000 without increasing the amount of the appropriation.

For the most part, therefore, the work of the Bureau during the fiscal year 1914 should consist of the conduct of the regular annual investigations required by law, and of certain special intercensal investigations authorized by the permanent census act. During the spring of 1913 the Bureau will undertake the collection of statistics relating to the electrical industries, which by law are to be obtained every five years. The last report on this subject related to 1907, and the forthcoming investigation will relate to the calendar year 1912. Most of the work of collecting the statistics will be completed during the present fiscal year, but the larger part of the work of tabulation and preparation for publication will fall in the fiscal year 1914.

Another important and extensive intercensal investigation which should be taken up during the fiscal year 1914 is that relating to wealth, debt, and taxation. The permanent census act authorizes a decennial investigation of "public indebtedness, valuation, taxation, and expenditures." An investigation relating to the year 1902 was made under the authority of this act. Substantially the same field had been covered at previous decennial censuses under the authority of the special acts providing for those censuses. It was deemed wisest not to undertake to make such an investigation as of the calendar year 1912, because the force of the Bureau was so fully occupied with the completion of the Thirteenth Census work; but in order that the series of investigations of wealth, debt, and taxation may not be broken or an unduly long interval appear between them, the subject should properly be taken up during the fiscal year 1914. The inquiry would, in that case, cover the calendar year 1913, or the last completed fiscal year in the case of those States, cities, and other localities which have fiscal years ending on June 30 or at other dates than December 31.

While the investigation of wealth, debt, and taxation is a very extensive one, it is not proposed to employ additional clerks or special agents to perform any part of the work. The statistics can be collected by sending clerks from the regular permanent force of the Bureau into the field, and the results can be tabulated by the regular force. It is, however, necessary that a special appropriation should be provided for the travel expenses and subsistence of the clerks engaged in collecting the statistics. Experience in the past shows that it is impossible to collect statistics involving any considerable degree of complexity by correspondence methods. A large proportion of the many thousands of persons to whom schedules would have to be sent in connection with an investigation of wealth, debt, and taxation would fail to report at all, and a large proportion of those who did report would do so in an imperfect manner. It is essential to the completeness and correctness of the results that experienced clerks should visit every State capital, every county seat, and every city of considerable size. The estimated cost of the travel and subsistence of clerks engaged in this investigation is \$100,000, and a special item of that amount has been included in the estimates of this Bureau for the fiscal year 1914. Unless this appropriation is provided, it will be necessary to defer the work on wealth, debt, and taxation still further.

These two extensive investigations of electrical industries and of wealth, debt, and taxation, together with the annual work of the Bureau, will be sufficient to occupy the entire clerical force during the fiscal year 1914.

PROPOSED CENSUS OF AGRICULTURE IN 1915 AND ITS RELATION TO DECENNIAL CENSUSES.

The Thirteenth Census act contains the following provision:

That there shall be in the year nineteen hundred and fifteen, and once every ten years thereafter, a census of agriculture and live stock, which shall show the acreage of farm land, the acreage of the principal crops, and the number and value of domestic animals on the farms and ranges of the country. The schedule employed in this census shall be prepared by the Director of the Census. Such census shall be taken as of October first, and shall relate to the current year. The Director of the Census may appoint enumerators or special agents for the purpose of this census, in accordance with the provisions of the permanent Census Act.

This section undoubtedly gives the Director of the Census all the necessary authority, provided proper appropriations are made, for the taking of a census of agriculture in 1915. The present Director, however, is of the opinion that the method of collecting the statistics should be radically different from that employed in connection with the last decennial census. Should such marked changes be made, it would seem desirable that they should be expressly authorized in advance by legislation of Congress. It is questionable also whether the date fixed for the agricultural census of 1915 (October 1) would be as satisfactory as one later in the year. The scope of the census, as authorized in the section above quoted, is comparatively narrow, and additional information of great value could be secured with little more expense. If further legislation is to be passed, it is desirable that it should be introduced during the first regular session of the next Congress, beginning in December, 1913, although it would scarcely be essential that it should be finally passed before the short session of 1914-15. It is desirable that the entire subject should be carefully considered by the Administration, by Congress, and by the general public, and therefore reference to it in the present report is not inappropriate.

There can be no question of the extreme desirability of taking a census of agriculture every five years. In the absence of such an actual enumeration of the principal facts with regard to the farms of the country and their products, the estimates made by the Department of Agriculture and by private individuals from year to year necessarily become increasingly wide of the mark. The rapidity with which changes in agricultural conditions are taking place, and the bearing of those changes upon the problem of the cost of living and other fundamental economic problems, make it essential that an agricultural census should be taken more frequently than once in a decade.

Moreover, the plan of taking a census of agriculture in 1915 has the further advantage that it will permit much-needed experiments with reference to methods of collecting statistics. The methods followed

at recent decennial censuses have failed to give entirely satisfactory results either as to population statistics or as to agricultural statistics. Errors are too numerous, and expenses high, though in both respects the census of 1910 compares most favorably with its predecessors. It is possible, in the light of past experience, to suggest radical changes in methods and to predict with reasonable certainty that they would secure greater accuracy with less expense. It would doubtless be taking some risk, however, to introduce wholly new methods at a great decennial census, when, should they prove unsatisfactory, the result would affect a very wide field. It is therefore desirable to test such methods on a less elaborate scale, as could very readily be done by applying them in 1915 to a census of agriculture of a simpler character than the decennial census.

METHOD OF COLLECTING STATISTICS.

Briefly stated, the chief changes which, in the opinion of the present Director, are desirable are:

(1) To use the mail carriers to perform as large a part of the census field work as possible.

(2) To provide for supervision of the field work by trained census employees, in addition to supervisors or other directing officers chosen locally.

In addition to these two changes, which can be recommended as being beyond question advantageous, it is believed that advantage might be gained from a third change, namely:

(3) In the agricultural census to collect statistics as to certain subjects—such as the prices of farm products—only from part and not from all of the farms, and to apply averages or percentages thus obtained to the calculation of totals for all.

