ANNUAL REPORT

OF THE

BUREAU OF HEALTH

FOR THE

PHILIPPINE ISLANDS

VICTOR G. HEISER, M. D.
DIRECTOR OF HEALTH
PASSED ASSISTANT SURGEON, UNITED STATES PUBLIC HEALTH
AND MARINE-HOSPITAL SERVICE

JULY 1, 1908, TO JUNE 30, 1909

MANILA
BUREAU OF PRINTING
1909

ANNUAL REPORT

OF THE

BUREAU OF HEALTH

FOR THE

PHILIPPINE ISLANDS

VICTOR G. HEISER, M. D.
DIRECTOR OF HEALTH
PASSED ASSISTANT SURGEON, UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE

JULY 1, 1908, TO JUNE 30, 1909

MANILA
BUREAU OF PRINTING
1909

ANNUAL REPORT OF THE BUREAU OF HEALTH.

BUREAU OF HEALTH,
Manila, July 26, 1909.

SIR: I have the honor to submit herewith the following report, which is a statement in general terms of the health and medical work carried on by the Bureau of Health for the year ended June 30, 1909, and the tenth annual report of this division of the Government of the Philippine Islands.

GENERAL ASPECT.

During the year just closed there were more large sanitary projects and works of public utility completed than during any similar period since the United States took possession of the Philippines, all of which may confidently be expected to have an important bearing in making for permanent sanitary advancement and a lowered death rate.

The new gravity water system, the supply for which is collected from an uninhabited watershed, was sufficiently advanced in November so that that water from this source has been exclusively used in the water mains of the city since that date, thus practically insuring the inhabitants of the city of Manila against a serious outbreak of cholera or other grave intestinal disease.

During May the new sanitary sewer of the city was ready for use and many connections have already been made, thus placing Manila in the front rank of Oriental cities in the question of sewage disposal.

The capacity of the Culion lepers colony was increased, so that it will now accommodate about 1,900 lepers, and the first collection of lepers has been made from all of the provinces except that of Nueva Ecija and Moro Province.

The Bureau of Public Works sunk forty artesian wells, and the provinces about as many more.

The Baguio Hospital, which has accommodations for 44 patients, was opened in July.

The modern reinforced concrete hospital at Bilibid, with a capacity of 376 patients, was ready for use in February.

A hookworm commission was placed in the field at Taytay and another at Las Piñas.

Extensive drainage improvements were made on the San Lazaro Estate, making it possible to transfer over a thousand persons thereto who previously occupied insanitary areas.

In addition to the foregoing and the ever-increasing amount of routine work, the Bureau combated with success a number of serious outbreaks of cholera, especially the one that occurred in Manila during September.

HEALTH IN THE TROPICS.

As each year's experience is added to that which went before, it is becoming more and more evident that those who observe a few simple rules can maintain good health in the tropics with more certainty than is possible in a temperate climate.

The diseases which occur most frequently in temperate climates, such as pneumonia, rheumatism, diphtheria, and scarlet fever, are the ones for which the prophylaxis is not well known, while the more common diseases in the tropics, like dysentery, hookworm, and malaria, are the ones for which the prophylaxis is well known. The following simple rules which are issued by this Bureau, if faithfully observed, will practically insure anyone from contracting the last-mentioned diseases:

1. Be vaccinated to-day. The Bureau of Health will do it free of charge.
2. *Never* drink any water unless it has been either boiled or distilled, or eat any raw vegetables. If you observe this rule carefully you will probably never contract dysentery, typhoid fever, cholera, or any other disease that originates in the intestines. Disregard of this rule is responsible for the returning to the United States of over 50 per cent of the invalids who leave these Islands.
3. Fruit is wholesome, and may generally be eaten raw with impunity, provided it is of a kind that grows upon trees, well above the ground.
4. Avoid patent medicines. "Do not put drugs of which you know nothing into bodies of which you may know less."
5. Alcoholic stimulants are not necessary, the advice of the "old resident" to the contrary notwithstanding.
6. Generally disease-carrying mosquitoes fly only at night; therefore, always sleep under a good mosquito net.
7. Otherwise observe the same hygienic rules that are applicable to temperate climates, including physical exercise.

LOW DEATH RATE AMONG GOVERNMENT EMPLOYEES.

The better care which the Government employees receive and the advantage of rejecting those obviously physically unfit has been most clearly demonstrated by the mortality rate of 8.62 for the fiscal year just closed.

The foregoing is believed to furnish an excellent example of what may be expected when the rules of hygiene are still further observed, and more especially when they become diffused among the masses. It also gives concrete proof of the value and necessity of modern health organization.

MUNICIPAL SANITATION IN MANILA.

The site of the city of Manila is a tidal flat intersected by the mouths of the Pasig River and numerous esteros or canals. That portion of Manila north of the Pasig has an elevation above mean high tide of

from 1 to 5 feet. The portion south of the Pasig River has an elevation of from 1 to 9 feet above mean high tide.

With this extremely low level, it will be readily understood that sanitation in Manila would be a difficult problem even under the best of conditions. Considering the conditions which really exist upon this low site, a tropical climate and a people whose ideas of personal hygiene are not very far advanced, the extent of the difficulty of making Manila a sanitary city may be appreciated. The problem of drainage and sewage is difficult because of the flat grades, but, for the surface at least, this difficulty is offset by short leads to the numerous esteros and water courses.

Prior to July 1, 1908, much good work in municipal sanitation had been accomplished. A new source for the water supply of the city, upon an uninhabited watershed, had been secured, and the city water system greatly extended. A pail conservancy system for the disposal of night soil had been inaugurated. The garbage-collection and street-cleaning departments had done much to transform Manila into a clean city. All this and much more in the suppression and prevention of epidemic diseases had been accomplished in a few short years, but there remain very many serious defects in the sanitary system which must be remedied to render Manila a sanitary city. The principal ones were persistently pointed out over a period of years by this Bureau, but with the exception of the removal of the barrio Rosario and a few other spasmodic efforts, no relief was obtained. Most of these defects date back scores of years, and occurred in the days when sanitation received very little attention in any quarter of the globe.

The gravest of these sanitary defects, and it may be considered the root of most of the trouble in making Manila sanitary, is the custom of permitting houses to be built promiscuously all over an interior plot of ground, without regard to street or alley lines. This neglect to supervise the construction of houses and the plotting of suburban subdivisions resulted in the growth of the horribly filthy and congested interiors in the strong-material districts, and of barrios or suburbs in the light-material districts, which were inaccessible by streets, and could only be entered by means of a narrow path between rice paddies, not wide enough to permit even a garbage cart to enter.

The second great defect, lack of system in surface drainage, is accentuated by the first. No effective systematic system of surface drainage is possible without streets and alleys, and where houses are crowded into an interior without streets or alleys and without regard to proper spacing.

The importance of a system of surface drainage in the light-material districts of Manila is at once apparent in view of the fact that the house and stable wastes of 90 per cent of these districts are cared for as surface drainage, and will have to be cared for as surface drainage for many years

to come. The condition of these insanitary congested interiors, without surface drainage, where the houses are so closely placed that one can scarcely pass between them, with their house and other wastes lying in pools under and between them, may be better imagined than described.

In these interiors and closed barrios, made up of collections of miserable shacks, without proper kitchen facilities and without surface drainage, with overcrowding greater than that of the famous "lung" blocks of New York or Chicago, the difficulty of finding and combating epidemic diseases is very great. Even if fortunate enough to possess a public closet, it is so much easier to throw their excrement out of the window or under the house that a very large proportion of these denizens never patronize the public midden shed. Imagine the difficulty of disinfecting an area of this description, of detecting contacts, and maintaining a quarantine.

The efforts of the Bureau to correct these defects, to clear out insanitary interiors, to open closed barrios, and to secure some kind of surface drainage, met with little success. The better class of people in Manila seldom go into the interiors, and many considered that the Bureau was only persecuting an inoffensive class of poverty-stricken unfortunates. It needed the lesson of a severe cholera epidemic at a time when serious losses to business would result, to awaken public opinion and give the Bureau the support so long withheld. The Municipal Board, as guardian of the city finances, evidently considered financial economy and retrenchment as more necessary than sanitation. With the object lesson of a severe epidemic and the prestige of a successful campaign ending with suppression, the recommendations of the Bureau of Health began to receive attention, and results, even if slow, are beginning to materialize.

The cardinal principle in preventing the spread of cholera and suppressing an epidemic is the safe disposal of the excrement of the entire population. This is a simple proposition with a modern city, a modern sewer system, and flush closets. In the poorer districts of Manila, through lack of or failure to use closet facilities, the task of finding all fecal matter was both arduous and costly. Areas properly drained and dry, in which the houses are properly spaced, can be disinfected by a few hours' sunlight, without cost. Emergency drainage and disinfection of the overcrowded, undrained interiors described above was effected slowly, cost much money, and had to be frequently repeated. To render swampy filthy interiors safe, disinfection of whole areas is involved. To find places soiled by fecal matter in a dry clean interior is an easy matter, and only the soiled spots need to be disinfected.

After the disappearance of cholera from Manila, the Bureau of Health made strenuous efforts to get rid of the insanitary nipa-shack interiors in the district of strong materials, and have city water and public midden sheds placed at the disposal of every inhabitant of the poorer districts. Considerable success was achieved along these lines.

Six hundred and forty-one of the most insanitary hovels were ordered vacated and were removed from the strong-material district. Forty-four additional midden sheds and fourteen public water hydrants were installed during the year. Much more could have been done toward obliterating the congested interiors if more sanitary building sites had been available. Experience has shown that it will be necessary to lay out such building sites and to arrange for cheap rental. It is useless to insist upon destroying the houses of the inhabitants of the insanitary districts unless a proper place is provided for them to settle. Otherwise, it will be a case of driving them from one insanitary site to another, and charges of persecution will be hard to refute. The *sanitary barrio* is the foundation upon which all future work in the sanitation of Manila will be based.

It should be as near as practicable to existing avenues of communication. It should be upon easily drained land. It should be subdivided into streets, alleys, and lots according to a definite plan. The unit of the sanitary barrio should be the *sanitary block*. Each sanitary block should contain each of the following necessities:

1. Streets and alleys.
2. A system of surface drainage.
3. Public closet.
4. Public bath and laundry.
5. Public water hydrants.

The insanitary congested interior should be prevented by an ordinance prohibiting the building of houses which do not front or abut upon a public street or alley or upon a private street or alley which has been approved.

With the platting and installation of the sanitary barrrios, the congestion in the most insanitary districts could be relieved, the low places filled in, streets and alleys cut through, and a system of surface drainage installed. Public closets, public water hydrants and public washing places must be added wherever necessary.

A market for Tondo with water communication is a necessity to prevent the illegal use of Tondo Beach as a market. Produce from the frequently cholera-infected towns of Bulacan, Pampanga, and Rizal is brought to Tondo Beach and sold. The people selling illegally have no compunction about disposing of prohibited and dangerous foods in time of cholera. In response to the recommendations of the Bureau of Health with regard to this matter, the Municipal Board has decided to erect a market at the Pretil Bridge, which will bring these illegal venders under control and reduce to a minimum the danger to the public health from this source.

The walling of the esteros is one of the most important sanitary necessities of Manila. The cost of this project is believed to be large,

but it must be done sooner or later and the cost could be covered by a bond issue, distributing the burden over a period of years.

The sanitary treatment of the esteros of Manila is only second in importance as a sanitary measure to the installation of sewer and water systems, and must be undertaken. It is said that the cost is prohibitive, estimated roughly at ₱5,000,000; but under an arrangement as above suggested, this work could be commenced at once.

The useful commercial esteros could be dredged and walled, and the low places along their banks and any other depressions in the city could be filled with the mud from the esteros. Useless ramifications of the esteros could be filled in, and the useful esteros straightened. The lowlands within the city limits now used for agricultural purposes involving irrigation, should be filled with the products of the dredges and raised to a level fit for residential purposes.

To sum up, the sanitary necessities of Manila, in the order of urgency, are as follows:

1. Sanitary barrios, as outlined above, upon which to settle occupants of insanitary houses, ordered vacated.

2. The Manila city water supply must be extended to every part of the city and placed within easy reach of everyone.

3. Tanks and reservoirs must be so constructed as to preclude the possibility of contamination.

4. Esteros must be controlled and confined to definite beds either by adequate walls or by dredging, so that any overflow land will be drained between tides.

5. The filling in of low places, which can not be drained, to the proper height above the curb is essential.

6. Public closets must be established in all barrios, so that every inhabitant of the city of Manila will have closet facilities at his disposal. It is advisable to have more closets even if of less seating capacity; six closets of six pails each will be of more value than three of twelve pails each, for the reason that the native has a shorter distance to travel. Also, the cutting of alleys through back yards will facilitate his journey to the closet.

7. Before permitting land to be used for building purposes within the city limits, the land should be subdivided by streets and alleys upon a definite plan. The indiscriminate building of nipa shacks in the interior of a block without order or regard for necessary intervening spaces should not be permitted. Streets and alleys should be cut through already existing collections of nipa shacks and, when necessary, houses removed to permit proper spacing. Streets must be opened into barrios within the city limits which are now isolated, and have no wagon roads entering them, to permit the collection of garbage and refuse.

8. All wells must be filled in.

9. Stricter enforcement of the building code in the erection of new buildings is necessary.

10. A proper system of surface drainage for every part of the city of Manila where such drainage is lacking, but especially for (1) the San Lazaro Estate and that portion of the city from the San Lazaro Estate to the railroad crossing on both sides of Calle Cervantes, (2) Santa Monica, (3) Antonio Rivera, (4) Palomar and Magdalena interior, (5) that portion of Tondo north of Moriones and west of Estero de la Reina, and (6) that part of Malate district bounded by Herran, Wright, San Andres, and Nueva.

Special attention is invited to the three maps which have already been submitted in discussing this matter with the Governor-General and the city engineer, but which are not reproduced here on account of their size:

The first showing the sanitary work done prior to July, 1908, in the matter of the installation of public closets, public water hydrants, and the removal of insanitary shacks; the second showing the work done in this direction for the period between July 1, 1908, and July 1, 1909; and the third showing the sanitary necessities which will have to be supplied in the future to make Manila a sanitary city. This map, however, does not show a complete system of surface drainage nor the project for the treatment of the esteros.

MEDICAL EDUCATION.

The facilities for the study of medicine offered by the two high grade medical colleges of Manila have been taken advantage of during the year in a manner never equaled before. The study of medicine has become a serious preparation for a scientific profession and not a preparation for a political career.

The Philippine Medical School operating under Government auspices and the San Jose Medical College, the Medical Department of the Royal and Pontifical University of Santo Tomas, have vied with each other in a commendable rivalry for improvement.

The first graduation exercises of the Government school were held in the Zorrilla Theater on Saturday morning, February 27, 1909. The graduating class consisted of eight young men who had formerly studied in Santo Tomás University or some other institution of equally high standing, and had been in attendance at the Philippine Medical School during the two years of its existence.

The course of study in the Government school covers five years, and is designed to fit students for actual practice of their profession among their own people, the purpose being to get as many as possible of the graduates to locate in the remote municipalities where they are needed.

MISINFORMATION CONCERNING THE PHILIPPINE ISLANDS.

An obstacle of no small importance with which the American Government in the Philippine Islands has had to contend, but one which is generally not taken into consideration, is that of the widespread misinformation concerning the Islands.

From Hamburg to Hongkong, from Singapore to the Suez, from Washington to San Francisco, it is the same. The climate, one of the best of its kind in the world; the people, the great majority of whom are peaceful and contented; the resources, still largely undeveloped; the harbors and the safety of the waters; the health condition, not by any means bad, and the government, which, if it has erred at all, has erred on the side of kindness and magnamimity, all come in for their share of misrepresentation. Even matters about which accurate data could be had for the asking are the subject of grossly misleading newspaper articles which, in some cases, possess enough truth to give them an aspect of plausibility.

In view of the foregoing, it is refreshing to have a retraction at least occasionally, a sample of which, taken from the Milwaukee Medical Journal of May, 1909, is as follows:

> The editorial in question was unfortunately worded, inasmuch as the criticism would appear to apply equally to conditions in the Philippines and in Russia. At the time when both countries were suffering from cholera, the newspapers were full of the horrors alleged to be existing in Russia, whilst the conditions in the Philippines were not brought with any particular prominence before the people. In common with the mass of newspaper readers, my indignation was directed against the authorities in Russia, where, it was reported, the sanitary conditions were of the worst, the water supply, in many places, polluted by excreta of cholera patients, and corpses lay for long periods of time unburied. That such unsanitary conditions should exist in a country so thoroughly governed, and where the ruling class is not behind any other nation in intelligence, seemed most reprehensible and instigated the editorial. I can only say in palliation that at no time during its writing or since did I think of the Philippines in connection with these horrors, for the magnificent work done by our medical department in our insular possessions and in Cuba is too well known to the reading public, and especially to the profession, to associate it in the slightest degree with shirking of duty or shifting of responsibility upon Divine Providence. The Americans as a people are not fatalists and are not inclined to "stand idly by" when there is any opportunity to endeavor to avert a calamity, nor are they slack in extending a helping hand, and their sympathy is not of the frigid variety. They are a nation of doers, and when the impulse and ability to work is directed by enthusiastic scientists something is bound to be accomplished for the benefit of mankind. That something great has been done, Havana and the Canal Zone stand as witnesses, and no less loud in proclaiming what may be accomplished and what has been done are the results of the labor of the self-sacrificing men and women, so ably directed, in the Philippines. We who are enjoying the comforts of our own favored land have very faint conception of the arduousness, the danger, and the thanklessness of the work in which these pioneers in bringing about healthful conditions are engaged. Far be it, then, from any

of us to cast any slur upon their work or to subject them to any word of adverse criticism. Rather should we hold up their hands and comfort them with the knowledge that their work is thoroughly appreciated.

THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

The Philippine Islands Medical Association, under the direction of its president, Dr. Ariston Bautista y Lim, met for its sixth annual meeting February 11, 1909.

The annual meetings of this association stimulate and crystallize much of the medical thought in the Islands and exert a powerful influence in creating a favorable public opinion in behalf of medicine, and more especially do they serve as an important educational factor in the great questions of scientific sanitation and thereby cause a healthy sentiment in their favor.

There were six scientific sessions held at which the following programme was carried out:

FIRST SESSION.

Wednesday, February 10th, at 4 p. m. (Meeting of the House of Delegates at 3 p. m.)

The calling of the association to order.

Prayer by the Rev. Murray Bartlett, D. D., dean of the Cathedral of St. Mary and St. John, Manila.

Opening address by the Hon. James F. Smith, Governor-General of the Philippine Islands.

The President's address: "The tuberculous patient in the Philippine Islands," by Dr. Ariston Bautista.

Adjournment.

Exhibition of pathological specimens.

SECOND SESSION.

Thursday, February 11, at 10 a. m.

Filtration experiments on the virus of rinderpest with Chamberland filter F. Dr. E. Henry Ruediger, Biological Laboratory, Bureau of Science, and associate professor of pathology and bacteriology, Philippine Medical School.

The reaction of culture media in relation to the morphology of the cholera organism. Dr. Y. K. Ohno, Biological Laboratory, Bureau of Science.

Some clinical features of tropical diseases. Dr. Thomas W. Jackson, Medical Reserve Corps, United States Army.

The third International Congress on Tuberculosis. Dr. Victor G. Heiser, passed assistant surgeon, United States Public Health and Marine-Hospital Service, Director of Health, and Dr. Fernando Calderon, professor of obstetrics, Philippine Medical School.

Further observations on bacterial vaccinations. Dr. Eugene R. Whitmore, captain, Medical Corps, U. S. Army, Biological Laboratory, Bureau of Science.

THIRD SESSION.

Thursday, February 11, at 3 p. m.

The treatment of cholera during the recent epidemic in Manila. Dr. H. J. Nichols, first lieutenant, Medical Corps, United States Army, and Dr. Vernon L. Andrews, Biological Laboratory, Bureau of Science.

Some experiments on the cultivation of the *Lepra bacillus*. Moses T. Clegg, Biological Laboratory, Bureau of Science.

The Nastin treatment of leprosy. Dr. Oscar Teague, Biological Laboratory, Bureau of Science.

Recent observations concerning the structure of the central nervous system. Dr. Robert B. Bean, associate professor of anatomy, Philippine Medical School.

The structure of the neuron subjected to anemia. Dr. Liborio Gomez, Biological Laboratory, Bureau of Science.

FOURTH SESSION.

Friday, February 12, at 10 a. m.

Observations upon an epidemic of beriberi. Dr. Louis Brechemin, jr., captain, Medical Corps, United States Army.

A case of chyluria with no discoverable filaria. Dr. Florentino Herrera, municipal physician, Bureau of Health.

What sanitation has done for the Tropics. Major Probyn, D. S. O., Royal Army Medical Corps, Hongkong.

The suppression of a cholera outbreak in the provinces. Dr. Allan J. McLaughlin, passed assistant surgeon, United States Public Health and Marine-Hospital Service, Assistant Director of Health.

A résumé of camp prophylaxis against typhoid, malaria, and dysentery. Dr. Percy L. Jones, captain, Medical Corps. United States Army.

Physiologic food factors in childhood. Dr. Eleanor J. Pond, Manila.

Some investigations concerning the food and nutrition of the Filipino people. Dr. Hans Aaron, assistant professor of physiology, Philippine Medical School.

FIFTH SESSION.

Friday, February 12, at 3 p. m.

Ectopic gestation. Dr. Henry Fitzbutler, Biological Laboratory, Bureau of Science.

Presentation of two cases of epigastric hernia. Dr. Otto Bartels, Manila.

Clinical notes on a series of surgical cases. Dr. John R. McDill, surgeon in chief, St. Paul's Hospital, and professor of surgery, Philippine Medical School, and Dr. Philip K. Gilman, Biological Laboratory, Bureau of Science, and Associate professor of pathology and bacteriology, Philippine Medical School.

The study of Obstetrics in the United States, France, Russia, and China. Dr. Fernando Calderon, professor of obstetrics, Philippine Medical School.

Therapeutic use of fibrolysin. Dr. W. J. B. Burke, professor of clinical medicine, University of Santo Tomás.

Spinal anesthesia. Dr. Gregorio Singian, associate professor of surgery, Philippine Medical School.

SIXTH SESSION.

Saturday, February 13, at 10 a. m.

