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OF THE
PHILIPPINE ISLANDS

TAKEN UNDER THE DIRECTION OF THE
PHILIPPINE LEGISLATURE
IN THE YEAR 1918/

IN FOUR VOLUMES

VOLUME I

GEOGRAPHY, HISTORY, AND
CLIMATOLOGY

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VOLUME II.—Population and Mortality.

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INTRODUCTION.

Authority for and Scope of the Census—Proclamation of the Governor-General—Plan for the Taking of the Census—The Assembly of Census Inspectors in Manila—Instructions to Enumerators and Special Agents—Difficulties Encountered in the Urban Districts—Difficulties in the Enumeration of Non-Christian Filipinos—Organization of the Office of the Philippine Census—Official Inspection of the Census Office by High Government Officials—Permanency of the Census Office—Scientific Contributions to the Census—Atlas of the Philippines with Geographical Sketches and Historical Accounts—Weather and Climate of the Philippines—Results of the Census Regarding Population, Agriculture, Education, Mortality, Social Statistics, Manufactures, and Household Industries—Indications of Prosperity and Social Progress—Usefulness and Necessity of Census Data for Constructive Measures.

The four volumes of the Census of 1918, as now published, contain an accurate and reliable exposition of the data recorded by the enumerators and special agents appointed in accordance with the provisions of the Census Act.

The taking of the Census of 1918 is authorized by section 2 of Act 2352, approved on February 28, 1914, as amended by section 1 of Act 2766, which reads as follows:

A census of the Philippine Islands shall be taken under the general supervision of the Governor-General and the immediate direction of an officer, to be known as the Director of the Census, who shall be appointed by the Governor-General, by and with the advice and consent of the Senate. The enumeration shall begin on a day to be fixed by the Governor-General, which shall be called Census Day, and shall proceed on consecutive days from daylight to darkness, including Sundays and holidays, until completed; and all data prescribed to be gathered by this Act or by regulations issued under it shall be gathered as of twelve o'clock of the night preceding that day: *Provided*, That if the Governor-General shall deem it necessary to require that the enumeration of any part or parts of the Philippine Islands should begin before Census Day, he is hereby authorized to fix the time when such enumeration shall begin.

In accordance with section 36 of the Census Act, the Governor-General, in August, 1914, appointed a Committee composed of the Executive Secretary of the Philippine Islands, Mr. Charles R. Cameron, Colonel J. Lindsay Johnson, and Mr. Epifanio de los Santos, Provincial Fiscal of Bulacan. The undersigned, as Executive Secretary, then began to render service in connec-

tion with the Census. The committee mentioned dedicated seven months to the preliminary study of the most appropriate methods to be adopted in the preparation of the Census. In February, 1915, it submitted its report to the Governor-General, recommending that the American plan, as adopted for the Census of Cuba and for the Philippine Census of 1903, be followed, with such modifications as the conditions, laws, usages and customs of these Islands would require. The work of that Committee consisted principally in the preparation of regulations for the execution of the Census Act. It also prepared six regular schedules for the taking of the census of the population, agriculture, schools, mortality, social statistics, and manufactures; two special schedules for the census of the non-Christian population, and miscellaneous others, with the necessary instructions for the collection of the data required in the above schedules.

On March 2, 1918, the Philippine Legislature, in amending the Census Act, appropriated the sum of one million pesos (₱1,000,000) for the taking of the Census. Subsequently, the Governor-General, on May 9, 1918, appointed the undersigned as Director of the Census and Dr. Alejandro Albert, Under Secretary of Public Instruction, Judge Percy M. Moir, of the Court of First Instance of Rizal, Dr. Leon Ma. Guerrero, of the Bureau of Science, and Messrs. Felipe Buencamino, Sr., and Epifanio de los Santos, as Assistant Directors. On May 9, 1918, the Census officials so appointed held their first meeting for the definite organization of the Census work and for the preparation of all schedules, instructions, and other printed matter for the use of enumerators, and immediately proceeded to revise the schedules prepared by the first Census Committee, adopting them with certain modifications and introducing new schedules, such as that on Household Industries.

In accordance with section 2 of the Census Act above mentioned, the Governor-General issued Proclamation No. 21, dated May 24, 1918, fixing the 31st of December, 1918, as the Census Day. The proclamation of the Governor-General is as follows:

In ancient times countries politically organized have for military and economic purposes felt the need of possessing exact data with reference to the number of inhabitants, resources and occupations. In the Philippines since the time of Buzeta, in the year seventeen hundred and ninety-nine, several attempts have been made to collect similar data; but a census as it is known at the present time, was not taken until nineteen hundred and three, when by means of scientific methods the work of enumeration was so skillfully prepared that the census of that year is considered a success.

memorandum book, but a collection of social data, information and facts of all kinds, profitable for the statesman, the legislator, the executive, the philosopher, the scientist, the manufacturer, the merchant, and the agriculturist. In a word, the Census will be of indispensable utility to everybody interested in the progress and welfare of the Philippines.

Accuracy in taking down the data should be the rule for all those who are directly or indirectly connected with the work, for, first and last, the Census is a brief in favor of the political and economic ideals to which the Filipino people have always aspired.

There will be no reason for doubting the conclusions drawn from the data published in the new Census, for everybody believes that the Philippines possesses all the elements that go to make up a country with an independent existence.

From nineteen hundred and three to nineteen hundred and eighteen, the progress of the Filipino people has been evident not only in the exercise of self-government but in agriculture, industry, and commerce. In the Government, there exist Filipinos of experience and demonstrated ability in all of its different branches. Likewise, in agriculture, industry, and commerce, and in the liberal and mechanical arts, a great number of persons during this period successfully pursued their respective professions and occupations and their experience constitutes today an asset of inestimable value to the culture and material development of the Filipino people. Along educational lines, there are excellent proofs of the positive results obtained by both the public and the private schools; many of the high-school graduates and those of the different colleges of the University of the Philippines and of other institutions of learning are now playing an important role in the community.

Though the present period of economic crisis through which the world is passing seems a somewhat unfavorable moment for the taking of a census in the Philippines, nevertheless when the time for world peace comes, which we all long for—when the great nations determine the status of the small countries, the Philippines undoubtedly will be included in that general political revision, and therefore ought to be prepared to show the best evidence of her progress, a graphic demonstration of her culture, in the International Court.

Now therefore, I, Francis Burton Harrison, Governor-General of the Philippine Islands, in pursuance of section two of Act Numbered Twenty-three hundred and fifty-two, enacted by the Philippine Legislature on the twenty-eight of February, nineteen hundred and fourteen, as amended by Act Numbered Twenty-seven hundred and sixty-six, enacted by the same Legislature on the eighteenth of March, nineteen hundred and eighteen, do hereby issue this proclamation, announcing as Census Day the thirty-first day of December, nineteen hundred and eighteen, on which day the enumeration of the population shall begin in all parts of the Philippine Islands, including the territory comprehended in the Department of Mindanao and Sulu, and shall

proceed on consecutive days thereafter, including Sundays and holidays, until completed.

It is expected that the enumeration among regularly and specially organized provinces and subprovinces, excluding those of the Mountain Province, and the Department of Mindanao and Sulu will be carried on by the enumerators of urban districts at the rate of not less than fifty persons per day, and of rural districts at the rate of not less than thirty persons per day. said enumeration to begin at daylight and continue until dark. The enumeration in the Mountain Province and the Department of Mindanao and Sulu will be carried on in the manner prescribed by the Director of the Census as circumstances may warrant. Any reduction in any district in the rate of enumeration thus established will be made the subject of investigation by the inspector, and unless it is found that such reduction in the rate of enumeration was due to causes beyond the control of the enumerator, pay for the period in excess of that corresponding to the rate established, may be withheld, pending the decision of the Director of the Census.

In witness whereof, I have hereunto set my hand and caused the great seal of the Government of the Philippine Islands to be affixed.

Given at the city of Manila, this twenty-fourth day of May in the year of our Lord nineteen hundred and eighteen.

FRANCIS BURTON HARRISON,
Governor-General.

Pursuant to the proclamation of the Governor-General, the whole Philippine Islands was divided into five districts, to wit:

No. 1 (Northern District).—Comprising the Province of Nueva Vizcaya and the Mountain Province, with the Subprovinces of Benguet, Amburayan, Ifugao, Lepanto, Bontoc, Kalinga and Apayao, and the Provinces of Abra, Batanes, Isabela, Cagayan, Ilocos Sur, Ilocos Norte, La Union, and Pangasinan.

No. 2 (Central District).—Comprising the Provinces of Tarlac, Zambales, Nueva Ecija, Pampanga, Bulacan, Bataan, Rizal, Cavite, Laguna, Tayabas, Batangas, and Mindoro, and the Subprovince of Marinduque.

No. 3 (District of Manila).—Comprising the city of Manila.

No. 4 (Southern District).—Comprising the Provinces of Ambos Camarines, Albay, Sorsogon, Samar, Leyte, Iloilo, Capiz, Antique, Romblon, Oriental Negros, Occidental Negros, Cebu, Bohol, and Palawan, and the Subprovinces of Siquijor, Masbate, and Catanduanes.

No. 5 (Mindanao District).—Comprising the Provinces of Agusan, Bukidnon, Cotabato, Davao, Lanao, Sulu, and Zamboanga, or the Department of Mindanao and Sulu, and the Provinces of Misamis and Surigao.

The above districts were assigned for census purposes to the Assistant Directors, as follows: Assistant Director Epifanio de los Santos for the first district, Mr. Felipe Buencamino, Sr., for the second, Justice Percy M. Moir for the third, Dr. Leon Ma. Guerrero for the fourth, and Dr. Alejandro Albert for the fifth district. Upon the resignation of Justice Moir, on November 25, 1918, on account of his appointment to the Supreme Court, Dr. Albert took his place in the third district, and in Dr. Albert's place, Judge Ponciano Reyes, of the Fourteenth Judicial district, was appointed as special inspector, vested with authority and delegated power similar to those exercised by the Assistant Directors of the Census. Judge Reyes, who perished on December 25, 1918, in the wreck of the *Quantico*, was succeeded by the Secretary of the Department of Mindanao and Sulu, Mr. Teopisto Guingona.

There were organized in all provinces and municipalities provincial advisory census boards and municipal and township census boards in accordance with the regulations approved by the Governor-General on May 24, 1918. The members of the provincial census boards acted as inspectors and auxiliary inspectors of the Census, while those of the municipal and township census boards performed the duties of special agents. In the Mountain Province, on account of its special conditions, the provincial governor was appointed as inspector, while the lieutenant-governors were appointed as auxiliary inspectors for their respective sub-provinces. A similar organization was adopted for the Department of Mindanao and Sulu, the Secretary of the Department being appointed as special census inspector, and the governors of the provinces comprising the Department as auxiliary inspectors. Thus, the supervision of the census work was assigned to the officials appointed in accordance with the organic regulations of the census. While the special agents were held responsible for the work in the portion of the municipality or township assigned to each, the inspectors and auxiliary inspectors were likewise held responsible for the work in the municipalities under their jurisdiction.

The provincial census boards are charged with the duty of lending support and assistance to the officers taking the census in each province; to exert all their authority and influence, collectively and individually, over the people of the province to make them coöperate actively and heartily with the Census officers; to divide the province into as many inspection districts as may be necessary, each district to be composed of one or more contiguous municipalities, municipal districts, townships, or other

territorial units, as the case may be; to divide the municipalities, municipal districts, or other territorial units within each inspection district into as many enumeration districts as may be necessary, in accordance with the basis established in the census regulations; to number each inspection district and assign it to one of the auxiliary inspectors; and, finally, to discharge in territory not organized into municipalities or townships the duties herein imposed upon municipal and township advisory census boards.

The members of the municipal advisory census boards are bound to exert all their authority and influence, collectively and individually, upon the people of their municipality in order to make them coöperate actively and heartily with the census officers; to furnish the census authorities with any information that may be desired in connection with the census work, and to act as special agents in the municipality.

To accomplish this tremendous task in such a manner that it would reveal the actual conditions of the country in all its aspects, an extensive organization covering even the minutest detail of the work was necessary. To this end, as has been stated, all the provinces of the Archipelago were divided into five districts, each of which was placed under the supervision of one Assistant Director; each province was in turn divided into three or more inspection districts, and to each inspection district one provincial inspector was assigned. Lastly, the municipalities were divided into enumeration districts of 1,500 inhabitants each in urban districts, and of 1,000 each in rural districts. Each enumeration district was assigned to one enumerator and for every ten enumerators generally one substitute enumerator was appointed. A similar organization was adopted for the Department of Mindanao and Sulu and for the Mountain Province, with the only difference that the enumeration districts there were less extensive, and that the lieutenant-governors of the Mountain Province and the governors of the provinces of the Department of Mindanao and Sulu were required to perform the same duties as the provincial inspectors in their jurisdictions.

As a rule, three census inspectors were appointed for each province and subprovince, with the exception of Manila, Cebu, Leyte, Pangasinan, and Iloilo, where a greater number of inspectors was authorized. The total number of inspectors appointed was 178. For each municipality and township, three special agents were appointed; the aggregate number of these agents was 2,650. Inasmuch as the number of inhabitants of

the Philippine Islands was estimated at 11,000,000, it was necessary to appoint 9,702 enumerators, besides 1,730 substitute enumerators; their number varied from 1 to 5 in each municipality, according to the estimated population of the municipality. In addition to the regular and substitute enumerators, auxiliary enumerators were appointed in places where their services were needed in order to secure a successful accomplishment of the census work. These appointments were, therefore, governed exclusively by the familiarity of the appointee with the locality and the customs and habits of the inhabitants thereof. These auxiliary enumerators numbered 824 in all.

Notwithstanding the fact that the regular enumerators had to enumerate both the inhabitants and the farms, special enumerators for Schedule No. 2 (Agriculture) were appointed in some provinces where the number of farms was very great. The total number of special enumerators for schools and mortality was 3,200. Likewise, special enumerators were appointed for special areas, institutions, and establishments, such as private colleges, convents, hospitals, hotels, steamers, military posts, etc.

In the Census of 1903, the regular enumerators took charge of the schedules relative to population, agriculture, and schools; and the special agents, who were then the municipal presidents, were in charge of the demographic, social, and industrial statistics and of Special Schedule No. 7, which was for territories not regularly organized.

In the present census, the regular enumerators filled in only the schedules relative to population and agriculture; and the special agents, those relative to social statistics, manufactures, and household industries, while the special enumerators appointed from the Bureaus of Education and Health, filled in respectively, the schedules for schools and mortality.

In connection with the appointment of Census employees such as inspectors and special agents, it is gratifying to state that there was no lack of personnel sufficiently qualified to hold those positions. Many persons of social standing and high culture offered their services, animated by the desire to do something for their country, and many of them were, after the taking of the Census, elected to provincial office such as governor or member of the provincial board, while others were elected members of the House of Representatives. There was no difficulty in the appointment of enumerators for the provinces, except in the Department of Mindanao and Sulu and in the Mountain Province. In order to be eligible for the position of enumerator, a person

had to be over 20 years of age, be able to read and write Spanish or English, know the local language and, above all, write a legible and clear hand. The difficulty lay in the selection from so many candidates, who claimed to possess all the qualifications required by the organic regulations. Many regular enumerators have a good knowledge of the English language and have filled in their schedules in this language; all the special enumerators for the schools and some of the enumerators for mortality have done so.

To overcome the lack of personnel in the Mountain Province, it was necessary to bring people from the bordering provinces of Pangasinan and La Union. This circumstance greatly increased the cost of enumeration in that province, because besides their traveling expenses, they had to be paid subsistence for the number of days they stayed in their respective stations before the taking of the Census, in order to receive the necessary instructions from the inspectors, familiarize themselves with local conditions, and acquire some knowledge of the customs of the inhabitants. However, it is a source of satisfaction to state that out of 471 enumerators appointed for the Mountain Province, 80 were young Igorots, educated in the public schools, some of them having completed the intermediate course, while others had finished the first two years of high school.