A preliminary test of this method on a limited scale should be made in order to determine its merits.

UNSATISFACTORY CHARACTER OF PRESENT METHODS.

While greater efforts were made at the census of 1910 than at any previous census to secure competent supervisors and enumerators and to eliminate political influence in their selection, the general method of selecting, directing, and paying them was substantially the same as at the three preceding censuses. The chief objection to that method is not the fact that politics is bound to a greater or less extent to enter into the appointments. It is rather that both supervisors and enumerators are in the great majority of instances entirely inexperienced in census work; that there is no way of guaranteeing that they shall be well acquainted with the people and the conditions of their districts; that the term of employment, par-

ticularly of enumerators, is so short and the pay so small that it is very difficult to induce competent persons to take the job; and, finally, that there is no adequate means of holding supervisors or enumerators responsible for conscientious and thorough work. Seventy thousand or more enumerators must be secured for work lasting not over fifteen days in the cities and not over thirty days in the rural districts, and at moderate rates of pay. The persons who would make most competent enumerators are usually already employed and can not give their time to the work. An enumerator, once selected, knows that at most the only penalty for unsatisfactory work will be failure to receive his comparatively small compensation, and that in fact it is scarcely likely that his incompetence will be discovered until after he has received his pay.

Incompetence and irresponsibility of enumerators are by no means the only cause of the errors found in census statistics. The excessive number of questions on the schedules and the ignorance or lack of interest on the part of many of the people called upon to answer them are also important causes. That the results are not entirely satisfactory is well known to the general public, but best known by the officials of the Census Bureau. There is reason to believe that the actual number of inhabitants is ascertained with approximate accuracy, and that the principal interrogatories on the population and agricultural schedules are answered with a fair degree of accuracy. Many of the less important inquiries, however, obtain much less satisfactory results. There is no way of measuring precisely the margin of error in any case. It is, however, sufficient evidence of the need of improved methods that in multitudes of cases interrogatories which are properly applicable are not answered at all, and that the statistics on several subjects as tabulated show relationships which are self-evidently incorrect.

For example, as already stated, in the population census of 1910 the enumerators failed to make any report at all regarding the citizenship of more than one-tenth of the foreign-born males of voting age, and failed to report the year of immigration of about one-tenth of the foreign-born population. The number of persons reported as being veterans of the Union Army during the Civil War was very much smaller than the number of such veterans actually on the pension rolls of the Government; special reasons, elsewhere mentioned, account, however, for a large part of this error. The age statistics of the census present numerous peculiarities which can be attributed only to a considerable margin of error in the returns. There can be little doubt that as to some other subjects, where there is no means of proving inaccuracy, the inaccuracy is quite as great. In the case of the agricultural census particular difficulty is encountered with respect to animal products and the minor crops. At the last census,

for example, 598,000 farms were reported as having sheep of shearing age on April 15, 1910, but of these only 424,000 were reported as having produced any wool during the preceding year, whereas, in fact, nearly all of them must have produced some wool. Again, there were 5,141,000 farms reported as having dairy cows on hand in 1910, but for only 4,021,000 of these farms was there a satisfactory report as to the quantity of milk produced in 1909, and for only 4,413,000 was an acceptable statement of the production of any kind of dairy products in 1909 reported. Similarly incomplete were the reports for the production of eggs and poultry; and, although there is no means of testing the results, there is little reason to doubt that the reports for minor crops are about equally incomplete. It goes without saying that, aside from the deficiencies due to failure to secure reports, there are many errors in the reports actually secured.

USE OF MAIL CARRIERS AS ENUMERATORS.

The need for more competent enumerators is thus obvious. There seems to be little hope of securing any great improvement in the character of enumerators by mere minor modifications of the present method of selecting them. The difficulties in the present method are fundamental and not a mere matter of detail. After careful consideration the Census Bureau has reached the conclusion that much better results can be obtained by utilizing the services of the mail carriers to do the larger part of the census enumeration than by any other feasible plan. The Postmaster General has also given consideration to this plan and believes it would be entirely feasible, at least in the case of the rural districts, and that it would not materially interfere with the regular and prompt distribution of the mails. There would be somewhat greater difficulties involved in utilizing the city mail carriers. It is probable, however, that they also could be advantageously employed, but the precise method by which the greatest advantage could be gained from using the city mail carriers, with the least inconvenience to the public, must be a matter of further investigation and consideration at the proper time, when preparations are being made for the census of 1920. Meantime, if the plan of using the rural mail carriers is adopted at the special agricultural census of 1915, much valuable experience will be secured which will be applicable to the solution of the problem of the proper taking of the decennial census.

In most of the leading foreign countries the work of census enumeration is largely or wholly performed by permanent employees either of the central government or of the local governments. Postal employees, policemen, and other officers of cities and local governments are called into service. In this country, on account of the dual system of government, the Federal Government would have no

authority to require the services of State or local officials; nor would it have any adequate control over them should they perform the work either voluntarily or at the direction of the States and local governments. The only large body of employees distributed through the country who are employed by the Federal Government and subject to its control are the mail carriers. The total number of such carriers, including the substitute carriers, is approximately equal to the total number of enumerators employed at the last census. The system of rural mail delivery has now been extended to a very large proportion of the country, and by 1915 will doubtless cover all except the most sparsely settled districts.