(*a*) The Development of the miracidium of paragonimus; (*b*) The intestinal worms of women and children in the Philippine Islands. Dr. Philip E. Garrison, assistant surgeon, United States Navy, Biological Laboratory, Bureau of Science, associate professor of medical zoölogy, Philippine Medical School; Ricardo Laynes, student demonstrator in medical zoölogy, and L. Llamas, student assistant in medical zoölogy, Philippine Medical School.

Two cases of *Balantidium coli* infection with autopsy. Dr. Fred B. Bowman, Biological Laboratory, Bureau of Science.

Piroplasmosis. Prof. Dr. Eric Martini, surgeon-major, Imperial German Navy, Tsing Tau.

The distribution of filaria in the Philippine Islands. Dr. J. M. Phalen, captain,

Medical Corps, U. S. Army, and Dr. H. J. Nichols, first lieutenant, Medical Corps, United States Army.

Two new species of poisonous snakes. Dr. L. E. Griffin, Biological Laboratory, Bureau of Science.

The relation of the Indian form of relapsing fever to African tick fever. Dr. Richard P. Strong, Director, Biological Laboratory, Bureau of Science, professor of tropical medicine, Philippine Medical School.

The character of the papers read was very high, and with the sole exception that the number of foreign delegates was not as great as that of the preceding year, the meeting was one of the most successful in the history of the association.

Hongkong was represented by Maj. Probyn, D. S. O., Royal Army Medical Corps of Great Britain; German New Guinea by Dr. Otto Bartels; China by His Imperial Chinese Majesty's consul, and Japan by Dr. Y. K. Ohno.

THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE.

Probably the most important medical event in the history of the Philippine Islands will be the convening of the first annual meeting of the Far Eastern Association of Tropical Medicine in Manila on March 6, next.

The meeting has received the official support of the Philippine Government, and the latter will invite all of the countries east of the Suez to participate by sending delegates. As the representative medical men of most of the countries are already members, a large attendance is practically assured.

The Philippine Islands Medical Association will merge its meetings for 1910 with that of the Far Eastern Association of Tropical Medicine.

This association will meet in Manila March 6, 1910, as stated above, and continue in session until the 14th. The following preliminary circular has been issued by the president:

FIRST BIENNIAL MEETING OF THE FAR EASTERN ASSOCIATION OF TROPICAL MEDICINE, MANILA, P. I., MARCH 6 TO MARCH 14, 1910.

DEAR SIR: In accordance with the report of a permanent committee on programme, appointed at the sixth annual meeting of the Philippine Islands Medical Association, for the first biennial meeting of the Far Eastern Association of Tropical Medicine be held for a period of nine days, opening Sunday afternoon, March 6, 1910, and closing with a business session at Baguio, Benguet, the summer capital of the Philippines, on Monday, March 14, 1910. The following has been adopted as the outline of a programme:

AT MANILA.

Sunday afternoon, March 6.—Opening session.
Monday, March 7.—Protozoölogy, helminthology.
Tuesday, March 8.—Cholera, plague, and leprosy.
Wednesday, March 9.—Surgery and obstetrics; diseases of children.
Thursday, March 10.—Fevers in the tropics, including malaria, typhoid, etc.
Friday, March 11.—Dysenteries; beriberi.
Saturday, March 12.—Enroute to Baguio.

AT BAGUIO.

Sunday, March 13.—Tuberculosis.

Monday, March 14.—Climate, hygiene, and sanitation; business session re- return to Manila Monday night.

It is proposed that the daily sessions begin at 9 a. m. and continue until 5 p. m. with an intermission from 12 to 2 for luncheon. The sessions on tuberculosis; climate, hygiene, and sanitation, and the business session will be held at Baguio, in the Benguet Mountains.

A suitable social programme will be arranged.

In order that the committee on arrangements may, at an early date, have at hand as much information as possible regarding the probable attendance and the material available for the final programme, it is requested that you fill out the accompanying blank at your earliest convenience and forward it to Dr. E. R. Whitmore, secretary-treasurer of the Philippine branch of the Far Eastern Association of Tropical Medicine. It is earnestly desired, also, that you furnish such ideas and criticisms concerning the proposed programme as may suggest themselves.

I am, very truly, yours,

PAUL C. FREER,
President of the Far Eastern Association of Tropical Medicine.

SESSIONS.

Protozoölogy, helminthology. Cholera, plague, leprosy. Surgery and obstetrics; diseases of children. Fevers in the tropics, including, malaria, typhoid, etc. Dysenteries, beriberi. Tuberculosis. Climate, hygiene, and sanitation.

ARMY MEDICAL BOARD FOR THE STUDY OF TROPICAL DISEASES.

The work of this board during the year has been a decided stimulus to those engaged in solving the problems connected with tropical diseases, and has been a direct aid in dealing with certain investigations. One of the members, Lieut. H. J. Nichols, served in the Taytay hookworm commission, and Capt. James M. Phalen accompanied the Bureau of Health parties on the leper collecting ship, the steamer *Basilan,* and rendered much assistance in making diagnoses. He also did considerable work in connection with the etiology of the lesions as found in the terribly scarred and disfigured persons who have been frequently classed as lepers, or who were thought to be syphilitic, in collecting evidence which tends to show that many of these cases are possibly a third stage of yaws.

The wide activity and usefulness of this board can be seen in detail by consulting the reports made to the Surgeon-General of the United States Army, and the contributions to the medical journals.

PHILIPPINE GENERAL HOSPITAL.

The constant agitation which the medical men of the Islands have waged so many years for a modern hospital, was definitely recognized in last year's appropriation bill, and it is now satisfactory to report that at the close of the year a greater portion of the buildings are actually under roof, and not many more months should elapse before the institution will be ready to receive patients.

The question as to whether the hospital should be managed by the Government as a separate bureau or institution, or whether it should be conducted as a division of the Bureau of Health, was practically settled by the last Legislature when it appropriated ₱100,000 for equipment, and other amounts, directly to the Bureau of Health. This institution will now be managed and known as the "Philippine General Hospital Division" of this Bureau, and the services furnished by the Civil Hospital will be merged with it, so that before another year passes, the Civil Hospital will have ceased to exist as such.

Placing the management of this institution under the Bureau of Health will add enormously to the large amount of work which is already being done by the Bureau; the purchase of the equipment and superintendence of the final completion will alone cause as much labor as is done by many Bureaus of the Government. With this additional weapon, however, the Bureau will be in a still better position to combat disease and meet the problems which confront it.

It is satisfactory to report that a careful study of the new hospitals constructed within the past few years both in Europe and America shows conclusively that the Philippine General Hospital will be one of the most modern of its kind and a great credit to the Philippines.

MUNICIPAL HEALTH SERVICE.

During the past year the real weakness of the municipal health service was brought most forcibly to the attention of the Bureau. During the early part of the cholera outbreak in the Province of Pangasinan an effort was made to have the disease combated by the local boards of health, in order that each municipality might be impressed with the responsibility which confronted it. In a few municipalities the measures were promptly and effectively carried out, but in the large majority there was nothing but apathy and indifference, so that the municipal health officer, even if he happened to be efficient, was unable to accomplish anything. At times when the prompt isolation of a case of cholera and the disinfection of a stool would have saved a town from an invasion of the disease, the factional disputes would be such that the municipal council could not be convened for lack of a quorum, or it would decide that guava water was a more desirable disinfectant than carbolic acid, or some other obstructive tactics would be indulged in. In other instances, the health officer happened to be *persona non grata* through religious, political, or personal differences. One of the weapons of persecution was the reduction of salary to the lowest possible limit.

So long as the municipal health officer is dependant upon one or the other faction of a municipality for his position, an entirely impartial official can not be expected. In view of the foregoing, it is believed that methods similar to those which have recently been put

into force in Cuba will have to be adopted in the Philippines if an efficient and economical municipal health force is desired.

Each municipality should have a health officer, or acting health officer, appointed by the Director of Health and paid from the Insular Treasury, the Insular Government to be reimbursed for the amount of salary paid. If no licensed graduate of medicine is available for the position, or if the town is too poor to pay a salary which would attract an efficient man, several municipalities should be combined into a health district as provided for by law. There should be as many provincial sanitary inspectors as there are municipalities. These should be appointed by the Director of Health, paid from the Insular Treasury, and the Insular Government reimbursed by the provinces. One of these inspectors would ordinarily be stationed in each municipality, but they could be concentrated anywhere in the province to combat communicable diseases or insanitary conditions, subject to the order of the Director of Health, or the district health officer with the approval of the Director of Health. They could be used as municipal health officers when necessary.

The municipal police can be used as local sanitary inspectors for house-to-house inspections. This duty is not inconsistent with their other duties; in fact, it is a distinct advantage in the maintenance of public order to have the police patrolling the barrios rather than setting idly in the *presidencia*. Each municipality should be divided into subdistricts according to the number of police available, and in time of threatened epidemics a provincial sanitary inspector should be placed in charge of the police acting as sanitary inspectors.

One other very necessary thing in municipal organization is transportation for the health officer or sanitary inspector in charge of the house-to-house inspections. The municipality should furnish this transportation, as the efficiency of the house-to-house inspection depends upon the ability of the inspector in charge to move rapidly. This transportation would also serve to carry the health officer and quarantine guard to a suspicious case with the promptness necessary in preventing the spread of contagious diseases. Prompt visiting and quarantining of suspicious cases is one of the primary requisites of a successful cholera campaign, and it is necessary to separate from the service any health officer who does not answer with alacrity a summons to visit a suspicious case.

MEDICAL AID IN THE PROVINCES.

Medical men are still reluctant to leave the large cities like Manila and settle in the provinces. A persistent effort has been made in every legitimate way to induce better qualified medical men to locate in the more remote districts. Several years ago an Act was passed whereby two or more municipalities might be combined into one municipal health district and thus be able to offer a more attractive salary. Quite a number of

medical men then located in the provinces as a result of this inducement, but unfortunately it is still a fact that there are many sections in the Philippines where no skilled medical aid is available and where many persons succumb to injuries and afflictions that could be easily relieved. Much has been done toward extending relief to this class of persons by furnishing medicines and medical supplies gratuitously to missionaries, school-teachers, and other kindly disposed persons, who extend aid to the sufferers. During the year a brief set of instructions was prepared for the use of persons who were not familiar with the administration of simple remedies, and in this way it has also been possible with the free medicines sent out to extend relief over a greater area and reach more people.

HEALTH CONDITIONS IN THE MORO PROVINCE.

The Moro Province is organized under a special Act of the Philippine Commission and is governed somewhat differently from the other provinces which are organized under the Provincial Code.

The province is divided into five districts and each district into a number of municipalities. The health organizations consist of a provincial board of health, five district boards of health, and several municipal boards of health. The law is so framed that the responsibility for the character of the services in health lines lies almost entirely with the provincial board of health, which as at present organized, has no medical member. The provincial board of health, while practically independent, nominally exercises its powers under the direct supervision of the Bureau of Health for the Philippine Islands. This relationship in law is undoubtedly responsible for the belief that the central Bureau should assume a portion of the financial responsibility, especially in the care of the insane and lepers of the province.

To bring the health organization of this section of the Philippine Islands in conformity with that of the provinces governed under the Provincial Code, this office has recently submitted the draft of a proposed law to the honorable the Secretary of the Interior. If this bill passes, boards of health will be supplanted by health officers, except in municipalities, and the province will be in line with the central Bureau and with the trend of sentiment among health officers.

THE PHILIPPINES CARNIVAL.

The second Philippines Carnival was held in Manila from the 2d to the 9th of February, 1909. Following the precedent established last year by Capt. Percy L. Jones, Medical Corps, United States Army, the Sanitary Code was adopted as a basis for the Carnival requirements in health lines.

The Carnival Association was represented by Captain Ruffner, Medical Corps, United States Army, and the Bureau of Health by Dr. Paul

Clements. The actual sanitary measures were instituted by J. C. Mehan, chief of the department of sanitation and transportation of the city of Manila, and by Will L. Doud, superintendent of sanitation for the city of Manila, who carried out their part of the work so well that this feature of the Carnival was a success in every particular, and created no friction whatever. Only those having immediate business with the sanitary board knew of the existence of such a board.

The disposal of excreta, the removal of garbage and waste, the supplying of distilled water, the inspection of foods and drinks, the preparation for accidents, all were carried out so thoroughly and systematically that scientific sanitation may be said to have again demonstrated its value in preventing disease and unnecessary suffering.

PROVINCIAL SANITARY REPORTS AND STATISTICS.

The Bureau of Health has been collecting provincial sanitary statistics since 1903, but not until within the period covered by this report has it ventured to publish any part of such reports, as, on account of their manifest inaccuracy, they could not be relied upon.

As stated in last year's report, an elaborate system of municipal and provincial sanitary reports has been maintained more for the sake of education than for their practical value.

With the view of making a start in this matter, the provincial statistics are included this year, and can be found in the statistical portion of this report. It is evident that the figures are far from accurate, because it is believed that the average provincial death rate is over 40 per thousand.

EMBALMERS.

The number of embalmers in the Philippines is rather limited, with the exception of those in the Army. The former customs of the country with regard to the disposal of the dead practically excluded the embalmer until the advent of the Americans, when it became necessary to practice the art of embalming for the preservation of bodies of the soldier dead for shipment to the homeland.

In Spanish times the practice was to deposit the body in rented graves or in leased niches, the lease period being usually for five years. When the time expired, unless the lease was renewed by another cash payment, the bones were thrown out, or in the case of the well-to-do, removed to their final resting place under the basement floor of a church. The remains of Spaniards were frequently shipped across the sea to be deposited in the churches where the deceased persons in infancy had received the sacrament of baptism. Now, however, the shipment of bodies to the United States and to other countries is a frequent occurrence, and this Bureau finds that the work of inspection which has for its object the transfer of bodies under sanitary conditions increases from year to year and considerable difficulty is experienced in finding persons with sufficient training to do the embalming properly.

ESTEROS (CANALS).

Owing to the small appropriations that have been made, the important work of dredging the esteros has not been as frequently done as it should have been. Last year the estero San Sebastian was the only one which received any attention. The dredging of the estero was done by hand, the mud being conveyed to certain city property adjacent to Plaza Carmen in bancas and deposited there, and the land which had been a mud hole was soon ready to be utilized as a stone depository for the city.

After months of waiting and after many vigorous protests against their present condition, some dredging was finally done during the latter part of the fiscal year. Much delay was caused by the settling of a dispute as to whether a certain part of an estero was a navigable stream and therefore under the jurisdiction of the Bureau of Navigation, or whether the duty of cleaning it devolved upon the city of Manila.

NEW WATER SUPPLY.

The following report of the opening of the new water supply appeared in the Manila Times of November 13, 1908.

Yesterday at 4.30 p. m. Gov.-Gen. James F. Smith turned the wheel which opened the gates that gives to Manila an additional supply of 50,000,000 gallons of water.

In addition to the new reservoir Manila has the old Deposito with a capacity of 15,000,000 gallons, while the pipe line from the dam at Montalbon is capable of turning in 22,500,00 gallons of the new supply every twenty-four hours.

The pressure on the old line during the day at the City Hall was about 12½ pounds to the square inch, although at 2 a. m. when El Deposito was full and but little water being used the pressure would reach 30 pounds to the square inch. This morning, with the new water supply turned on, the Manila mains have a pressure of from 45 to 55 pounds to the square inch, giving a supply of 100 gallons of water a day for every man, women, and child in the city.

At 3.15 p. m. yesterday the Municipal Board and invited guests left the City Hall in a special car for San Juan del Monte. Among others in the party were Governor-General Smith, Commissioner Worcester, Commissioner Gilbert and wife, Assistant Engineer Hubbell and wife, the procurator-general of the Dominican Order which donated the land for the reservoir and his secretary, and representatives of the press.

On reaching the San Juan loop the party transferred to ambulances furnished by the city and completed the journey to the reservoir where a large crowd of citizens had gathered to witness the opening exercises.

In the gatehouse Major Case, chief engineer of sewer and waterworks construction, made a short address in turning over the reservoir to the city, and at the close of his remarks handed over the keys of the gatehouse to Felix M. Roxas, President of the Municipal Board.

President Roxas replied to the speech making special mention of the advance made by Manila in being able to furnish such an additional supply of excellent mountain water to the citizens, and at the close of his speech designated Governor-General Smith as the proper person to turn the wheel that would open the flood gates of the new reservoir. The Governor-General took the wheel with a will and soon the rush of water could be heard beneath the gatehouse as it passed into the city mains.

Refreshments were then served and shortly after 5 o'clock the party started on the return journey, leaving the wagons for the special car at the loop.

The reservoir is rectangular in plan and measures 509 by 764 feet and is 20 feet deep. Its capacity is 50,000,000 gallons. Its construction involved the excavation of 275,000 cubic yards of material, the placing of about 9,000 cubic yards of concrete, and the use of about 20,000 pounds of steel.

The gatehouse, inlet, and outlet are so arranged that water may be drawn directly from the headworks, directly from the reservoir, or from both at the same time.

The water surface is 140 feet above the datum plane of the city, and the pressure throughout the city will be about 20 pounds per square inch more than at present.

The water is carried from the headworks to the tunnels by means of a riveted steel pipe line 42 inches in diameter, 10½ miles long.

The dam is 400 feet long on the crest and about 85 feet in extreme height. It is built of cyclopean masonry, or concrete in which large stones are embedded. Behind the dam will be a storage basin which will serve the city during the dry months when the discharge of the river is less than that necessary for the supply.

The cost of the completed work is about ₱3,000,000 as far as the Deposito, and the distribution system to be installed throughout the city will cost about ₱1,000,000 additional.

THE NEW SEWER SYSTEM OF MANILA.

The installation of the new sewer system for the city of Manila ranks second only to the new water system above mentioned, is one of the most costly of permanent sanitary improvements that has been completed since American occupation, and ranks easily among the best installations in the Orient. It also furnishes a most striking example of the different method of sewage disposal in Manila as compared with other large eastern cities. Here the removal of night soil is a source of great expense to the Goverment, the installation of the system having cost ₱3,300,000, and the annual operation charge will be at least ₱150,000, almost half of which can be credited to night soil; while in cities like Hongkong or Tokyo there was no charge for installation, and there is an annual revenue of about ₱75,000 (Mexican dollars) and ₱3,000,000 (Mexican dollars), respectively.

The contractors turned the new sewer system over to the city on May 25, from which time up to the close of the fiscal year there were 34 connections made.

The ordinances which will prescribe the rules and regulations which are to govern the questions as to who, when, and how connections are to be made, have been receiving most careful consideration since April. Every effort is being made to have the system universally used without causing actual hardship. It is obvious that there will be many instances in which a person may have sufficient means to construct a house which would comfortably meet his needs, and which would cost perhaps ₱300, but in order to install the necessary sanitary fixtures which could be safely connected with the new sewer system, an additional outlay of

a similar or even greater amount would be necessary. This is a condition which obviously must be met.

A complete technical description of the system will be found in the annual reports of the Municipal Board, but the following may be of interest:

The sewers range in size from 20 centimeters to 1.75 meters, and the slopes are sufficient to warrant a velocity of not less than 65 centimeters per second when flowing one-half full. The minimum depth is 1.5 meters, and the maximum depth is 5.4 meters.

Five substations are required to give the system the flow mentioned above, and are located as follows:

	Gallons per 24 hours.
Ermita, with a capacity of	5,000,000
Santa Cruz, with a capacity of	12,000,000
Quiapo, with a capacity of	5,000,000
Malate, with a capacity of	2,000,000
Paco, with a capacity of	800,000

These pump the water to the main pumping station, which is located on the beach in the lower part of Tondo, the latter having a capacity of 25,000,000 gallons for twenty-four hours. The main station has a lift of approximately 8.8 meters, and discharges into the bay through a 1.05-meter cast-iron force main laid 3.05 meters below the bed of the bay, at a point approximately 1½ kilometers from the shore. This pipe terminates in a vertical position, which was done for the purpose of making the discharge take place above the bottom of the bay. This outlet end is encased in a huge block of cement masonry which rests upon a timber platform supported by a group of piles.

Branches or outlet pipes have been provided at intervals of 12 meters throughout practically the entire sewer system. This system will be ventilated by omitting the vent pipe and continuing the soil pipe and vent stack of each house connection full size through and above the roof. Flush tanks with suitable connections to the water system supply have been constructed at the ends of the primary lateral sewers for the purpose of keeping them clean and in a satisfactory condition. These tanks have been built to hold about 1,320 liters of water each and are provided with gates and handles for operation by hand. This feature is unique and has been introduced for the first time in Manila.

The pumping plant consists of centrifugal pumps driven by electric motors, and are supposed to be automatic, the rise and fall of the sewage in the sewer starting or stopping the pumps as occasion may require.

Some idea of the magnitude of the contract may be gathered from the fact that the excavation alone represented 260,100 cubic meters and the iron pipe used weighed 2,180 metric tons and measured 2½ kilometers. Of this there were 1.9 kilometers of 1.05 meter pipe used for the outfall and sewer in the bay and the balance of from 0.2 of a

meter to 0.6 of a meter. The concrete used in this construction was represented by 30,600 cubic meters and in this work over 50,000 barrels of Green Island cement were utilized. All the main sewer was constructed of concrete as were over 900 manholes and 265 flush tanks for flushing the entire system. The length of the main sewers is approximately 12.87 kilometers built in egg shape.

Over 1,530 cubic meters of brick masonry were laid in the manholes in which over 1,200,000 bricks were used. The terra-cotta pipe laid covers in all over 68 kilometers varying from 0.2 to 0.6 of a meter.

For bracing the excavations alone, the company utilized over 1,000,000 feet of lumber which gives some idea of the extensive operations under way at one time throughout the city in order to make headway, meet every requirement of the contract, and at the same time not impede traffic in the city streets.

ARTESIAN WELLS.

The movement for artesian wells has received a greater impetus and more wells have actually been bored and the water therefrom made available for a larger number of people during the past year than has been the case at any similar time in the history of the Islands.

The Bureau of Public Works has sunk 11 wells with a deep well rig, and 40 with a jet rig. The provinces are commencing to purchase outfits of their own and have probably put in as many wells during the year as has the Bureau of Public Works. Bulacan and Pampanga take front rank as the provinces that have accomplished most in this direction.

As yet there is too small a per cent of the population in each town using the water from the wells for any appreciable reduction to be expected in the death rate. But there can scarcely be two opinions with regard to the fact that the great bulk of the water used in the past has been unfit for drinking purposes, and that the health among those using artesian water will be very much better than among those who are not using it.

The widespread public interest aroused is a most encouraging sign and augurs well for better hygiene and sanitation in the Philippines.

"LA PROTECCIÓN DE LA INFANCIA."