To solve the difficulty encountered in the Department of Mindanao and Sulu through the lack of Moros qualified to undertake enumeration work, it was found necessary to appoint Christian residents of Zamboanga, the teachers of municipal districts, and even members of the Constabulary, who had been residing in the Department for a certain length of time and were therefore acquainted with local conditions and the usages and customs of the inhabitants. The services of some *datos* or Moro chiefs were utilized by appointing them as auxiliary enumerators, to accompany the regular men in the enumeration work. A similar measure was adopted in the Mountain Province, where certain leading Igorots were appointed to act as guides to the enumerators.

A tremendous task such as the taking of the Census of the country in its various aspects, necessarily requires uniformity in the work and an exact knowledge of the instructions prepared by the Census Office for the filling in of the nine schedules of the Census regarding population, agriculture, social conditions, schools, mortality, manufactures, household industries, non-Christian population, and miscellaneous things. It was deemed

necessary, as had been done when the Census of 1903 was taken, to summon all the Census inspectors to an assembly, which took place on September 30, 1918, in order to familiarize them with the instructions regarding the taking of the census, inasmuch as they, by reason of their position, were charged with the duty of attending personally to the instruction of all enumerators.

At the same time that the inspectors were summoned to attend this assembly, they were advised of their duty to take the prescribed oath of office and organize as provincial advisory census board, with the elective member of the provincial board as chairman. In order to avoid all delay in the preparatory work of the Census, the inspectors were required to prepare, with the assistance of the district engineer, a map without topographical details of their respective province or subprovince, showing the inspection districts into which each province had been divided; the municipalities, municipal districts, townships, or other territorial units included in each inspection district; the barrios included in each of these; the enumeration districts into which the province had been divided by the provincial census board; and the principal inter-provincial and inter-municipal roads and the roads connecting barrios of the same municipality, giving the distances from one place to another.

In order to enable the inspectors appointed by the undersigned to acquaint themselves with the duties assigned to them, as well as with the work intrusted to the special agents and enumerators, each was furnished in due time with copies of Census schedules 1 to 9, the proclamation of the Governor-General, the regulations governing census organization, the Census Act, and the instructions to enumerators, and with forms of the oath of office. Likewise, they were required to submit a list of proposed special agents as well as a list of eligibles for enumerators, carefully selected from among such persons in each locality as had the qualifications required by the Census Regulations.

All the inspectors appointed enthusiastically responded to our call, except those of the Department of Mindanao and Sulu and the Mountain Province, who were afterwards convened in their respective territories by the provincial inspector. The inaugural meeting of the inspectors' assembly was held at the Marble Hall on September 30, 1918, and was attended by distinguished Government officials, including the Governor-General, the President of the Senate, members of the Cabinet, and members of the Philippine Legislature, whose presence gave special importance to the occasion.

You have your defects as well as your high merits. We want this Philippine situation to stand on its own feet; and I am all the more satisfied to tell you that because I am certain that the stand this situation will take will appear very high and noble to all the rest of the world. We do not want anybody to prove any political theory through the medium of this census; we do not want any feature of Philippine life exaggerated or aggrandized at the expense of any other. We want the plain, simple facts, and if those facts are as I have seen during five years of friendship and association with your people, you need not fear their effect in the eyes of the world.

Now, I want you to feel that I am as much interested in the outcome of your work as any one of you can be. For my part, I insist only upon accuracy. The policies, the details, the work itself, is to be carried out by the organization before me today. I am sure it is going to be straightforward, I am sure it is going to be successful, and I am sure it is going to put the Philippines in the place it is entitled to in the world.

It is needless to say that these sentiments uttered by President Quezon and Governor-General Harrison have served as a guiding light to the inspectors and other officials of the Philippine Census.

The assembly lasted for a week. During this time, all questions pertaining to the census work were extensively discussed, and as comprehensive explanations as possible were given in regard to the filling in of the different schedules of the census. In order to put this knowledge into practice, seeing that they had had no experience in this kind of work, the inspectors were given all kinds of schedules to fill in with hypothetical data and were thus able to show their ability to instruct the enumerators afterwards. In the course of this instruction, many doubts arose regarding certain points of the instructions to enumerators, but all were solved, apparently to the satisfaction of all concerned.

The formation of enumeration districts was also discussed in this convention. The appointment of regular, auxiliary, and substitute enumerators in accordance with the lists submitted by the inspectors, was also taken up. This work, however, was left unfinished at that time, as some inspectors had failed to bring a list of eligibles for these positions and some had been unable to arrange the enumeration districts in their provinces in accordance with the instructions given them by the undersigned, upon organizing as provincial census advisory boards. It was, therefore, necessary to postpone the issuance of a certain number of appointments until the inspectors had returned to their provinces and sent to this office the names of the candidates for the positions. This postponement caused

no little delay in the work of organization. After six days of instruction and practice in the enumeration work, when the inspectors had shown their ability to undertake the census work, they were given permission to return to their provinces, with the advice that they visit their respective districts and instruct the regular, auxiliary, and substitute enumerators, as well as the special agents, in regard to their duties and responsibilities, and inform the inhabitants of their respective provinces of the main objects of the census soon to be taken.

As soon as the census inspectors had returned to their provinces, the following material necessary for the use of the enumerators in taking the census was mailed to them: all the forms of schedules mentioned above, the Census Acts and an abstract of its penal provisions, and the proclamation of the Governor-General. Translations of these publications into Ilocano, Tagalog, and Visayan were extensively distributed in the municipalities throughout the Archipelago to inform the people at large of the main purposes of the Census and thus secure their cordial coöperation.

To protect them from any possible destruction, the census forms and other papers mailed to the provinces were provisionally kept in those of the provincial buildings which offered the greatest security, until they were taken to municipal buildings for distribution among the special agents and enumerators. The municipal presidents were designated as depositaries of the portfolios containing the census papers. How the distribution of the census material was to be made and how the census inspectors were to proceed in instructing the enumerators, were the objects of repeated circular letters of the central office. Pursuant to instructions, the census inspectors went out into their respective districts on the days fixed by them. They assembled the special agents and enumerators at the most convenient places, required them to take the prescribed oath of office, delivered to them their portfolios, and instructed them in the performance of their duties. The instruction generally lasted three days in each municipality. The inspectors kept the undersigned in touch with the progress of their work by advising him by telegram, wherever possible, of their arrival at, and departure from, each municipality. The incidents that took place at that period were too numerous to be related in this report. All the difficulties, however, were overcome by the laudable efforts put forth by the inspectors, who certified to the undersigned before Census Day that everything was prepared

for the enumeration work. All measures necessary to insure the taking of the Census on the day fixed by the proclamation of the Governor-General were therefore taken.

Before Census Day, the Assistant Directors of the Census traveled in their respective districts to ascertain whether the provincial census employees were prepared to undertake their work, and to help solve all the doubts confronting them. While the census was being taken, they kept in constant touch with the inspectors, ready to help them to solve all the difficulties encountered, while the undersigned stayed at the Central Office in Manila, answering inquiries from the provinces and supervising the enumeration work all over the Islands.

For the purpose of acquiring a first-hand knowledge of the actual condition of the enumeration work, the undersigned also made three extended trips to the central provinces of Luzon; to the non-Christian provinces, visiting Nueva Vizcaya, Ifugao, Benguet, Bontoc, and Lepanto-Amburayan; and to the South, visiting the Provinces of Misamis, Bukidnon, Cotabato, Davao, Jolo, Zamboanga, Lanao, Palawan, and Mindoro. On the first trip, he was accompanied by Assistant Directors Buencamino and Santos; on the second, by Assistant Director Guerrero, and on the last, by Assistant Directors Guerrero and Albert. No complaint was received by us as to the manner in which the census was taken. We were cordially received everywhere, not only by the Igorot people, but also by the Moros of Mindanao and Sulu, including those of Ganassi and Parang, all of which seems to indicate that the taking of the Census of 1918 was welcomed by the people throughout the Archipelago.

As previously stated, during the enumeration period many inquiries were received, both from the inspectors and the enumerators, as to the procedure to be followed in various matters, which they could have solved themselves by the exercise of sound discretion. This, however, far from denoting lack of judgment on the part of these census employees, was only the result of their desire to evade responsibility, and above all, to coöperate with the central office, in order that there be uniformity in the census work. They all realized the importance of the work in which we were then engaged and the value of the results thereof, and for this very reason they consulted the Director of the Census even in cases of slight doubts, as they were interested in the success of this great governmental task, the accomplishment of which is a test of the capacity of the Filipino people.

On account of the enumeration, many questions as to territorial jurisdiction between provinces, and even between municipalities and barrios arose. However, all of them were settled by directing that the enumeration should be made by the enumerator or enumerators originally assigned to the places in question, without prejudice to the right of the contending parties to appeal to the proper administrative authorities for appropriate action, it being clearly understood that the enumeration made did not at all affect any jurisdictional right concerning the places in controversy.

In the enumeration of rural districts, some difficulties were encountered, especially in those far distant from the townsites, where houses lie at a distance of 6 or 7 miles from each other, and there are no roads or trails connecting them. There the enumerators had to go around many times in a locality in order to avoid omission. Instances also happened where there were no persons who could give them the exact location of the houses in a certain place, and where they found it necessary to travel through their whole district, which caused delay in their work and suffering on their part. In these difficult situations they were upheld by their devotion to duty and by the realization that they were cooperating in a work of national importance in assisting in the taking of the census.

The creation of new barrios, not existing when the Census of 1903 was taken, and the lack of information or visible boundaries marking the territorial jurisdiction of each municipality and barrio constituted a great obstacle to the formation of the enumeration districts. The lists of barrios secured from the offices of the provincial governments, and some available maps, were made the basis, though defective, for carrying on this work. In many cases it was necessary for the census inspectors to obtain information from the municipal authorities about the existing barrios and their respective limits in order to organize the final enumeration districts.

In the organization and distribution of the enumeration districts, the lack of maps with details relative to the location of barrios and other inhabited places, and their approximate population and the rivers, roads, and trails connecting one barrio with another, caused also no little difficulty. The rivers and roads would have been the best boundaries of these districts to prevent one enumerator from getting into another's district. However, thanks to the census notices fixed on the walls of the houses enumerated, duplications were successfully avoided.

The taking of the census having coincided with the harvesting of rice, the enumeration was somewhat retarded, as all or most of the heads of families and other adults were absent from their homes and did not return until after the completion of the work, while others came back at midnight. It was, therefore, not always possible for a great number of enumerators to comply with the requirements of Proclamation No. 21 by the Governor-General, directing to enumerate not less than 50 persons per day in urban districts and 30 in rural districts. In many cases the enumeration had to be made at night, the only time when the enumerators could meet the people in their houses.

The main difficulty in the organization of urban districts lay in estimating the number of inhabitants of a place or locality. In the provinces, where people do not frequently change their residence, and where the approximate number of inhabitants in each place may be obtained from the municipal officials, this estimate was made quite easily. But in a cosmopolitan, bustling city like Manila, where a considerable percentage of the population live in rented houses, which are vacated with the same frequency as they are occupied; where immigrants constantly arrive; and where the rich as well as the poor come to fix their abodes; in a city, in short, where the population undergoes a remarkable change of number, it was in most cases difficult to estimate the number of the inhabitants of a given place. To overcome this difficulty, the inspectors had to exercise a personal and close supervision over the work of the enumerators, which was done to our satisfaction. And in order to prevent omissions and duplications, this office had to publish in the Manila press information about the provisions of the Census Law which provide for the punishment of any person neglecting to give notice of his not being enumerated; or of his knowledge or belief that he himself or any other person or persons were enumerated twice, or concealing the fact of his or any other person's or persons' prior enumeration from any enumerator on the point of enumerating a second time. As a result of this publicity, we received various communications asking for enumeration, which request was immediately attended to by the enumerators. The same was done in the nearby provinces with satisfactory results.

Some of the difficulties experienced in Zamboanga were due to the great distances between the houses and the lack of suitable means of communication. This is especially true with the Su-

banos. They are accustomed to build their houses on the mountain tops, a practice which made it necessary for the enumerators to climb to those places in order to do enumeration work. Another difficulty was due to the ignorance of some people, Mohammedans and pagans especially, who refused to furnish the data courteously requested by the enumerators, believing that the purpose of taking the census was to impose more taxes on them. Some enumerators were charged with carrying poison with them and consequently were refused entrance into the houses. In such cases, the help of the authorities had to be requested.

The enumeration of the Negritos scattered in the mountains of Zambales, Bataan, and Pampanga, on the slopes of Mount Isarog (Ambos Camarines), in the hilly parts of Iloilo, Capiz, and Antique, and in other mountainous regions of the Islands caused no less difficulty, due to their nomadic mode of living. Special enumerators were appointed. These had to travel much throughout their districts to locate the Negritos indicated by no geographical description, due to the absence of a permanent residence. It happened not unfrequently that they tried to avoid meeting the enumerators, and it was sometimes necessary for the enumerators to await the celebration of feasts where the people gather, in order to do enumeration work.

The same may be said regarding the enumeration of the Manguianes in Mindoro Province. Due to their shyness and the difficulty experienced by the enumerators in reaching their settlements, there being no roads or trails, or if there were any, they are in the heart of the mountains, along dangerous precipices, the census inspectors had to make extended trips in order to help the enumerators in their work by advising and convincing the Manguianes of the purpose of the enumeration and its advantages. In fact, Inspector Cipriano Liboro says in his report:

All the Manguianes, both young and old, informed me that they could not remember any occasion of having been enumerated. The only ones who told me that they were enumerated fifteen years ago are the Manguianes living on the sea coast.

The statements made by the inspectors of the Mountain Province will show how the census work in these districts was carried on.

Inspector Tomas Blanco of the subprovince of Kalinga has the following to say:

In many cases, the population of a settlement or barrio was too big to make one enumeration district and too small to make two districts. It was necessary in several cases to unite one, two or three barrios or settlements to constitute one enumeration district. This caused us a great deal of inconvenience in the division of the territory comprised in each district, as it was very hard to know where one district began and where it ended, because the people live in small groups. Not unfrequently one sees four or five houses in one group, and each group of houses is separated from the others by mountains, rivers, brooks, etc., which makes travel extremely difficult. With this difficulty, there was a possibility of omission or duplication of enumeration, and to overcome this, it was necessary to make a list of the names of each group of houses included in each enumeration district, with the approximate number of inhabitants in each group, and this list was handed to the enumerator, for his guidance. And with the assistance of the auxiliary enumerator, who was himself a native and one of the influential men in the locality, there was practically no confusion in the taking of the census. There were no questions of jurisdictional limits of any importance.

Our next difficulty was to get the number of qualified persons for enumerators, for we needed 45 men for this purpose and there were only about 10 or 15 available in Kalinga. We had to take the rest from the lowland provinces. This difficulty was aggravated by the fact that when the time of the taking of the census drew near, many of those who had expressed a willingness to come failed to do so and we had to hustle to get others. Many of those who came from the coast-provinces, on account of their inability to speak the dialect here, had considerable difficulty in understanding the people and in making themselves understood by them. To minimize as much as possible the difficulty thus encountered, we held classes of instruction here at Lubuagan for both the regular and auxiliary enumerators, and efforts were made to solve all the difficulties that they might encounter in the actual work of enumeration. Here the auxiliary enumerators played an important part. This being the first census of its kind taken in Kalinga, the natives were very suspicious as to the motives of the census, and many of them actually expressed the belief that the census work was only a preliminary step toward the imposition of the land tax, etc. (a thing which they do not want, because the education of the people is not yet sufficiently advanced to realize the advantages and benefit of the same). The people, through the special agents of the Census, the auxiliary enumerators, the settlement presidents, the *bacnang* (well-to-do), and others, received as thorough an explanation as we could give them regarding the census work, its purpose, necessity, and importance. The Census Law, regulations, etc., were explained to them. I told the people that when the enumeration work began, they would greatly facilitate the work if they would be kindly enough to try and

The recent epidemic disease commonly known as influenza; the fact that the taking of the census coincided with the harvesting of the crops; and the deficient and costly transportation have been the chief difficulties encountered in the enumeration work throughout the province.