Mail carriers, whether in cities or in rural districts, appear to be conspicuously well qualified to act as census enumerators. They are selected without reference to political considerations and as the result of tests which guarantee a fair degree of education and ability. There is no doubt that, independently of special experience, the average mail carrier is quite as intelligent as the average enumerator at the last census. Their peculiar experience, however, adds immensely to their fitness for the work. They are personally acquainted with almost every family and individual in the districts which they serve. Such acquaintance would not only result in saving the carrier much time which the ordinary enumerator finds it necessary to devote to introducing himself and explaining the purposes of his visit, but would enable him to secure more complete and accurate information. Again, the mail carriers have a permanent responsibility to the Government as their employer, and if utilized for census work would feel under obligation to do it to the best of their ability, lest otherwise their permanent positions might be endangered. It is inconceivable, for example, that mail carriers acting as enumerators would permit themselves to become parties to a scheme of elaborate padding of the census, such as was attempted in a number of the cities and towns of the country at the last census, or that they should neglect their work to any such degree as did some of the enumerators in 1910.

Another peculiar advantage of the employment of mail carriers as census enumerators is the fact that their duties require them day by day to go over the same territory. It is believed that a large part of the required census work could be done by the carriers as incidental to their mail deliveries, although of course a considerable amount of additional time would be required. Under the method heretofore employed, an enumerator who finds a family absent on his first visit is under a strong temptation not to return to that family to complete his work. To do so, particularly in the rural districts, may mean a special trip of considerable distance. The mail carrier who is unable to obtain the required schedules on one visit could visit the same family on a later trip without loss of time.

It is believed that by the employment of mail carriers as enumerators it would be possible to have the families themselves in a large majority of cases fill out the required schedules, whether of agriculture or of population. At the census of 1910 for the first time an effort was made to enlist the cooperation of families in filling out the schedules. In the larger cities so-called "advance schedules of population" were distributed by the enumerators themselves, one to each family, and in the rural districts of a large part of the country similar advance schedules of agriculture were distributed, more or less completely, through the mails. Each family was requested to fill out the answers and hold the schedule ready for the enumerator on his arrival. While in a considerable number of cases the schedules were carefully and promptly filled out by the families, yet in a large majority of instances they were either not filled out at all or were filled so imperfectly that the enumerator on his regular visit had practically to ask all the questions orally and prepare the schedules himself. It obviously took less time for him to do so than to make still another visit in the hope that the schedule might in the mean time have been filled up by the family concerned.

The mail carrier, however, going his rounds every day, could make more effective use of such a system. He could distribute the schedules on one or more of his trips and briefly explain to the families the importance of preparing them promptly and carefully and the significance of the inquiries. On subsequent trips he could collect these schedules, and if on any given trip he found schedules for certain families as yet lacking he could arrange without inconvenience to secure them on later trips.

As already stated, it is believed by the Post Office Department that mail carriers in the rural districts could perform the work of enumeration without interfering at all seriously with the public convenience as regards the delivery of mail. Doubtless the carriers would have to work more than the ordinary number of hours, and in some cases, perhaps generally, it would be necessary for the regular rural carriers to call upon their substitutes for more or less assistance in the delivery of mail during the time of enumeration. Even, however, if there should be some little temporary inconvenience to the public, it should be borne in mind that the taking of a census is a great national enterprise, in which every citizen should be interested and for which he should be, and in most cases would be, willing to sacrifice a trifle of his personal convenience.

If mail carriers were called upon for such service, they should, of course, be properly compensated for the additional work thrust upon them. It is believed that just compensation to the carriers would amount to a decidedly smaller sum than must necessarily be paid to enumerators employed exclusively for census work. The

saving of cost, however, is less important than greater accuracy in the statistics, and there can be no reasonable doubt that much greater accuracy could be secured by the proposed method than by the methods heretofore employed. There would, of course, be sections of the country where, in the absence of mail carriers or by reason of their insufficient number, the employment of other enumerators would be necessary.

USE OF PERMANENT EMPLOYEES IN SUPERVISING CENSUS WORK.

Without any reflection upon the general ability or the conscientiousness of the supervisors of the Thirteenth Census, it can be said that the same objections which apply to the methods heretofore used for the selection of enumerators apply also, though with somewhat less force, to the practice of intrusting the entire supervision of the field work of the census to men most of whom are wholly inexperienced in census work. Very few supervisors of the last census had had any previous work in connection with the census, or with any other statistical inquiry.

If enumerators continue to be chosen by the method followed at recent censuses, or by any substantially similar method, it will always be necessary to have a large number of supervisors of the census, each resident in the district over which he has charge. Under any such method by far the most important function of the supervisors is the selection of enumerators, and it is essential that some local official should be in charge of the selection. It is one of the chief advantages of the plan for the employment of mail carriers as enumerators that this function of supervisors of the census would largely or wholly disappear.

The second great function of supervisors of the census is the direction of the enumerators during their work. For such direction persons without previous census experience can be only partially qualified. There is need of the cooperation of trained employees in the local supervision of the census, by whatever method taken. Experienced employees of the Census Bureau should be distributed over the country to aid in instructing the enumerators and directing their work. It will doubtless also be desirable to continue the employment of a certain number of locally chosen officials, whether designated as supervisors of the census or by some other name, who are familiar with local conditions, but these should work in cooperation with the trained employees of the Census Bureau.

The proposed census of agriculture of 1915 will furnish a convenient opportunity of testing such a system of supervision by permanent employees of the Census Bureau. Particularly in case the rural mail carriers are utilized as enumerators, there will be little occasion for the employment of a large number of supervisors of the census or any

other specially appointed local officials having functions similar to those of the supervisors of the decennial census of 1910. Employees detailed from the office in Washington and assisted by a limited number of local special agents ought to be able to give the enumerators the necessary instructions and to direct their work. The experience along this line gained in connection with this intermediate census would be invaluable in helping to determine upon a proper method of organizing the field force for the coming decennial census of 1920.

RELIANCE UPON TYPICAL DATA FOR CERTAIN CLASSES OF STATISTICS.