This society is the "Gota de Leche," which was organized October 7, 1907, under another name.

The original plan adopted was to divide the infants into three classes: those of the wealthy families being assigned to the first class; those of the middle class to the second, and those of the poor to the third. The milk distributed to all infants was identical, the classification being solely for the purpose of fixing a graduated scale of charges for those who were able to pay. At the beginning there were two infants of the first class, seven of the second, and ten of the third. It was soon discovered that class distinction would cause friction, so on December 1, 1907, it was resolved to abolish the classes and to divide the applicants

into two categories, the needy and nonneedy, the latter paying 50 centavos a day, provided that the infant does not consume more than 800 grams of milk, and 75 centavos if that amount is exceeded. The needy pay 5 centavos a day regardless of the amount consumed by the child.

The issue of milk is made daily from 3 to 5 p. m., and every Tuesday, Thursday, and Saturday the infants are examined by the physicians and their respective weights and conditions recorded.

Mothers who fail to send their infants to the consulting room for three consecutive weeks without a valid reason are dropped from the list and deprived of the benefits of the society.

The total value of the milk issued during the first year of the existence of the society amounted to ₱3,145.90.

The consulting faculty occupies two departments of the building and has a spacious waiting room provided with benches for mothers waiting their turn, and a special room for consultation and for the weighing of the infants. Both in the waiting room and in the consultation room cards containing "Advice to Mothers" in Tagalog and Spanish are distributed.

One important feature of the work in this institution is the talks to mothers by the physicians on infant hygiene.

When an infant is presented, a minute investigation is instituted to ascertain why the mother desires to be supplied with milk from "La Gota de Leche;" if no good reason is found why the material or wet nurse lactation, when the latter method of nourishing the infant is pursued, should not be continued, an effort is made to have the mother or nurse continue the lactation by pointing out to them the advantages and superiority of this method over any other. In this way many are persuaded to continue nature's method. If it is decided after examination to enter the child, its name and history is inscribed in a register, and the number by which it is to be designated is noted on all papers, tickets, baskets, and other articles pertaining to it. The mother is then instructed as to the manner of administering the milk, the careful system of observation to which the child is to be subjected, and the number of times that it is to be taken to the consulting room every week. She is given a little pamphlet setting forth the principal facts of the history of the case, including the weight and condition of the child at the time of entry, together with such instructions as are to be followed and health maxims to be learned. The child's clinical slip remains on file in the consulting room. This slip is modeled after that employed by Doctor Budin of Paris, and upon it are noted all pecularities, affections, and other characteristics that have been observed.

The nourishment ticket is a pasteboard card on which is entered the number of the nursing bottle, the quantity of milk which it will hold, and the proportion in which milk, water, sugar, and other ingredients should be mixed. To ascertain the quantity of milk which should be

taken by any infant at each feeding, the number of such feedings, and the degree of dilution, if any, that is required, due consideration is given to the age and weight of the child and to the condition of the digestive organs, following the method of Terrion.

The laboratory of this institution is located in a spacious room, well lighted and ventilated, which communicates with the waiting room by means of a window through which the basket containing the nursing bottles are handed out to those who come to get them. At one end of the laboratory there is a small room which serves as a receiving and drying room for flasks. Within the laboratory are installed the sterilizing apparatus, the freezer, the water filter, and other appurtenances of this class.

The milk used is from Australian cows and great care is exercised to obtain it pure and free from all contamination. The cows are kept clean and before milking both the udder of the cow and the hands of the milker are carefully cleaned and afterward washed in a disinfecting solution. The milk is received in sterilized zinc receptacles furnished by the institution. These receptacles have movable covers in the shape of a funnel, with two disks of wire netting which are adjusted by means of powerful friction within the funnel; between these disks there is a layer of steam sterilized cotton which arrests and filters out all tangible impurities such as hairs and dust-carried particles which might gain entrance during the process of milking.

Immediately after the operation of milking, the receptacles are carried to the refrigerator of the laboratory where they remain in a suitable temperature until the time for the preparation of the milk for issue.

According to repeated examinations made at the Bureau of Science, the average constituent ingredients of the milk used are as follows:

	Per cent.
Water	85.172
Fat	4.360
Solids (not fat)	8.506

"Other constituents the difference."

All the glassware employed, such as bottles, graduated glasses, tubes, and the like, are sterilized in a boiler of large dimensions with a mechanical elevator. The cotton for filtering and all metal ware are hermetically steam sterilized. For the milk the Sobxlet apparatus made by the Gentile factory of Paris is used. At present there are eight of these installations fed with petroleum and having a joint capacity of 400 flasks.

The sterilizing process is as follows: All flasks or bottles from the outside, even though clean when brought in, are passed through lye and then through a bottle-cleansing machine until they are perfectly clear and transparent. They are then taken to the drying-racks. Those that were cleaned the previous day are taken from the racks and steril-

ized in the boiler and used for the preparation of the milk for that day. Once the milk has been put into the flasks in accordance with the entries on the nourishment tickets, the bottles are marked and separated on each tray of the sterilizer by means of a metal tag bearing the corresponding ticket number, thus avoiding all possibility of dangerous confusion in the distribution.

The water in which the cleansed milk bottles are sterilized is kept at boiling point for forty-five minutes. As soon as the bottles are cool, they are put on trays in the refrigerator until used.

The care exercised in the preparation of the milk and the instruction given to the mothers has had a potent influence for good, not only on these who have received the direct benefits of the institution, but in an educational way as well.

The Society for the Protection of Infants deserves better support from the public than has been accorded it. Its mission is to save human life, and it should not be allowed to fail for want of support. During the coming year some financial aid will be provided by the Government through the Bureau of Health, but much additional help is necessary before an appreciable reduction is to be made in the infant mortality.

DIET AND NUTRITION OF THE FILIPINO PEOPLE.

Since the character, physical status, occupation, and evolutionary tendencies of a people are influenced by the food supply of the country, and the ease or hardship by which it is obtained, it is very important both for hygiene and practical medicine, as well as for sociological reasons, that the question should be the subject of exhaustive study. This is especially true with relation to the Philippine Islands, for the reason that the organisms of many of the diseases from which the people suffer are introduced into the body with the food of which they partake. The subject of intestinal parasites is of vital interest to a proper study of the hygienic conditions of the people with whom we have to deal in this country, and, with the exception of the hookworm, it may be said that practically all other intestinal parasites which impair the health of the Filipino people and make them an easy prey to disease find their way into the body by means of the mouth, associated with the food or drink.

Dr. Hans Aaron, assistant professor of physiology at the Philippine Medical School, at the last meeting of the Philippine Islands Medical Association, read a paper on the subject of the "Diet and Nutriton of the Filipino People," from which paper the following abstract is made with appropriate adaptations:

There are two main factors which regulate the heat of the human body; the one is the production of heat by combustion of organic material; the other is the loss of heat which takes place either by conduction

or radiation from the surface of the body, or by evaporation of water from the lungs and skin. There is also a third factor of less importance which is the warmth of the ingested food and of the air inspired. The lower the temperature of the atmosphere, the higher the relative amount of heat lost by conduction and evaporation, while above about 36° to 37° C. no heat can be lost in this way, and only water evaporation can lower the body temperature. The whole heat regulation consists also of a balance between the production of heat by chemical process of combustion (the chemical heat regulation), and the loss of heat by physical means (the physical regulation). It has been known for a long time that cold increases the combustion of food stuffs, and favorably affects metabolism in general.

A person living in an atmosphere the temperature of which is below 30° to 35° C. is accustomed by wearing suitable clothing, to protect the surface of his body against the loss of heat by conduction or radiation. Since air is a very bad conductor of heat, a layer of stationary air protects the body against loss of heat, even if the surrounding air has a lower temperature.

In civilized countries man endeavors to overcome the influence of chemical regulation of body temperature by keeping the skin covered by clothing; the cooler the climate, the thicker the clothing. By means of variation of clothing one may live in any climate under about the same conditions with regard to chemical heat regulation. Man in the temperate zone is in an artificial tropical climate so far as his heat regulation is concerned.

The importance of adipose tissue as a factor in heat regulation should not be overlooked. The Filipino people as a race, on account of the climatic conditions under which they live, do not require the protection afforded by fat; hence, as a rule, there is a complete absence of the adipose tissue layer.

The best method to ascertain the diet of a people is to note the quantity and class of food that man consumes when he feeds himself according to his customs. A second method is to investigate the composition of the rations dealt out to groups of individuals who have no choice as to their food.

By controlling the food given to soldiers, prisoners, hospital patients, and inmates of various institutions, the normal average diet of man can be determined. The standard values for the composition of a normal diet for Filipino laborers based upon the investigations conducted at Bilibid Prison by Doctor Aaron are, protein 75; fat 27; carbohydrates 510; calories 2,676.

The food given daily averages about 75 grams protein. The caloric value of the food is about 3,650. The basis of the nutrition is a vegetable diet consisting of rice, sugar, bread, potatoes, and onions. This food

which is about the same for the different days, gives more than four-fifths of the ingested calories and much of the protein. In addition to the vegetable portion of the diet the prisoners also receive considerable animal food which changes on different days both in protein and caloric value, and produces the variations showing in the following table:

	Protein.	Fat.	Carbohydrates.	Total calories.
	Grams.	*Grams.*	*Grams.*	
Sunday	50	47	468	2,315
Monday	60	28	521	2,640
Saturday	69	46	504	2,778
Tuesday or Friday	74	19	465	2,386
Thursday	82	18	533	2,686
Tuesday	84	23	456	2,426
Friday	89	18	571	2,872
Wednesday	96	21	572	2,984
Average	75	27	510	2,646

Basis:

270 grams rice
45 grams sugar
300 grams bread
About 250 grams camotes or potatoes
50 to 100 grams onions

Representing ca 45 g. protein and 2,100 calories.

In addition, the following, per man on the different days, is given:

Average:

70 grams bacon.
90 grams pork.
45 grams bacon and 90 grams beef.
75 grams salmon.
115 grams fresh fish.
100 grams corned beef and 45 grams mongo.
115 grams beef and 90 grams dry fish.
150 grams salmon and 90 grams mongo.
115 grams beef and 150 grams mongo.
3 grams tea.
or 5 grams coffee.
or 6 grams ginger root.

On certain days, besides the animal food, a native pea called *mongo*, which is exceedingly rich in nitrogen, is given. Finally, a very small amount of tea, coffee, and ginger root is given to the prisoners.

The Filipino is of much smaller size than the American or European; the former weighing about 50 to 55 kilos to the latter 65 or more. This means that the American or European protein standard value has to be reduced by about 20 per cent to make it suitable for the Filipino. The caloric demand of the body depends not only on its weight, but on the extent of its surface as well. The surface decreases only with the second power, while the weight increases with the third; besides the Filipinos are thinner and taller than Europeans of the same weight. These reasons suggest that the demands on the calorics may only be about

10 per cent less than the European demands. A comparison of the Filipino prison food with that given to European laboring men shows that the caloric value of the prisoners' food corresponds to that of workingmen in America and Europe performing moderately hard labor, and also in caloric value to the food in German prisons.

The protein content of the food seems even after a reduction of 20 per cent from the standard values, somewhat lower than the average European protein content.

It is known that much less protein in the food is sufficient to maintain life and health, and the values given by Chittenden, who has done the most extensive work in this direction, are considerably lower than the protein intake of the class of Filipinos under consideration. People living on an almost pure vegetable diet always take a smaller amount of protein than meat eaters. The quantity of protein, for instance, taken by the Bengalese in India, according to recent researches by the Medical College of Calcutta, is only 30 to 40 grams of protein for the lower caste, which fact depends on the wholly vegetable diet and not on the tropical climate.

The question as to whether or not the Bilibid Prison rations are a fair sample of the average Filipino diet must be taken into consideration. From the facts observed only approximate values and comparisons can be determined. The most reliable method is to study the protein metabolism. The nitrogen in the urine is a measure of the protein bodies burned by the subject, and in the case of an adult man who works in his customary way and eats his normal food, it is safe to assume that all nitrogen of the protein of food, so far as the protein is digestible, appears in the urine. The systematic investigations conducted by Doctor Aaron showed that the quantity of protein found on the average in the prison food corresponds to the protein intake of the average Filipino workman. He estimated that the average Filipino's food consists of 650 to 700 grams of rice and about 200 to 250 grams of fish daily. Such a ration represents about 70 to 75 grams of protein, 10 grams of fat and 525 grams of carbohydrates. This corresponds very closely in its composition and in its amount of calories from 2,500 to 2,600 with the food in Bilibid.

Not all Filipinos are able to purchase the quantity of fish given above, in which case more rice would probably be consumed and more native fruits and vegetables eaten. With the fish only a small amount of calories are ingested, chiefly proteids. The caloric value of 250 grams of fish would be replaced by 60 grams of rice containing only 4 grams of protein, so that a man eating only rice receives with about 2,600 calories at the highest only 50 grams of protein. In order to get the same quantity of protein as with the mixed food, he would have to consume an immense excess of carbohydrates.

Doctor Aaron suggests that the exclusive use of one kind of vegetable

protein may have some bearing on the prevalence of beriberi if the food be rice, and the development of pellagra if the article of diet be corn.

The question is worthy of the more extended study and research which Doctor Aaron promises to give it.

Briefly, then, the foregoing shows that the food furnished soldiers and prisoners corresponds in caloric value to that of the American or European workman and that the food of the average Filipino workman is lower in caloric value.

DAIRIES AND DAIRY PRODUCTS.

The dairy business has not developed in the Philippine Islands as successfully as was expected. This is due in a great measure to the presence of rinderpest which destroys the cows.

The Legislature made an appropriation to be expended by this Bureau for the introduction of means and measures to reduce infant mortality. It has been decided to invest a portion of the money in encouraging the purchase of goats, as these animals are not so subject to rinderpest, besides being less expensive to keep than cows. If this project proves a success, it ought to be possible to induce each family to keep one milch animal for supplying the needs in this direction.

The records of the custom-house show that the importations of canned milks are increasing every year, notwithstanding the operation of the Food and Drugs Act. The reason for this is that the Bureau of Health caused the discontinuance of several of the insanitary dairies and discouraged milk peddling as it was conducted, and also the great number of milch animals that have been destroyed through the ravages of rinderpest.

The quality of milk imported has been enhanced by the strict inspection to which it is subjected, and by the increased demand for the best varieties.

ADMINISTRATION OF THE FOOD AND DRUGS ACT.

During the past year the enforcement of the Food and Drugs Act in the Philippine Islands has brought to the front many practical difficulties which have shown conclusively that for some time, at least, it will not be possible to carry out the provisions of this act in their entirety until more definite and exact knowledge becomes available, first, of the effects of certain substances upon the human organism, and second, until laboratory methods for examining foods have been still further perfected.

A review of the literature of the world shows that this question is not peculiar to the Philippine Islands but that the same trouble has been encountered in almost every civilized country in which it was attempted during the past year to enforce better standards for food and drugs.

At first sight it would appear that so far as a medical bureau is concerned the only interest it would have in foods would be as to whether they are injurious, and that the matter of substitution, especially of

harmless articles, did not concern it. As a matter of practical administration, however, it will be apparent that it would be folly to charge one bureau with the enforcement of the law which would prevent substitution, and another bureau with the enforcement of the law which would prevent deleterious substances being sold. This double function was specifically provided for by the lawmakers in the Food and Drugs Act and it is for that reason that this Bureau is attempting to protect the consumer against the introduction into food stuffs of deleterious substances, and to afford him security that the article which he buys corresponds within reasonable limits with the description which is given to it.

During the fiscal year which corresponds to the second year of the enforcement of the Food and Drugs Act, 528 samples, comprising foods, beverages, and drugs, were examined under the provisions of the Act. Of these 113 have not yet been reported on, leaving a total of 415. Of these, 202 were found to be neither adulterated nor misbranded, and 213 were either adulterated or misbranded, of which latter but 22 were rejected.

Misbrandings.—More than one-third of the misbrandings are charged against distilled beverages and the remainder were mainly misbranded because of the lack of an English label. Steps have been taken which it is believed will result in the elimination of the latter character of misbranding.

Adulterations.—Adulterations of distilled liquors account for more than half of the total amount. Five samples of lime juice were examined and were all found to be adulterated by the addition of sulphurous acid as a preservative. Glucose was used as an adulterant in some of the flavoring extracts examined.

Rejections.—Three samples of lime juice were rejected as containing excessive quantities of sulphurous acid. Five samples of flavoring extracts were rejected as being adulterated with glucose. Three samples of butter contained boron compound and were rejected. Five samples of asparagus were adulterated by large quantities of tin and lead salts, caused by the action of the contents on the interior of the tin containers. Four samples of tinned meats were decomposed.

Alcoholic beverages.—One hundred ten samples of distilled and fermented beverages were examined during the year of which 63 were whiskies, 14 brandies, 11 gins, 9 wines, and the remainder miscellaneous. Thirty-seven were found to comply with the requirements of the Act and the rest were deficient in the various ways.

Whiskies.—Of the 63 whiskies examined, 36 were of the Scotch variety and the remainder were composed principally of rye whiskies.

Of the whiskies, but 2 were found to conform to the requirements of the Act. Thirty-four samples were artificially colored and flavored, and 27 samples were found to be adulterated by being "stretched" by the

addition of rectified spirits, the substitution amounting to from 40 per cent to 55 per cent in volume, and in addition they were artificially colored and flavored with a view to concealing the adulteration. These 27 samples include the best known, reputable and expensive whiskies, many of the labels of which make statements in direct contradiction to what analyses reveal. There is no objection to the sale of these classes of whisky provided they are correctly labeled.

That genuine Scotch whisky is not commercially impracticable is evident from the fact that two samples of Scotch whisky were passed without conditions.

Of the 27 whiskies other than Scotch (ryes, bourbons, etc.) 4 were found to be neither adulterated nor misbranded; 23 were artificially colored and flavored; 8 were "stretched" by the addition of rectified spirits as well as being colored and flavored. Ten were classed as imitation whiskies and 2 as compound whiskies.

Brandies.—Of the 14 examined but 1 sample was passed. Thirteen were artificially colored and flavored, 2 were "stretched" and 2 were classed as imitation.

Owing to the fact that judicial decisions upon the most important questions at issue are pending in the United States, it has been considered advisable to postpone action until the questions have been definitely settled. No consignments were denied admittance.

Asparagus.—Of 19 samples of canned asparagus examined, 5 were rejected because of the presence of large quantities of tin and lead salts, caused by the corrosive action of the fluid contents upon the interiors of the tin containers. Exporters of asparagus to the tropics should pay special attention to the quality of tin used for packing. Corrosion may be prevented by using enameled cans or perhaps by lacquering the interior surface of the tins.

Butter.—But 3 samples of butter were rejected during the year. Rejections were for the addition of a boron compound as a preservative. The rigid enforcement of the Act has had a most beneficial effect and all fresh butter now being received from Australia, which practically monopolizes the market, is free from preservatives, and furnishes concrete proof that the claims which were so persistently urged, viz., that a boron compound was absolutely essential in tropical climates, were unfounded.

Preserved fruit and fruit products.—A special investigation is now under way to determine whether formaldehyde is spontaneously generated in preserves, especially strawberries, in which sugar is so important a constituent. The collection of samples has taken several months and it is anticipated that much valuable information will be secured from their examination. This investigation may be considered as original research.

Canned milks.—This Bureau is especially interested in the supply of milk for the inhabitants of the Islands. Milch cows do not exist in sufficient numbers to warrant consideration; hence, the public are

dependant upon imported canned milks. The sterilized evaporated canned milks, consumption of which is practically limited to the foreign population and the weathier class of Filipinos, is on the whole satisfactory and free from adulterants. In some few instances their contents of fats and solids fall below standard, in which case they are appropriately relabeled.

Condensed milk is consumed by the poorer classes and is quite extensively used for the nourishment of infants. Repeated analyses have shown that these condensed milks contain added sugar in proportions ranging from 40 per cent to 55 per cent. This is an adulteration and is added for the purpose of cheapening the product. No indication is given on the labels that such an abnormal quantity of sugar is present; yet if the milk is used for the nourishment of infants and invalids, the presence of so large an amount of sugar has an important bearing. Some improvement has been effected by requiring such milk to be labeled as sweetened, the word "sweetened" forming an integral part of the name of the product.

Summary of food and drug inspections.

Article.	Total.	Number adulterated, misbranded or otherwise deficient.	Article.	Total.	Number adulterated, misbranded or otherwise deficient.
Baking powder	3	0	Jellies and jams	4	3
Beverages, alcoholic	110	78	Meats, canned	27	20
Butter	15	4	Milks	19	11
Cheese	18	4	Molasses, sirups	3	0
Coffee	6	1	Sausage	4	1
Drugs	27	26	Sauces	7	4
Fish, canned	48	20	Vegetables	47	17
Flavoring extracts	18	7	Miscellaneous	19	8
Fruits	19	4			
Fruit juices	19	9	Total	415	213
Ham	7	1			

FREE DISPENSARY SERVICE.

Seven free dispensaries have been maintained in Manila by the Bureau of Health; the central dispensary at the headquarters building; one at each of the other four health stations; the San Lazaro free dispensary at the San Lazaro Hospital, and the Civil Hospital free dispensary. In addition to the above, this Bureau has supplied all of the medicines, dressings, etc., for the dispensary of the Philippine Medical School, at which 17,415 patients were treated during the year; the majority of the medicine and medical supplies for the University Hospital dispensary, and the Mary J. Johnston Hospital dispensary, at which 3,940 new cases were treated, was furnished gratis. Medicines were also donated to a number of independent missionaries and other persons, with which relief was afforded to thousands of people.

PUBLIC MARKETS IN MANILA.

Two very important advances in market sanitation were made during the year; first, the desire for revenue which heretofore permitted dry goods, crockery, shoes, and many other kinds of wares to occupy space which should have been used for perishable foods, has been so far overcome as to cause their exclusion from the principal markets; and second, food is now sold only from tables instead of from the floor and filthy inclosed spaces under the tables.

The fact that fresh meat in Manila can only be sold in a public market building has made its inspection effective and has given Manila an advantage which is enjoyed in only a few of the leading cities of the world.

In the report for last year there were mentioned certain measures adopted by the Municipal Board in the matter of the assignment of stands in the Divisoria Market, and the placing of the sanitation of all markets under the department of sanitation and transportation. The administration of three markets, the Divisoria, the Quinta, and the Sampaloc, have also been placed under this department.