Due to the aforesaid disease, many houses were vacated and abandoned. This was especially true in the barrios and other isolated places. Members of families surviving the disease then raging moved to other houses, to other towns, and even to other provinces. Because of the death of many family heads, it was rather hard for the enumerators to obtain certain data required by schedules Nos. 1 and 2.

The period for harvesting rice in this province covers the months of January and February of each year, and during the month fixed for the taking of the census, a considerable number of families were living in the rice fields, with nobody left in their houses in town to give the information required by the enumerators. In many instances, the enumerators had to go back to the same house three or four times to make the enumeration, usually at midnight, when the owners had returned. In many towns, the provincial governor had instructed the municipal presidents to announce by proclamation by the town crier the days on which the enumerators for each barrio would gather data, thus avoiding the absence of family heads from their homes.

As this region is remarkably mountainous, with little population, generally scattered in distant barrios connected only by trails, the travel of the enumerators was always difficult and expensive. Some of them who had hired horses during the month, at one peso and fifty centavos per day, complained of the small compensation granted them.

The enumerators assigned to the mountain regions had to provide themselves with thick clothing to protect themselves from the cold weather. Some enumerators who became ill after receiving census instructions and after beginning enumeration on January 1st, were replaced by substitute and auxiliary enumerators. To minimize these difficulties, we adopted the policy of employing regular and substitute enumerators of both sexes, nearly one-half being females. This was possible because, besides the existence in this province of sufficiently educated women to do the census work of 1918, their coöperation along this line was successful in the Census of 1903. We endeavored to assign the female enumerators as much as possible to the central districts, inhabited by the Christian population.

A great number of regular enumerators filled out their schedules in English, and only a few of them in Spanish. This was due to the personnel having been selected from among teachers and students of the public schools, with the exception of some who had been deemed properly qualified to do the census work on account of their experience in the former census, or their education and influence in the locality.

A thing worthy of mention noted during the enumeration of the Ilongot people is that the enumerators were able to discharge

their duties unmolested in the *rancherías* visited, with the exception of those of Tamsi and Gumyad, where slight opposition was offered at the beginning. However, upon learning the real object of the taking of the census, these Ilongots willingly submitted to enumeration, answering all questions asked by the enumerators.

Regarding the difficulties experienced in the Department of Mindanao and Sulu, Inspector Guingona, in his report, says, among other things:

The appointment of enumerators in remote regions inhabited by Moros and pagans met with difficulty in shape of the lack of adequate personnel. It was necessary that the enumerator should possess a knowledge of the dialect, the customs of the people and the conditions of the locality, and command the confidence of the people, or have ability to inspire confidence, in the regions where he had to work. No Moros or pagans could be appointed, as very few of them were prepared to do the work; and Christians or inhabitants of the coast could not be appointed on account of the objections above cited. However, these difficulties were overcome by the appointment of members of the Constabulary stationed in the regions to be enumerated and by the appointment of teachers. Arrangements were made so that a man of the locality accompanied the enumerators and served as assistant or interpreter at the same time. Some *datus* were also appointed as special agents and their coöperation was secured in this manner.

Inspector Calvin B. Carter of Cotabato reports:

In forming enumeration districts in the province, the greatest difficulty encountered was the lack of definite knowledge of the territory to be covered. Except in the one organized municipality there was no delineation of barrios, and in many cases municipal district boundaries were more or less indefinitely located. It was necessary to consider the topography of the country in relation to difficulty of travel rather than estimated population. Fortunately, many of the government officials in Cotabato had seen long service in the province and had a fairly accurate knowledge of the territory and people.

Another serious problem was the Moro *datu's* extreme jealousy of his neighboring chief. If part of one chief's territory was included in the enumeration district with that of another chief, he became suspicious immediately, thinking that he was losing some of his followers and that the census districts were permanent government divisions or organizations of territory. This difficulty could not be overcome in the original formation of districts as it would have necessitated many more enumeration districts, than allotted to us according to population. Much patient explaining, preliminary to beginning actual count, reduced trouble from this source to the minimum, although there still exists ill feeling and suspicion in some sections. These cases could have

been avoided had more assistant enumerators been used and one acceptable to each chief been selected for his limited territory, but this again would have increased the census personnel and expense out of proportion to the good derived. One instance will suffice as an example of this petty jealousy which forms so great a part of the Moro character. *Datu* Alimpang was appointed assistant enumerator for District No. 6, Buldung, and in company with the enumerator for that district visited the houses in order. Sultan Agaos of the northern part of Bundan became highly offended over him even though it had been explained to Agaos that it would be necessary, upon beginning the enumeration, to perform the work in the most expeditious manner to avoid unnecessary expense and hardship. This chief has not yet been convinced that Alimpang did not purposely insult him or try to seduce some of his followers. Agaos was asked the name and location of all barrios under his jurisdiction and through spite failed to give the information regarding one distant barrio. After completion of the enumeration, one of the residents of this barrio notified the provincial governor that he had not been enumerated. It was necessary for the enumerator to travel from Parang a distance of fifty miles to count the sixteen people in this place.

Due to the small Christian population of Cotabato Province, and the fact that nearly all of this population of sufficient intelligence to fill out a census schedule have steady employment at lucrative salaries, it was impossible to secure more than five enumerators who were not Government employees, the remainder being school teachers and Constabulary soldiers. These men, specially the latter, needed most careful instruction and supervision. In fact, the task seemed almost hopeless at times. The enumerators were divided into groups of from five to nine and placed under the immediate direction of a special agent who was made responsible for their instruction and the proper performance of their duties. They then reported to their respective special agents for further instruction and were sent to their districts to acquaint the people with the coming census and the objects thereof, and to learn as much as possible of the territory they were to cover. The assistant enumerators were native Mohammedan residents of the districts to which they were assigned, who assisted in the preliminary work. All municipal district presidents and important chiefs were called to the provincial capital where they were informed of the objects of the census and their assistance requested. Upon return to their homes these called a meeting of the municipal district councilmen and instructed them to spread the information throughout the province. By these methods, it is believed that every single inhabitant knew of the census and its objects, and few cases arose where enumerators' questions were looked upon with suspicion. In such cases the special agent or inspector was notified and proceeded at once to overcome such suspicion by careful explanation. Only one prosecution under the Census Law was necessary.

After deducting from the small force of Constabulary the men appointed as enumerators, and the number of men absolutely necessary for guarding the various stations and other imperative work, it was impossible to furnish escorts for enumerators even in doubtful parts of the province, among the pagan people. Therefore, it is surprising that no single enumerator suffered abuse or death since there can be no doubt that many of them risked their lives by going alone in a country practically unexplored. This can only be attributed to the thorough preliminary work.

The undersigned, he continues, as provincial governor wishes to speak here of the inestimable value to the province of the census work aside from the valuable statistical data obtained. Enumerators were able to talk and become friendly with people who had never before come in contact with a Government official, and also gained a knowledge of the practically unexplored portions of the province which will be of great use to Government here. The census of Cotabato Province in 1903 was only an estimate because of the unsettled conditions at that time, so that no accurate comparison with the present census is possible. Some 3,450 Christian Filipinos including men, women, and children have immigrated to the province and settled on homesteads since 1913. Prior to that date immigration was negligible.

Likewise, the inspectors of Sulu have narrated their experience. Inspector N. C. Page states:

The enumerators themselves, nearly all of whom were Filipino teachers, and the auxiliary enumerators, all of whom were Moros, acquitted themselves with great credit. Theirs was a difficult task, and they did it well, by the use of tact and good judgment, and with the least possible friction, and with no loss of life or brawls.

According to the same inspector, the enumeration of his district is as accurate as possible, considering the character of the people and their suspicious nature. He says that a Moro will not tell one his own name or that of his wife, if the latter is present, unless circumstances make it unavoidable or imperative.

Inspector O. H. Newton says:

The main difficulty in enumerating the Moro people is the reluctance on the part of the Moro people to tell anything regarding their family history. A Moro does not like to tell his name. If you ask a Moro his name, should he have companions, he will in turn ask any question about their deceased relatives, therefore, we probably did not get the correct mortality of 1918. The Census of 1903 of Sulu was only an estimate, therefore, and no comparison can be made between 1903 and 1918.

Inspector P. D. Rogers made the following statement:

Great difficulty was experienced in enumerating the people. First, there was the question of the auxiliary enumerators. The chiefs who were not auxiliary enumerators objected to have their people enumerated, as they thought that the auxiliary enumerators would have the right to claim all the people enumerated by them. Also many wild rumors sprang up all over the province as to the causes of the enumeration, the following being some of the principal rumors afloat as to the cause of the enumeration

1. That the Government wanted to get a list of all the people, so that all the men could be listed and forced to go to war.
2. That their religion would be changed.
3. That all the women would be required to wear clothes worn by the Christians.
4. That all the babies would be branded on the posterior the same as cattle.

In this connection, Inspector T. W. Coverston of Lanao submitted the following in his report:

The greatest difficulty encountered in organization for census work was found in the lack of personnel sufficiently educated and at the same time possessing a necessary knowledge of local conditions and customs to enable them to work harmoniously among the Maranaos, who were very suspicious of our reasons for taking the census. Our activities in the past have been based upon estimates of the population of the various municipal district the limits of which were sufficiently well defined to avoid confusion or to permit of questions of territorial jurisdiction. When a municipal district was divided into two or more enumeration districts each district was given a certain part of the district divided by barrios.

Several months before the taking of the census a campaign was organized, the object of which was to inform the people in all parts of the province of the coming census and of the reasons for taking same. It was believed by the inspectors that we would not be successful in taking the census if various and conflicting reasons for the census were given. In order that we might all be in harmony, a circular letter in the local dialect was sent to all municipal district presidents informing them that the census would be taken in order that we might receive our share of the revenues and that the census was not for the purpose of taxation. The same reason was disseminated by all deputy governors and the enumerators, and, as a result, we found but one man who refused to permit his people to be enumerated and he later complied with the request of the enumerator when the deputy governor of that district came to the assistance of the enumerator.

The enumerators, who had to deal with people from all the walks of life, occasionally experienced great difficulty in per-

forming their duty. There were educated people who strenuously objected to being enumerated and whom the courteous remonstrances of the enumerator would only exasperate them still further. Then the enumerator would encounter a man of the rough and boisterous type, who would indulge in bad language and make fun of the census officials and of the questions propounded to him. Occasionally, he would meet with a vain individual who would insist upon putting down all the academic degrees which he possessed or claimed to possess and would endeavor to show off his alleged knowledge by engaging in a learned conversation with the enumerator, which latter, not being in his own house, had to endeavor to make the best of the situation. Sometimes a lady of wealth and rank would consider that she had a right to treat the enumerator with contempt and would make him wait for a considerable time and then give him all sorts of information except what he required, or make him come back day after day.

The Chinese and Japanese were objecting most vigorously to being enumerated during the first days of the taking of the Census, but thanks to the circular letters issued by their respective consuls, upon the request of the undersigned, they at last allowed themselves to be enumerated.

We have only one instance where the census officials had to resort to force to secure compliance with the Census Law, and that was the "Kulay-Kulay case," reported by Inspector Guingona, which resulted in the death of some Moros who had to be shot. The Awkasa family refused to be enumerated and offered armed resistance to the force of the Government, in spite of the persuasion employed to make them change their attitude. The force employed in this case was extremely necessary in order to prevent these recalcitrants not only from doing bodily injury to the provincial inspector and his companions, who had come to enumerate them, but also from disturbing the public peace and order in Sulu. As the Director of the Bureau of Non-Christian Tribes says:

No effort appears to have been spared by Government officials and by both the local chief, Panglima Agga, and the priest or Imam, the latter being the nearest relative of the family. When an individual or group of Joloanos or others of our Moham-medan population make the preparation the Awkasa family is stated to have made, they are practically amok and if the local chief and Imam are unable to bring them back to mental equilibrium, it is absolutely necessary they be taken into custody as otherwise they will inevitably pass to the violent stage of

amok when not only must they themselves be killed but some and perhaps many innocent persons also be wounded and killed.

However, in spite of all the difficulties mentioned, which have been overcome, it is safe to state that the work of taking the census was carried on smoothly, and thanks to the valuable coöperation of the provincial and municipal officials and the influence of the inspectors and their assistants in particular, and to the hearty coöperation of the people in general, as well as the zeal and faithfulness of the enumerators, the enumeration of the inhabitants of the Islands was effected in a very satisfactory manner.

The census records disclose two instances where a reënumeration was made,—the first was the case of enumerator Macario Gala of Candelaria, Tayabas, whose house was burned down with the Census papers in it; and the second, that of enumerator Agaton Peñaflorida of Buhi, Ambos Camarines, whose port-folios containing census papers were lost while he was crossing a lake in a sail-boat.

Generally, the enumeration work was done within the 30 days period prescribed in the Governor-General's proclamation. This period, however, had to be extended in some provinces, such as Cagayan, Isabela, Nueva Vizcaya, Ilocos Sur, Ilocos Norte, Catanduanes, Batangas, Marinduque, Bohol, Mountain Province, Oriental Negros, Occidental Negros, Capiz, and Palawan, and in the Department of Mindanao and Sulu, owing in part to the difficulties of communication and transportation, but largely to the influenza epidemic then raging in the Islands and the quarantine in some barrios attacked by smallpox.

We have spoken extensively of the Census organization, as we are convinced that a good organization insures success in this kind of work. We tried to follow substantially the American plan adopted for the taking of the Census of 1903, as we were sure that it was the most adequate means of obtaining complete and exact data on the various subjects embraced in the census schedules under the provisions of the Census Act. Yet the description of the 1918 Census organization would, without doubt, appear incomplete if we did not give some account of the organization of the central office, which was temporarily established to coördinate the data obtained by the enumerators and compute and arrange the same in the form of statistical tables for publication. In the Census of 1903, the enumeration work was accomplished in the Philippines, but the compilation of data, the preparation of statistical tables,

tical tables, it was necessary to organize the Divisions of Compilation.

For the use of these divisions, several forms were prepared, on which the compilers entered in figures the data appearing on the schedules of the numerators, either grouping in a column of the form the data contained in one column of a schedule, or combining those of two or more columns of the schedules, as required by the character of the form. In this manner, the compilers grouped entries of the same kind under each of the questions appearing in the schedules; the totals thus obtained were then computed by the Division of Computation, and the final results were passed on to the various Statistical Sections for the preparation of the corresponding tables, which contain, in concise form, all information needed for the consideration of measures, whether of a legislative, administrative, social, or other character, conducive to the improvement of the condition of the country, which is the principal purpose of the taking of the Census of 1918.

For the preparation of the personnel which was to take charge of the compilation and statistical work, it was deemed advisable to organize a training department, which was maintained until the schedules returned by the inspectors had been properly arranged and were ready for distribution among the compilers. This work extended over the first two months of 1919.

The compilation divisions began to work at the end of February, when the schedules of the enumerators began to come in; but their work was rather irregular, due in part to the defective system of returning the schedules, and partly to the preparation of new forms of compilation. It can be safely said that the real compilation work began only about the end of May, 1919. Of course, in the beginning of the work of compilation, the compilers newly trained in this work encountered serious difficulties which hindered to some extent the rapid advancement of the compilation. Instructions to compilers for the use of the compilation forms were then prepared. These were given orally to the compilers beginning with the organization of these divisions. But in view of the frequent changes in the office force, due to resignation and other causes, these instructions had to be repeated several times. This increased the work of the chiefs of these divisions, and in order to avoid difficulties and facilitate the work of the compilers, it was deemed advisable to print said instructions which form Bulletin No. 2 of the Census Office.