One of the chief causes of the imperfection of the censuses of agriculture has been the great elaboration of the schedules. The agricultural schedule of 1910 was not much more detailed than that of 1900, yet it contained spaces for more than 500 different items regarding each farm. Many of the inquiries, of course, did not apply to the majority of farms, but their presence on the schedule nevertheless made it confusing and discouraging to the enumerator and to the farmer. Among the inquiries were many which the average farmer could not be expected to answer except by the roughest sort of estimates, and the presence of inquiries of this class tended to make the enumerators and farmers less careful in answering those questions as to which reasonably precise replies could have been made. It is the firm conviction of the officials of the Census Bureau that at future decennial censuses the number of inquiries on the regular agricultural schedule used for all farms must be greatly reduced—if possible to not exceeding one-half or one-third the number used at the census of 1910. Either the public must get along without so much information or a part of the information must be secured by other methods than that of general enumeration.

As more fully shown later, the proposed agricultural census of 1915, as contemplated by those who advocated it and as authorized by Congress, will not in itself suffer from too great an amount of detail. The law authorizes only a relatively small number of inquiries at that census. It seems desirable, however, at this intermediate census of agriculture to make tests covering a few selected areas and looking to the possibility of using a new method for collecting part of the more detailed information required at decennial censuses.

The method thus tentatively proposed consists in addressing certain classes of inquiries to selected farmers only, and obtaining from the data thus secured averages and percentages which can be applied to all farms in calculating totals. For example, all questions relating to the values of domestic animals, crops, and other farm products might conceivably be omitted from the general schedules used for all farms, and information as to values be obtained from selected farms only. It is possible, too, that better results would be secured by

omitting from the general schedule inquiries as to the quantities as well as the values of certain dairy and poultry products and as to the yield per acre of such of the minor crops as are returned in the scheme of inquiry, and by securing this information from typical farms. Such inquiries as to values and as to dairy and poultry products and yield per acre of minor crops, if eliminated from the general schedule, would be incorporated in special schedules. The regular enumerators, or, still better, enumerators specially trained for the purpose, would then secure answers to the inquiries on these special schedules from selected farms—say one out of ten or one out of twenty-five of the total number. It would be essential that such farms should be selected at random and not by reason of special fitness of the farmer to furnish the information, because those most qualified to furnish the information would very likely not represent average conditions.

By devoting to the canvass of each selected farm three or four times the amount of time required for filling the general schedule, and by pushing home each inquiry with special care and criticising the answers conscientiously, enumerators could obtain substantially complete and approximately accurate information for these selected farms. There can be little question that by applying the average values, yields, or percentages shown for these typical farms to the figures obtained for other farms in the same vicinity, quite as satisfactory, and probably more nearly correct, totals would be obtained than by the present method of addressing all the inquiries to all the farmers. For example, if the amount received for wheat were correctly furnished by one farmer out of ten, or even one out of twenty-five, and the average price calculated from these returns applied to the quantity of wheat produced as reported by all farmers, the result would undoubtedly be substantially accurate.

The chief gain likely to be derived from such a plan would not, however, be in the exceptional accuracy of the reports obtained for the typical farms, but in relieving the general schedule of a mass of details the presence of which tends to cause inaccuracy even as to the most important and fundamental inquiries. At the same time the question would have to be considered whether, at least as to the domestic animals and the principal crops, the elimination of inquiries as to values from the general schedule might not indirectly cause a certain amount of error. It occasionally happens that a careless farmer or enumerator enters a given class of animals or crops on the wrong line in the schedule. The data as to values in such cases often afford the Bureau a means of detecting such errors, which might otherwise escape notice. A test could, however, readily be made as to the relative importance of such errors as compared with errors due to the excessive number

of inquiries on the schedule. A compromise method might be found most effective, by which some data as to values or as to animal products might be left in the general schedule and others transferred to special schedules.

It is highly desirable that, at the proper time, authority be given by Congress to test this system of special schedules for selected farms on a limited scale, either in connection with the agricultural census of 1915 or at some other time before the next decennial census. A few counties scattered throughout the country would furnish a sufficient basis for the experiment. In order to furnish a comparison between the results of the new method and those of the method previously in vogue, it would be desirable to apply both methods to the same territory. A detailed schedule similar to that employed at the census of 1910 ought to be secured from every farmer in the counties chosen, and later there should be another canvass of the same territory, using a much simplified schedule for every farm, together with a supplemental detailed schedule for selected farms. If, as is quite likely, considerable differences should appear between the results of the two methods, then further careful inquiry as to the cause of the differences and as to the relative accuracy of the two methods should be made. An expenditure of, say, \$100,000 upon such an experiment would go a long way toward demonstrating conclusively and finally which is the more effective, and might easily save several times that sum at the next decennial census. For, should the method of enumeration of typical farms for the purpose of securing details prove satisfactory in its results, it would also have the further advantage, in all probability, of materially reducing expense.

If it should prove that the proposed method was unsatisfactory, the only remedy, aside from a change in the manner of selecting enumerators, for the difficulties heretofore encountered in the agricultural census would appear to be the entire elimination of many of the less important inquiries. The general schedule must be simplified in some manner.

DATE OF PROPOSED CENSUS AND OF FUTURE DECENNIAL CENSUSES.

The section of the Thirteenth Census act previously quoted provides that the census of agriculture to be taken in 1915 shall be taken as of October 1. This is a far better date for the agricultural census than April 15, the date of the last decennial census. The date April 15 was chosen as being more satisfactory for population purposes than June 1, the date of previous censuses, but it was less rather than more satisfactory from the standpoint of agricultural statistics. It was in the midst of the season when most animals are born, and therefore very ill adapted to the enumeration of live stock. All

inquiries as to crops and other farm products at the census of 1910 necessarily related to the preceding calendar year, yet they were addressed to the farmers months after the end of that year, when recollection of the facts had become dimmed from lapse of time. Moreover, a very large number of farms, particularly tenant farms, change hands from one year to another. The question on the agricultural schedule of 1910 with reference to the length of time the farmers had occupied their farms showed that about 17 per cent of the total number had not operated in 1909 the farms which they occupied at the time of the enumeration in 1910. Since each farmer is asked to report for the particular farm which he occupies at the time of the enumeration, it is obvious that in many cases those answering the inquiries could not possess any accurate information as to the products of 1909. It seems likely, moreover, that in some instances farmers through misunderstanding gave data for the farm which they occupied in the previous year instead of that occupied by them at the time of the census.