These markets were freed from all inclosures and contrivances in which unsuitable food or filth might be hidden from view and concealed; the venders of the same class of goods were assigned to certain sections of the market, and were required to expose all food supplies on tables or pans and not on the floor; drains and receptacles were provided for refuse; the markets were well lighted; suitable tables, pans, racks, etc., were installed, and the premises, tables, and all utensils kept in a clean and sanitary condition. Wares not properly classified as food supplies were excluded from the market.

Venders were required to exhibit receipts for tariff in a clip attached to the stall number, every stall being given a number. Daily reports of the number of assigned and unassigned stalls were submitted to the Auditor for a check on the revenues.

Venders were given the privilege of retaining their respective stalls by complying with certain market regulations, but all unassigned stall space was accessible to the first applicant, and all previously assigned space, which was vacated, was reassigned by means of special agreement when the circumstances made this procedure advisable.

An ordinance for the proper regulation and establishment of public markets in the city of Manila was passed on April 30, 1908, and as the provisions of this ordinance embodied those features of market administration instituted in Quinta Market, it was made to apply to only that one market at the time of its passage. On June 1, the Sampaloc Market having been enlarged by the construction of a new shed and the space having been arranged along the same lines as was done in Quinta Market, the market ordinance was made to apply to this market as well as to the

Quinta Market. In view of the success of the measures adopted in Quinta and Sampaloc Markets, the Municipal Board decided that the same measures should be adopted in the Divisoria Market, and passed a resolution on April 23, 1909, to that effect.

The question of the food supply of the inhabitants of a city is always an important one, and deserves close and careful study from many points of view, some of which pertain to the proper inspection of food so that no diseased, unsound, or unfit food is sold and consumed; the manner of handling and exposing food for sale; adequate and clean market buildings and fixtures; a proper and just system of assignment of space and privileges of vendors, whereby all dealers or producers of food supplies can have ready access to the public to market their wares; and a proper supervision and control of the marketing of food supplies in so much as can be done to prevent the fostering of special privileges and the building up of monopolies in the sale of certain food supplies.

The welfare of the people in any community demands that they should be protected from dealers of unwholesome food, should not pay unusual or exorbitant prices for food, and should be able to procure their food supplies within the limits of their own community.

The markets of Manila have undergone a great transformation since the advent of Americanism, and when the plans now under contemplation are carried out, Manila may safely place these institutions in her list of attractions.

THE "MATADERO" OR SLAUGHTERHOUSE.

The matadero is the city slaughterhouse where all animals killed in Manila, except pigs and goats not over eight weeks of age, are required to be slaughtered and dressed. All animals are subjected to ante mortem and post-mortem inspections by veterinary surgeons of the Bureau of Agriculture. All meats that are found to be diseased are seized and destroyed.

From the *matadero* the meat is conveyed to the various city markets in special wagons supplied by the city.

Much annoyance has been caused during the past few years by the persistent circulation of rumors to the effect that the meat was conveyed from the slaughterhouse to the market in the same wagons that were used for hauling garbage and night soil. It is, of course, needless to state that no such thing occurred.

DEPARTMENT OF SANITATION AND TRANSPORTATION.

This department is under control of the city of Manila and is charged with the responsibilities of street sprinkling and flushing, street sweeping and gutter cleaning; the collection and disposal of garbage, house refuse, and dead animals; the filling of lowlands; the collection and disposal of night soil and public closets; the administration of the

city pound; the sanitary care of markets and slaughterhouses; the transportation of meat; the care and administration of cemeteries; the maintenance and development of parks, trees and plant nurseries; the care of city walls; the improvement of public grounds; the administration of all land transportation of the city, and the service of this character for the Insular Government.

The collection and disposal of garbage, house refuse, and dead animals is an important branch of the work with which this department is charged, and is carried on principally between 9 p. m. and 6 a. m. The garbage and refuse from dwellings, factories, shops, stables and similar places, are collected by carts which pass along regular itineraries, collecting the garbage and refuse placed on the curbing in separate receptacles as required by city ordinances. The material suitable for filling in lowlands is applied to that purpose, and the garbage, slops, and organic matter find their way to one of the two city crematories.

Dead animals weighing 30 pounds or less are considered garbage and are deposited in the regular garbage receptacles. Those of greater weight are collected in wagons specially designed and constructed for this purpose, and are either burned or sold to factories to be manufactured into trade products.

Night soil is collected by odorless excavators from vaults and cesspools, and by the pail conservancy system from premises where there are no closet systems installed. The collections are emptied into tanks on the steam barge *Pluto* and carried out to sea.

When connections are made with the new sewer system, the work of collecting night soil will be greatly diminished, thus reducing the expenses of the city correspondingly. The completion of the new water system has already removed the necessity of maintaining a pail system at Mariquina for the protection of the water supply.

The pail conservancy system will have to be maintained in the districts of light material even after the new sewer system is in full working operation, both in the public closets and as a domicillary sanitary measure.

The present charge for each pail is ₱2.50 per month or ₱7.50 per quarter, which is rather high for many families to pay. No charge is made for the pail service established in public closets.

The pail conservancy system as it is operated in Manila is a clearly efficient method of sanitation second only to the water-closet system, and might well be adopted in many towns in the United States where earth closets are now permitted.

DUST SUPPRESSION.

Much has been done in Manila during the past few years to overcome the dust nuisance. The department of sanitation and transportation

of the city government has established a very thorough system of street sprinkling for the dry season. Last year this office issued a circular which was put into force by the Executive Secretary in all the public buildings of Manila, in which attention was called to the habit that had formerly prevailed of sweeping the floors without dust precautions while the employees were still at their desks, and the dangers thereof, and attention was invited to the fact that by reason of the prevalence of tuberculosis in the Philippines and of the careless habits in spitting, the dust of offices often became laden with the deadly tubercular *bacilli* which might enter the system by means of the inspired air. The circular enjoined that there should be no more dry sweeping in Government buildings, and required that floors should be thoroughly sprinkled with wet sawdust before they were swept, and that they be not disturbed as long as there were any employees at their desks. On account of the fact that this new method of sweeping was not in accordance with the former custom, some opposition to it developed, but this finally yielded to persuasion, and now the method has been quite generally adopted in public buildings.

This system of dust suppression is recommended to housekeepers and to stores, hotels, and other places where dust continues to be a source of danger.

PUBLIC CHARITIES AND CORRECTIONS.

The public charities of the city of Manila are administered partly under the direction of the Municipal Board and partly under the Bureau of Health; but the bulk of the work connected therewith, even of that which comes under the Municipal Board is done by this Bureau.

The Bureau has its contracts with the Hospicio de San José for the care of orphans and indigent insane, and with the Colegio de Santa Isabel and the Sisters of Saint Vincent de Paul for the care of full orphaned children of the indigent. In these three institutions the Bureau maintains on an average of nearly 500 persons. In addition to this, it has accommodations in its own hospital at San Lazaro for 350 insane and 250 lepers and for 1,700 lepers at Culion.

The city has a contract with the Hospicio de San José for the care and education of juvenile offenders, thus preventing their incarceration in Bilibid Prison where perhaps they would have to associate with professional criminals and receive lasting impressions of a harmful character that would direct them onward in the road to ruin.

The juvenile offenders' school is conducted on the order of the Junior Republic Schools which have been such a factor for good in the United States and other enlightened countries.

Last year there were 63 males and 4 females admitted. They are left in the institution until they have attained the age of eighteen years, and during the entire period of their confinement they are surrounded with the very best educational influences.

MEDICAL EXAMINATION OF IMMIGRANTS.

During the year the medical officers of the United States Public Health and Marine-Hospital Service have examined 7,735 immigrants, with 22 rejections. The number of rejections for trachoma continues to be in excess of that for all other causes.

While trachoma is not an uncommon disease among aliens seeking admission to the Philippine Islands, the virulent form of the malady is extremely rare and those that have it are promptly returned to the port of embarkation.

The principal interest to the Bureau in the incoming aliens consists in the diseases that they develop after they land here; of these, typhoid fever easily stands first, and occurs with much greater frequency among the Japanese immigrants. It is also of interest to note that the percentage of cholera cases among the Japanese residents of Manila is much higher than among any other nationality.

CEMETERIES.

The regulation of cemeteries in the United States is a question which, as a rule, takes care of itself; but in the Philippines it requires the force of legal authority to keep it within proper bounds. When the Americans came, their first messages to the homeland told of the bone piles or *osarios,* and many a bone found its way to America as a relic from this faraway and then strange country. In less than two years practically all the bones in the *osario* of Paco disappeared.

To regulate the improprieties of the *osario* and to have a definite standard by which the claims of rival religious sects and others can be adjudicated, the lawmaking body enacted a special cemetery law adapted from similar ones in the leading States of the home country, to which all burial grounds must conform and under which all interments and disinterments must be made.

During the fiscal year just closed, this office has acted on more than five hundred applications pertaining to the cemetery question. A large number of these applications was for the establishment of new burial grounds. The policy of the Government is that there shall be, whenever practicable, in each municipality a sufficient number and kind of cemeteries, to meet the needs of the communities.

The question has been a difficult one both on account of the general financial depression and the prevalence of religious antipathies between the different denominations, but considerable progress has been made in the way of educating the people to accept the doctrine of a complete separation of the church and the state in everything that pertains to governmental administration. It is quite clearly understood that a cemetery must comply with the requirements of the law whether it belongs to the church or to a municipality, or to a private person, before it can be authorized.

The Bureau has published a set of cemetery regulations which the honorable the Secretary of the Interior has approved, and which thus carry the force and effect of law. These regulations are intended to correct the evils of nonuniform administration and "standardize" the cemeteries throughout the Philippines.

CIVIL-SERVICE EXAMINATIONS.

As heretofore, civil-service medical examinations are conducted by the Bureau of Health and by the United States Public Health and Marine-Hospital Service; the former examines applicants for land positions, and the latter for positions aboard vessels, in which the question of color blindness is of so much importance.

During the year there was a total of 426 physical examinations made at the Bureau of Health, the number passed being 378, or 89 per cent of the number examined.

The following tabular statement will show the number examined in each classification and the result:

Position.	Passed.	Rejected.	Total.
First-class patrolman—American	34	4	38
First-class prison guard	9	1	10
First-class fireman—American	26	0	26
Second-class prison guard	24	5	29
Second-class fireman	47	4	51
Third-class patrolman	79	23	102
Third grade	28	0	28
Third grade apprentice	122	6	128
Messenger	1	0	1
Second grade	4	1	5
Inspector auxiliary	1	1	1
Machinist	3	1	4
Mate—Filipino	2	0	2
Mate—American	1	0	1
Building inspector—American	1	0	1
Building inspector—Filipino	1	1	2
Foreman	0	2	2
Total	378	48	426

Cause for rejection.

Blindness	2
Trachoma	2
Hydrocele and defect of right eye	1
Poor vision	4
Varicose veins	4
Venereal	1
Varicocele	12
Under weight	13
Inguinal hernia	3
Acute conjunctivitis	1
Cataract one eye and underweight	1
Defective hearing	2
Organic heart disease	1
Tuberculosis	1
Total	48

PROMOTIONS.

The policy of the Director of Health has been to promote the employees of the Bureau as rapidly as the conditions of the service would permit, and the claims of the employees would justify. This policy has been recognized by the majority of the employees, but among others an impression seems to prevail that they should be promoted every year or oftener. In order to correct this wrong impression it has been found necessary to issue to all employees the following circular:

An impression seems to prevail among the employees of this Bureau that at the expiration of each year's service they are entitled to promotion. This impression is erroneous. The fact that an executive ruling has been made that promotions should not be made oftener than once a year, does not mean that promotions are provided for at the end of each year's service.

In filling vacancies efficiency and increased worth are the principal elements that weigh with this office in making promotions, and application for promotion made solely because of the close of another year's service can not be considered.

It is the policy of this Bureau always to fill vacancies in higher positions whenever persons with the necessary qualifications can be found among its own employees and those who have rendered good and faithful service can depend upon being recommended for advancement.

BUREAU OF HEALTH MANUAL.

The work of the Bureau of Health has become so extensive and so many employees are located at such widely separated places, that on account of the desirability of having the work uniform and to cause the minimum amount of inconvenience when new employees take the place of more experienced ones, it became evident that readily accessible information and a set of rules and regulations covering the work of the Bureau were necessary in the interest of good administration. To meet this need a manual has been prepared which is now in press, and will soon be ready for distribution.

AMBULANCE SERVICE.

The service during the year has been as satisfactory as could be expected from horse-drawn vehicles, but in order that a still better service may be had, and after making a thorough investigation as to what was being done in the United States and Europe along these lines, it was decided to gradually replace the old ambulances with motor vehicles. For this purpose, one electric ambulance has already been ordered, and if this type of motor proves successful, as many more as are needed will be rapidly secured.

VACCINATION.

There would be no smallpox in the Philippine Islands if everybody would seek the protection that is afforded by vaccination, but there are always sufficient people who evade the vaccinators intentionally or otherwise to keep the infection going. There are many false ideas with regard

to vaccination. It is alleged to produce harmful effects during menstruation, pregnancy, lactation, early infancy, or some other equally absurd reasons are given in protest. These superstitious ideas are frequently respected even by the best of Filipino vaccinators. The practice of hiding cases of smallpox is also largely responsible for perpetuating the disease.

In many municipalities where in the course of time the greater part of the inhabitants have been vaccinated, the disease is limited to the unprotected children who are sacrificed in great numbers in consequence of wrong beliefs. The tiny graves in the cemeteries protest in vain against this form of race homicide, and nothing but education can change the ideas that are too often born of distrust and hatred of those who are seeking to bring about the highest good of the people and to save the race from retrogression and lead them on to that progress and prosperity which alone can make them a strong nation.

The records of the year make further concrete proof of the thorough efficacy of vaccination. For instance, of the 51 deaths that occurred at the smallpox hospital at Manila, *not one person succumbed who had ever been successfully vaccinated.* In the Province of Oriental Negros we have the following for smallpox figures:

	Deaths.
1905	118
1906	127
1907	54
1908	23
1909	2

The records further show that the systematic vaccination of that province was commenced in 1907, and when completed in 1909, the disease was practically extinct.

MOSQUITOES.

Life in the Philippine Islands is blessed with many advantages, and if it has any disadvantages, the presence of mosquitoes in annoying numbers during all seasons must be given a first consideration.

The health authorities in the past have had considerable criticism heaped upon them for not taking more measures looking toward relief from this pest. In explanation of this, attention is invited to the fact that the great source of mosquitoes in Manila are the great tidal swamps which are daily overflowed by the water in the esteros or canals, and on this account it would be nothing more or less than a waste of public funds to attempt the temporary measures for relief which have often proved successful in other countries. Although several millions of dollars would probably be necessary to fill the lowlands and wall the esteros, yet the resulting gain in the increased value of real estate would more than offset the original expense, and the improved sanitary conditions and lowered mortality thus brought about would well warrant the outlay.

However, much local relief could be had from mosquitoes if the householders themselves would destroy the purely domestic breeding places such as rain barrels, buckets, cisterns, tanks and other places directly under their control.

PROVINCIAL AND MUNICIPAL QUARANTINE.

During the past year much difficulty was encountered by the Bureau in preventing the imposition of useless and illegal quarantines. These quarantines were imposed by local health officers under a misinterpretation of their quarantine powers. Quarantine between towns or provinces in the Philippines is often a lazy man's remedy and nearly always is ineffective. There are exceptions, where the topography of the country makes a quarantine feasible and desirable. A quarantine is effective upon the Benguet Road to protect the Mountain Province against cholera in Pangasinan, but an effective quarantine of Manila to protect against cholera in the provinces, or vice versa, is impossible.

Nevertheless, quarantines were imposed without consulting this Bureau in many parts of the Islands by health officers who either misinterpreted the law or chose to ignore it. These quarantines had no other result than to tie up commerce and cause travelers to take a more circuitous route.

Other health officers, who seemed to know of and to accept the Bureau's interpretation of law, besieged the Bureau with requests for quarantines against infected points. The majority of these officers were directed to clean up their towns; to prepare to combat cholera promptly and energetically should it appear; to institute an inspection of arrivals by boat or train without detention or interference with personal liberty; and to observe without detention, for at least five days, all arrivals from infected territory. If such arrivals desired to proceed further they were to be permitted to proceed to their destination, the inspecting health officer to notify the health officer at their destination that these persons came from infected territory.

A few quarantines were authorized after very careful consideration and where there was a probability of their being effective and of value.

To clear up the very confused conception of quarantine powers which local health officers seemed to possess, the Bureau issued the following circular, defining the various kinds of legal quarantines, and the method of procedure to be followed in imposing the same:

Since May 14, 1905, the date of the passage of Act 1340, authorizing the Director of Health, with the approval of the honorable, the Secretary of the Interior, to make and promulgate quarantine regulations for the government of all vessels at all ports of the Philippine Islands, except ports of entry, and by virtue of the last paragraph of section 5 (a) of Act 1407, which confers on the Director of Health, subject to the approval of the same authority, the right to revoke or modify any order, regulation, by-law, or ordinance of any local board of health or of any municipality, except the city of Manila, concerning

any matter which in his judgment affects the public health, this Bureau has recognized only three kinds of quarantine as permissible in the Philippine Islands: (1) that imposed by the officers of the United States Public Health and Marine-Hospital Service; (2) that imposed by authority of the Director of Health, with the approval of the Secretary of the Interior; (3) house or place quarantine. While subsequent acts have not deprived municipal boards of health of that power and authority granted by Section 5 of Act 308 to make and enforce such quarantine regulations with reference to their municipalities as they deem necessary, it is held by this office that such measures, however, must have the approval of the Director of Health and of the Secretary of the Interior. This interpretation of the law is sustained by Section 11 of Act 1487, which makes it necessary for district health officers to obtain the aforesaid approval before making or enforcing quarantine measures in their respective districts.

District health officers and presidents of municipal boards of health may impose such house quarantine as may be warranted by the circumstances or by the nature of the disease, without the previous permission of the Director of Health.

Most of the European countries have abandoned maritime and overland quarantine, except where it can be made absolute, and rely on other and more effective means to impede the progress of dangerous, communicable diseases. This is especially true of cholera, since it is positively known that persons who themselves never have the disease may be *bacilli* carriers and disseminate the infection.

It is the desire of this office that no quarantine measures affecting commerce shall be instituted without the previous authority of the Director of Health and the approval of the Secretary of the Interior. Applications for such approval must set forth the reasons therefor and the facilities available for maintaining the measures to be instituted.

The law regulating the question of quarantine is practically all embraced in the foregoing citations with the exception of that which governs the operations of the United States Public Health and Marine-Hospital Service, and its interpretation should be in accordance with this paragraph.

INFANT MORTALITY.

The question of the causes of the high rate of infant mortality has a hearing at nearly every medical meeting that is held in the Philippine Islands. It is discussed by the Commission and by the Assembly. The Bureau of Health and the Bureau of Education are working to improve the conditions; but after all the actual improvement is scarcely discernible. Yet the conditions are no worse here than they are in New York or Philadelphia during the hot months, and it is largely because the hot months in the Philippines last throughout the year that the conditions here appear to be worse. In the abstract, the question is a simple one, because an enormous reduction in the death rate among children could be made if mothers would only see that their children are breast fed or where that is impossible, that sterilized milk is used properly modified, and not permit them to have solid foods or other substances which the infant's stomachs are unable properly to digest.

One of the principal workers along this line is Dr. Fernando Calderon, professor of obstetrics in the Philippine Islands Medical School, who

was a delegate to the International Congress on Tuberculosis at Washington, and was also in attendance at the twenty-sixth annual meeting of the Lake Mohonk Conference where he delivered an address on the subject of "Infant Mortality in the Philippines." Doctor Calderon said in part:

This small population of the Philippines is not increasing, not because of race suicide in its different forms as in other countries, or revolution against Spain in 1896, or war against the United States, or epidemics of cholera, bubonic plague, etc. These causes are removed to-day. The revolution and war are over. The epidemics are checked by the excellent sanitary measures taken, and if cholera breaks out now and then, it is controlled with a very few victims. It is therefore necessary to search deeper for the true cause of this nonincrease of the Philippine population. The true cause you will find to be the alarming mortality among children under 5 years of age.

On different occasions in the past I have given a warning and proved by figures that 60 per cent of the deaths in the Philippines were among infants under 5 years of age, and now, after a more careful study, I do not hesitate to reiterate my former statement.

In my belief, this overwhelmingly high rate in the mortality among infants under 5 years of age is due to the ignorance of the Filipina mothers as to the proper care of their babies. This ignorance will remain, I am afraid, because we do not have charitable institutions as those existing in Europe and in this country—institutions where mothers and girls can apply for instruction and help in order to carry out properly and with success their sacred duty of raising the baby properly.

In the practice of my profession I have had the opportunity of learning through facts the above-mentioned ignorance of the Filipina mothers. We see mothers suffering from tuberculosis nursing their children, thus transmitting the deadly *bacilli* to their tender offspring; mothers suffering from beriberi transmitting, also through nursing, the mortal *bacilli* causing the baby to suffer from a common tropical malady of infants called "taon" which cuts short thousands of lives throughout the Philippine Archipelago.

I can mention many cases like this to show you the real need of institutions which will spread throughout the Islands the true knowledge of the duties of motherhood.

In order to satisfy this need a year ago an institution of the kind mentioned was established through my initiative called "The Protection of the Infant." This institution was organized in the city of Manila under the auspices of the Philippine Womanhood Association, patronized by the American philanthropist, Dr. David J. Doherty, who, with Mrs. Smith, wife of the Governor of the Philippine Islands, organized a social function at which funds were collected to meet the first expenses of the newly born institution. Doctor Doherty has also donated to the institution a building situated in one of the most central localities in the city. Later, Mrs. Gilbert, wife of ex-Congressman Gilbert of Indiana, now member of the Philippine Commission, organized a theatrical show at which funds were collected for the institution.

To these persons we are immensely indebted, because with the funds collected the institution was able to remodel the building, especially the laboratory, which was made larger and was better equipped.

Through the charity of some American and Filipino philanthropists of Manila the institution is further supported by monthly subscriptions. Three doctors give,

without pay, their professional services in this institution, where three times a week a free consultation is held, distributing at the same time, without charge, sterilized milk to thirty babies who are the only ones that the poor institution can take care of.

The results obtained professionally and the records are brilliant. A great number of sick babies have been cured in this dispensary without medicine, but with only advice concerning hygiene and pure sterilized milk in proportion to the baby's weight.

But, ladies and gentlemen, if the professional results are brilliant, the victory in the way of spreading among the mothers the knowledge of modern motherhood is still greater.