There are other compilation sections, those for Schools, Social

Conditions, Mortality, Manufactures, Household Industries, and Judiciary, which are at the same time statistical sections, as they compile the data entered in their respective schedules while preparing the statistical tables.

To add up and compute or compare the totals of the data on the various forms filled in by the compilation divisions, with a view to ascertaining the results thereof, it was necessary to organize the division of computation. The personnel of this division consisted of 90 educated young men, properly trained in operating the "Barret," "Burroughs," and "Monroe" adding machines, with 86 of these machines of various makes. If one takes into consideration the fact that the compilation divisions with 400 compilers were able to fill in about 12,000 forms daily, it will be easy to imagine the volume of work done every day by the computation division, which is represented by 7,000 forms, each containing from two to seven columns of figures.

It was not sufficient, however, to have the data compiled by the compilation divisions; it was also necessary to embody in statistical tables the results obtained by the computation division, in accordance with the outlined plan of work prepared for the publication of the Census. Hence, the necessity of organizing the statistical division, which was composed of the most efficient employees of the office, especially trained for this delicate part of our work. This division was subdivided into various sections designated as "Population," "Agriculture," and "Miscellaneous." The latter included the statistical section for Schools, Mortality, Social Conditions, Judiciary, Manufactures, and Household Industries. The Division of Statistics had charge of the preparation of all statistical tables published in the Census, under the direction of its chief, Mr. Braulio Bejasa,¹ and the supervision of the undersigned. In this division there was a tabulating section which had charge of the forms and tables needed by the compilers and statisticians.

There were in the Census Office other divisions, such as the administrative, property, accounting, translating and proof-reading divisions, which performed the duties imposed upon similar divisions in other Government offices.

Inasmuch as this was the first Census Office organized in the Philippines, its activities attracted the attention of the public to such an extent that the Office had the privilege of being inspected by distinguished persons not connected with the Government, and by high Government officials, members of the

¹ On March 1, 1920, he was required to return to the Bureau of Justice when he was appointed assistant attorney.

Legislature, department secretaries, the President of the Senate, the Speaker of the House of Representatives, and the Governor-General.

Certain pessimists expressed the fear that the Filipinos could not make a census of their own, because either the organization would be deficient or the personnel incompetent. Instead of discouraging the Census officials and employees, this only made them more enthusiastic and determined in the performance of their duties.

The Committee on Appropriations of the Upper House of the Legislature contributed to a certain extent to those pessimistic opinions when it submitted an amendment to the Appropriation Bill of 1920, as approved by the Lower House, to the effect that the appropriations for the Census should be made in the form of an itemized statement of expenditures, thus disregarding the temporary character of the office and the many unforeseen contingencies sure to arise in it. This proposed amendment provided, further, that employees of the Bureaus of the Government detailed to perform duties in the Census Office should not be paid the additional compensation fixed in their respective appointments unless authorized by the Council of State, which body resolved, at a session held on January 14th, 1920, that a final decision upon said additional compensation would be made as soon as the Census work was completed, taking into consideration the date of completion and the efficiency shown. Although the task seemed difficult, we accepted the responsibility of carrying out the work contemplated in the Census Act, as we considered that an opportunity had been afforded us to serve the interests of our country and to show, through the efforts of thousands of Census officials and employees from all over the Islands, that the Filipinos, as a people, possess that integrity, accuracy, and diligence which make a people capable of managing its public affairs in a successful manner.

In this connection, it will not be amiss to quote some authoritative opinions on the Census organization. The Governor-General, Honorable Francis Burton Harrison, upon inspecting the Census Office on September 19, 1919, accompanied by the President of the Senate, Hon. Manuel L. Quezon, among other things, said:

I have at heart the functions of the Census a year ago and am delighted to find out in the interesting investigation made by President Quezon and myself this morning that the stupendous work of the census is nearing its prompt termination.

We want to congratulate President Villamor, his assistants,

and subordinates for the spirit they have shown in carrying on the census work and for the patriotism and enthusiasm they have in their hearts, all of which go to demonstrate the ability of the Filipino people to the American public and to the American Congress.

The Speaker of the House of Representatives, Hon. Sergio Osmeña, on the occasion of the inspection of the Census Office by himself, accompanied by members of the Philippine Legislature, on the 11th of November, 1919, delivered this encouraging speech :

It has been gratifying for my colleagues of the Legislature and myself to have been afforded this opportunity to examine the various divisions of the Census Office. You are not splendidly housed; this being only a temporary office, it has not been possible to provide very good premises for it, and therefore we are glad to see that efforts have been made to arrange the departments so that the employees may do their work in an orderly and comfortable manner. But, as the saying goes, even under the nipa roof of a humble bamboo house great things may be accomplished.

We, the members of the Legislature here present, are firmly convinced that in this building—which, perhaps, witnessed important events in the past—you will show Filipino capacity once more, and that the confidence we reposed in you when we placed this work in your hands has not been bestowed in vain.

For the first time the Filipinos are called upon to do themselves this work, which is so important for the country. Since men first began to live in communities, there has been a necessity of taking some sort of census. The tribal chiefs of old had to find out the number of their subjects for the purpose of ascertaining the number of individuals to be taxed. They also had to know the effective war strength of the tribe, that is, the number of able-bodied men available for armed service. In a modern census, much more than that is needed. We are not taking this Census for the mere purpose of obtaining the information referred to, which is perhaps of little use, but to secure complete data which will, as the Director of the Census rightly says, be a graphic representation of our own situation, a living image of the present life of our country, our resources, our land, our territory and its population, the distribution of that population, our mode of living, our education, our vices, our virtues, in one word, the whole substance of our people. All that work, that image, the preparation of which has been entrusted to you, must be exact. Just now, certain Government offices have to come to get data from the office of the Census. In our campaign in America we availed ourselves of the Census to get information, for example, on educational matters, in order to supply the demands of the leaders of Congress. Therefore, we who have come here to pay a visit, cannot say anything but that the work now being done here is highly important.

I wish to say something else. There are problems that the country will be confronted with and which will need your assistance, such as, for example, the increase of population. It is our duty to see how the population increases. We are a comparatively numerous people. There are in other countries of the earth peoples not so numerous as we are, who, nevertheless, live and are respected. But we will not confine ourselves to that; we want facts about the growth of our population, and one of the things we have learned today in this building is that, in spite of the past epidemics, we are going ahead, and that our death rate in 1918 was less than that of 1917, and much less than that of 1903.

There are other very important facts which I am sure will be confirmed by the Census. For example: One of the main factors for a really stable government is an even distribution of property, and it is through this office that the world will know the great number of small property holders of the Philippines who constitute the foundation of our orderly and peaceful life.

In conclusion, I may say that much is expected of the census you are now taking. This is your work, and I am sure, and the members of the Legislature are sure, that it will be done by you with the utmost efficacy. We are anxiously awaiting the publication of your work, and when our men and the men of other countries see it, they will say that you have done not only a useful, but a meritorious work.

The Director of the Census of the United States, Honorable Samuel L. Rogers, in his communication to the undersigned, of January 20, 1920, says: "The report submitted by you to the Governor-General on September 11th, 1919, is very interesting, and I congratulate you upon the good organization you have established. I look forward with a good deal of interest to receiving copies of the census reports which you state will include the provincial maps and descriptive matter as well as the statistical tables."

As has been stated elsewhere in this report, the work of the Census Office was greatly handicapped by lack of preparation on the part of the employees, who had to be trained before they could render efficient service. The experience gained by many Filipinos in this kind of work should be utilized for the benefit of both the Government and the people, and I earnestly recommend that this office be made permanent.

In the great majority of advanced nations there is a central office of statistics charged with the collection, compilation and periodical publication of information relative to population, national wealth, and progress. The taking, usually decennial, of a census through the organization of a temporary office is objectionable from the viewpoint of its high cost and of the

difficulties that in many cases cannot be overcome, because the census work thus accomplished is necessarily done hastily. Furthermore, the decennial census, once finished, leaves an immense lacune, shrouded in darkness, which extends over the entire decade preceding it, and there is no human power capable of forming statistics for that period, where dimness and chaos reign supreme. On the other hand, the leaving of the statistical work to the scattered and isolated efforts of the various Government offices now publishing statistical information would result in confusion, perplexity, and dissatisfaction, and would not respond to the requirements of methodization, integration, and synthesis prescribed by science for the preparation of all national statistics.

Before we consider the results of the Census, I deem it advisable to mention the division of the work among the Director and his Assistants, so far as the analytical examination or descriptive part of the statistical tables compiled from the census schedules is concerned. While the undersigned supervised the preparation of all the statistical tables and had charge of the description of the schedule on population, the other schedules were assigned to the Assistant Directors for examination and comment, as follows: to Mr. F. Buencamino, Sr., the schedule of agriculture; that of schools, to Dr. A. Albert; that of mortality, to Dr. L. Ma. Guerrero; and the schedules of social conditions, manufacture, and household industry, to Mr. E. de los Santos. This arrangement, however, did not prevent the Director and his Assistants from preparing other articles. For example, Mr. F. Buencamino, Sr., wrote an article on the Banks and the undersigned a monograph on criminality, both of which are included in Volume IV, while Dr. L. Ma. Guerrero prepared an article on medicinal plants which will be found in Volume III.

Special mention should be made of Dr. Otley Beyer, Associate Professor of Anthropology of the University of the Philippines, who prepared a paper on the non-Christian tribes which will be considered later; Mr. Francisco Agcaoili, a chemist of the Bureau of Science, who wrote on the food value of the most important Philippine products; Reverend Father José Coronas, the meteorologist of the Weather Bureau, who prepared a report of the Climate and Weather of the Philippines, and, lastly, Mr. Rafael Medina, Assistant Director of the Bureau of Forestry, who wrote an article on the forests of the Philippines. These gentlemen had no official connection with the Census Office and deserve our most profound gratitude for their valuable contributions.

The attention of the reader is called to the Atlas of the Philippines or provincial maps published in this volume of the Census. They were prepared especially for the Census, at the request of the undersigned, by Mr. John Bach, the able cartographer of the Bureau of Coast and Geodetic Survey, who used for this purpose, among other sources of information, the data recently collected by the Census officials. Every map of the series is a new production in the sense that it is a complete compilation of all information existing on the date of publication.

The process of compilation was as follows:

The boundaries of the province were determined and a polyconic projection was constructed for the area in question, using the maximum scale permitted by the size of the page. All shore lines were reduced by pantograph from Coast and Geodetic Survey charts. Interior provincial boundaries were plotted from surveys by the Bureau of Lands, from provisions of the Administrative Code, from Executive Orders or, in a few doubtful cases, from information obtained from local officials. In many inaccessible regions, the available information is not adequate for the exact delimitation of provincial boundaries, but all sources were exhausted in the study of this question and it can be confidently asserted that the boundaries are far superior to those shown on previous maps.

Interior details were filled from various sources. In regions covered by maps of the Coast and Geodetic Survey, these were used as the base for reduction since they themselves contain a digest of all previous information, including more especially the detailed topographic surveys by the United States Army.

In other regions various sources of information were utilized, the greatest weight being assigned to road traverses by the Bureau of Lands and Public Works. These traverses fixed the location of towns, and minor features were adjusted to fit in with these.

For these interior features all maps having any degree of authority were freely used. In Mindanao and the Mountain Province, unpublished blueprints from Constabulary sources furnished a large part of the data. Sixty-eight blueprints of the Census Office compiled from data furnished by inspectors, were used to locate many hitherto unplaced barrios. After all publications and authentic blueprints had been exhausted, recourse was had to sketch maps by municipal presidents. Between 1909 and 1916, the Coast and Geodetic Survey collected sketches of all municipalities from the presidents thereof. Most of these sketches are of no value for absolute locations, but they

to give life to the maps; the texts used as reference for the same consisted of sixty-two text-books on Philippine geography, twenty-seven text-books on Philippine history, and others.

The work of the learned Jesuit Father José Coronas on the Climate and Weather of the Philippines is of great practical value. The report published in Volume I of the Census as deduced from the period 1903 to 1918, is original and contains very valuable information not only on the general conditions of our climate, but also on exceptional weather conditions experienced during that period of 16 years. The data given in this report will be of exceptional interest to the public in general and most particularly to those who are engaged in agriculture or in commerce in the Philippines. Never before has any report been published on the climate of the Philippines with such a wealth of data and referring to so many stations distributed throughout the Archipelago.

In the introductory remarks of this report, a short account is given of the Climatological and Weather Service of the Philippines as it existed at the end of 1918. There were in all, 60 official stations and 53 voluntary or coöperative stations throughout the Archipelago. Weather telegrams are being received twice daily from about 50 stations in the Philippines, one station in Guam, ten stations in Japan, five stations in Formosa, five on the China coast and three in Indo-China. A weather map of the Far East based on these telegraphic reports is being prepared daily at the Manila Observatory since 1907, and posted in several public places in Manila. There cannot be any doubt that the preparation of this weather map has helped considerably to improve the forecasting service of the Philippine Weather Bureau, especially as regards the forecasting of typhoons.

Special effort has been made in this report to present in a most comprehensive manner the greatest possible amount of information referring to the distribution of rainfall in the Philippines, as this is considered the most important element of our climate. In fact, it is the cause of the different types of climate which exist in the Philippines within a characteristically tropical climate. A very elaborate and interesting climate and rainfall map and a good number of other graphic illustrations accompany this part of the report. The different types of monthly distribution of rainfall graphically represented in three plates will be of the greatest interest to all. A short account is also given of the principal floods and periods of drought experienced in the Philippines since 1903.

The prevalence of typhoons in the Philippines has always been a matter of the utmost importance to any one interested in our agricultural or commercial activities. The part of the report referring to this subject will prove very interesting. The matter is presented in a new way which will appeal to every one. The author considers first the remarkable typhoons which have actually struck the Philippines during the chosen period of 16 years, and distributes them by provinces and subprovinces; then he takes up the ordinary typhoons of less importance and regular depressions that have traversed the Archipelago, distributing them also by provinces; and finally he gives the number of those typhoons which influenced clearly the weather of the Philippines without touching the Archipelago. Typhoons of the Far East which on account of their distance from our Islands or of their small dimensions had hardly any or little influence on our weather are disregarded in this report. This is considered a very good idea, because what people desire to know is not precisely the frequency of depressions and typhoons in the whole Far East, but the frequency of the typhoons which are apt to work havoc in the Philippines, and also of those which exert a great influence on our weather conditions.

The article of Mr. Francisco Agcaoili, chief food analyst of the Bureau of Science, on "The Value of Food" is an excellent one and contains practical information regarding the nutritive value of our common foods. The selection of foods is of paramount importance to maintain health and growth. It is needless to say that an improperly nourished body can neither properly function nor efficiently keep up the routine requirement of the present-day strenuous life. The article prepared by Mr. Agcaoili not only shows those common foods which may be obtained at reasonable prices and yet have a high nutritive value, but also demonstrates that by proper selection of a daily diet and by not overeating, more particularly not overcrowding the system with a large quantity of one staple food, a healthy body is obtained; a clear mind is ever ready to meet the daily task; and waste and luxury are brought to a minimum.