The plan of taking the census of agriculture during the actual year to which it relates is absolutely essential to satisfactory results and ought to be applied at the decennial censuses as well as at the intermediate censuses. Since at the decennial censuses population statistics must for the sake of economy be collected at the same time and by the same enumerators as agricultural statistics, this means that the population as well as the agricultural census of 1920 ought to be taken toward the end of that year.

October 1 would be as satisfactory a date for a population census as any that could be selected. It is believed, however, that somewhat more satisfactory results as to agriculture would be secured if the census were taken somewhat later in the year. If neither the decennial census nor the intermediate census called for any other information than that specified in section 31 of the Thirteenth Census act (previously quoted), it would not make a great deal of difference whether the census were taken early or late in the fall or early in the winter. The inquiries as to acreage of the crops harvested and as to the number and value of domestic animals could usually be satisfactorily answered on October 1. But, at least at the decennial census, inquiries will presumably also be made as to the production and value of crops and as to the production and value of animal products. There are many crops the production and value of which are not accurately known by the farmers as early as October 1. Approximately correct statements regarding animal products for a given calendar year, of course, can not be made until at least almost the close of that year. It is highly desirable that the intermediate censuses of agriculture, even if they include fewer inquiries, shall be taken as of precisely the same time of the year as the decennial censuses. Other-

wise there can be no close comparison with respect to the number of domestic animals from one census to another, as the number of domestic animals changes materially from month to month during the year.

After careful consideration, it is the opinion of the Census Bureau that the best time for a census of agriculture is in November and December. Farmers are less busy then than in October, and have more complete information as to the results of the year's operations. In some ways it would be even more satisfactory if the enumeration could be taken as late as January, but in some sections the conditions of weather and roads might make work more difficult at that time than in the late fall and early winter. If the enumeration could be begun, say, November 15 and completed December 15, there should be no serious difficulty in any considerable section of the country with reference to weather or roads.

Objections have been raised in the past to the idea of having the census taken in the fall, on the ground that it should not be closely associated in point of time with election day. It has been argued that if the census were taken just before or just after election political considerations would have an undue influence in the selection of enumerators and other employees. This objection certainly ought not to outweigh the fundamental importance of collecting agricultural statistics in the late fall. It ought to be possible, by proper methods of organization, to eliminate political influence wholly or almost wholly, whatever the date of the census. If, in accordance with the suggestion already made, a large part of the work were done by the mail carriers, who are chosen strictly by civil-service methods, this objection would to that extent cease to apply.

SCOPE OF THE PROPOSED CENSUS OF AGRICULTURE.

It was the idea of the preceding Director of the Census, of the Secretary of Agriculture, who urged the measure, and of Congress in enacting the provision above quoted, that the "intermediate" census of agriculture, to be taken in 1915 and every ten years thereafter, should be much less elaborate than the decennial census of agriculture. The scope of this special census as defined in the law differs from that of the decennial census chiefly in not calling for the tenure of farms, the acreage of woodland on farms, the value of farms and farm property, or the quantity or value of crops; in calling only for the acreage of the principal crops, rather than that of all crops; and in omitting inquiries as to farm products other than crops. A schedule formulated in accordance with section 31 of the Thirteenth Census act would not need to include more than one-tenth as many inquiries as the schedule for the Thirteenth Census.

It is perhaps questionable, however, whether the information specified in the section of the Thirteenth Census act providing for the census of 1915 is altogether adequate. A limited amount of additional information could be obtained with very little increase in cost. The very rapid changes which have been taking place in recent years in the value of farm land—the average value per acre having more than doubled between 1900 and 1910—make it desirable that the value of farm land as well as its acreage should be obtained. The subject of the high cost of living and of the difference between the rate of increase in food supply and in population is prominently before the public at the present time, and it may be queried, therefore, whether the production of the principal crops, as well as the acreage, ought not to be ascertained. The act does authorize an inquiry not only as to the number but also as to the value of domestic animals, and it would seem that the production of crops is quite as important as the value of domestic animals. In fact, it is possible that the values of the principal crops also should be asked, not only because of the importance of the information in itself, but also because, as already suggested, its presence on the individual schedules at times serves as a means of detecting errors.

Even if production and value of the principal crops were added to the schedule for the 1915 census, it could still be made not over one-fifth as extensive as the schedule used at the decennial census. The latter contained a multitude of inquiries as to minor crops, farm tenure, values of buildings and implements, animal products, purchases and sales of animals, and the like, which need not appear in the schedule for the intermediate census.

OFFICE FORCE.

CHANGES IN ADMINISTRATIVE FORCE.

During the Thirteenth Census period the administrative officials of the Bureau included an Assistant Director, an appointment clerk, and a disbursing clerk. At the close of the period these positions ceased to exist, and an important change was made in the administrative organization of the Bureau. Between the Twelfth and Thirteenth Census periods the Bureau had its own disbursing office and appointment division, under the supervision of the disbursing clerk, who also acted as appointment clerk. During the Thirteenth Census period the work of these two divisions naturally increased, and a separate appointment clerk was provided to take charge of the appointment division. At the close of that period, however, following a policy of concentration of administrative functions, which had been adopted by the Department of Commerce and Labor, the disbursing and appointment divisions were abolished as separate

divisions. As much as possible of the work which had theretofore been performed by these divisions was transferred to the corresponding divisions of the Department, the remainder of their activities being consolidated with the work of the chief clerk's division of the Bureau.

At the close of the census period, moreover, the number of chief statisticians, which had been increased to five during that period, was again reduced to four. Several reductions in salaries of administrative officials also occurred at the same time.

TEMPORARY FORCE.