Now, coming back to the fact that this institution is able to support only thirty poor babies in the city of Manila of nearly 250,000 inhabitants, we will readily see that this altruism is just a drop of milk in the middle of an immense ocean.

If the American people, and especially those who are interested in the welfare of dependent peoples, could help us financially in the realization of this great work, both countries—America and the Philippine Islands—would have solved one of the most vital social problems in the interest of humanity, especially among the Filipinos, who are to-day sheltered under the wings of the American eagle.

Some time ago Doctor Calderon in an address in this city among other things said in effect:

Instead of bringing before you foreign statistics as to the relative mortality of breast-fed and bottle-fed infants, I would have greatly preferred to present such data taken from the records of the Insular Bureau of Health. Unfortunately, that Bureau was unable to furnish me with them because no such data exist.

In order to cover this deficiency, I desire to suggest with all due respect to the Bureau of Health, the desirability of having separate blanks printed to be used for all death certificates of infants from 0 to 1 year of age, the certificates to have a space in which is to be noted whether the infant was breast-fed or bottle-fed. With such blanks in use it would be an easy matter to formulate such statistical data as might be needed, and these published reports furnished monthly to the local press would speedily bring to the notice of the public, and especially of the mothers, the great difference in mortality of breast-fed as comparel with bottle-fed infants, and as the former would always be much lower than the latter, it would serve to stimulate in mothers generally a desire to employ breast feeding in preference to artificial feeding whenever possible.

It is necessary, in fact, that we employ every resource available to inculcate into the minds of mothers the idea that it is their sacred duty to nurse their babies, and that it is not just as good, but on the contrary much worse, to bring them up on the bottle instead of nursing them at the breast.

How often certain mothers evade their moral obligations of nursing their babies for purely conventional reasons, and because they believe in all good faith that it is just as good to bring them up on the bottle!

Every resource is employed, excuses, pretexts, suggestions of every kind imaginable, to convince the credulous husband and sometimes even the complaisant family physician, that it is impossible for them to comply with an obligation placed upon them by nature, and all this in many cases because of the ridiculous fear of becoming thin and so losing their plastic beauty of thin morbid figures, or that an infant would prove a hindrance to their participation in drives,

banquets, balls, receptions, or evening parties; so these mothers abandon their offspring, seek and find diversion in a splendid manner in that flashy society to which they belong.

Again in other cases it is not the mothers. Old women of the neighborhood, those old meddlers who poke their noses into matters that do not concern them in the least, take the unfortunate mother in hand to convince her, which they ultimately succeed in doing, that according to Mrs. So-and-so's experience, it is much better to feed the baby with the bottle as it will get fat so much quicker. They make use of the old fallacy that nursing produces anemia and undermines the health of the person, and, if the mother is weak of character and given to certain forms of amusements to which she looks forward longingly, as is the case with many of her kind, she finds a very heaven in this advise of the old neighbor, does not hesitate nor consult her physician; the baby is put on the bottle, and she gives free rein to her diversions which usually lead her in the direction of *panguingui* (a game of cards). Meanwhile, the poor infant loses weight daily, becomes rachitic, colicky and frog-bellied, and as an attempt to cure it, the child is forced to travel the painful road of sampling every brand of condensed milk known to commerce or to be invented and finally, after having toiled along this indigestible milky way, the little suffering victim finds relief in death.

It is well known that under special conditions it becomes necessary and justifiable to have recourse to artifical feeding, as, when the mother lacks sufficient milk, or because the milk is purulent or otherwise harmful; or because the mother is afflicted with syphilis, leprosy, tuberculosis, beriberi, or other diseases which prohibit nursing. On the other hand, there are mothers of exactly opposite tendencies, who insist on nursing their children after their physicians have told them that it is unsafe for them to do so. They keep on and send child after child into eternity by another and probably less direct route than the first class of mothers.

Then there are some extreme cases who get it into their heads that the milk which the baby receives is insufficient for its nutrition, and who without consulting God or the devil feed the little one to *help out*, as they put it, cooked rice, sauces, potatoes, sweets, and what is worse, shellfish, fruits, bits of meats and other things which its delicate digestive organs can not handle. (This process could also be correctly termed *help into* as well as *help out*, as it effectually helps the little ones *out* of this world and *into* the next.)

The year's work.—Doctor Calderon's address has been quoted from chiefly to emphasize the conditions now existing in the Philippines and against which the health officer has to contend.

For the information of those on the other side of the Pacific Ocean who may read this report, and in order that the American population of the Philippine Islands may not think that they were singled out for an attack, and, finally, to save the feelings of erring mothers in every clime and every land, it should be stated that Doctor Calderon was addressing his own people, the Filipinos. How wondrously alike are the people and the follies of the whole world!

Among Manila's population of 223,542, there were, according to reports, 8,685 births during the present year. During the same time there were 4,600 deaths of infants one year or less of age, the percentage of deaths coming within this age limit to the number of children born being 52.

With regard to the recommendation of Doctor Calderon that statistics be compiled showing the number of deaths among infants that are breast-fed and those that are artificially fed, it may be said that this matter has been brought to the attention of the Bureau upon numerous occasions, and its desirability was long recognized; but after an extended experience of some years with statistical matters, it was believed that figures that had real value could scarcely be obtained. However, in February last the work of obtaining from the parents of each child that died under one year of age a statement as to whether it was breast-fed or artificially fed, or both, has produced, as was anticipated, a set of statistics that must of necessity be so at variance with the facts that it is not deemed advisable to publish them.

The custom of kindly disposed persons giving a child solid food is so prevalent that frequently the child's own mother may not know that her offspring has been so fed and in such or similar cases the data which she herself furnishes are of course unreliable.

The Bureau of Health believes that the best and most permanent results in reducing the infant mortality are to be obtained along the lines of education, and to this end it has persistently furnished data to the Bureau of Education which is used in the school system throughout the Islands, and more particularly in the domestic science courses. The effect of this work is commencing to be gradually felt. It is hoped that this educational campaign will be further aided during the coming year by the appropriation of ₱10,000 which the last Legislature has made for the purpose of aiding societies which have for their object the reduction of infant mortality.

INSTRUCTIONS IN INFANT FEEDING.

In order to teach the important subject of infant feeding in a practical way to Filipina mothers, the Bureau of Education established last year a class in this subject in connection with the Meisic Intermediate School. This class has been taught by a specialist under the supervision of the Bureau of Health. The work of the year was largely taken up in the organization and testing of this new experiment in Filipino primary education which begins with the infant before he is ready for the kindergarten, and has for its chief object the saving of the life for the duties and responsibilties of the incarnate world.

The inauguration of this work was attended by difficulties. To teach the difference between feeding and scientific alimentation is not an easy thing in any country. Miss Ashby, the teacher, invaded an untried field. With one exception all of her subjects had been fed on a single brand of canned milk. The first thing was to determine the quantity and character of the nourishment which the children were receiving. By requiring the parents to bring the saucepan and spoon used in mixing the milk, and

by this and other means carefully estimating the amount of food given, it was ascertained that the proteids ranged from 0.2 to 0.3 per cent, and that the sugar was between 3 and 4 per cent, thus practically showing that the children were being fed on a sugar diet.

The amount of food that should be given depends upon the caloric value of the food and the weight of the child; hence it was necessary to establish a working formula. The composition of all the canned milks on the market was known, and it was a simple matter to estimate the required number of calories per kilogram of body weight, and to multiply this by the child's weight to get a day's feeding, making allowance for whatever flour or sugar that had been added by subtracting the quantity of milk which would give an equal caloric value. For example a child of nine months weighing 8 kilograms requires 58 cubic centimeters of Highland Cream per kilogram; there would be given 8 multiplied by 58 cubic centimeters, minus the equivalent of two dessert-spoonfuls of flour and one of sugar, it having been determined that one dessert-spoonful of flour is equal in caloric value to 13 cubic centimeters of Highland Cream and one dessert-spoonful of sugar equals 27 cubic centimeters of Highland Cream, so that it is necessary to subtract from the original result 53 cubic centimeters before diluting and dividing into the required number of feedings. The pupils learned to make these calculations and prepare the milk with a degree of accuracy that showed their great interest in this important study.

The following table prepared by Dr. Hans Aaron of the Philippine Medical School has been used as the basis of Miss Ashby's work.

For each kilo bodyweight or fraction thereof a child must get the following quantities:

	Milk.	Water.	
		Until third month.	After third month.
Fresh milk:	cc.	cc.	cc.
Cow	170	80	
Carraballa	75	125	75
Unconcentrated sterilized	150	50	
Concentrated sterilized	65	140	95

Concentrated, sweetened, sterilized milk is unsuitable for babies as one liter corresponds to 3,340 calories, and only 178 calories (less than 6 per cent of the total amount) are delivered by protein, while in rational baby food at least 10 per cent of the total quantity of calories should be delivered by protein.

OBSTETRICAL TEACHING IN THE PHILIPPINE ISLANDS.

In connection with subject of infant mortality, it is fitting that there should be a revival of interest in the conditions which are responsible

primarily for a large proportion of the number of deaths which render the statistics so discouraging. Doctor Calderon has recently returned from an extended trip through America, Germany, Russia, and China, where he made an extensive study of obstetrical teaching, practice, and conditions in comparative relation with that of the Philippine Islands. His conclusions were as follows:

1. That the instruction in obstetrics in the United States is on the same advanced plane as that of the most progressive countries of Europe, and that it would be to the best interest of all Filipino students of medicine who intend to specialize in this important branch to study in the medical schools of the United States.

2. That the instruction in obstetrics is at present very deficient in the Philippine Islands on account of inadequate means for elevating it to the level of progress which it has attained in the United States and other progressive countries, and stands in need of radical reform.

Dr. Calderon recommends:

1. That joint instruction in obstetrics and gynecology be provided for in the new government general hospital now in course of erection, on the same plan that is followed in Germany and Russia.

2. The establishment of a dispensary for pregnant women to which medical students shall not have access, to be in charge of a native woman physician, so that the innate modesty of Filipinos shall not serve as a barrier against their seeking aid and advice.

3. The organization of an outside service for maternity cases in connection with the obstetrical dispensary.

4. The organization of a school for midwives in order to provide trained *comadres* to assist physicians and to help in the great work of education.

5. That the course in the medical schools be supplemented by therapeutical and practical instruction by stereoptic demonstrations during the third year of study, with demonstrations on the manikin, usually an actual fœtus, and that provision be made for the students to visit the obstetrical wards of the hospital for the clinical study of the more important cases.

6. That the work in the fourth year be made more effective by subdividing the classes in the practical study of this branch into smaller classes, so that every student shall have a chance to see and learn, and that special courses in pelvic deformities and obstructions to childbirth be inaugurated and teaching apparatus purchased for the same.

If these recommendations are carried out, the obstetrical instruction in the Philippine Medical School will be on the same plane as that of the most advanced schools of the world, and the results will be measured in terms of human lives and human happiness.

LEGISLATION.

The following laws which directly or indirectly pertain to the interests of the public health were enacted during the fiscal year:

Act No. 1894 passed May 15, 1909, amending Act No. 309, known as the Vaccination Law, provides that presidents of municipal boards of health, public vaccinators, and all other persons authorized to vaccinate against smallpox, shall furnish each person vaccinated by them a certificate to the effect that he has been so vaccinated, setting forth the date of the vaccination, the number of marks made, and their location; and also record the information in a book kept for that purpose. It also provides that the inoculation of any human being with smallpox virus shall be unlawful, whether done directly or indirectly, and provides for the punishment of those who disobey the law.

Act No. 1910 enacted May 19, 1909, amending Act No. 1761, known as the Opium Act, provides that taxes, fines and the moneys collected by virtue of any of the provisions of the Opium Act shall be deposited in the Insular Treasury and shall constitute a fund to be devoted to special purposes among which are the proper hospitalization of opium patients who care to reform, and for the construction of school buildings throughout the provinces and the employment of teachers.

Act No. 1921, enacted May 19, 1909, amending Act No. 397, known as the Pharmacy Act, provides for a number of minor changes in the subjects and conditions of examination, and makes it unlawful for pharmacists to compound prescriptions which are written in cipher or in which there are employed unusual names of drugs which differ from the names ordinarily used for such drugs in standard pharmacopœias or formularis.

Act No. 1925, amending Act No. 1124, provides that in any case where an officer or employee of the Insular Government or of a provincial government is ill at a point remote from a hospital under the control of the Insular or a provincial government, and it appears to the satisfaction of the Governor-General that medical attendance on such officer or employee is necessary to preserve his life, the Governor-General may order any medical officer in the employee of the Insular or of a provincial government to attend such ill person, and, if necessary, conduct him to the nearest hospital for treatment. In case the attending physician and surgeon of a hospital under the control of the Insular or of a provincial government is so ordered to give such medical attention he may, if he shall deem it more advisable, desigmate in his stead for such duty a competent nurse in the employ of the Government. Provisions are made for the payment of the traveling expenses of employees thus designated, by making them a proper charge against the Bureau or office with which the patient is connected in the case of employees of the Insular Government, and against the Insular Government in case of provincial employees.

Act. No. 1931, enacted May 20, 1909, entitled "An Act to provide for the Establishment of Classes on Training in Nursing in the Philippine Normal School" and appropriating twenty thousand pesos for such purpose, provides that, in order to be eligible for appointment under the provisions of this Act, students must be holders of certificates of completion of the intermediate course in the public schools, and must be at least 19 years of age. The appointments are to be distributed among the provinces, and the students selected are entitled to their traveling and subsistence expenses from their places of residence to Manila, and shall receive during their stay in Manila for attendance at such classes, as compensation of all other expenses, the sum of ₱280 per annum.

Act. No. 1953, enacted May 20, 1909, provides that the family of any leper at

present confined in the Culion leper colony is authorized to deliver to the district health officer of each province once in three months any package or parcels containing foods, clothing, tobacco, letters, pictures, and generally all sorts of documents or papers, and nothing else, to be sent free of charge to the leper member of said family for his personal use, whenever the total gross weight of each such shipment shall not exceed 100 pounds. District health officers are required to receive such articles and give receipts therefor, and ship the packages by first available transportation at the expense of the Bureau of Health.

Act No. 1954, enacted May 20, 1909, makes financial provision for artesian wells in the provinces; for the construction of additional wards at the San Lazaro Hospital for dangerous communicable diseases, appropriating ₱30,000 therefor. An appropriation of ₱11,000 for additions to the Benguet Hospital is also made. This Act also provides for the expenditure of ₱100,000 under the direction of the Bureau of Health for the equipment of the new Philippine General Hospital, the settling for the present the state of the administration of the said hospital.

Act No. 1955, the appropriation Act for 1910, enacted May 20, 1909, in addition to appropriating funds for the general expenses of the Bureau of Health, provides for the establishment in Manila of a dispensary for tuberculosis patients, and for a "shack" camp at Baguio; also for nurses to visit tuberculosis patients in their homes for the purpose of instructing them in the hygienic treatment of the disease.

An authorization to expend ₱10,000, if funds are available, was inserted in the appropriation Act of this Bureau, to be used for the purpose of combating the causes of infant mortality. This amount is really a contribution to the Gota de Leche movement, and will be expended along those lines.

The necessary funds are appropriated for the continuation of the system of training nurses adopted by the Bureau of Health a few years ago, and for the system of hospital internships for the hospitals of the Bureau.

ANIMAL DISEASES.

Since November 1, 1905, when the Reorganization Act went into effect, the veterinary medical service has been operated by the Bureau of Agriculture, but the law transferring the service provided that the Director of Agriculture should cause to be made for the Director of Health such examinations of meat, milk, and other animal products or of animals as may be deemed necessary by the Director of Health to safeguard the public health against dangerous diseases which may be communicated to man by animals or by means of animal products. Pursuant to this requirement all animals that are brought into Manila either from the provinces or from foreign countries are subjected to the most rigid veterinary inspection, and, again at the *matadero,* such animals as are intended for human food have to pass both ante-mortem and post-mortem inspection, and live animals that are not in good condition are rejected. By post-mortem examination those carcasses which are diseased are condemned and cremated.

Animal products such as butter, lard, and milk are also inspected, and if found below the standard, condemned.

The system of veterinary inspections is well organized so that it is extremely improbable that unwholesome animal foods are sold.

ARMY DISEASES.

Notes on typhoid fever, dysentery, and malaria.—In order to give an idea of the prevalence of these diseases among our troops, the following extracts are made from the Surgeon-General's report for 1908:

After charging the deaths to the country in which the disease which caused them was contracted, the death rate among troops in continental United States was 5.63, in the Philippines it was 6.92 and in Porto Rico 14.18.

The slight advantage in the United States rate is mostly made up by the difference in tuberculosis, which was 0.85 in the Philippines and only 0.53 in the United States, but as this disease was perhaps contracted in the United States it is evident that the difference is more apparent than real.

Dysentery caused 0.26 of the deaths in the Philippines, but this is more than offset by 0.47 deaths from pneumonia in the United States and 0.55 deaths from cerebrospinal meningitis, neither of which occurred in the Philippines.

The foregoing figures make additional proof that as the hygienic surroundings of the troops are made to approach those of the United States, the death rate is as low or lower in the Philippines than in the United States.

ALBINISM IN THE PHILIPPINE ISLANDS.

At the instance of Dr. H. Fraser of the Institute for Medical Research, Kaula Lumper, Federated Malay States, Dr. C. H. Usher, of Aberdeen, Scotland, and Prof. Frederick Starr, of Chicago University, this office issued on April 28, 1908, the following circular, addressed to the medical inspectors and district health officers of this Bureau:

In view of the general interest in the question of albinism, information is respectfully requested as to whether albinos have come under your observation, and if so, you are respectfully requested to furnish this office without delay answers to the following questions:

1. The pedigrees of families in which one or more cases of albinism have occurred. The more extensive such pedigrees are the better.

2. All information is desired bearing on whether albinism is or is not the expression of a prevalence of scanty pigmentation in a particular stock. Hence particulars are desired as to color of hair and eyes, fecundity, general physical and mental vigor, and the occurrence in albinotic families of any other defects than albinism.

3. The influence of cousin marriages is of great importance to be carefully followed up.

4. Incomplete family records and particulars of single cases of albinism will also be useful and welcome.

5. Photographs of albinos will be valued, especially albinos of dark races.

6. Incomplete or partial albinism; instances of pied albinism are desired.

The investigators venture to ask whether you will kindly aid the research by sending particulars of any cases. Whilst the information itself will be treated as confidential, full acknowledgement of its source will be made when the subject comes to publication.

Incomplete notes often contain useful information and will be welcome when full records can not be obtained.

As the responses to the foregoing circular were not satisfactory, a supplementary circular was issued on July 2, 1908, as follows:

Judging by the replies that have been received, it would appear that Circular G–13, issued from this office April 29, 1908, has not received proper attention, or that the medical officers of this Bureau are not close observers in the matter of detecting albinos, and compiling statistics relating thereto, as such reports as have been received do not locate a single case. This is most extraordinary in view of the fact that Professor Starr of the University of Chicago, who is at present visiting the Philippine Islands, within a space of three weeks, with no source of information other than those which are open to everybody, has found within a very limited territorial area thirty-five well-defined cases. Professor Starr first applied to this office for information on the questions which were made the subject of the circular cited, and it is not only humiliating, but discouraging, that a stranger, a distinguished scientist though he be, should learn more in a brief visit about a question which belongs directly to the sociological duties of a health officer's work, than all the resources of this Bureau have been able to discover through special investigation, knowledge of local conditions, and the advantage, in many instances, of a long service among the people.

It is requested that another effort be made to supply the information desired in the circular to which reference has been made.

With the first circular there was sent a leaflet prepared by Dr. C. H. Usher, containing information as to the prevalence of albinism and a form for making reports, as follows:

ALBINISM.

Albinism occurs among all races, even the darkest. It appears to be frequent among Malayan peoples. I desire to secure specific information regarding all possible cases. The following will help to render observation definite. When impossible to make a full report, give what you can. The first three items are indispensable.

Report on case of albinism.

Name of subject.

Residence.

Race or tribe.

Hair; color; quality; secure a sample if possible.

Skin; color; quality; blushing? sunburn?

Eyes; color; movement; squinting? myopic?

Carefully draw the iris and color to show pigment distribution, etc.

Disposition and character. Ability in different directions; deficiency in different directions.

Occurrence. Is the case sporadic? If not, give all possible information regarding similar occurrences in the family. Are the parents related? Name all the children in the family in order, marking the cases.

What is the native word for an albino? What is its literal meaning?

What, if any, popular ideas regarding albinos? What do "the people say" about them?

Secure photograph of the subject; where possible, two views—one square front, the other exact profile.

As a result of these circulars, forty-five cases of albinos were reported from seven provinces; Albay, 2; Bohol 11; Ambos Camarines, 5; Ilocos Sur, 5; Manila, 1; Pampanga, 16; Tarlac, 5.