The importance of the catalogue of medicinal plants prepared by Dr. Leon Ma. Guerrero is self evident. A flora so abundant in endemic species should necessarily contain many plants of medicinal and poisonous properties which have a great therapeutic future and which, if studied pharmacologically, could form the original subjects of a genuinely Philippine Pharmacopoeia. From time immemorial, our quacks have been using many of

our plants for the treatment of the diseases from which the inhabitants of our vast Archipelago ordinarily suffer. Quite a few of our people are opposed to the use of *pharmacy drugs*, because they are laboring under the queer prejudice that such drugs exhaust the force of the patient instead of delivering him from the disease which threatens his existence.

But it must be admitted that, notwithstanding the fact that the knowledge of the quack is extremely empirical and crude with respect to vegetable pharmacology, he knows how to make a timely application of certain matters the action of which in the sick organism is of undisputable and sure efficacy, and sometimes even specific. He displays great ability in the use of purgatives, emetics, febrifuges, vermifuges, remedies for heart disease, dysentery, and diarrhea, etc., which he finds abundantly in our medical flora. He possesses marvelous medicines for healing wounds, and the antidotes administered by quacks have often saved the lives of poisoned persons. On the other hand, many people are not unaware of the deadly effects of many of the plants which they administer judiciously enough to have a curative effect, owing to the simplicity of their pharmaceutical methods, coupled with their poor knowledge of the nature of the beneficent principle of the drug and of the means of extracting the same. The reader interested in this matter is referred to the catalogue of medicinal plants inserted in the proper chapter of Volume III of the present Census.

The report of Mr. Medina on Philippine forests, published in Volume III, contains data of great interest not only to lumbermen, but also to the public in general. More than half of the total area of the Archipelago is covered with forest, nearly one-ninth of which consists of commercial timber. From the investigations and estimates made by the Bureau of Forestry, it appears that the forests of the Philippine Islands contain approximately 200,000,000,000 board feet of commercial timber, which, at the average price of ₱3.50 per thousand board feet, is valued at ₱700,000,000. In the report of Mr. Medina, all kinds of lumber for building construction and furniture, as well as secondary forest products, are described, and an idea is given of the various uses made of the same. It also contains data on the durability and strength of Philippine lumber, and other useful informations on forestry matters.

From the standpoint of statistics, the taking of the Census of 1918 may be considered a success, in the same degree at least as the Census of 1903. This is not intended to mean, however,

that there were no errors on the part of the enumerators. Some of them, of course, made mistakes in making up the schedules, but these mistakes were easily corrected, either by the Census inspectors who revised the schedules before they were turned into the central office, or by the compilation divisions in accordance with rules prescribed by the undersigned,—thus avoiding the necessity of repeating the enumeration work.

To carry out all the Census work, 17,275 persons were employed, 192 of which were females, 12 Americans, 1 Japanese, and 4 Chinese. These figures do not include the employes of the central office, which numbered altogether 887. It may be safely stated, therefore, that the present census was made entirely by Filipinos.

On the Census Day, there were 45 organized provinces, 10 subprovinces, 829 municipalities, 88 townships, 2 cities, 213 municipal districts, and 16,307 barrios. The then Department of Mindanao and Sulu comprised the Provinces of Agusan, Bukidnon, Cotabato, Davao, Lanao, Sulu, and Zamboanga.

The total population of the Philippine Islands is 10,350,730, of which 9,463,731 are Christians, while 886,999 are recorded as non-Christians. Comparing these figures with those of the 1903 Census, it will appear that the total population has increased 35.6 per cent, and while the Christian population shows an increase of 35.4 per cent, the non-Christians have increased 36.9 per cent.

The Director of the Census of 1903, in describing the characteristics of the Christian Filipinos, says among other things:

It may be said that the Filipinos are generally subordinate to lawful authority, that, under competent officers, they make excellent soldiers, and will, in the course of time, it is believed, make good citizens. In fact, it is not too much to expect that, under the guidance of a free, just, and generous Government, the establishment of more rapid and frequent means of communication, whereby they can be brought into more frequent contact with each other, and, with the general spread of education, the tribal distinctions which now exist will gradually disappear and the Filipinos will become a numerous and homogeneous, English-speaking race, exceeding in intelligence and capacity all other people of the Tropics.

Certainly, the Filipinos have demonstrated during the American régime that they are good citizens, love peace and order, and profess high ideals of progress and justice.

The increasing transportation facilities are doing untold good to the people of the Islands. People from various parts

of the country are often seen to commingle and enjoy themselves without in the least taking into account their place of origin. They consider themselves as Filipinos, and are proud to bear this distinctive national appellation. The people are becoming united as they become better acquainted with themselves and each other and realize their common interest and ethnic affinities, which are a potent factor in a united and strong Filipino people. The sectional pride of the people is subordinate to their national consciousness. In order to have the proper internal improvements, sectional or local pride is necessary, but far from being a disturbing element, it is, as in the United States and other enlightened countries, a powerful stimulus for friendly and healthy competition to accomplish the best results in any given line of work.

The forces of democracy and equality have been at work in the Islands since the time of Burgos and even long before. Now the Filipino watches that his rights as a free citizen are not trampled upon and that he does not infringe upon those of other people. It is true that he still falls short of some of his rights and duties, but what he has accomplished makes us hope that he will continue to advance towards his goal, self-perfection. That the great majority of the people are thrifty, ambitious, and hardworking, is a fact substantiated by the census data gathered from the schedules of Population, Agriculture, Manufacture, and Household Industries. Were the Philippines inhabited by a superstitious people depending only upon the blessing of the saints, there would not have been a sufficient foundation for the work of the United States in these Islands; and the unparalleled progress of the Filipinos under the American régime, which has called forth the admiration of the entire world, would not have been realized in such a short period. It is true that there are superstitions among the Filipinos, but what country does not have superstitions? Here they constitute an exception to the rule. The Filipinos in general know that God helps only those who know how to help themselves, and that they have to work in order to succeed in the struggle for life. Let it be said that those Filipino customs—acquired by inheritance or education—which isolate the individual and check him in his progress, have already been modified, and others will undoubtedly be modified as the spirit of investigation and criticism which characterizes the present age, discovers other customs well in accord with the ideals of improvement and perfection which inspire progressive nations.

The description of the non-Christian tribes submitted by Dr. H. O. Beyer, and published in Volume II, is interesting and contains valuable information for the study of the wild peoples of the Philippines in connection with schedules No. 8 and No. 9 of the Census. He classifies the non-Christians into three groups, designating them by the names of Pigmies, Indonesians, and Malays.

The author believes that the Philippine pigmies composing the first group represent the remnants not merely of one, but of three quite distinct aboriginal races, the first of which is the true Negritos, or dwarf men of undoubted Negro affinities; the second a straight-haired dwarf type of strong Mongol affinities which may perhaps be termed the Proto-Malay; and the third a hairy dwarf man intermediate between the aboriginal Australian and the Ainu of Northern Japan, which he calls the Australoid-Ainu. According to the author, the pigmy races have been considered as the most ancient inhabitants of these Islands, whose presence here is believed to date back to a time when the Philippines formed a part of Asia.

The second group is composed of Indonesians. In later times numerous waves of taller migrating peoples found their way to these shores. These tall immigrants were of two quite distinct racial types. Those who came first presented certain marked affinities to the tall races of southern Asia, and this type is what the author calls the Indonesians.

The third group is composed of the migrating people who came later. They were shorter and more Mongoloid, and for this type the term Malay has come into common use.

The Malay race is divided again into Pagans and Mohammedans. The Pagans, by reason of their mental, social and economic characteristics, are considered semicivilized by the author. They are subdivided into four main cultural groups; namely, the Tingguians, Bontoks, Igorot, and Ifugao,—all dwelling in the mountainous interior of northern Luzon. Comparatively speaking, the culture of the Tingguians has little in common with that of the other three groups, while the Bontok culture represents a relatively low state of type which reaches its higher development among the Ifugao and Igorot.

The Mohammedans are divided into at least seven ethnographic groups, differing more or less in culture and dialect, the members of which live almost exclusively in the Sulu Archipelago, the southern end of the Province of Palawan, and the Provinces of Zamboanga, Cotabato, and Lanao, on the Island of Mindanao. In regard to the culture of these people, the author mentions

traits and characteristics which distinguish the Lanaos and Maguindanaos more or less from other Moro groups. Their culture reveals Indian influence. Their industrial arts and agriculture are more highly developed. The more cultured classes are all literate in their own tongue, the Arabic alphabet being used for writing. They have a number of manuscript books, consisting chiefly of religious works, codes of laws, genealogies of the datus, historical works, books of magic, etc. There are a few printed pamphlets in the Maguindanao language. The social life and beliefs of these groups are interesting to know. The institution of polygamy and many other Mohammedan customs, both good and bad, prevail among the upper classes. The older generation is firmly fixed in these customs, but the young people who are attending the public schools are gradually drawing away from them. Education and continuance of peaceful relations will doubtless lead to ultimate assimilation with the Christian Filipinos.

The Moros profess the Mohammedan religion; they follow the Koran and recognize the authorities of Turkey as supreme in religious matters. From the moral and religious points of view, there are many people who consider the Koran as a good book. The trouble is that in its application, the Imams and Panditas twist the meaning of the passages of the book and thus the people become fanatical and are led away from the truth. We have, for example, the practice of going *juramentado*, in which a Moro desiring to commit suicide is put under moral obligation to "die killing Christians." This has been imposed upon the people by the Panditas and other religious authorities as a commandment of Mohammed. It is a politico-religious custom, the origin of which may be traced to the intolerance and hatred which formerly appeared to have existed between Christians and Moros, and which was made use of by the Panditas to persuade certain Moros to "die killing Christians."

The establishment, however, of civil government in Mindanao-Sulu in 1914, under the able and wise administration of Governor Carpenter, who inaugurated and pursued a policy which reached the hearts of the Mindanao-Sulu people, and especially of the Moros, resulted in far-reaching reforms. Considering the past history of these Islands, it is almost incredible that such results have become possible. The majority of the non-Christians in the interior of Mindanao-Sulu have changed their manner of dressing and have adopted the garb of the Christians, whom they are endeavoring to imitate as much as possible, mingling

improve their habits and bring about their assimilation. Certain Christian missions, like that of the Belgian Fathers, the Episcopalians, the United Brethren and others, are doing wonderful work in this direction. It would be desirable that action be taken by the Legislature extending to the people of the Mountain Province and Nueva Vizcaya, Isabela, and Abra the same financial aid that was given to the late Department of Mindanao and Sulu, for the continued promotion of their progress through the opening of new roads connecting those provinces, and the establishment of schools even in the remotest *rancherías* of the Igorot.

The pigmies, commonly known as Negritos, regarding whom little hope of their becoming civilized is entertained, may yet be induced to adopt the modern social life, if they can be obliged to live in communities near the municipalities, in the mountains of which they are now scattered, and if they can be given the necessary assistance until they shall have become independent and self-supporting, after having been trained to habits of work and order and taught useful knowledge and the practice of civic duties.

Census Schedule No. 2 contains the necessary data to show the condition of agriculture in the Philippines and is similar to the schedule for agriculture of the Census of 1903. The schedule of 1918, however, embodies additional questions which were considered necessary for the study of measures tending to facilitate land registration, prevent the consummation of usurious contracts, which are detrimental to the development of agriculture and, lastly, locate those provinces where irrigation systems ought to be established. Schedule No. 2 was filled in by regular enumerators, with the assistance of other enumerators especially appointed in cases where the great number of farms required it. It was not an easy thing to enumerate the farms, due to the fact that the great majority of our farmers do not keep records of their properties and products. It was necessary to furnish the enumerators with a list of the average production per hectare of rice, corn, tobacco, sugar cane, etc., and the average number of fruits per tree of the most important fruit-bearing trees, to be used as memorandum for the farmers in case of doubt. Likewise, it was necessary to secure from the municipal treasurers, before the taking of the census, a list of the declarations of rural and urban property submitted by the owners or tenants of the land, wherein the area of the property is stated, so that the enumerators, with the aid of

said list, could solve any doubt regarding the area of land to be enumerated.

This shows that the Census Office adopted all reasonable measures to guarantee the accuracy of the data collected by the enumerators. It is not strange, however, to find mistakes made by enumerators, for reasons easy to understand, in collecting data regarding products, though these errors were properly corrected in the Central Office in accordance with the instructions of the undersigned, based on the average of products obtained by the Bureaus of Science and Agriculture. We can, therefore, state that the Census contains exact data on agriculture. No reference to public lands was made in the Census of 1903, due, perhaps, to the difficulties then existing to gather the necessary data. The present Census, which combines the data collected by the enumerators and the results of surveys made by the Bureau of Coast and Geodetic Survey, Bureau of Lands, and Bureau of Forestry, contains a table which gives 29,629,600 hectares as the approximate area of the Philippine Islands, distributed as follows: Of private lands, there were 4,563,723 hectares, of which 2,415,778 were under cultivation, while the rest was not cultivated. The public lands are classified into forest of commercial value, 16,609,108 hectares; forest of non-commercial value, 2,096,985; *cogon* and open land, 4,553,049 hectares; mangroves, 262,633 hectares; unexplored land, 1,541,245 hectares.

Comparing the total number of farms in 1918 with that of the Census of 1903, it appears that 1,955,276 farms were enumerated in 1918, while only 815,453 farms were registered in 1903.¹ As regards the area under cultivation, the statistics of 1918 show 2,415,778 hectares, as against 1,298,845 in the Census of 1903.

The average area of farms in the Islands in 1918 was 2.33 hectares, as against 3.47 hectares in 1903, which shows that in 1918 there was a greater division of property.

Out of the 1,955,276 farms, 1,946,580 were owned by Filipinos, 2,678 by Americans, 949 by Europeans, 1,612 by Asiatics, and 3,457 by other nationalities. As to the extent of irrigation, there were 458,747 farms irrigated with natural current and 13,247 with forced flow; the rest of the farms were not irrigated.

¹ In the Census of 1918, any piece of land not less than 200 square meters devoted to agriculture is considered as a "farm," while in the Census of 1903, any agricultural holding regardless of size was considered as a "farm."

As to encumbrances, there were 26,612 farms encumbered or mortgaged, and 6,917 sold with right to repurchase, while 1,921,749 were entirely free from encumbrance.

The agricultural wealth of the Philippines is shown in the tables published in Volume III of the Census. The principal products are abacá, coconuts, from which copra is made, sugarcane, tobacco, rice, and corn. The production of these articles in 1918, compared with that of 1903, shows a considerable increase, as may be seen in the comparative tables. Considering one of the most important products, as rice, for instance, it will be seen that there is a general increase of it in all provinces, Pangasinan taking the lead with an increase of 596 per cent over the production of the Census of 1903. Regarding sugar cane, there is no way of making a fair comparison of the 1918 Census with that of 1903, because this Census gives indiscriminately the total production of manufactured sugar and cane sugar by provinces, while the present Census gives separately the production of cane and that of manufactured sugar, but there is no doubt that all sugar producing provinces have increased their cane production. The increase of the production of corn is noticeable in all provinces with a maximum increase of 308.61 per cent over the production of 1903. The provinces which have the greatest production of this grain are Cebu, Isabela, Bohol, Leyte, Misamis, and Cagayan. The existence of many oil factories is a clear indication of the ever-increasing production of coconuts; these factories having been but recently established in the Philippines, have exported a considerable amount of oil according to the statistics of the last few years. Abacá also shows a considerable increase of production; the provinces of Agusan, Batangas, Bukidnon, Cotabato, and Bataan, which had no production in the Census of 1903, in the present Census show a production of from 2,900 kilos for Bataan, to 4,452,484 for Agusan.