On December 31, 1911, there were in the Bureau 1,622 temporary employees. The appropriation of \$500,000 made in December was not much more than sufficient to maintain the permanent force of the Bureau for the remainder of the fiscal year, and steps were at once taken to drop the temporary force as rapidly as possible. Reductions in that force were made as follows: December 31, 223; during the first ten days of January, 1,030; and on February 29, 276. These dismissals, although they came only a few months earlier than had been anticipated, involved considerable hardship in many cases, and every possible effort was made to minimize such hardship. Some of the temporary employees had been transferred to the Bureau from other branches of the departmental service. Measures were taken to secure the restoration of such employees, as far as possible, to the positions previously held by them. Again, a large number had, during their service in the Bureau, obtained eligibility on the civil-service registers. The President intimated to the departments generally his desire that when such persons were certified for vacancies they should be given special consideration.

In planning for the fiscal year 1913, the Bureau recognized the importance of pushing to a conclusion the essential features of the Thirteenth Census work. It was readily seen that it would be difficult or impossible, by means of the unaided services of the permanent force, to complete this work during the year, and at the same time to carry on the annual work required by law. The Bureau did not deem it advisable, however, to meet these conditions by requesting Congress to add clerks to the permanent force, with the prospect of having later to dismiss such clerks when conditions had returned to a normal basis. It was therefore considered preferable to endeavor to secure for the fiscal year the services of a small temporary force. At the request of the Bureau, Congress appropriated \$120,000 for the employment of temporary clerks, not exceeding 175 in number, for a period not to extend beyond June 30, 1913, and at a maximum salary of \$900. These clerks were, under the law, appointed

from among the former members of the Thirteenth Census temporary force. The appointments were, so far as possible, apportioned among the States, but to obviate the bringing of clerks to Washington from a distance preference was given to those locally available.

The Bureau had calculated on being able to avail itself of the services of these temporary clerks immediately after July 1, 1912, but the delay in the passage of the legislative, executive, and judicial appropriation act until August 23, 1912, made it impossible to take advantage of this provision until September; in fact, the full temporary force was not secured until some time in October. Hence, the program of work laid down for this force was considerably deranged. This delay, in conjunction with the limit fixed as to the number of temporary clerks, will prevent the Bureau from economically utilizing to the full amount the appropriation of \$120,000. Steps are now being taken to secure authority of Congress to increase the temporary force for the remainder of the fiscal year, without increasing the appropriation.

PERMANENT FORCE.

During the greater part of the Thirteenth Census period no effort was made to fill the vacancies which occurred from time to time in the permanent force of the Bureau. The hope was entertained that at the termination of the census period means would be found to fill such vacancies by the selection of some of the best clerks in the temporary force, thus securing to the service the benefits of the training and experience which such employees had obtained. This hope has been in a measure realized. At the request of the Bureau, Congress inserted a provision in the legislative, executive, and judicial appropriation act approved August 23, 1912, that "in certifying eligibles from the civil-service registers for the purpose of appointment to positions of clerkships in the Census Office hereinbefore provided for at salaries of \$1,200 or less, the Civil Service Commission shall, so far as practicable under the law of apportionment, certify those who have had at least one year's experience in census work." While the operation of this proviso was not as general as had been hoped, by reason of the fact that a number of the States entitled to appointments under the rule of apportionment had no eligibles with the required experience, the Bureau was nevertheless enabled to secure as permanent employees a considerable number of its experienced Thirteenth Census clerks, and doubtless others will be obtained as vacancies occur during the remainder of the fiscal year.

The Thirteenth Census act authorized during the census period an increase in the number of clerks above the \$1,200 class from 16, as provided for in the permanent census act, to 116. Immediately prior

to that period, the number of such positions in the Bureau had been, under the appropriation acts, only 36, equal to 7 per cent of the total number of clerks, as compared with from 24 to 55 per cent prevailing in other branches of the departmental service. While a certain number of the promotions to the higher grades, which, during the Thirteenth Census period, the Bureau was able to give to its permanent clerks, were justified chiefly by reason of the additional responsibility temporarily placed upon them, many of the promotions were long-delayed and well-deserved rewards for faithful and efficient service extending over many years, which by reason of the limitation mentioned it had been impossible previously to recognize. Congress, in the legislative, executive, and judicial appropriation act for 1913 provided for 63 clerks in the grades referred to, but this number was still decidedly disproportionate to the total number of clerks and insufficient for the needs of the Bureau. The diminution of the number of high-grade clerical positions from 116 to 63 involved very numerous demotions in the higher salary classes, and consequently also in the lower ones. The total number of demotions was 185. While it is the intention to give those demoted clerks, where their efficiency justifies it, preference in the matter of promotions whenever opportunity occurs, the vacancies which permit such restoration of salary occur but slowly. Up to December 31, 1912, the total number of clerks who had been restored to their previous salaries was 42, of which number 10 had been restored to salaries above \$1,200. One of the objects of maintaining a permanent Census Bureau is to have a nucleus for the great force which must be employed during decennial census periods. A large part of this nucleus must of necessity consist of persons of high qualifications, well trained in census work, and capable of undertaking supervisory duties involving great responsibility. Persons thus qualified can demand larger salaries than the average clerk, and if not able to secure them in the Bureau will seek employment elsewhere. Thus, by reason of its inability to provide salaries adequate to those qualifications, the Bureau is constantly suffering a considerable loss of trained employees and has to educate, at Government expense, others to take their places. The fact that the Bureau must expand so greatly at each decennial census would indicate that during the intervals between censuses there should be a greater proportion of high-grade places in the Bureau than in other branches of the Government service, rather than the contrary condition, which has so long prevailed. In the four months subsequent to the reorganization of the force and the enforced reduction of so large a proportion of the higher-grade employees, 28 experienced clerks have left for other fields, where the prospect for advancement is better than in this Bureau.

QUARTERS.