No.	Name.	Race.	Sex.	Age.	Condition.	Occupation.	Total or partial.	Residence.	Skin	Hair		Eyes.		Character and constitution.	Mentality.	Other members of the family albinos	How many brothers and children not albinos?	Remarks
												Iris. Radiation	Pupil					
1	Presentacion Baiana	Filipino	Female					Libog, Albay	White	Deep yellow	Pink	Pink	Pink					
2	Vicente Ballvado	Filipino	Male	7			Total	Libog, Albay	Absolute white	White	Pink	Pink	Pink					
3	Luis Madrea	Filipino	Male	17	Single	Farmer	Total	Valencia, Bohol	Thin delicate, pink and white	Blonde decolorated	Light blue	Golden	Dark	Weak and lymphatic, effeminate	Poor			Daylight disagreeable, sight best after dark
4	Dalmacia Madrea	Filipino	Female					Valencia, Bohol	Thin delicate, pink and white	Coarse blonde brownish with lustrous	Light blue	Golden	Dark	Weak	Poor	Grandmother, maternal parents, and 2 brothers and a cousin and some relatives	3 brothers	Eyes normal, strabismus, not shortsighted
5	Francisco Namucot	Filipino	Male	65	Married	Farmer	Partial	Dimiao, Bohol	Course, sunburnt, white in certain regions	Black ashy	Dark brown	Brown and imperceptible	Light blue	Weak, easily angered	Average	Father, grandparents and 2 children	2 daughters	Eyes normal.
6	Saturnino Goloso	Filipino	Male	24	Single	Farmer	Partial	Tagbilaran, Bohol	Malay	Course, coffee colored	Dark brown	Brown and imperceptible	Blue	Strong, content, and happy	Poor	One sister and maternal father.		Eyes normal
7	Jacoba Madronero	Filipino	Female	35		Weaver	Partial	Dimiao, Bohol	Sunburnt white in parts, course, thin.	Brunette, slightly brown	Light brown	Light blue	Dark	Strong and healthy, irascible	Fair	All grandparents and 1 sister and 2 children	2 children	Eyes normal
8	Paula Madrea	Filipino	Female	26	Married	None	Total	Valencia, Bohol	Pink, delicate, thin and white.	Gold, brownish, lustrous	Blue	Blue	Dark	Fair	Poor		3 children	Eyes normal, fecund woman, all labors normal
9	Julian Loresca	Filipino	Male	24	Married	None	Partial	Panglao, Bohol	Sunburnt, coarse, thin.	Auburn, brownish	Brown	Brown	Black	Sickly, weak, and nervous	Poor	Father, father's parents, great grandparents and 7 brothers	9 brothers	Eyes normal
10	Julian Lorica	Filipino	Male					Panglao, Bohol		Auburn, fine								
11	Pedro Lorica	Filipino	Male					Panglao, Bohol		Brown								
12	Ana Bongulto	Filipino	Female					Panglao, Bohol		Old copper								
13	Maximino Busalanan	Filipino	Male					Carmen, Bohol		Auburn at end dark brown								
14	Fabian Villareal	Filipino	Male	19	Married		Partial	Iriga, Camarines	White in chest and other regions.	Black, small blonde patch in frontal region	Brown	Brown	Black					No relationship between parents.
15	Luis Tizon	Filipino	Male	30	Single	Hemp stripper	Total	Lagonoy, Camarines	Pink white	Cream white	Blue	Pink	Pink	Good natured, robust, good worker.	Intelligent	No history of albinism in family.	All relations	Parents not related
16	Vivencio Tizon	Filipino	Male	20	Single	Hemp stripper	Total	Lagonoy, Camarines	Pink white	Cream white	Blue	Pink	Pink	Good natured, robust, good worker	Intelligent	No history of albinism in family.	All relations	
17	Negrita No. 1	Filipino	Female	9	Single		Total	Paracale, Camarines	White	Yellowish white		Reddish brown						The Serrano family, residence Maradodom, Cabugao, Ilocos Sur, when all were living consisted of mother, father, two boys, and three girls, who were not albinos, and one boy and two girls who were albinos. Of the two boys who are not albinos, both are living, while the three non-albino girls are dead. Of the three albino children, the boy is dead. Of the albino children, 33⅓ per cent are dead, while of the nonalbinos 60 per cent are dead, from which it may be assumed that albinoism did not affect their physical condition. The two albino sisters are marked about equally, hair is of extremely light straw color, almost white. No history of albinoism on either side. Parents not related. Mother is said to have been very fond of white flowers during pregnancy. Both albinos rendered uncomfortable by light.
18	Negrita No. 2	Filipino	Female	11	Single		Total	Paracale, Camarines	White	Yellowish white		Reddish brown			Dull and apathetic.			
19	Marciana Serrano	Filipino	Female	30			Total	Cabugao, Ilocos Sur	Dark pink	Almost white light straw	Dark blue	Yellow	Dark		Low			
20	Gregoria Serrano	Filipino	Female	25			Total	Cabugao, Ilocos Sur	Dark pink	Almost white light straw	Dark blue	Yellow	Dark		Good	1 aunt and sisters	Parents and 5 brothers	
21	Sotero Cabasug	Filipino	Male	11	Single		Total	Cabugao, Ilocos Sur	Fine blonde	Light brown	Gray	Grayish brown	Dark		Good	1 brother and sister	Parents and 1 brother	The Cabasug family of the barrio of Pila, Cabugao, Ilocos Sur, consists of father, mother and one son not albinos, and three sons who are albinos, all living. These albino children resemble European children. Parents are fourth cousins. Mother twice married and had albino child (now dead) by first husband. Father has unpigmented birthmark, 1.5 square cm in extent, just below left outer malleolus. Mother has jet black hair with exception of brown strands in left temporal region. These albinos seem uncomfortable in the light.
22	Alberto Cabasug	Filipino	Male	6	Single		Total	Cabugao, Ilocos Sur	Fine blonde	Light brown	Gray	Grayish brown	Dark		Good	1 brother and sister	Parents and 1 brother	
23	Getrudis Cabasug	Filipino	Female	4	Single		Total	Cabugao, Ilocos Sur	Fine blonde	Light brown	Gray	Grayish brown	Dark		Good	2 brothers	Parents and 1 brother	
24	Petra Parcotelo	Filipino	Female	26	Single		Total	Manila, P. I.	White	Blonde	Blue	Blue	Dark	Vigorous	Vigorous			Parents dark and not related. From Iloilo.
25	Name not reported	Filipino	Female				Partil	Apalit, Pampanga										Observed by Dr Catanjal in 1894.
26	Name not reported	Filipino	Female				Total	Tarlac, Tarlac										Observed by Dr Catanjal in 1902.
27	Florentina Cunanan	Filipino	Female	5			Total	Angeles, Pampanga	White pinkish	White and shiny	Pink	Pink	Pink	Delicate		Father and grandfather of mother, mother's sister also 4 brothers.		Blue photophobia, "nictalopia" and nystagmus.
28	Mother of Florentina Cunanan.	Filipino	Female	35	Widow		Partial	Angeles, Pampanga	Light					Delicate, frail, weak.				White semicircle surrounding upper part of both corners.
29	Brother of Florentina Cunanan.	Filipino	Male	10			Total	Angeles, Pampanga	White, thin	White and fine								Toe nails blackish.
30	Maura Tofigio	Filipino	Female	40	Married		Total	Bacolor, Pampanga	Blushing	Blonde	Blue	Blue	Dark	Good habits and healthy.		3 children and 1 cousin	7 children	Chinese mestiza
31	Cefererino Valdez	Filipino	Male	22			Partial	Bacolor, Pampanga		Black								
32	Lorenza Valdes	Filipino	Female	16	Single		Total	Bacolor, Pampanga	Blushing	Brown ochre	Light blue	Light blue	Dark			2 sisters and 1 aunt	7 brothers	
33	Eufrosina Valdes	Filipino	Female	10	Single		Total	Bacolor, Pampanga	Blushing	Golden brown	Light blue	Light blue	Dark			1 brother, 2 sisters and 1 aunt	7 brothers	Children of Maura Tofigio; one albino sister dead; great grandmother of father albino.
34	Benita Gozun	Filipino	Male	12	Single		Total	Bacolor, Pampanga	Pale and dead white.	Semi-auburn	Light blue	Light blue	Dark			1 brother, 2 sisters and 1 aunt.	7 brothers	
35	Francisco Gozun	Filipino	Male	4	Single		Total	Bacolor, Pampanga	Pale and dead white.	Dark gold	Light blue	Light blue	Dark			1 sister, 1 brother and 1 aunt	5 brothers	Mother is cousin of Maura Tofigio, not albino; father not an albino.
36	Guadalupe Gozun	Filipino	Female	7 m.	Single		Total	Bacolor, Pampanga	Pale and dead white.	Gold, decolorated	Light blue	Light blue	Dark			1 sister, 1 brother and 1 aunt	5 brothers	
37	Juan Varon	Filipino	Male	46	Married		Total	San Fernando, Pampanga.	Albine characteristic, very white.	Gold blonde	Light blue	Light blue	Dark	Good habits, good physique.		2 brothers and 1 aunt.	5 brothers	
38	Eugenia Mendoza	Filipino	Female	50	Single			Guagua, Pampanga								Nothing known	2 children	One of grand parents English mestizo.
39	Apolinaria Castro	Filipino	Female	38	Single		Total	San Fernando, Pampanga.	Blushing	Pale blonde	Pink	Pink	Red			Only case in family		
40	Eustaquia Alarcon	Filipino	Female	8	Single		Total	Candaba, Pampanga	White	Golden	Blue	Blue	Dark	Good			Parents	Orbits continually moving laterally. Born very small with unperforated anus; photophobia. Great-grandfather English mestizo.
41	Nicolás Alarcon	Filipino	Male	5	Single		Total	Candaba, Pampanga	White	Golden	Blue	Blue	Dark	Good	Defective memory.	2 brothers	Parents	
42	No name given	Filipino	Male					Moncada, Tarlac	Sunburn white	Blonde	Brick red	Brick red	Dark		Good	1 sister and 1 brother	Parents	Brothers both myops. Had an albino brother who is dead. No consanguinity between ancestors.
43	No name given	Filipino	Male					Moncada, Tarlac	Sunburn white	Blonde	Brick red	Brick red	Dark		Less than average.	Yes		
44	No name given	Filipino	Female					Moncada, Tarlac	Sunburn white	Blonde	Brick red	Brick red	Dark		Less than average.	Yes		Have been albinos for three generations, originally came from Badoc, Ilocos Norte.
45	Agustina Felicitas	Filipino	Female	52	Married	Shopkeeper	Total	Camiling, Tarlac	Sunburn white		Blue	Blue	Dark	Weak and nervous.	Good	1 brother	1 daughter	Parents were cousins.

It is not claimed that the figures presented are correct or approximately correct. It is not reasonable to suppose that on the island Province of Bohol, with a population of 269,223, there are 11 albinos; while in the near-by island Province of Cebu with a population of 653,729 there is not a single albino, though it is probably true that albinism is more prevalent in Bohol than in other provinces, as there is more "folk-lore" concerning the condition. The Bohol term for albino is "bulao" from the Visayan word "bulauan" which means gold. Albinos with blond hair and dark skin are called "bugao" (yellow) and those who are entirely white are known as "uguis" (decolorized). In this province there is a tradition of a white people known as Taguibanua (cave dwellers) who once lived in the mountain caves of the island, and the popular belief is that albinos are the result of the mingling of these cave dwellers with the natives.

By some of the inhabitants it is believed that a few of the Taguibanua still exist, and that whenever one is seen by a pregnant woman, an albino child is the result. This latter theory is accepted in the Province of Albay where there also exists a tradition of an ancient white race.

Another theory that prevails in both of these provinces, and more or less in all other provinces, is that albinism is due to some peculiar phase of the moon at the moment of conception.

In the provinces around Manila an albino is known as "anak arao," "child of the sun," from the belief that the mothers of albino children during pregnancy develop a "fancy" for gazing at the sun. This theory is also prevalent to some extent in all parts of the Philippines.

The accompanying table of "Albinism in the Philippine Islands" is presented as evidence of good faith and as a token that this office will continue the investigation of this interesting subject until it can publish a reliable table of albinism in the Philippine Islands.

AMŒBIC DYSENTERY.

Amœbic dysentery still easily retains first place as that disease which is the white man's worst enemy in the tropics. More permanent disability is caused, more time is lost, and more persons are compelled to give up their residence in the Islands and seek the temperate zone than from all the other tropical diseases combined. It has been the most formidable opponent to American occupation of the Philippine Islands that has been encountered, yet it belongs to the class of preventable diseases that could almost always be avoided by adherence to simple hygienic rules. In order to insure absolute safety, elaborate precautions would have to be observed; but it may be stated from a practical standpoint that this disease is almost unknown among those who wash the hands immediately before eating, only drink water that has been sterilized by distilling or boiling and subsequently protected from contamination, and who do not eat in a raw state low-growing garden vegetables like tomatoes, celery, cabbage, onions, and lettuce.

BACILLARY DYSENTERY.

For the first time since the year 1900 when Flexner and Strong made a definite diagnosis of bacillary dysentery from specimens that had been taken from cases that occurred in the Province of Batangas, authentic cases have come to the notice of this office.

During the month of June, however, a severe outbreak occurred in Batangas and Bauan, the diagnosis of which was confirmed by laboratory methods. A similar outbreak occurred in the Island of Romblon, but the diagnosis was not bacteriologically confirmed.

At Batangas it was found that large numbers of officers, their families and the soldiers connected with the garrison were stricken with the disease, and that it was due in all probability to contaminated ice which was supplied to the post. Cultures made from the ice in question showed innumerable colonies of bacteria, and the water taken from the river which flows through the town of Batangas was found to be infected, and the distilled water supply of the post contained flagellates. In the town of Batangas nearly 100 deaths occurred among Filipinos from this cause, and up to the close of the fiscal year three deaths were reported by the Military. In the town of Bauan there also approximately 100 deaths which were ascribed to dysentery.

BERIBERI.

Our knowledge of this disease has been considerably enhanced during the year by the further confirmation by Fraser of the results which were obtained by Fletcher at the Kuala Lumpur Lunatic Asylum, Straits Settlements. It will perhaps be remembered that Fletcher subsisted 123 inmates on rice that was heated in water before being husked, and no cases of beriberi occurred, while among another 123 inmates which were subsisted coincidentally on ordinary rice, there were 43 cases. These figures are significant and the method perhaps explains in part the success which has heretofore been had in dealing with beriberi in public institutions in the Philippines. Upon the appearance of the disease it has been customary to reduce the rice allowance and substitute therefor meat and mongoes. It was presumed that this did good by substituting nitrogen for carbohydrates, but the benefit, in view of Fletcher and Fraser's works, was probably due to the decreased quantity of rice and the lessened amount of poison ingested in consequence.

It has also been the aim during the past few years in public institutions to reduce the amount of rice in the ration and replace it with a more variegated diet, and since that time the disease has practically disappeared in those places in which this was done.

The number of deaths from beriberi reported in Manila during the year was 924, which is nearly double the number that has occurred for some years past. An investigation to account for this condition is now being made. There is a very common belief among the Filipino people

that cholera is invariably followed by a large increase in the number of beriberi cases. In view of the fact that there was considerable cholera in Manila during the past year, it will be interesting to ascertain whether any connection can be traced.

CHOLERA.

Owing to the coëxistence of cholera in Manila and many of the provinces at the beginning of the year, the inspection force of the Bureau was at times inadequate to cover all the infected points. It was necessary to depend upon the district health officers for the enforcement of the measures prescribed by the Bureau for combating cholera. Whenever possible, a medical inspector or a sanitary inspector from Manila was sent to the infected provinces to supervise the carrying out of these measures. Of necessity, cholera-infected provinces were often left in the hands of the district health officer, with varying success. In these instances, telegraphic instructions embracing the cardinal principles of cholera fighting were sent. Unfortunately, some of the district health officers failed to accomplish the desired result, through lack of prompt action and inability to overcome the apathy or obstruction of officials and residents of the infected municipalities. Wherever the principles laid down by the Bureau were carried out with promptitude and energy, cholera was quickly eradicated.

The measures against the disease prescribed by the Bureau were the following:

GENERAL MEASURES.

1. Organization of available force for house-to-house inspection.
2. The securing of a good water supply, or general measures to render the water supply safe.
3. Safe disposal of the feces of the entire population.
4. General disinfection of large areas where the foci can not be located definitely.
5. Campaign of education.
6. Prohibition of certain food stuffs.
7. Enactment of necessary ordinances.

LOCAL MEASURES.

1. Early quarantine of house and inmates.
2. Disinfection of house and inmates.
3. Observation of contacts for five days.
4. Examination of stools of contacts.

Special stress was laid upon the disposal of the feces of the entire population; daily house-to-house inspection to discover cases early; prompt placing and rigid maintenance of quarantine of infected houses; disinfection of infected houses and contacts.

Failure by certain district health officers to suppress cholera was due largely to lack of a provincial organization, to furnish prompt information of the outbreak of the disease, and to a blind dependence upon useless

intermunicipal quarantines imposed illegally by local officials through ignorance of the laws governing quarantines. To correct these shortcomings, the following circular, in addition to that quoted under the subject "Provincial and Municipal Quarantine," was issued:

You are hereby informed that this office will hold you personally responsible for the unreported existence of smallpox or other dangerous communicable diseases in your district.

Repeatedly, rumors of the existence of cholera and smallpox are receivd from private individuals, teachers and others, and upon investigation directed by this office the district health officer often finds that cholera or smallpox has been present for weeks.

It is your plain duty to require of local officials that they report promptly the existence of such diseases, and to transmit such information by wire to this office.

In the event of failure to report promptly, you should take immediate steps to punish offenders. Failure to establish a system of transmitting information promptly will be deemed evidence of inefficiency and sufficient ground upon which to base charges for removal.

If there are towns in your district in which there is no health official, the duty of reporting promptly cases of dangerous communicable diseases may be placed upon the municipal president.

Comparative statement showing provinces infected and number of cases by fiscal years.

Fiscal years.	Number of provinces.	Cases.	Fiscal years.	Number of provinces.	Cases.
1901-2	15	9,538	1905-6	10	5,241
1902-3	34	128,007	1906-7	16	7,085
1903-4	33	23,126	1907-8	16	4,772
1904-5			1908-9	34	28,866

NOTE.—The figures are approximate.

Three distinct epidemics of cholera marked the opening of the fiscal year 1908–9; one in the Island of Luzon, with Pangasinan as a center; one in the Island of Panay, which originated in Capiz but soon spread to Iloilo; and one in the Province of Misamis on the Island of Mindanao.

Pangasinan.—During the month of July, 1908, twenty-five municipalities in Pangasinan were infected. Strenuous work during this month by representatives of this Bureau sent from Manila to aid the local officials resulted in cutting down enormously the infection in all towns, and in stamping it out completely in Calasiao, Dagupan, Malasiqui, Natividad, San Fabian, San Jacinto, San Manuel, Bulangao, Umingan, Urdaneta, and Urbiztondo. During the month of August, the remaining towns were cleared of infection and the entire province was clear of cholera by the end of the month.

Tarlac.—Tarlac was heavily infected in July, especially Camiling and Moncada, but by good work the number of towns infected was reduced to three and the disease was confined to these three municipalities, Cami-

ling, Moncada, and Paniqui. During August these foci were eradicated and the province was declared free of cholera by September 1.

Mountain Province.—Benguet was infected three times in July, twice in August, and once in September, but prompt and energetic measures in each instance prevented any spread of the infection.

Infection from Pangasinan was carried in over the mountain trail to Nueva Vizcaya. This trail furnished an excellent opportunity for effective quarantine. Further infection was prevented by an efficient quarantine of the trails over the mountains.

Ordinarily, land quarantine is ineffective and an unjustifiable restriction of commerce and personal liberty. There are exceptions, however, where the topography is favorable, where quarantine may be effectively placed and maintained. This favorable topographical condition existed in Nueva Vizcaya, Benguet, and other parts of the Mountain Province. The Bureau established a quarantine on the Benguet Road; on the trail from San Nicolas, Pangasinan, into Nueva Vizcaya; on the Aringay and Naguilian trails from Union into Benguet; and on the Candon and Tagudin trails to Cervantes.

It will be noted from the statistics that these trails in every instance led from badly infected towns to the Mountain Province. Infection was kept out of the hill country, with the exception of one infection of Nueva Vizcaya before the quarantine was placed, and which was promptly stamped out by a sanitary inspector from Manila, and the isolated infections in Benguet, referred to above.

Nueva Ecija.—Nueva Ecija had a very severe epidemic in Cuyapo and San Jose. Cuyapo registered 280 cases for the month of July. Medical Inspector Abella from Manila was placed in charge and in August the number of cases in Cuyapo was reduced to 37, and by the end of the month every focus in the province had been obliterated.

Union.—Union was infected from Pangasinan. Medical Inspector Jones from Manila was placed in San Fernando in July. Sanitary Inspector Barron from Benguet came over the trail to Naguilian and did some strenuous work in that municipality. Medical Inspector Clements and Sanitary Inspector Brantigan working in Luna, Bacnotan and other towns of northern Union cleared them of infection and proceeded to Ilocos Sur, where the infection was getting beyond the control of the local authorities. After the departure of Medical Inspector Clements for Ilocos Sur, the local authorities in northern Union seemed unable to profit by the object lesson given and cholera increased rapidly. During August, the only towns in Union which did not show an increasing ratio of cases were San Fernando and Naguilian, where Insular representatives had been working. Early in August Medical Inspector Jones suffered an attack of sciatica which incapacitated him and compelled his return to Manila. Sanitary Inspector Barron was compelled to devote most of his time to the protection of Benguet, so that early in August Union was

left to District Health Officer Ejercito and the local officials. Cholera was finally eradicated the first week in November.

Ilocos Sur.—In Ilocos Sur the same experience was repeated. Cholera was checked in September and the outbreak in Manila necessitated the recall of the Manila men for service at home. The work of completing the eradication of cholera should not have been difficult, but after the departure of the Manila men cholera increased almost immediately, and ran along in Santa, Vigan, and Santa Catalina until December.

In July, Banayoyo, Candon, Nagbuguel, Narvacan, Santa Cruz, Santa Lucia, Santa Maria, and Santiago were infected. The Insular representatives took charge in August. They found the number of cases increasing in every one of the towns mentioned and in addition the infection had spread to Santa Catalina and Vigan. The table of infected towns in this province is instructive. It shows that during July and until the coming of the Insular officials in August, the provincial officials were in charge and were unable to reduce the number of cases in any of the towns except Narvacan and Santa Maria. It shows further that finding twelve municipalities infected in August, the campaign directed by the Insular officials cleared the province of cholera by September 18. On September 21, Medical Inspector Clements returned to Manila. After the departure of Doctor Clements, cholera appeared again in Vigan, one case of September 25 and one case on September 29. From this small beginning, cholera reached a total of 44 cases in October, 60 cases in November and 71 cases in December.

This recrudescence of cholera in Vigan was directly responsible for the epidemic which begun October 1 and lasted three months.

Ilocos Norte.—Cholera was introduced probably from Cagayan. Sanitary Inspector Brantigan was sent to Ilocos Norte to assist the local officials. The best he could do with the assistance available was to hold the disease in check during October and November. Toward the end of December, the last traces of infection were removed from the province.

Cagayan.—Cholera reached the province of Cagayan in September, probably by boat from Ilocos Sur. It was present in October in Tuguegarao, Amulag, Gattaran, and other towns on the Cagayan River. The local health officer at Aparri insisted that the suspicious cases were not cholera but were due to the eating of decomposed fish and meat. The disease spread slowly through the Cagayan Valley and infected several towns in the Province of Isabela. The local health officers were able to prevent any great increase in the number of cases but the infection lingered for months and the number of foci increased during December and January. In February, it was possible to send assistance from Manila. Sanitary Inspector Percy and six assistant sanitary inspectors were sent in February and Doctor Jesus and Sanitary Inspector Brantigan later. The Valley was reported clean by the middle of April.