The Census data on large cattle show the possibilities of this country so far as stock breeding is concerned. At present the shortage of work animals is one of the principal difficulties encountered by the agriculturists. For many years prior to 1918, rinderpest had been reducing the number of our carabaos, which are indispensable for the cultivation of rice. However, judging by the number of carabaos shown by the Census of 1918, it seems that the efforts made by the Bureau of Agriculture in fighting this disease are bearing fruit and that rinderpest is disappearing. If this satisfactory state of affairs

continues, the country will soon have sufficient cattle for the cultivation of its farms. The hope expressed by the Director of the Census of 1903 with regard to introducing mules and American cattle into the Philippines as a substitute for the typical carabao for agricultural labor still continues to be unrealized, and it is believed that it will remain so while present obstacles such as the high price of those animals and the susceptibility of the mules to surra and of the cattle to rinderpest and texas fever, exist.

The remarkable progress made in agriculture shows that the Filipino people work not only to satisfy their present needs, but also endeavor to provide for their future welfare and happiness. This, however, is not intended to mean that the country has now reached the maximum of its productive capacity. There is still much to be done for the improvement of our agriculture. We should teach more agriculture in the public schools and should encourage the young generation to pursue this career, which is of the utmost importance to the progress of the country. We should extend agricultural education to all rural communities by multiplying the experimental stations and thus facilitating the diffusion of practical knowledge among the agriculturists. We should adopt modern methods of cultivation and use scientific implements, such as tractors, sowing and thrashing machines; and it is hoped that with the employment of sufficient capital and labor and with the establishment of the necessary irrigation systems, the Philippines will be able to produce all that is necessary to meet the needs of the people.

Schedule No. 3 of the Census of 1918, referring to schools, contains almost the same set of questions as that of the Census of 1903. In order to obtain the information required therein, the services of public school-teachers properly recommended by the Director of the Bureau of Education were utilized. These teachers have unreservedly given their valuable coöperation in the work. It can be said, therefore, that the data contained in this table offer all the guarantees of accuracy. However, it should be noted that some of the figures in the statistical data of the Census of 1918 differ from those of the report of the Director of the Bureau of Education for the same year, due to the fact that the latter report includes only data up to the month of March, 1918, while that of the Census comprises data gathered up to the 30th of December of the same year, which was the Census Day. Attention is, therefore, invited to the text on schools, in Volume IV, where the necessary explanations are given re-

garding whatever differences there are between the data published in the Census and those contained in the report of the Bureau of Education.

It will be noted there that the present Census not only contains a greater number of statistical tables than that of 1903, but also its tables include the latest details relative to schools in the Philippines. The statistical tables demonstrate the great progress realized during the last 15 years, not only with respect to the total number of public and private schools, but also with reference to the personnel, Americans and Filipinos, of both sexes, and to the cost of school buildings, school sites, and land reserved for gardens, athletic grounds, and fields.

Wherever a schoolhouse has been built, even in the remotest barrios, there are adjoining lots for gardening and the cultivation of food products, besides grounds for athletic games, such as indoor baseball, outdoor baseball, volley ball, basket ball, etc., etc.

The public school is the center of all social, physical, and intellectual activities. In it, the school boys and girls learn many things that are not taught to them in their homes, and their minds are revolutionized by these revelations. After finishing their studies, they apply the knowledge they have acquired to everyday life, with the results to be expected. They plant flower seeds about their houses, lead a more hygienic life, beautify their homes, and eat more nourishing food. They work harder in order to acquire the things which they have learned to consider as necessary and indispensable to right living. They sometimes act as teachers to their parents, brought up in surroundings devoid of good ideals, and suffering from the results of a limited and deficient schooling in the past. There are many public and private school products of this type, and as the years go by, we shall surely see them multiply, until their influence for higher ideals shall become a decisive factor. The Filipino is a born artist and idealist, and if his artistic temperament and idealistic nature are supplemented by a substantial education, as is being done now, thus enabling him to look upon the problems of life squarely and honestly in the face, there is indeed a great future awaiting him. Not only is the school population affected by the change of régime, but the Filipinos of the passing generation have also shared and are taking part in its blessings in the way of comfort and noble ideals.

The Filipino people have bravely responded to all the needs of the public schools by donations of land, materials, and vol-

unteer labor for the construction of schoolhouses. Ninety-five per cent of the so-called barrio schools have been built by the natives, who donated the necessary land, materials, and labor, as well as the school supplies. The Philippine Legislature, on the other hand, has with the utmost liberality appropriated great sums of money for the Bureau of Education during the past years. The last of these is the act appropriating the liberal sum of ₱30,000,000 for additional expenses for the maintenance of barrio schools and for the increase of the salaries of the municipal teachers.

The Census shows that there are 5,720 primary schools, 508 intermediate, 87 secondary, 178 vocational, 15 colleges, and 2 universities. There are 17,172 Filipino teachers, 501 American, 249 Spanish, 58 Chinese, 26 English, and 128 belonging to other nationalities. The total enrollment is 789,046.

The enthusiasm for education is so intense that it has now become an increasingly difficult problem for the Government to give adequate instruction to the great number of students of both sexes who apply for admission to our public schools, colleges, and universities. Our young people, the fair hope of the Fatherland, as Rizal called them, are anxious to educate themselves and conscious of their duty to promote the progress of the country. They pursue all the branches of learning and take up all professions, showing everywhere, both here and abroad, that the Filipino student in general possesses, the opinion of many travellers to the contrary notwithstanding, great mental aptitude for the study of the sciences and arts.

For a long time past there has been a class of cultured persons in the Islands who have had the advantages of a college or university education. They do not differ in any essential respect from the educated class in other countries so far as influence over their fellow citizens is concerned. The number of educated people, those who have secured higher culture in colleges or universities, is rapidly increasing. The privileges of education are now available not only to those who can afford to pay for it, but also to the poor. The Philippine Government showed great foresight when it provided for the education of hundreds of Filipino students in American universities, and it is to be hoped that this policy will be continued until a sufficient number of specialists in the different branches of learning shall have been secured.

Besides the official institutions established in the Islands, there

are some religious and a few non-sectarian schools, which are doing their part to impart higher culture to both men and women. The old University of Santo Tomas, older than the oldest university in the United States, has sent out into the world many of the principal leaders of the country in the political, judicial, and social life of the people. The Jesuit and Dominican Colleges have also done work along these lines. The well-known Silliman Institute in Dumaguete, the Liceo de Manila, the Ateneo de Manila, the National Academy, the Instituto de Manila, San Juan de Letran, the Philippine Law School, the National Law College, San Beda College, the Escuela de Derecho, the De la Salle College, and the Instituto Burgos, for boys, and the Centro Escolar de Señoritas, the Instituto de Mujeres, the Assumption College, and the Santa Escolastica College, for girls, are worthy of special mention among the private institutions, all of which exert great influence along educational lines.

Schedule No. 4 relates to mortality and is found in Volume II. The data shown therein were obtained from the municipal registers by special enumerators. These registers are kept by the municipal secretaries, who are at the same time the custodians of the local archives. The law requires that except in cases of emergency, no dead body shall be buried without a certificate of death (Sec. 1087, Administrative Code of the Philippine Islands of 1917) and likewise provides that "it shall be unlawful for any person to bury or inter, or to cause to be buried or interred, either temporarily or permanently, a dead body of any human being or any human remains in any place other than such as may lawfully be used for such purpose." (Sec. 1073, *Ibid.*) The occultations of cases and the surreptitious burials of persons dying from dangerous communicable diseases—resorted to mainly for the purpose of evading quarantine and other restrictive measures prescribed on such occasions by the health authorities—were practiced only during the turbulent period of the reconstruction (1900–1903). The strict enforcement of the provisions of the law above quoted, which provides a heavy penalty for the delinquent, now insures the recording of all deaths, except in a limited number of cases of undiscovered murder, homicide, or infanticide, the aggregate number of which must be so small that they cannot affect the general conclusions. The certificate of death at present in use in the Philippine Islands is patterned after the American standard and contains the following particulars, to wit: The name, age, sex, nationality, and occupation of the de-

write down their notes in pencil in notebooks full of erasures. Moreover, the special agents assigned to make this schedule noticed that there was much fear on the part of the owners that the object of the enumeration was the imposition of a new tax. This circumstance explains why the data collected show little production, if not loss, in many industries. Nevertheless, we may consider that the data compiled by the special agents are near the truth.

It will be noted that only the embroidery, textile, hat, and mat industries are to a certain degree well developed, the rest being in a rudimentary state. What the laboring class needs to promote the progress of these industries, is organization and the adoption of modern utensils to improve production. Besides, there ought to be the proper division of labor in order to realize big profits. Judging from the figures in the schedules on household industries, these small industries are only as a supplementary means of earning a living, and generally the persons engaged in these industries devote but a small part of their time to the same. For example, fishing-net weavers do not always weave nets, but employ most of their time in some other work, and weave only during certain hours of the day and night.

There were altogether 124,487 registered household industry establishments, which produced during 1918 ₱31,352,458.74. The provinces that have the greatest number of these establishments are Iloilo, with 14,144; Batangas, with 13,411; Samar, with 9,780, and Tayabas, with 9,241. The industries regarded as the most important, because of their production or wide distribution throughout the Islands, are the following: Native fiber textile industry, native cotton textile industry, native hat making, spinning establishments, native wine making, etc.

The fishing industry is very important to the country, because fish is one of the important foods of the people. The provinces along the coast are all engaged in fishing, and although they use more or less antiquated implements, this industry always yields profit to the people engaged in it. In the Philippines there are 2,107 fish-salting and fish-smoking establishments. The most important ones are in Manila and surrounding provinces, where there is a great demand and where the industry is really lucrative.

The fishing industry is carried on by means of fish ponds, corrals, and fish nets. Fish ponds give greater profits and generally can be used the whole year. Moreover, they are not so exposed to destruction by typhoons as the corrals and

fish nets. On the other hand, the corrals and fish nets at times give almost fabulous profits to the fisherman.

With the exception of sixty-seven Japanese fishermen residing in the city of Manila and fifty-one foreigners engaged in fishing in various provinces of the Archipelago, registered on Census Day, the fishing industry in the Philippines may be said to be controlled by Filipinos.

The data on commerce and transportation, corporations, and banks, were taken from records existing in various offices of the Government, and there is no doubt as to their accuracy. The comments on commerce and transportation published in Volume IV were prepared by one of the officials of the Census Office, Mr. Manuel Sityar, formerly professor of mathematics and commercial and statistical geography in the "Liceo de Manila."

The data on corporations, railroads, telegraph and post-offices, and roads are undoubtedly accurate, as they were taken from official records. The increasing business prosperity of the Philippines is shown by the table of registered corporations, which numbered 1,534, with a subscribed capital of ₱115,225,686, out of a total of ₱242,201,067. Among the mercantile corporations, those organized for the development of natural resources occupy the first place. The agricultural corporations rank second only, notwithstanding the fact that the Philippine Islands are an eminently agricultural country. This may be explained by the fact that agriculture is generally not engaged in by corporations, for the reason that a considerable area of the land suitable for agriculture is owned and cultivated by individuals. There is no way of establishing a comparison with the commercial activities of 1903 on the basis of the table on corporations, because at that time there was not a Corporation Act like the one now in force.

As to the roads of the Philippines, it is gratifying to know the great improvements realized since the taking of the Census of 1903. The Philippine Legislature has authorized the provincial governments to double the cedula tax for the purpose of improving the roads, and this measure, coupled with the effort of the engineers of the Bureau of Public Works, has resulted in the construction of many good roads and strong bridges, a large number of the latter are of steel and cement.

At the time of the taking of the present Census, the total length of roads and highways in the Philippines was 9,595.5 kilometers, of which 4,500.3 were first class roads. As regards

the total length of first, second, and third class roads, the Province of Pangasinan comes first, the Province of Cebu, next; the Province of Occidental Negros, third; and the Province of Iloilo, fourth. The province occupying the last place has 247.7 kilometers of first class roads.

The judicial statistics were reproduced bodily from the official records of the justice of the peace courts, the Insular and provincial jails, and the clerk's offices of the courts of First Instance and the Supreme Court. The analysis of these tables, prepared by the undersigned, appears in Volume IV.

To mention the multitudinous details of the Census would be overstepping the limits of a report like the present one. The attention of the reader is, therefore, invited to the four volumes of the Census in which he may find interesting information.

A careful study of the hundreds of statistical tables deduced from the Census schedules and the comments upon the same will reveal to the impartial observer the great progress realized by the Filipinos in all the phases of life during the fifteen years intervening between the taking of the Census of 1903 and that of 1918. I have examined all the data of the present Census, and in all I have found evidence tending to show that the Filipino people, as a race, possess the energy necessary for progress. Their desire for betterment and perfection, constantly encouraged by their national aspiration, is manifested in all spheres of life. What they need are more ample opportunities to develop themselves completely as a people and a nation.

In view of what the Filipino people have accomplished in the trying years of the past in the development of the country and the maintenance of a stable government, we sincerely believe that upon reaching their ardently desired goal, the independence of their country, they will maintain their place in the concert of nations with dignity and will demonstrate to the world that the United States, in carrying to a successful conclusion her noble work in the Philippines, has added to the annals of civilization what may, perhaps, be their most brilliant page.

Before concluding, I desire to express to the small army of Filipinos who have worked for the Census my high appreciation of the zeal and loyalty with which they have performed their duties.

Likewise, I wish to convey, in the name of the Assistant Directors as well as in my own, the expression of our gratitude to the Governor-General, Honorable Francis Burton Harrison,

to the President of the Philippine Senate, Honorable Manuel L. Quezon, to the Speaker of the House of Representatives, Honorable Sergio Osmeña, to the Department Secretaries, Bureau Chiefs, Census Inspectors, provincial and municipal officials, to the press, and to the public at large, for the decided coöperation they have given us in the fulfilment of our duties. In terminating our task, we are far from entertaining the presumption that we have produced a perfect work, but we do believe the data which we have compiled in the volumes of the Census are useful and necessary for the study of measures conducive to the improvement of the conditions of our country.

MANILA, *May 17, 1920.*


Director of the Census.

There are but few towns in this province, and the population is largely made up of Visayans, who originally immigrated from Cebu and Bohol; those coming from the latter island constitute about one-half of the total population. Immigration from Leyte, Iloilo, and other distant provinces is also increasing yearly. There is a very insignificant number of non-Christians, Manobos and Aetas, who, through frequent contact with the civilized inhabitants, are gradually adopting the customs and habits of the latter. The people who live around Lake Mainit are Negritos.

This province has 14 municipalities and 146 barrios. Its capital is Surigao, with 15,792 inhabitants.¹ It is located in the northwestern part of the province.

HISTORICAL ACCOUNT.

What is now Surigao was once a part of the old province of Caraga which in former years existed in northeastern Mindanao. The term "Caraga" was derived from the "Caragas," the name applied to the people who at the time of the arrival of the Spaniards inhabited Surigao. It is believed that the Caragas were of Visayan stock, mixed probably with Manobos and other peoples of Mindanao. They were a warlike people, noted for their bravery and ferocity.

The eastern coast of Surigao was explored by Villalobos in 1543. Bernardo de la Torre, a member of the expedition of Villalobos, named the land which they sighted *Cesarea Caroli*, in honor of the reigning sovereign of Spain, Charles V. This name was later applied to the whole Island of Mindanao. Villalobos, however, was not the first to visit Surigao. That honor belongs to a Portuguese, Francisco de Castro, who visited the towns of Butuan and Surigao five years before the arrival of Villalobos. He baptized the natives of those places, including the regulo of Butuan and that of Surigao, to whom he gave the name Antonio Galvan in honor of the governor of Ternate.

The Recollects endeavored to establish missions in what is now Surigao Province as early as 1597, but their efforts were a failure due to the hostility and resistance offered by the Caragas to the Spaniards. The government was forced to launch an expedition against the natives in 1609 before Spanish authority could be established under the command of Juan de Vega. This expedition consisted of 400 Spaniards and a number of native allies. It proved a success, the Caragas being defeated, and more than 1,500 Christian prisoners being liberated. The Spaniards thereupon erected a fort at Tandag as an outpost of Spanish authority.