At the commencement of the fiscal year 1912 the personnel of the Bureau occupied three buildings—the main office at First and B Streets NW., which has been rented since the Twelfth Census; Annex No. 1, a four-story brick building located on First Street, immediately adjoining the main building; and Annex No. 2, a four-story brick building located on L Street near Fifth Street NW. On account of the rapid reduction of the temporary clerical force the Bureau vacated Annex No. 2 on January 31, 1912, and Annex No. 1 on March 30, 1912, the force being concentrated in the Census building proper. Since for many reasons this building has not the advantages that could be secured in more modern and suitable quarters, there was some hesitation about retaining it during 1913, but after thoroughly canvassing the situation it was decided upon as the most advisable course, especially as the lessor offered to expend several thousand dollars in much-needed changes, chiefly designed to improve the sanitary condition of the building. A more modern building erected with a view to present and future needs of the permanent Bureau, with better facilities for lighting and sanitation, and a large amount of storage space for documents, records, equipment, and furniture carried over between census periods, would greatly facilitate the work of the Bureau and would add to the comfort and well-being of its employees. The need of a fireproof building is particularly great, in view of the vast quantity of valuable records which must be stored.

APPROPRIATIONS.**THIRTEENTH CENSUS APPROPRIATIONS AND EXPENSES.**

Although appropriations amounting to \$14,500,000 had been made for carrying on the Thirteenth Census and conducting during the three-year census period the annual inquiries required by law, it was perceived, as the year 1911 was drawing to a close, that this amount would be insufficient to complete the work within the period allowed by law. It was estimated that \$1,000,000 more would be required for that purpose, and an additional appropriation of that amount was therefore requested. Congress, however, granted only \$500,000, and in consequence a considerable quantity of Thirteenth Census work had to be deferred until the fiscal year 1913, and some lines of proposed work, not expressly required by law, had to be dropped entirely. The failure to complete the work within the cost originally estimated by the former Director of the Census may be attributed to various causes, which have been more fully discussed in previous reports. Among these may be mentioned the unexpectedly heavy outlay for field work (it being found necessary to pay higher rates to

supervisors and enumerators than had been estimated); the additions made by law to the inquiries on the schedules after the work was planned; and the fact that the mechanical equipment, although reasonably satisfactory, failed to effect economies as great as had been anticipated. Even with these adverse conditions, however, the cost per capita of the Thirteenth Census, when finally completed, will not be greater than at the Twelfth Census. Close comparison of costs is impracticable because at the Twelfth Census some work was done after the close of the census period which at the Thirteenth Census was performed within that period, while as to some other lines of work the reverse was the case. Just what was the ultimate total expenditure on Twelfth Census work, some little of which was still going on as late as 1905 or 1906, can not be determined. Had the recent improvements in the tabulating machines, elsewhere described, been available throughout the Thirteenth Census work, very considerable saving in money and time could have been effected.

A detailed statement of the expenditures of the Bureau to date in connection with the Thirteenth Census work appears in the appendix.

APPROPRIATIONS FOR 1913.

The Bureau's estimates of expenditures required for the fiscal year 1913 was \$1,612,440. Of this amount, \$40,000 for printing was subsequently deducted and included in a general estimate for printing for the Department of Commerce and Labor, leaving \$1,572,440 to provide for all other operations of the Bureau. The legislative, executive, and judicial appropriation act of 1913, as finally passed, appropriated \$1,503,920. To this sum were later added by the sundry civil appropriation act items of \$15,000 and \$30,000, respectively, for carrying out inquiries regarding tobacco and cotton required by new legislation enacted in 1912. These additions made a total appropriation for the year of \$1,548,920. Included in this amount were \$120,000 for the employment of temporary clerks to complete the Thirteenth Census work and \$272,000 for the printing of Thirteenth Census reports.

ESTIMATES FOR 1914.

The estimates for the work of the Bureau for the fiscal year 1914 amounted to \$1,238,320, a net decrease as compared with the appropriation made for the previous year. If, however, the items in the appropriations of 1913 for temporary clerks to complete the Thirteenth Census and for printing the results of that census are disregarded, there is an increase of \$81,400. Decreased amounts are requested for the ordinary field expenses of collecting statistics and for construction and improvement of mechanical appliances, and a slight increase for miscellaneous expenses and for the library. The decen-

nial inquiry regarding wealth, debt, and taxation of the nation should be made in 1913-14, and an estimate of \$100,000 to provide for the travel and subsistence of the clerks in the field collecting these statistics is inserted, which accounts for the net increase above mentioned. An increase of 11 clerks is requested on account of additional office work connected with the inquiries recently added by Congress relative to tobacco and cotton. This does not, however, represent a new expenditure, but is merely a change in the form of the appropriation, that work having been covered last year by the lump-sum appropriations above mentioned.

Respectfully submitted.

E. DANA DURAND,
Director of the Census.

To Hon. CHARLES NAGEL,
Secretary of Commerce and Labor.

APPENDIXES.

APPENDIX I.

FINANCIAL STATEMENT OF THE THIRTEENTH DECENNIAL CENSUS.

APPROPRIATIONS, RECEIPTS, ETC.

Expenses of the Thirteenth Census, 1910-1912.....	\$15,000,000.00
Preliminary expenses of the Thirteenth Census, 1909-10.....	150,000.00
Recoveries on account of overpayments.....	2,875.68
Receipts for transcripts of records.....	1,520.96
Reimbursement from Bureau of Immigration and Naturalization.....	13,980.05
Reimbursement from Government Printing Office.....	6,610.20
Reimbursement for photostat.....	500.00
Total.....	15,175,486.89

EXPENDITURES.