Pampanga.—Infection of Pampanga was slight but persistent. In

July, Angeles, Bacolor, Betis, Guagua and San Fernando were infected. In August the same, with the addition of Santa Rita. In September, Betis, Guagua and San Fernando persisted. Apalit, Mabalacat, Porac and Sexmoan each registered one case, Masantol had four. In October there was one case each in Angeles, Guagua, Candaba, and Dampol; 10 cases in San Fernando, 1 in Santa Rita, and 1 in Lubao. In December, no cases were registered in this province. In January, February, March, April and May there were a few cases in Sexmoan, Guagua, Betis, and Bacolor, and in June infection still persisted in Sexmoan and Bacolor.

Medical Inspector McKeehan was sent on June 18 to report on the persistance of cholera in Pampanga, and on June 22 Medical Inspector Clements, with eight assistant sanitary inspectors, was sent to Pampanga with instructions to obliterate this focus, which is the only known one at present existing in the Island of Luzon.

Bulacan.—In July, the town of Bulacan had 20 cases of cholera and Malolos had 2. The district health officer was urged to take prompt action to prevent the spread to other towns and to prepare all municipalities to resist the invasion of cholera. Very little was done during the whole month of August by the district health officer, although the provincial board had expressed its willingness to act upon the recommendations of the district health officer if he could get up energy enough to make recommendations. He wasted more time and it was only after receiving peremptory orders from Manila that he secured his provincial sanitary inspectors and placed them on duty. In the meantime, during August Paombong, Baliuag, Quingua, Bocaue, Polo, and Obando became infected, and the infected towns were increased during September by the addition of Bigaa, Calumpit, Hagonoy, and Mecauayan, making 13 infected municipalities in Bulacan for September. The effect of this wide spread infection of Bulacan Province upon the cholera situation in Manila will be noted later on. It was not possible to send men from Manila in September or October, and the number of infected towns in October was 12 and in November 13. In December, 7 towns were still infected and the infection lingered on in Malolos and Quingua until February.

Albay.—Suspicious cases have been reported from Albay during June, and it was deemed prudent to consider them as cholera. Medical Inspector Laughlin was sent to Albay on June 23 to take charge of the district and to investigate these cases. Dr. Vicente de Jesus and sanitary inspectors from Manila were sent on June 30 to aid in suppressing this disease, which will probably prove to be cholera.

Capiz.—Cholera existed in Capiz in March, 1908. During March, April, May and June every support was given to local health officers, including permission to use the thirty vaccinators on duty for the Insular Bureau of Health for cholera work; the district health officer from Iloilo was sent to Capiz to aid in the work; the provincial board of Capiz

authorized the employment of sanitary inspectors; and the Philippine Assembly appropriated ₱1,500 for combating cholera in Capiz. In spite of these efforts cholera persisted and in July eight municipalities were still infected. During August the number of infected towns was reduced, but the infection lingered in the towns of Capiz, Pilar, Dumarao, and Navas. The failure to eradicate the infection in these four towns was responsible for the increase in September and October. Acting District Health Officer Xavier was replaced early in September by Dr. Paulino Quisumbing but he had no better success than his predecessor and Ibajay became infected from Navas and was responsible for the very serious outbreaks later in Taft and Calibo. In addition, new *foci* appeared in September and October in Dao, Panay, and Pontevedra. There were seven municipalities infected in October, 9 in November, 7 in December, 13 in January and 11 in February. The net result of the work of the local officials after 11 months' effort seemed to be an increase in the number of infected towns and the imposition of numerous annoying and illegal inter-municipal quarantines.

Owing to the presence of cholera in Manila and many other provinces, it was not possible to send men from Manila to Capiz. In February, however, two experienced men became available; District Health Officer Montinola, who had been combating cholera in Antique, and Dr. Pacifico Laygo, who had been engaged in a cholera campaign on the island of Cuyo. Doctors Montinola and Laygo were sent on February 20 and were instructed to fight the cholera on the principles laid down by the Insular Bureau, and to dispense with the inter-municipal quarantines. In March, the number of infected towns was reduced to 7 and in April the disease was confined to Panay, Pilar and Pontevedra, and on the 3d of May the last cases were reported in Pilar and Pontevedra and the province declared free from cholera.

Iloilo.—Iloilo was undoubtedly infected from Capiz. The first cases occurred in Barotac Nuevo on July 12, and were not reported until much later. Cholera undoubtedly existed in the interior towns for several weeks previous to its appearance in Iloilo. When it was reported by the district health officer at the end of the month, Barotac Nuevo, Dumangas, Leganes, Pototan, Santa Barbara, Zarraga, Jaro, and Iloilo were infected. In spite of the known existence of cholera in Capiz for months, cholera existed in the Province of Iloilo for weeks apparently without the knowledge of the district health officer, and when its presence was officially announced, he was apparently unprepared to meet the invasion. The epidemic spread rapidly and during August the number of infected municipalities was increased to 22.

It was evident that the district health officer could not cope with the situation and later in August Medical Inspector Laughlin was sent from Manila to take charge of the campaign. In September the towns of Leganes, Alimodian, Arevalo, Anilao, Lucena, Balasan, Estancia, Lam-

bunan, and Niña were cleared of cholera. The number of cases was greatly reduced in the city of Iloilo, Jaro, Dumangas and Zarraga, but new infections occurred in Tigbawan, Guimbal, Miagac, Passi and Sara. In October there were no new towns infected, and the number of cases was reduced still further in Iloilo, Jaro, Dumangas, Barotac Nuevo, Pototan, and Santa Barbara. Cholera was eradicated from Zarraga, Banate, Cabatuan, Oton, and Passi, leaving only fifteen municipalities infected on November 1, and the daily record of cases in each of these towns was enormously decreased.

In November the towns of Barotac Nuevo, Dumangas, Jaro Santa Barbara, Buenavista, San Miguel, and Tigbawan were cleared of cholera and the epidemic can be said to have been suppressed.

During November the infection still lingered in the following towns:

	Cases.
Iloilo	5
Pototan	5
Dingle	35
Janiway	2
Leon	8
Guimbal	52
Miagac	15
Sara	2

The work of eradication was centered upon these remaining foci and during December the entire province was cleared of cholera.

The cases for the entire province by months shows the good work effected under the supervision of Medical Inspector Laughlin in September, October, and November.

Month.	Municipalities infected.	Number of cases entire province.
July	8	138
August	22	1986
September	30	3160
October	20	1366
November	15	283
December	8	52

Antique.—Cholera was reported at Aniniy in August and was introduced by two peddlers from Iloilo, who succumbed to the disease. From August 8 to 14, 3 more fatal cases occurred. Report of these cases was received at the Bureau of Health late in August, and although few men were available for provincial duty, the necessity of providing a man for Antique because of its poverty and lack of local physicians was apparent. The people are very poor and there is not even a *cirujano ministrante* in the province. Doctor Montinola was sent on August 25 to take charge, with authority to employ the necessary sanitary inspectors. He had instructions not only to attempt the prompt eradication of existing foci of infection, but to prepare the towns north of Aniniy

and Dao to resist an invasion of cholera by placing them in the best possible sanitary condition.

As the Province of Antique had no money to carry on such a campaign, money was secured from the Calamity Fund, to be disbursed by the Provincial Board along the lines suggested by the Bureau. It was very difficult to find men intelligent enough to act as sanitary inspectors and disinfectors, and those secured were absolutely ignorant of sanitary work, and much time was necessarily lost in patient instruction of the new sanitary inspectors. Doctor Montinola had authority to quarantine against all boats from Iloilo Province and to place land quarantines upon the mountain trails from Iloilo which pass through Guintas and Sibalom. The sea quarantine was undoubtedly effective but the land quarantine was ineffective because of the number of little-known trails by means of which infected persons from Iloilo Province evaded the quarantine guard at Sibalom and Guintas.

Doctor Montinola found Aniniy, Dao, Sibalom, and Patnongon infected. Sibalom was on the main trail from Iloilo province and reinfection prolonged the existence of cholera; infection was eradicated from Dao and Aniniy in less than one month; in two months Sibalom was also cleared of cholera. Doctor Montinola repeated the same effective work in Patnongon, where the last of the 235 cases occurred on October 27.

On September 10 cholera appeared at San Jose de Buenavista. This focus was obliterated by October 1 but the disease broke out among the harvesters of palay in the various *arrabales* of San Jose, nomadic bands who live under miserable makeshift conditions, moving about rapidly from place to place, seeking employment in the rice fields. These people were very difficult to control because of the miserable conditions under which they lived and their lack of a fixed place of abode, and the cholera persisted in the rice fields of San Jose during October, November, and December, the last cases occurring January 9.

In Bugason the disease appeared on November 25 but the organization was prepared and the outbreak was suppressed in thirty days.

On November 4 Dao became reinfected after being clean for forty days. The same measures again eradicated the infection in twenty-five days.

The harvesters referred to above and the inhabitants of the barrios of San Jose in their ignorance believed that the Insular officials poisoned the wells and they placed placards on the church and public buildings that the reigning disease was not cholera but poison introduced by Doctor Montinola and "los Americanos" under the guise of disinfectants.

The energetic campaign under most discouraging conditions effected the localization of the epidemic in the municipalities of Sibalom, San Jose, Patnongon, Dao, and Bugason. In each of these towns the foci were eradicated in from twenty-five to sixty days, except in San Jose.

The impossibility of quarantining or controlling the small army of harvesters with the means available was responsible for the persistence of cholera in the rice fields of San Jose.

Palawan.—Cuyo was infected from Antique and during the month of September, 39 cases occurred. Dr. Pacifico Laygo and Assistant Steward McDonald were sent to Cuyo because of the absolute lack of physicians or sanitarians on the island. Doctor Laygo arrived on October 24. During October the number of cases reached 63. In November the outbreak was controlled and only seven cases occurred during the entire month. The last case occurred on December 10, 1908.

Occidental Negros.—Occidental Negros was infected from Iloilo, the first cases appearing at Bago, August 6, and at Valladolid on August 7. The district health officer was on leave for his health in Capiz. There was an American sanitary inspector in the province with a party of Insular vaccinators. He did what he could to check the spread of the disease, but the infection appeared almost simultaneously in 12 municipalities. The provincial authorities clamored for a physician to take charge, and as District Health Officer Quisumbing on leave in Capiz reported himself unfit for duty in Occidental Negros on account of his health but was willing to take charge of the situation in Capiz, an exchange was effected September 9 by which Doctor Xavier, acting district health officer in Capiz, proceeded to Occidental Negros, and Doctor Quisumbing remained in Capiz. The district health officer had failed to effect a health organization in his province, and of the first 12 municipalities infected only 4 had *presidentes de sanidad* or sanitary inspectors acting as *presidentes de sanidad.* Only eight municipalities in the entire province had any health organization whatever.

In September, 20 of the 22 municipalities were infected, the 2 uninfected ones being Cadiz and Escalante. In October the towns of Ilog, Binalbagan, Cabancalan, Cawayan, Murcia, Sagay, and San Carlos were cleared of cholera. The infection was stamped out of Manapla on November 2, Pontevedra on November 9, Silay on November 11, and Bago on November 14.

Towns.	Date of last case.
Manapla	Nov. 2
Valladolid	Nov. 7
Pontevedra	Nov. 9
Silay	Nov. 11
Jimamailan	Nov. 13
La Carlotta	Nov. 13
Bago	Nov. 14
Talisay	Nov. 21
Isabela	Nov. 21
Victorias	Nov. 22
Bacolod	Nov. 23
Hinigaran	Nov. 26

The only infection left at the end of November was in Saravia. Failure to eradicate cholera in Saravia was responsible for the reinfection of Sagay and the late epidemic in Sagay and Escalante.

The infection by months in Saravia, Sagay, and Escalante was as follows:

	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.
Saravia	8	44	58	22	19	4				
Sagay		20	11		43	69	2			
Escalante								243	104	3

The outbreak in Escalante in March (243 cases) was severe enough to threaten the neighboring islands. It was necessary to send Medical Inspector Rosario from Manila to inaugurate a campaign along the lines so successfully employed in Manila and other parts of the Islands. Doctor Rosario arrived in Escalante on March 20. From 243 cases in March the number was reduced to 104 cases in April and the last case was reported on May 4. Since that date the province has remained free of cholera.

Cebu and Oriental Negros.—Cebu Province was infected at least seven times; at Cebu, Balamban, Carcar, Oslob and Toledo. The activity and energy displayed by District Health Officer Arlington Pond prevented any spread of the disease and the foci were eradicated almost as soon as discovered.

Oriental Negros is also a part of Doctor Pond's district. Infection of Oriental Negros occurred several times but energetic measures prevented an epidemic. Ayuquitan became infected on May 11 and a slight infection persisted until June 24, when the last case was reported.

Samar and Leyte.—Northern Samar has been regarded as an endemic cholera center for some years. District Health Officer Cullen has been able to either prevent the spread of the disease or to stamp out each new infection in from 1 to 6 weeks. Some of these outbreaks were quite severe; as, for exampe, in Guiuan, which began November 3 and was stamped out December 15, after reaching a total of over 300 cases. During June isolated cases occurred in Calbayog, Cauayan, Dagami, Catbalogan and Tanauan. There is no reason to suppose that these infections will resist longer than previous infections of this province.

Doctor Cullen has charge of Leyte also and he was able to repeat the good work done in Samar, although a slight infection persisted in Tacloban from November 19 to January 14, with a total of 100 cases. During the month of June, a few cases have been reported at Palo, but it is hoped that the spread of the disease will be prevented.

Bohol.—Bohol was infected from Mindanao, once in July and once in August. These foci were eradicated with no spread of the disease. December 14 Tubigon became infected and in six weeks District Health Officer Villafranca stamped out an outbreak which reached a total of

113 cases. An outbreak in Tagbilaran of 28 cases began January 22 but was promptly suppressed in 10 days. Infection of Dauis, Panglao, and Laoay during February was eradicated without great difficulty. On February 4 an epidemic began in Loon, which reached a total of 334 cases in 10 weeks. The inhabitants and municipal authorities of Loon not only failed to assist Doctor Villafranca in his campaign, but actively opposed his proposed measures. He appealed to the Governor, who by executive order obliged the municipal council to adopt the measures proposed by the district health officer. Almost coincident with this, one of the municipal councilmen who had been most persistent in his attitude that the disease was not cholera, contracted cholera, which was a convincing argument that the health officer was correct in his opinion, and did much to secure effective coöperation from the residents and officials.

After securing proper support, the situation began to improve and the last cases were reported on April 17. Maribojoc became infected in March (8th). There were 59 cases in March and 18 cases in April; the last case occurred on April 13.

Misamis.—Cholera attacked three towns of Misamis during July; Balingasag, Cagayan and Tagoloan. The outbreak was very severe, especially in Cagayan. However, the district health officer succeeded in confining the disease to the three towns mentioned and the epidemic was suppressed early in September, as shown below.

Municipality.	July.	August.	September.
Balingasag	145	16	
Cagayan	597	212	7
Tagoloan	58	59	6

There was an outbreak of cholera in Mambajao in September of 24 cases and another in April, 1909, of 43 cases. The epidemic in Misamis was probably due to infection from the interior of Mindanao and the Moro Province, where rumors of a disease resembling cholera are continually present.

Manila.—Manila was repeatedly infected from the surrounding provinces during June and July, 1908. During August there was an average of about two cases of cholera per day. In September up to the 9th, the average was about 3 cases daily. About this time there was a marked increase in the number of towns infected in the Province of Bulacan. The infection already present in Malolos, Bulacan, Baliuag, Bocaue, Obando, Paombong, Polo, Quingua, and Santa Maria, spread to Bigaa, Calumpit, Hagonoy, and Meycauayan. There was an exodus of panic-stricken fugitives from these Bulacan towns to Tondo and Meisic during the second week of September, and following this a sharp rise in the number of cases in Manila was noticeable. Up to September 11 the

work of combating cholera had been handled by the ordinary Manila force without increase in personnel.

The following table shows the number of cases daily during July, August and September:

Date.	July.	August.	September.	Date.	July.	August.	September.
1	0	2	3	17	0	1	25
2	0	1	1	18	0	0	24
3	0	2	0	19	0	1	43
4	0	0	6	20	0	1	60
5	0	1	4	21	1	1	56
6	0	4	4	22	1	0	38
7	0	1	4	23	0	3	45
8	0	2	5	24	0	4	40
9	0	2	3	25	0	2	44
10	0	2	7	26	2	3	37
11	0	0	9	27	0	6	14
12	0	0	17	28	4	1	18
13	0	3	11	29	3	2	13
14	0	0	10	30	4	5	11
15	0	0	16	31	2	5	
16	1	0	37				

When the number of cases reached 9 on September 11, the probability of an epidemic was recognized. On September 12 the number reached 17, 12 being in Meisic district. Upon investigating this district, it was found that in 18 cholera houses—that is, houses in which cases of cholera had occurred—in every case the closet was in a filthy condition. They had the following combination: Filthy closets, rats, flies, cockroaches, and other insects, and a kitchen immediately adjoining the closet. With this combination, all that was necessary was the presence of the bacilli carrier, who, by using the closet, would furnish the infective material.

Two additional disinfection squads were put to work immediately for the exclusive duty of disinfecting closets, and on the 13th the cases dropped to 11, and on the 14th to 10. On the 15th 16 cases occurred, and 105 additional men were employed. This force was increased as rapidly as possible without causing confusion and disorganization, and by September 22 the complete organization of 500 men was working smoothly. This force was increased by the 25th to 600 men.

The boundaries of the health districts already existing were left unchanged. The office force of each station was not increased, but the field force was enormously increased.

Total personnel, all stations.

	Medical officers.	Sanitary inspectors.	Foremen.	Laborers.	Disinfectors.	Total.
Station A, Meisic	4	2	14	136	5	161
Station C, Tondo	3	1	8	86	5	103
Station I, Sampaloc	2	1	6	112	5	126
Station J, Intramuros	2	2	9	117	10	140
Station L, Paco	2	1	4	58	5	70
Total	13	7	41	509	30	600

NOTE.—This does not include police for house-to-house inspection, nor some 300 men of the city street-cleaning force, who have been assisting in draining the worst places in the barrios, nor the Constabulary for quarantine guards.

Lime squads varied in size according to the district. In open districts, or sparsely settled districts, one foreman could properly supervise from 15 to 25 men. In a district like Meisic, where the houses are crowded together, a foreman could not properly supervise more than 12 men.

One mechanic was assigned to the duty of keeping the disinfection wagons, pumps, and hose in good condition. He traveled from wagon to wagon with tools, thus avoiding sending the wagons in for repairs, which were often trivial and could be made in a few minutes on the spot.

The daily output of disinfectants was enormous, about 75 tons of lime, and about 700 gallons of carbolic acid or its equivalent in creoline, tricresol, or formalin. There was some difficulty in securing enough disinfectants to satisfy this enormous demand. The entire stock of carbolic acid, formalin, and tricresol in the Philippine Islands was used before the end of September. Four thousand gallons of Jeye's fluid (a creolin preparation) was secured from Hongkong and shipments of carbolic acid arrived from Hongkong and Japan in time to prevent the wagons lying idle. Four of the eleven tank wagons might have lost two days on account of lack of disinfectants, but the Director of the Bureau of Science suggested that salt water could be electrolyzed forming a disinfecting fluid which, according to laboratory tests, would kill cholera bacilli promptly. His offer to electrolyze the solution was accepted, and for two days, four of the wagons used this fluid. In a short time all the lime in Manila and the vicinity was used and the entire daily output of the kilns in the Island of Luzon was taken. The lack of lime sometime caused the cessation of lime disinfection at 3 or 4 o'clock in the afternoon, but lime squads were equipped with shovels, hoes, rakes, brooms, or other cleaning-up instruments, and their spare time was utilized in digging ditches, and cleaning up the yards or premises.

Infected districts were subdivided into subdistricts; maps were made of these subdistricts, and the foreman in charge of a disinfecting wagon or lime squad was furnished with a map of his subdistrict. For example, Meisic was subdivided into 20 subdistricts, and Tondo into 14.

The ordinary chemical fire engine makes an excellent disinfecting apparatus. The 80-gallon tanks are charged by CO_2 produced from bicarbonate of soda and sulphuric acid; to make an efficient disinfecting solution it is only necessary to add carbolic acid, creoline, or other disinfectant to this solution. The ordinary street-sprinkling wagon is convertible into an excellent disinfecting apparatus. All that is necessary is to install an ordinary pressure pump, and several hundred feet of hose, put in the disinfectant, and fill the tank from the street hydrant. We used eleven of these wagons and four chemical engines, and they were all effective. The tank wagon possessed the advantage of being cheaper, as the cost of soda and sulphuric acid for charging the chemical engine

is not inconsiderable. In Manila the cost was offset by receiving the services of the chemical engine crew free of charge.

Several kinds of disinfectants were used in the tank wagons. Crystal carbolic acid does not mix readily and requires careful handling in using it on a large scale. Formalin is good but causes a great deal of complaint from the people because of its irritating properties. Crude carbolic acid, in our experience, did not mix well, and from both kinds of carbolic acid, because of irregular distribution in the solution, minor accidents occurred, as burning of the hands and feet of the laborers, and killing of dogs and chickens. The most satisfactory disinfectant was Jeye's fluid, a creoline preparation which we secured from Hongkong. It is nearly fool proof and is very effective. It mixes perfectly with water, forming a milky solution of uniform strength. It does not burn the hands or feet of the laborers or children about the house, and no ill effects upon animals were noted.

The simplest and most effective way to use lime was with a bucket and a ladle. The lime gang of from 15 to 25 men was handled by one white foreman and one native *capataz*. Each gang was followed by a cart with the lime. Each native lime thrower carried a bucket and scoop or ladle. After a little patient instruction, the natives learned to use the lime to the best advantage, to place it where it was needed, and to avoid the spots where it was unnecessary. Their instructions were definite and included liming all closets and places where fecal matter existed or was likely to be deposited.

Each chemical engine was handled by its own crew in charge of a lieutenant of the fire department.

Each tank wagon was in charge of an American foreman, who directed the disinfection, was responsible for the thoroughness of the work, and for the conduct of the six natives who manned the pump and hose.

In giving foremen their instructions, great stress was laid upon the necessity of displaying courtesy at all times. They were instructed to take part in no argument with householders or others, and to do their work with consideration for the feelings of the people, but none the less thoroughly. If actual obstructions were encountered, they were to notify the central office at once. The result of these instructions was that during the whole campaign, the valid complaints were less than a dozen. All complaints were promptly investigated by the Acting Director, and if found to be valid, the foreman in charge was dismissed. Only one case of actual obstruction was encountered; this man refused to permit the disinfectors to enter; he was arrested, fined ₱50, and no further trouble occurred.