Like many other provinces, Surigao suffered severely from Moro raids. Probably the most destructive of these was the one that took place in 1752. In that year, the Moros practically covered the seas of Visayas with their fleets, frequently bringing desolation and ruin to the places they visited. In what is now Surigao, the town of Surigao and the Island of Siargao were attacked. Surigao was devastated and ruined. Nearly all her population of 2,000 souls were either killed or carried away to the Island of Siargao, where about 1,600 persons were also either slain or carried away to slavery.

¹ Non-Christian population, 459, not included.

Up to 1849, Surigao included that part of southeastern Mindanao which now belongs to Davao. This territory, however, was ceded to Nueva Guipozcoa, which was made a province in 1849. To this newly created province were ceded the following towns: Tandag, Tago, Lianga, Mission de San Juan, Bislig, Jinatuan, Catel, Quinablengan, Dapa, and Baganga.

By the decree of 1860 establishing a politico-military government for Mindanao, what is now Surigao Province together with the present Province of Agusan, became one of the six districts into which Mindanao was divided. It was known as the East District and was supposed to include the territory lying between the Butuan and Caraga Bays. This territory was known in 1870 as the district of Surigao.

At the close of the Spanish rule, Surigao constituted one of the seven districts of Mindanao. Its boundaries then were practically the same as those of the province at the time of the establishment of civil government. It was ruled by an army officer with the rank of major. The capital was Surigao. There were, besides the capital, 27 other towns. The district had a population of 93,000 Christian Filipinos. This district included the politico-military comandancia of Butuan.

Civil government was established in Surigao May 15, 1901. As constituted at the time, Surigao included as a subprovince, the former politico-military *comandancia* of Butuan. Upon the creation in 1911 of the Province of Agusan, Butuan was separated from Surigao.

STATISTICAL DATA.

Approximate area.....	square kilometers.....	7,483
Area of farms.....	hectares.....	67,420
Cultivated lands.....	do.....	44,651
Production in 1918:		
Rice	cavans ¹	507,671
Sugar cane.....	tons.....	1,250
Corn	cavans.....	58,655
Copra	kilos.....	4,608,527
Abacá	do.....	7,230,899
Tobacco	do.....	18,292
Population		² 119,357
Number of schools.....		110
Primary	101	
Intermediate	5	
High school	1	
Vocational	3	
Enrollment for 1918.....	11,662	
Males	6,122	
Females	5,540	
Rate of mortality per 1,000 inhabitants.....		26.4
Number of establishments of household industries.....		841
Production in 1918.....		P269,109.61
Number of manufacturing establishments.....		8
Production in 1918.....		P60,200.25

¹ One *cavan* equals 75 liters.

² Non-Christian population, 2,665, not included.

TABLE VIII.—Average

TABLA VIII.—Promedio

FIRST TYPE.

STATION. Estación.	PROVINCE OR SUBPROV- INCE. Provincia o subprovincia.	LENGTH OF RECORD. Periodo de observa- ción. YEARS. Años.	MONTHS. Meses.		
			JANUARY. Enero.	FEB- RUARY. Febrero.	MARCH. Marzo.
			<i>mm.</i>	<i>mm.</i>	<i>mm.</i>
Bacolod.	Occidental Negros	6	111.2	63.9	15.3
Iloilo.	Iloilo.	16	56.6	46.1	28.6
San Jose de Buenavista.	Antique	16	35.7	22.5	15.4
Cuyo.	Palawan	15	13.2	18.8	3.4
San Jose.	Mindoro	5	13.2	13.1	12.7
Mamburao.	do	2	3.2	2.3	9.4
Batangas.	Batangas.	11	25.6	19.8	7.3
Ambulong, Tanauan, Batangas.	do	6	33.6	10.2	9.7
Silang.	Cavite	11	37.9	20	20.8
Santa Cruz.	Laguna.	9	57.1	31	34.3
Corregidor.	Cavite	14	11.8	6.5	3.8
Cavite.	do	4	17.5	6.5	11.3
Manila.	Manila.	16	20.6	11.6	19.4
Antipolo.	Rizal	7	29.3	17	13.3
Balanga.	Bataan	6	18.2	7.3	7
Olongapo.	Zambales.	15	5.5	2.6	8.6
Marilao.	Bulacan	3	11.3	6.3	8.1
Arayat.	Pampanga.	5	10.2	6.7	8
Iba.	Zambales.	10	6.9	5.3	31.5
San Isidro.	Nueva Ecija	16	14.4	7.6	13.6
Tarlac.	Tarlac.	16	8.5	9.8	19.2
Dagupan.	Pangasinan.	16	10.4	20.7	29.2
Bolinao.	do	15	17.1	16.9	21.8
Baguio.	Benguet	16	30.5	18.4	47.8
San Fernando.	La Union	16	6	8.2	9.1
Candon.	Ilocos Sur	16	5.6	8.6	10.8
Vigan.	do	16	1.2	6.9	11.7
Laoag.	Ilocos Norte.	11	4.6	7.6	6
Cape Bojeador.	do	3	5.7	13.1	38

SECOND TYPE.

Caraga.	Davao.	5	294.8	402.4	270.3
Butuan.	Agusan.	15	246.4	204.1	166.9
Surigao.	Surigao.	16	484.6	342	296.8
Guuan.	Samar.	6	743.6	309.2	260.3
Tacloban.	Leyte	15	355.9	220.7	155.7
Borongan.	Samar.	16	635.3	426.7	258.5
Catbalogan.	do	3	639.1	283.1	175.5
Batag.	do	6	554.4	332.2	180.4
Gubat.	Sorsogon.	13	313.3	234.8	171.9
Legaspi.	Albay.	16	376.3	273.2	171.5
Virac.	Catanduanes.	11	230	222.4	152.9
Atimonan.	Tayabas.	16	244.2	127.2	89.2
Paracale.	Ambos Camarines.	8	459.1	276.7	205.1

THIRD OR INTERMEDIATE A TYPE.

Zamboanga.	Zamboanga.	16	64.2	55.7	28.7
Cagayan, Misamis.	Misamis.	9	51.7	40.7	38.1
Balingasag.	do	6	75.2	51.7	25.6
Dumaguete.	Oriental Negros.	8	90.6	112.4	33.5
Iwahig.	Palawan.	5	102.5	89.1	45.5
Cebu.	Cebu.	16	95	73.5	48.6
Tuburan.	do	7	112.3	67.5	40.9
Capiz.	Capiz.	16	162.3	100.9	29.9
Masbate.	Masbate.	15	181.8	139.3	55.7
Romblon.	Romblon.	15	121.8	88.5	49.9
Lucena.	Tayabas.	3	257.8	61.4	43.3
Bayombong.	Nueva Vizcaya.	8	84.8	29.5	37.6
Echague.	Isabela.	11	56.1	38.3	51.6
Tuguegarao.	Cagayan.	16	32.9	22.3	34.3
Apurri.	do	16	135.8	86.4	57.7

was an extraordinary lack of rainfall during the period 1903 to 1918. Only a few stations have been chosen, for which the total rainfall from November to May is given for every year of that period together with the percentage of the normal for the seven months, November to May.

It appears from this table that there has been a general lack of rain in the years 1903, 1905, 1912, 1914, and 1915. But the most important and more general periods of drought were those of 1903, 1912, and 1915. A few words on each of them will be of interest.

Drought of 1903.—As far as Manila is concerned we may say that the distribution of rainfall for the year 1903 was very extraordinary. There was a considerable lack of rain throughout the year, except only in December, thus making that year the driest on record since 1865 with the only exception of 1885. That the conditions shown by Manila records did not differ

TABLE XXIII.—*Rainfall in the Philippines during the year 1903.*

Station.	January to May.				June to October.			
	Normal.	1903	Difference.	Per cent.	Normal.	1903	Difference.	Per cent.
	mm.	mm.	mm.		mm.	mm.	mm.	
Aparri.....	528.8	260.6	—268.2	49	969.2	1,033	+ 63.8	107
Tuguegarao.....	66	188.8	+122.8	286	495.1	1,105.1	+610	223
Vigan.....	97	72.7	— 24.3	75	1,704.9	1,826.5	+121.6	107
Bolinao.....	146.7	118.6	— 28.1	81	2,242.2	1,795.5	—446.7	80
San Isidro.....	262.4	60.8	—201.6	23	1,349.6	982.9	—366.7	73
Manila.....	184.2	62.4	—121.8	34	1,536.2	773.7	—762.5	50
Daet.....	927.8	330.1	—588.7	37	1,316.5	722.6	—593.9	55
Atimonan.....	604.3	257.9	—346.4	43	1,261.9	1,184.1	— 77.8	94
Legaspi.....	974.4	552.6	—421.8	57	1,228.3	759	—469.3	62
Iloilo.....	334.3	180.7	—153.6	54	1,272.9	1,249.4	— 23.5	98
Cebu.....	331.5	169.8	—161.7	51	852.6	758.2	— 94.4	89
Bacolod.....	476.7	164.7	—312	34	1,748.2	1,234.6	—513.6	71
Surigao.....	1,532.1	836.4	—695.7	55	734.9	540.5	—194.4	74
Davao.....	733.9	509.9	—224	69	891.5	794.6	— 96.9	89
Zamboanga.....	235.1	71.8	—163.3	31	464.8	321.3	—143.5	69
Jolo.....	524.5	229.3	—295.2	44	721.9	1,074.7	+352.8	149

Station.	November to December.				Annual.			
	Normal.	1903	Difference.	Per cent.	Normal.	1903	Difference.	Per cent.
	mm.	mm.	mm.		mm.	mm.	mm.	
Aparri.....	490.1	561.3	+ 71.1	115	1,988.1	1,854.9	— 133.2	93
Tuguegarao.....	139.3	441.9	+302.6	317	700.4	1,735.8	+1,035.4	248
Vigan.....	65.8	119.1	+ 53.3	181	1,867.7	2,018.3	+ 150.6	108
Bolinao.....	42.5	147.5	+105	347	2,431.4	2,061.6	— 369.8	85
San Isidro.....	157.8	210.4	+ 52.6	133	1,769.8	1,254.1	— 515.7	71
Manila.....	194.5	194.3	— 0.2	100	1,914.9	1,030.4	— 884.5	54
Daet.....	642.5	1,575.6	+933.1	245	2,886.8	2,628.3	— 258.5	91
Atimonan.....	794.2	1,073.9	+279.7	135	2,660.4	2,515.9	— 144.5	95
Legaspi.....	758.1	1,573.4	+815.3	208	2,960.8	2,885	— 75.8	97
Iloilo.....	189.1	652.8	+463.7	345	1,796.3	2,082.9	+ 286.6	116
Cebu.....	288	504.9	+216.9	175	1,472.1	1,432.9	— 39.2	97
Bacolod.....	326.3	591.2	+264.9	181	2,551.2	1,990.5	— 560.7	78
Surigao.....	895.6	600.2	—295.4	67	3,162.6	1,977.1	—1,185.5	63
Davao.....	252.5	307.7	+ 55.2	122	1,877.9	1,612.2	— 265.7	86
Zamboanga.....	186.2	277.7	+ 91.5	149	886.1	670.8	— 215.3	76
Jolo.....	288	405.2	+117.2	141	1,534.4	1,709.2	+ 174.8	111

TABLE XXXIV.—*Monthly percentages of wind directions at several stations of the Philippines.*TABLA XXXIV.—*Porcentajes mensuales de las direcciones del viento en varias estaciones de Filipinas.*

ZAMBOANGA, 1917-1918.

DIRECTION. Dirección.	JANUARY. Enero.	FEBRUARY. Febrero.	MARCH. Marzo.	APRIL. Abril.	MAY. Mayo.	JUNE. Junio.	JULY. Julio.	AUGUST. Agosto.	SEPTEMBER. Septiembre.	OCTOBER. Octubre.	NOVEMBER. Noviembre.	DECEMBER. Diciembre.
N, NNE	18	19	21	23	26	19	27	19	13	13	16	25
NE, ENE	24	17	9	12	10	11	14	8	10	5	9	12
E, ESE	13	10	6	4	6	5	6	3	5	2	7	8
SE, SSE	5	7	7	8	8	10	15	10	9	9	6	7
S, SSW	2	5	5	3	3	1	1	2	3	3	5	3
SW, WSW	3	4	5	6	9	11	10	8	9	9	12	15
W, WNW	11	14	25	22	16	20	15	26	15	25	15	6
NW, NNW	6	3	3	7	6	11	5	8	9	9	3	8
Calm	18	21	18	15	16	12	7	15	26	24	28	16

SURIGAO, 1903-1918.

N, NNE	11	11	6	6	6	4	2	2	2	4	5	7
NE, ENE	32	29	30	22	14	8	3	3	3	7	16	24
E, ESE	14	16	20	20	15	11	4	3	3	6	9	15
SE, SSE	3	3	5	6	5	5	1	1	2	3	3	4
S, SSW	2	2	3	3	6	8	9	10	8	16	6	3
SW, WSW	2	2	2	3	6	12	26	36	30	9	11	4
W, WNW	1	2	1	2	4	6	13	12	12	9	4	2
NW, NNW	6	4	3	3	4	5	5	4	5	5	8	6
Calm	29	30	29	34	39	40	37	29	35	41	37	35

CEBU, 1903-1918.

N, NNE	27	23	22	15	8	6	3	2	3	9	19	24
NE, ENE	39	41	40	37	20	12	4	3	4	13	23	37
E, ESE	9	10	13	13	10	7	2	2	2	6	7	5
SE, SSE	0	1	1	1	4	4	3	2	2	4	2	1
S, SSW	1	1	1	2	10	11	14	14	15	7	4	2
SW, WSW	1	0	0	1	7	15	32	34	28	15	6	3
W, WNW	0	0	0	0	2	4	8	9	7	5	3	1
NW, NNW	1	1	1	2	2	3	2	3	3	4	4	2
Calm	23	24	23	28	37	37	33	30	35	37	32	26

ILOILO, 1903-1918.

N, NNE	43	42	40	36	18	13	6	3	5	17	33	42
NE, ENE	47	48	48	41	21	13	5	4	6	22	39	45
E, ESE	4	4	6	8	7	4	2	2	1	4	3	3
SE, SSE	0	0	0	0	1	2	1	1	1	1	1	1
S, SSW	0	0	0	0	4	7	7	5	4	4	1	0
SW, WSW	1	1	1	5	23	33	55	64	54	26	10	3
W, WNW	0	0	0	0	2	4	5	4	5	4	1	0
NW, NNW	2	1	1	2	5	4	12	2	3	3	2	1
Calm	2	3	3	7	19	19	6	16	20	20	11	5

LEGASPI, 1903-1918.