THIRTEENTH CENSUS FIELD WORK.	COMPILATION AND PUBLICATION OF THIRTEENTH CENSUS STATISTICS—continued.
Continental United States:	
Supervisors—	Salaries of special agents..... \$105,358.84
Salaries..... \$585,188.00	Tabulating machinery and mechanical equipment..... 330,801.43
Expenses..... 99,349.77	Stationery..... 87,854.41
Assistance..... 495,755.85	Rent..... 105,479.42
Enumerators..... 4,755,160.06	Cards..... 67,322.90
Interpreters..... 37,349.51	Printing:
Institutions, field work..... 118,730.40	Reports, including press notices..... 87,908.49
Manufactures census—	Other..... 149,433.11
Salaries of special agents..... 412,730.21	Office maintenance..... 91,559.99
Salaries of clerks detailed for field work..... 61,730.08	Furniture..... 17,688.78
Travel, subsistence, etc..... 251,737.15	Miscellaneous supplies..... 69,001.70
Irrigation—	Total..... 6,271,445.71
Salaries of special agents..... 43,025.50	ANNUAL AND OTHER INVESTIGATIONS OF PERMANENT BUREAU.
Salaries of clerks detailed for field work..... 7,390.54	Cotton:
Travel, subsistence, etc..... 46,793.87	Office work, salaries..... \$42,850.83
Other investigations—	Field work..... 650,407.91
Salary and medical expenses of Alice V. Houghton..... 1,821.00	Printing..... 14,755.52
Salary, C. W. G. Brett, "Employees' liability act, 1908"..... 101.11	Statistics of cities:
Frauds and reenumeration..... 29,068.09	Office work, salaries..... 94,356.29
All other..... 50,663.26	Field work—
Alaska..... 78,303.15	Salaries of special agents..... 30,465.50
Porto Rico..... 113,728.85	Salaries of clerks detailed for field work..... 55,967.00
Hawaii..... 34,749.79	Travel, subsistence, etc..... 60,831.23
Total..... 7,223,385.19	Printing..... 19,942.56
COMPILATION AND PUBLICATION OF THIRTEENTH CENSUS STATISTICS.	Vital statistics:
Salaries by divisions:	Office work, salaries..... 216,762.21
Director's..... \$55,803.47	Field work (transcripts of records)..... 121,875.41
Chief clerk's..... 336,739.57	Printing..... 51,075.19
Machine shop..... 118,254.63	Forest statistics:
Appointment..... 99,495.38	Office work, salaries..... 105,146.40
Disbursements..... 70,274.10	Printing..... 10,101.20
Geographer's..... 140,536.10	Official Register:
Publication..... 53,672.95	Office work, salaries..... 32,768.99
Revision and results..... 183,915.70	Printing..... 44,180.67
Population..... 2,181,987.81	International Commission at Paris..... 2,155.75
Agriculture..... 1,002,189.72	All other investigations:
Irrigation..... 25,463.65	Office work, salaries..... 41,639.93
Manufactures..... 673,124.12	Travel, subsistence, etc..... 13,009.23
Mining..... 118,489.44	Printing..... 61,861.53
Total salaries..... 5,059,940.64	Total..... 1,676,762.35
	Grand total..... 15,171,598.25

APPENDIX II.

STATEMENT SHOWING NATURE AND DISTRIBUTION OF OFFICE AND FIELD FORCE, DECEMBER 31, 1912.

OFFICIALS.

Chief clerk.....	William A. Hathaway.
Chief statisticians:	
Population.....	William C. Hunt.
Statistics of cities.....	Lo Grand Powers.
Manufactures.....	William M. Stewart.
Vital statistics.....	Cressy L. Wilbur.
Expert special agent in charge of agriculture.....	John Lee Coulter.
Expert special agent in charge of mines.....	Isaac A. Hourwich.
Expert special agent in charge of census of institutions.....	Joseph A. Hill.
Geographer.....	Charles S. Sloane.
Expert chiefs of division:	
Population.....	William H. Jarvis.
Statistics of cities.....	Edward W. Koch.
Manufactures.....	William J. Barrows.
Vital statistics.....	Joseph D. Lewis.
Publication.....	Frank L. Sanford.
Expert on tabulating machinery.....	Richard C. Lappin.
Chief mechanician.....	Harry H. Pierce.
	Harry Hayward Allen.
	B. M. La Boiteaux.

CLERICAL FORCE.

CLASS.	Perma- nent.	Tempo- rary.	Total.
Stenographer, \$1,500.....	1		1
Clerks:			
Class 4.....	11		11
Class 3.....	20		20
Class 2.....	32		32
Class 1.....	200		200
\$1,000.....	80		80
\$900.....	63	16	79
\$720.....		173	173
Total.....			605

SUBCLERICAL FORCE.

Engineer, \$1,000.....	1		1
Electrician, \$1,000.....	1		1
Skilled laborers:			
\$1,000.....	2		2
\$900.....	4		4
\$720.....	10		10
Unskilled laborers, \$720.....	8		8
Messengers, \$840.....	3		3
Assistant messengers, \$720.....	5		5
Messenger boys, \$480.....	4		4
Watchmen, \$720.....	5		5
Firemen, \$720.....	3		3
Charwomen, \$240.....	14		14
Total.....			60

MACHINE-SHOP FORCE.

Electrical expert, \$1,800.....	1
Mechanical expert, \$1,600.....	1
Mechanical experts, \$1,400.....	2
Mechanicians, \$1,400.....	2
Electricians, \$1,200.....	2
Machinists, \$1,200.....	2
Machinists, \$1,000.....	4
Machinists, \$900.....	1
Machinists, \$720.....	1
Machinist's helper, \$840.....	1
Apprentice boys, \$480.....	2
Total.....	19

1912

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REPORT OF THE DIRECTOR OF THE CENSUS.

Statement showing nature and distribution of office and field force, December 31, 1912—Con.

SPECIAL AGENT FORCE.

Experts, agents for general field work, etc..... 23

SUMMARY OF CENSUS FORCE.

Officials.....	16
Clerical.....	695
Subclerical.....	60
Machine shop.....	19
Special agents (general force).....	23
Total office force.....	813
Special agents to collect statistics of cotton.....	742