N, NNE	30	25	22	18	11	6	3	1	4	13	27	32
NE, ENE	51	50	52	50	36	25	9	5	8	27	41	49
E, ESE	7	10	6	17	15	1	4	5	5	7	8	6
SE, SSE	0	0	0	1	1	1	1	1	1	1	1	0
S, SSW	0	0	0	1	3	6	7	6	7	4	1	0
SW, WSW	0	0	0	1	5	13	35	46	35	12	3	1
W, WNW	0	0	0	0	2	4	10	14	10	5	2	1
NW, NNW	1	1	0	0	1	1	1	1	2	1	1	1
Calm	11	14	9	12	28	33	31	23	28	29	16	10

TABLE XXXVI.—*Monthly and daily mean wind*TABLA XXXVI.—*Media velocidad del viento, men*

STATION. Estación.	JANUARY. Enero.	FEBRUARY. Febrero.	MARCH. Marzo.	APRIL. Abril.	MAY. Mayo.
SURIGAO (1912-1918).					
	<i>Km.</i>	<i>Km.</i>	<i>Km.</i>	<i>Km.</i>	<i>Km.</i>
Monthly mean velocity (Velocidad media mensual)	6,323.2	6,775.2	6,612.4	5,303.4	3,967
Daily mean velocity (Velocidad media diaria)	264.2	251.8	221.2	185	145.6
Maximum daily velocity (Velocidad máxima diaria)	786	683.1	490.9	476.9	506.2
Date (Fecha)	5, 1917	1, 1913	25, 1916	12, 1916	27, 1914
Minimum daily velocity (Velocidad mínima diaria)	68.2	75.2	79.2	82.3	46.1
Date (Fecha)	1, 1918	23, 1917	28, 1918	9, 1918	17, 1918
CEBU (1908-1918).					
Monthly mean velocity (Velocidad media mensual)	10,354.4	8,193.5	9,786.5	8,886.5	7,980.2
Daily mean velocity (Velocidad media diaria)	302.3	290.7	313	287.1	231.2
Maximum daily velocity (Velocidad máxima diaria)	734.2	628.2	876.6	577	1,154.8
Date (Fecha)	8, 1918	2, 1913	22, 1915	22, 1915	31, 1914
Minimum daily velocity (Velocidad mínima diaria)	103	99	103.5	96.3	86.6
Date (Fecha)	1, 1908	16, 1911	16, 1909	22, 1910	25, 1912
ILOILO (1908-1918).					
Monthly mean velocity (Velocidad media mensual)	13,601.8	11,739	13,066	10,198.3	7,361.3
Daily mean velocity (Velocidad media diaria)	420.3	408.8	412.7	341.3	241.3
Maximum daily velocity (Velocidad máxima diaria)	805.4	695.7	642.7	631	552.1
Date (Fecha)	9, 1918	18, 1918	1, 1915	25, 1915	3, 1914
Minimum daily velocity (Velocidad mínima diaria)	84.7	126.9	111.5	114.4	94
Date (Fecha)	4, 1916	8, 1916	23, 1909	13, 1913	1, 1911
LEGASPI (1908-1918).					
Monthly mean velocity (Velocidad media mensual)	11,365.9	7,715.5	8,010.9	6,974.2	5,730.9
Daily mean velocity (Velocidad media diaria)	295.3	284.1	265.5	237.7	174.8
Maximum daily velocity (Velocidad máxima diaria)	674.2	628.7	638	905.3	525.1
Date (Fecha)	25, 1918	2, 1910	1, 1916	16, 1914	5, 1913
Minimum daily velocity (Velocidad mínima diaria)	7.4	56.6	90.5	52.3	28.4
Date (Fecha)	15, 1913	9, 1913	6, 1911	30, 1911	9, 1909
MANILA (1903-1918).					
Monthly mean velocity (Velocidad media mensual)	4,780.9	5,152.9	6,554	6,556.6	6,421.6
Daily mean velocity (Velocidad media diaria)	154.2	182.4	211.4	218.6	207.2
Maximum daily velocity (Velocidad máxima diaria)	485.5	414	412	824	1,157.5
Date (Fecha)	11, 1907	2, 1912	13, 1903	29, 1905	18, 1906
Minimum daily velocity (Velocidad mínima diaria)	34.5	64	70	88.5	57.5
Date (Fecha)	20, 1910	7, 1912	17, 1907	27, 1910	11, 1904
BAGUIO (1910-1918).					
Monthly mean velocity (Velocidad media mensual)	11,015.5	9,819.9	10,422.4	9,962.9	9,840
Daily mean velocity (Velocidad media diaria)	350.9	345.2	336.8	328.7	357.7
Maximum daily velocity (Velocidad máxima diaria)	767.1	815.4	623.3	655.5	1,183.8
Date (Fecha)	1, 1915	2, 1918	12, 1911	24, 1910	9, 1913
Minimum daily velocity (Velocidad mínima diaria)	160.3	152.2	189.8	173.8	185.9
Date (Fecha)	22, 1910	26, 1911	23, 1911	27, 1911	20, 1910

There are but few towns in this province, and the population is largely made up of Visayans, who originally immigrated from Cebu and Bohol; those coming from the latter island constitute about one-half of the total population. Immigration from Leyte, Iloilo, and other distant provinces is also increasing yearly. There is a very insignificant number of non-Christians, Manobos and Aetas, who, through frequent contact with the civilized inhabitants, are gradually adopting the customs and habits of the latter. The people who live around Lake Mainit are Negritos.

This province has 14 municipalities and 146 barrios. Its capital is Surigao, with 15,792 inhabitants.¹ It is located in the northwestern part of the province.

HISTORICAL ACCOUNT.

What is now Surigao was once a part of the old province of Caraga which in former years existed in northeastern Mindanao. The term "Caraga" was derived from the "Caragas," the name applied to the people who at the time of the arrival of the Spaniards inhabited Surigao. It is believed that the Caragas were of Visayan stock, mixed probably with Manobos and other peoples of Mindanao. They were a warlike people, noted for their bravery and ferocity.

The eastern coast of Surigao was explored by Villalobos in 1543. Bernardo de la Torre, a member of the expedition of Villalobos, named the land which they sighted Cesarea Caroli, in honor of the reigning sovereign of Spain, Charles V. This name was later applied to the whole Island of Mindanao. Villalobos, however, was not the first to visit Surigao. That honor belongs to a Portuguese, Francisco de Castro, who visited the towns of Butuan and Surigao five years before the arrival of Villalobos. He baptized the natives of those places, including the regulo of Butuan and that of Surigao, to whom he gave the name Antonio Galvan in honor of the governor of Ternate.

The Recollects endeavored to establish missions in what is now Surigao Province as early as 1597, but their efforts were a failure due to the hostility and resistance offered by the Caragas to the Spaniards. The government was forced to launch an expedition against the natives in 1609 before Spanish authority could be established under the command of Juan de Vega. This expedition consisted of 400 Spaniards and a number of native allies. It proved a success, the Caragas being defeated, and more than 1,500 Christian prisoners being liberated. The Spaniards thereupon erected a fort at Tandag as an outpost of Spanish authority.

Like many other provinces, Surigao suffered severely from Moro raids. Probably the most destructive of these was the one that took place in 1752. In that year, the Moros practically covered the seas of Visayas with their fleets, frequently bringing desolation and ruin to the places they visited. In what is now Surigao, the town of Surigao and the Island of Siargao were attacked. Surigao was devastated and ruined. Nearly all her population of 2,000 souls were either killed or carried away to the Island of Siargao, where about 1,600 persons were also either slain or carried away to slavery.

¹ Non-Christian population, 459, not included.

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By the decree of 1860 establishing a politico-military government for Mindanao, what is now Surigao Province together with the present Province of Agusan, became one of the six districts into which Mindanao was divided. It was known as the East District and was supposed to include the territory lying between the Butuan and Caraga Bays. This territory was known in 1870 as the district of Surigao.

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Tobacco	do.....	18,292
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Intermediate	5	
High school	1	
Vocational	3	
Enrollment for 1918.....	11,662	
Males	6,122	
Females	5,540	
Rate of mortality per 1,000 inhabitants.....		26.4
Number of establishments of household industries.....		841
Production in 1918.....		₱269,109.61
Number of manufacturing establishments.....		8
Production in 1918.....		₱60,200.25

¹ One *cavan* equals 75 liters.

² Non-Christian population, 2,665, not included.

TABLE VIII.—Average

TABLA VIII.—Promedio

FIRST TYPE.

STATION. Estación.	PROVINCE OR SUBPROVINCE. Provincia o subprovincia.	LENGTH OF RECORD. Periodo de observación. YEARS. Años.	MONTHS. Meses.		
			JANUARY. Enero.	FEBRUARY. Febrero.	MARCH. Marzo.
			<i>mm.</i>	<i>mm.</i>	<i>mm.</i>
Bacolod.	Occidental Negros	6	111.2	63.9	15.3
Iloilo.	Iloilo.	16	56.6	46.1	28.6
San Jose de Buenavista.	Antique	16	35.7	22.5	15.4
Cuyo.	Palawan	15	13.2	18.8	3.4
San Jose.	Mindoro	5	13.2	13.1	12.7
Mamburao.	do	2	3.2	2.3	9.4
Batangas.	Batangas.	11	25.6	19.8	7.3
Ambulong, Tanauan, Batangas.	do	6	33.6	10.2	9.7
Silang.	Cavite	11	37.9	20	20.8
Santa Cruz.	Laguna.	9	57.1	31	34.3
Corregidor.	Cavite	14	11.8	6.5	3.8
Cavite.	do	4	17.5	6.5	11.3
Manila.	Manila.	16	20.6	11.6	19.4
Antipolo.	Rizal	7	29.3	17	13.3
Balanga.	Bataan	6	18.2	7.3	7
Olongapo.	Zambales	15	5.5	2.6	8.6
Marilao.	Bulacan	3	11.3	6.3	8.1
Arayat.	Pampanga	5	10.2	6.7	8
Iba.	Zambales	10	6.9	5.3	31.5
San Isidro.	Nueva Ecija	16	14.4	7.6	13.6
Tarlac.	Tarlac	16	8.5	9.8	19.2
Dagupan.	Pangasinan.	16	10.4	20.7	29.2
Bolinao.	do	15	17.1	16.9	21.8
Baguio.	Benguet	16	30.5	18.4	47.8
San Fernando.	La Union	16	6	8.2	9.1
Candon.	Ilocos Sur	16	5.6	8.6	10.8
Vigan.	do	16	1.2	6.9	11.7
Laoag.	Ilocos Norte.	11	4.6	7.6	6
Cape Bojeador.	do	3	5.7	13.1	38

SECOND TYPE.

Caraga.	Davao.	5	294.8	402.4	270.3
Butuan.	Agusan.	15	246.4	204.1	166.9
Surigao.	Surigao.	16	484.6	342	296.8
Guuan.	Samar.	6	743.6	309.2	260.3
Tacloban.	Leyte	15	355.9	220.7	155.7
Borongan.	Samar.	16	635.3	426.7	258.5
Catbalogan.	do	3	639.1	283.1	175.5
Batag.	do	6	554.4	332.2	180.4
Gubat.	Sorsogon.	13	313.3	234.8	171.9
Legaspi.	Albay.	16	376.3	273.2	171.5
Virac.	Catanduanes	11	230	222.4	152.9
Atimonan.	Tayabas.	16	244.2	127.2	89.2
Paracale.	Ambos Camarines.	8	459.1	276.7	205.1

THIRD OR INTERMEDIATE A TYPE.

Zamboanga.	Zamboanga.	16	64.2	55.7	28.7
Cagayan, Misamis.	Misamis.	9	51.7	40.7	38.1
Balingasag.	do	6	75.2	51.7	25.6
Dumaguete.	Oriental Negros.	8	90.6	112.4	33.5
Iwahig.	Palawan.	5	102.5	89.1	45.5
Cebu.	Cebu.	16	95	73.5	48.6
Tuburan.	do	7	112.3	67.5	40.9
Capiz.	Capiz.	16	162.3	100.9	29.9
Masbate.	Masbate.	15	181.8	139.3	55.7
Romblon.	Romblon.	15	121.8	88.5	49.9
Lucena.	Tayabas.	3	257.8	61.4	43.3
Bayombong.	Nueva Vizcaya.	8	34.8	29.5	37.6
Echague.	Isabela.	11	56.1	38.3	51.6
Tuguegarao.	Cagayan.	16	32.9	22.3	34.3
Apurri.	do	16	135.8	86.4	57.7

was an extraordinary lack of rainfall during the period 1903 to 1918. Only a few stations have been chosen, for which the total rainfall from November to May is given for every year of that period together with the percentage of the normal for the seven months, November to May.

It appears from this table that there has been a general lack of rain in the years 1903, 1905, 1912, 1914, and 1915. But the most important and more general periods of drought were those of 1903, 1912, and 1915. A few words on each of them will be of interest.

Drought of 1903.—As far as Manila is concerned we may say that the distribution of rainfall for the year 1903 was very extraordinary. There was a considerable lack of rain throughout the year, except only in December, thus making that year the driest on record since 1865 with the only exception of 1885. That the conditions shown by Manila records did not differ

TABLE XXIII.—*Rainfall in the Philippines during the year 1903.*

Station.	January to May.				June to October.			
	Normal.	1903	Difference.	Per cent.	Normal.	1903	Difference.	Per cent.
	mm.	mm.	mm.		mm.	mm.	mm.	
Aparri.....	528.8	260.6	—268.2	49	969.2	1,033	+ 63.8	107
Tuguegarao.....	66	188.8	+122.8	286	495.1	1,105.1	+610	223
Vigan.....	97	72.7	— 24.3	75	1,704.9	1,826.5	+121.6	107
Bolinao.....	146.7	118.6	— 28.1	81	2,242.2	1,795.5	—446.7	80
San Isidro.....	262.4	60.8	—201.6	23	1,349.6	982.9	—366.7	73
Manila.....	184.2	62.4	—121.8	34	1,536.2	773.7	—762.5	50
Daet.....	927.8	330.1	—588.7	37	1,316.5	722.6	—593.9	55
Atimonan.....	604.3	257.9	—346.4	43	1,261.9	1,184.1	— 77.8	94
Legaspi.....	974.4	552.6	—421.8	57	1,228.3	759	—469.3	62
Iloilo.....	334.3	180.7	—153.6	54	1,272.9	1,249.4	— 23.5	98
Cebu.....	331.5	169.8	—161.7	51	852.6	758.2	— 94.4	89
Bacolod.....	476.7	164.7	—312	34	1,748.2	1,234.6	—513.6	71
Surigao.....	1,532.1	836.4	—695.7	55	734.9	540.5	—194.4	74
Davao.....	733.9	509.9	—224	69	891.5	794.6	— 96.9	89
Zamboanga.....	235.1	71.8	—163.3	31	464.8	321.3	—143.5	69
Jolo.....	524.5	229.3	—295.2	44	721.9	1,074.7	+352.8	149

Station.	November to December.				Annual.			
	Normal.	1903	Difference.	Per cent.	Normal.	1903	Difference.	Per cent.
	mm.	mm.	mm.		mm.	mm.	mm.	
Aparri.....	490.1	561.3	+ 71.1	115	1,988.1	1,854.9	— 133.2	93
Tuguegarao.....	139.3	441.9	+302.6	317	700.4	1,735.8	+1,035.4	248
Vigan.....	65.8	119.1	+ 53.3	181	1,867.7	2,018.3	+ 150.6	108
Bolinao.....	42.5	147.5	+105	347	2,431.4	2,061.6	— 369.8	85
San Isidro.....	157.8	210.4	+ 52.6	133	1,769.8	1,254.1	— 515.7	71
Manila.....	194.5	194.3	— 0.2	100	1,914.9	1,030.4	— 884.5	54
Daet.....	642.5	1,575.6	+933.1	245	2,886.8	2,628.3	— 258.5	91
Atimonan.....	794.2	1,073.9	+279.7	135	2,660.4	2,515.9	— 144.5	95
Legaspi.....	758.1	1,573.4	+815.3	208	2,960.8	2,885	— 75.8	97
Iloilo.....	189.1	652.8	+463.7	345	1,796.3	2,082.9	+ 286.6	116
Cebu.....	288	504.9	+216.9	175	1,472.1	1,432.9	— 39.2	97
Bacolod.....	326.3	591.2	+264.9	181	2,551.2	1,990.5	— 560.7	78
Surigao.....	895.6	600.2	—295.4	67	3,162.6	1,977.1	—1,185.5	63
Davao.....	252.5	307.7	+ 55.2	122	1,877.9	1,612.2	— 265.7	86
Zamboanga.....	186.2	277.7	+ 91.5	149	886.1	670.8	— 215.3	76
Jolo.....	288	405.2	+117.2	141	1,534.4	1,709.2	+ 174.8	111