The organization was mobile, and concentration of disinfecting wagons from Paco, Intramuros, and Sampaloc, as a reënforcement of Meisic and Tondo, was effected when necessary, with good results.

The general plan of campaign was as follows:

House-to-house inspection by police to discover promptly cases of cholera.

Constabulary guard upon house and inmates to prevent ingress or egress until removal of the patient and disinfection of the house.

Examination of the stools of cholera contacts to find bacilli carriers, the bacilli carriers being sent to San Lazaro Hospital for treatment.

Daily disinfection of all insanitary closets with lime, and disinfection of ground surfaces known to be, or suspected of being, soiled with fecal matter.

An attempt was made to disinfect daily all closets in the strong-material districts, which were not flush closets or which were not kept clean. In the light-material districts, the effort to disinfect the dejections of the entire population necessitated the disinfection of entire districts. It was necessary to disinfect practically the whole ground area. When one considers the enormous area to be covered daily in Tondo, Sampaloc, Malate, and Paco, with their outlying barrios, and the fact that there are over 5,000 insanitary closets in the Meisic district alone, the magnitude of this work may be imagined.

Two general methods of disinfection were employed—(1) the spreading of lime, and (2) disinfection with water wagons, hose and pump, or by chemical engines, containing carbolic acid, creoline, formalin, or other disinfecting material.

Lime was effective in conjunction with drainage in the low-lying swampy nipa districts, and also for disinfecting the bad closets in the strong-material districts. The tank wagons and chemical engines were used for general disinfection of lower floors, outhouses, *patios*, stables, and closets in both strong and light material districts.

Two factors, more than any others, make difficult the suppression of cholera in Manila—first, the existence of bacilli carriers and bad closet facilities or none at all; second, failure to find cases early.

The presence of bacilli carriers makes necessary the safe disposal or disinfection of dejections of the entire population.

The experience of this Bureau in the recent epidemic points to the fact that the most important rôle in the transmission of cholera is played by the bacilli carrier.

If a bacilli carrier be a person of cleanly habits, and if he be in possession and makes use of proper closet facilities, he is practically harmless. But on the other hand, a bacilli carrier of filthy habits, who has no closet facilities, or refuses to avail himself of the public closets furnished him, is the greatest menace to the public health which can possibly exist, so far as cholera is concerned. The demonstration of the fact that over 7 per cent of apparently healthy individuals in the Meisic and Tondo districts were bacilli carriers, coupled with the insanitary

closets of Meisic district and the absence of or failure to use public closets in the nipa districts, will go far toward explaining the dissemination of cholera this year.

Every effort was made to discover promptly light cases of the disease and bacilli carriers. When a case of cholera was found, the house was quarantined until the removal of the patient and until the disinfection had been completed. The stools of the other inmates were taken for the purpose of discovering bacilli carriers. These, if found, were sent to the San Lazaro-Hospital, and there detained until the vibrios disappeared from their stools. A house-to-house inspection was made of a large area, having the infected house for a center. This was done daily for five days.

The following tables show the number of apparently healthy persons examined for cholera bacilli, and how many were really carrying the bacilli:

Bilibid Prison.

Number of persons examined	264
Number found positive	17
Percentage found positive	6.44

City of Manila (exclusive of all hospitals and Bilibid Prison).

Number of persons examined	376
Number found positive	27
Number found negative but containing vibrios other than cholera	46
Percentage found positive	7.18
Percentage found negative but containing vibrios other than cholera	12.23

Even with perfect daily disinfection of closets and places soiled with fecal matter, all chance of infection from bacilli carries is not cut off, because a bacilli carrier with his soiled fingers may infect the food or drink of other persons.

The prohibition of certain native foods, fruits, and vegetables was necessary, not only because these substances were often infected or dangerous of themselves, but they were also the substances carelessly handled by dirty people of dirty habits, many of whom were undoubtedly bacilli carriers, and they were the substances which were eaten without sterilization by boiling or cooking after such handling.

It has been demonstrated this year that the perennial outbreaks of cholera in Bilibid Prison are probably due to bacilli carriers. Upon the appearance of cholera in Bilibid Prison this year, orders were issued that stools were to be examined for cholera of those who had anything to do with the preparation of handling of food and drink. Two hundred and sixty-four samples were taken and of this number of apparently healthy persons, 17 were carrying the cholera organisms in their intestines. To find out and isolate all other bacilli carriers, involved an

amount of work in stool examinations alone which would have been impossible for the already overtaxed bacteriologists.

Results were obtained by an order to compel washing of the hands in disinfecting solution after stool and before eating. This order was enforced and cases ceased to appear, although there were doubtless many bacilli carriers in the 3,000 prisoners whose stools had not been examined.

The practice of taking stools had to be discontinued when the cases increased to such an extent that it was no longer possible to do it. For the same reason, the house-to-house inspection of infected areas had to be supplanted by a general house-to-house inspection of the whole city when the number of infected houses—that is, houses in which cholera had appeared within five days—reached 200.

Failure to find cholera cases early makes the suppression of the disease difficult. Cases, even with the house-to-house inspection, are from two to twenty-four hours sick before discovery. Upon discovery a quarantine guard is placed upon the house and inmates, and from this point that particular focus is adequately cared for, but in the hours before discovery other individuals probably have been infected.

When a Filipino falls ill, all the neighbors will, either through interest or curiosity, crowd into the house. Upon discovery, or upon decision of the householder or doctor to report the case, these people promptly scatter, go to their meals without washing their infected hands, eat their rice with these same infected hands, and even carry with them from the infected houses, mats, articles of clothing, food and drink, to save them from the all-destroying disinfectors. Our disinfectors try to trace out these other houses where clothing, etc., has been carried, but it is very difficult and often impossible.

To illustrate the spread of the infection in this way, the course of the disease in Meisic district may be taken as an example. It will be observed that every four days there is a sudden increase in the number of cases. These are the persons infected from the cases of four days previous. It does not mean an incubation of four days, for these cases when found have always been sick for some time, but it would indicate an incubation of from two to three days.

Counting a house where cholera had been found within five days as a focus, on September 23 there were 241 infected foci in the city of Manila, well scattered, as is shown by the following table:

District.	Number of infected foci.
Meisic	66
Tondo	59
Sampaloc	41
Intramuros	54
Paco	21
Total	241

With the organization and the employment of the measures outlined above, the number of cases was reduced from 60, the maximum number of cases in one day, September 20, to an average of 8 cases per day for the first twelve days in October.

Cholera is the same disease, whether encountered in Germany, Russia, Italy, Egypt, India, or the Philippines, but the measures taken to prevent its spread and to suppress the infection depend upon the geographical location of the epidemic. To suppress a cholera epidemic in a country like Germany, for example, is a comparatively simple proposition, while in the Philippines its suppression is complicated by existing conditions peculiar to these Islands.

Four things are of prime importance for the suppression of cholera: (1) A good water supply for all the people; (2) safe disposal of the defecations of the entire population; (3) prompt discovery of cholera cases, suspects, or bacilli carriers, with immediate isolation and disinfection; and (4) habits of cleanliness.

If the water supply is free from cholera and can be kept so, then the spread of the epidemic depends upon the improperly cared for stools of the persons carrying the bacilli of cholera. Flies, cockroaches, and other insects or animals having access to such stools carry the infection to food and drink. There is infection from persons who do not wash their hands and whose soiled fingers carry the infection to food or drink. There is also direct infection from actual cases of cholera.

Water.—Manila city water has been examined daily by the Bureau of Science and the cholera bacilli have not been found therein. However, with the appearance of cholera in San Mateo and Mariquina, it was deemed prudent to place a military guard to prevent possible pollution of the river.

The new water supply, taken from higher up the gorge, will be practically safe from contamination by human excrement.

The great trouble with the Manila water supply is that it does not reach all the people. Some barrios are at a great distance from the nearest hydrants, and the people must carry, or pay for carrying, a long distance. As a result, they use water from shallow wells, ponds, esteros, or other questionable sources, for washing clothes, kitchen untensils, and also in many instances for drinking purposes.

It was deemed necessary to close all wells, except a few in the more distant barrios, which were treated with permanganate of potash. Besides closing wells, wherever possible, all stagnant places were drained by digging ditches and certain small, infected esteros were patrolled by the Constabulary to prevent the people using the water.

Disposal of the human excrement.—The new sewer system is another sanitary improvement anxiously awaited. The existence in Meisic district of thousands of tight vaults and filthy closets is responsible in a great measure for the spread of cholera in that district and the difficulty

experienced in eradicating the disease. These filthy closets and tight vaults can be replaced by modern flush closets connected with the new sewer system. In the newer residence districts, septic vaults and absorbing basins are used as receivers of sewage from modern flush closets. It will be an improvement when all vaults, however satisfactory in construction, are no longer necessary, because of the installation of the new sewer.

In the nipa districts, the people depend upon the sparsely scattered public closets or have no closet facilities whatever. In the latter instance, the fecal matter is deposited in the most convenient place; in the long grass, in the estero, in pools or gutters, or under the house. The family pig takes care of a considerable quantity of human excreta and garbage.

There are large barrios within the limits of the city of Manila where the only way of entrance is a path too narrow to permit a wagon to enter. These, of course, have no garbage collection or closet facilities.

Habits of cleanliness are best secured by a campaign of popular education. Excluding the water supply and the disposal of feces, the other factors in spreading infection can be nullified by the inculcation of cleanly habits. If the bacilli carrier washed his hands often enough and at the proper times he would not transfer infection from his dirty fingers to the food or drink of others. If the kindly native neighbors who assist those sick with cholera, and who disappear before the arrival of the health officers, can be taught the necessity of washing their hands before eating or handling food, many more cases will be prevented.

The Bureau of Health has printed cholera circulars in Spanish, English, and all the native dialects, telling how to protect one's self against the infection of cholera. This campaign is best conducted in the schoolroom and from the pulpit. The Bureau of Education and the church authorities have coöperated in an attempt to spread the knowledge and advice contained in the cholera circulars among the people. Efforts along this line have met with success but it requires a long time to completely change the habits of a people, and it will probably require another generation to complete the work.

In order to keep the city of Manila reasonably free from cholera, it will be necessary to carry out the following measures:

The Manila city water supply must be extended to every part of the city and placed within the reach of everyone.

Tanks and reservoirs must be so constructed as to preclude the possibility of contamination.

Esteros must be controlled and confined to definite beds either by adequate walls or by dredging so that any overflow land will be drained between tides.

The filling in of low places which can not be drained to the proper height above the curb is essential.

Public closets must be established in all barrios, so that every inhabitant of the city of Manila will have closet facilities at his disposal. It is advisable to have more closets even if of less seating capacity; six closets of six pails each will be of more value than three of twelve pails each, for the reason that the native has a shorter distance to travel. Also, the cutting of alleys through the back yards will facilitate his journey to the closet.

Before permitting land to be used for building purposes within the city limits, the land should be subdivided by streets and alleys upon a definite plan. The indiscriminate building of nipa shacks upon the interior of a block without order or regard for necessary intervening spaces should not be permitted. Streets and alleys should be cut through already existing collections of nipa shacks, and, when necessary, houses removed to permit proper spacing. Streets must be opened into barrios within the city limits which are now isolated and have no wagon road entering them to permit the collection of garbage and refuse.

A sufficient force of sanitary police to enforce the use and sanitary maintenance of closets.

All wells must be filled in.

More stringent measures to compel the prompt reporting of "suspicious" cases, with severe penalties for infractions of this ordinance.

Stricter enforcement of the building code in the erection of new buildings.

Nipa shacks in the strong-material districts must go, and repairs to old nipa shacks, which perpetuate this problem, must be prevented. These nipa districts exist by sufferance within the strong-material districts, dilapidated shacks crowded together in the most insanitary manner, where there are excellent public closets, patronized only by a select few. The majority still find it easier to deposit or throw their dejections upon the swampy ground. These districts are the natural homes of cholera and from there the people who are trying to live decently are infected by means of *muchachos,* cooks, or *cocheros,* who spend their spare time in these plague spots.

A proper system of surface drainage for every part of the city of Manila, where such drainage is lacking, but especially for (1) the San Lazaro Estate and that portion of the city from the San Lazaro Estate to the railroad crossing on both sides of Calle Cervantes, (2) Santa Monica, (3) Antonio Rivera, (4) Magdalena, interior, (5) that portion of Tondo north of Moriones and west of Estero de la Reina, and (6) that portion of Malate bounded by Calle Herran, Wright, San Andres, and Nueva.

In view of the foregoing, the city authorities, under the direction of this office, have installed a chain of forty-five additional public midden sheds throughout the poorer sections of the city.

In the same manner, seven additional public water hydrants have been installed, and five more will be placed as soon as the necessary pipe can be laid.

Upon request of this Bureau, on October 24 the Municipal Board of the city of Manila made provisions for the expenditure of ₱5,000 for drainage purposes; the work to be carried on under the general supervision of the Director of Health. The larger portion of this sum was expended for the drainage of the San Lazaro Estate.

On November 13 the Bureau of Lands added to this amount the sum of ₱5,000, and on December 10 the Municipal Board added a further sum of ₱1,500, making a total sum of ₱11,500 available for emergency drainage work.

Of this amount, ₱1,221.42 was expended on the drainage of certain branches of the estero de Quiapo in the vicinity of Calle San Sebastian and Mendoza, 1,000 meters of estero were cleaned, and 19.5 meters of retaining wall constructed. The remainder is being expended entirely on the San Lazaro Estate, ₱7,806.20 having been used up to January 1, 1909, with the following results:

Number of meters of street drains constructed	11,317
Number of meters of alleys drains constructed	5,811
Number of meters of cement gutters constructed	134
Number of culverts placed at street crossings	212
Number of meters 20-inch sewer constructed	70

The San Lazaro Estate has a population of several thousand inhabitants, which, together with the low ground on which it is situated, make conditions extremely insanitary. This fact was particularly emphasized during the outbreak of cholera. It was insisted by many that the estate could not be drained without extensive preliminary filling which would involve an expense of fully ₱100,000. The present drainage system, however, as carried into effect by this Bureau, is a complete success, and clearly shows the practicability of draining at a comparatively small expense by proper street drains many of the insanitary districts of Manila.

The efforts of the Bureau to solve the problem of the nipa shacks in the strong-material districts have met with strenuous opposition. It is most difficult to make the denizens of these filthy collections of shacks conform to the sanitary regulations, and their habitations and mode of life make this problem a serious one, as their presence is a distinct menace to the health of their more fortunate neighbors. When orders were issued for the removal of these shacks, all sorts of expedients were tried to delay the work. However, the securing and preparation of sanitary building sites removed the last valid objection, and the shacks are now disappearing from the better residence districts. During the past year nearly 700 insanitary nipa houses have been vacated and

removed from the congested hard-material districts of Manila, Government land (San Lazaro Estate) being provided for such as desired the same, free of rental for six months, after which period a nominal ground rent will be charged.

The nipa-shack problem is perpetuated by allowing illegal repairs and by legalizing repairs in sections where such should not be permitted. If the building ordinances of the city were carried out strictly and all repairs prevented, the problem would solve itself. In response to the protest of this Bureau, the Municipal Board amended that part of its ordinances which permitted residents of certain nipa sections in the heart of Malate to repair their shacks until 1914. Therefore, repairs in this district to light material houses are now illegal.

SUMMARY OF THE CHOLERA SITUATION IN THE PHILIPPINES.

A careful review of the cholera conditions in the Philippines during the past few years, coupled with a study of the cholera reports from different parts of the world in which the disease exists, leads more and more to the conclusion that the cholera question in the Philippine Islands presents much the same problem as typhoid fever in Europe and America. The experience of the Bureau has demonstrated again and again that the disease can be controlled and that those persons who desire to take the few simple precautions which all residents of the tropics should take in order to protect themselves against intestinal diseases, can rest assured that they will not contract the disease.

The prospects of lessening the number of cases each year are excellent, and its complete eradication is not too much to hope for because many brilliant scientific men with liberal endowments to aid them are at present at work in all civilized countries seeking to perfect measures for eradicating typhoid; and when these are found, they can likewise be applied to cholera, and this scourge removed from our midst.

GANGOSA.

The experience of the past year has been similar to that of the previous years, and the opinion that this disease does not exist in the Philippine Islands is becoming very firmly fixed. During the past year there were 1,300 lepers collected, and the officials in charge of these collections were specially instructed to bring to the ports not only those persons who were undoubted lepers, but also those who were suspects, in order that a definite diagnosis might be made. They were specially instructed also to bring in all persons with symptons of gangosa. In view of the fact that not one case came under observation during the past year, it is believed that it does not exist to any great extent, at least, in the Philippine Islands.

INSANITY.

The Government at the close of the year was maintaining 136 insane persons at San Lazaro, and 112 at the Hospicio de San Jose; the city had at its own expense at the same institution 119, so that relief was afforded to a total of 367 cases, exclusive of those maintained at private hospitals. Of those at San Lazaro, 18 were discharged as having regained their normal mental condition, which is a percentage that will compare favorably with institutions in other countries.

Considerable difficulty has been encountered in committing cases because there are no adequate laws in the Philippines governing this subject. A review was made of the legislation on insanity in many of the States in the United States, but there also it was evident that the legislation was, in many instances, unsatisfactory. The legislature of Massachusetts has appointed a special committee to draft a model modern law upon this subject, and it is hoped that the result of that study will be available soon so that its good features may be incorporated in the draft of an insanity act which it is proposed to submit to the next Legislature.

HOOKWORM DISEASE.

During the past year it was not possible on account of the prevalence of cholera which required all the available force of the Bureau, to commence the hookworm campaign as outlined in the last annual report; but after numerous efforts, a commission for the study of the hookworm and other tropical diseases was finally put into the field under the joint auspices of the Bureau of Health, the Bureau of Science, and the Philippine Medical School. In addition to making hookworm examinations, it was deemed advisable to make a complete sanitary survey and study of a provincial town, with the object of ascertaining just what the incidence of disease was among Filipinos who lived amidst typical local conditions. For this purpose the town of Taytay in the Province of Rizal was chosen, which has a population of about 6,000 persons, and is a community which in the past has suffered severely from outbreaks of dangerous communicable diseases. Even in Spanish times it was supposed to be one of the endemic centers from which cholera spread.

On account of the fact that men were available from so many different sources, it was possible to have one expert report upon the contour and formation of the country, a chemist for the analysis of water, a biologist for the study of its animal and vegetable forms, clinical microscopists for making blood examinations, a zoölogist for making the intestinal parasite examination, an entomologist for studying the mosquitoes and other insects, a number of competent clinical men to make the physical examinations, and a number of other experts who could be consulted from time to time.

Unfortunately, this commission was discontinued early in the month of June because many of its members had to return to their positions as instructors in the Philippine Medical School, or sever their connection with the work for other reasons.

Of the first 1,000 inhabitants examined it was found that about 10 per cent were suffering from uncinariasis and 95 per cent harbored one or more kinds of intestinal parasites.

In order, however, that this work might be continued another commission was immediately put into the field directly under the auspices of the Bureau of Health, and Medical Inspector Rissler was placed in charge thereof. This commission will confine itself entirely to intestinal parasites, and will operate in the vicinity of Las Piñas, in Cavite Province, which has a sandy soil, and in this respect differs from Taytay which has a clay soil.

Up to the close of the fiscal year, 623 cases had been examined, and it was found that 14 per cent of the males and 10.6 of the females, or an average of 12.3 per cent, had hookworms. In the town of Parañaque, which also has a sandy soil, a total of 159 persons were examined, of whom 76 males showed a percentage of infection of 18.4 per cent, and 83 females a percentage of 12 per cent with an average of 15 per cent.

In carrying out this hookworm work, a feature has crept in for which no provision was originally made, viz, people apply for all sorts of medical and surgical relief; and in order to encourage them to come in for examination for hookworms, it has been the policy of the Bureau to take care of this work; but the number of persons so attending has reached such proportions that the hookworm work is seriously interfered with.

LEPROSY.

A review of the work of the year with this disease shows that most satisfactory progress has been made, and all expectations more than realized. A total of 1,318 lepers were transferred to Culion, and every province in the Philippines except Nueva Ecija and Moro have had at least one collection of lepers made. The incidence of the disease has been apparently decreased from one leper among every 2,000 inhabitants to one leper among every 2,800 inhabitants. At the close of the last fiscal year the estimated total number of lepers in the Islands was 2,708; this year it is 2,273. The hardest task of the health officer in order to bring this work to a successful issue, however, yet remains, and that is patiently, but nevertheless firmly and continually to seek the incipient cases and transfer them to Culion. With our present knowledge, the carrying out of this policy offers the only hope of ultimately eradicating this most loathesome disease from the Philippines.

Since the work of isolating the lepers of the Islands began in a systematic manner in 1906, there have been 3,990 collected up to the

close of the fiscal year 1908–9. The work has been carried on with scarcely any friction or disturbance, nor has anyone felt that it was necessary to seek legal means of avoiding segregation. The cheerful manner in which the great majority of the lepers and their friends have acquiesced when their turn came to be taken to Culion has been most satisfactory evidence of the forbearance of the people of the Philippines, and an example of how well a large public health measure can be carried out when it is supported by public opinion and done in a manner which shows due regard for the rights of the individual.

At Culion there were at the close of the year 1,741 lepers and 185 were en route, making a total of 1,926. A much better feeling appears to prevail among the colonists than has heretofore been the case. An interested and cheerful activity is shown in the cultivation of gardens, the establishment of barrios or small groups of houses built some distance from the colony by the lepers themselves.

A number of causes are no doubt responsible for this. The great majority of the advanced cases that reached the colony in a hopeless condition have now passed away, and in consequence, the death rate has since become materially lower. The great improvement which has taken place in many cases from the use of the X-ray and more especially the use of crude chaulmoogra oil as recommended by Professor Dyer of New Orleans, has renewed hope to a marked extent. The offers of the Government to furnish work animals and farm implements are now eagerly accepted in many cases.

Our knowledge of leprosy has been considerably enhanced during the year by the discovery of Mr. Moses T. Clegg of the Bureau of Science of a method of cultivating the leper bacillus in artificial media. This is believed to be the first time that there has been an opportunity to study this organism satisfactorily, and there is now at least some hope that a serum or vaccine will be made which can be successfully used in combating this loathsome disease which has been shunned from Biblical time.

CHAULMOOGRA OIL TREATMENT.

In view of the many requests which are being received for the details of the treatment of leprosy with crude chaulmoogra oil as used by Professor Dyer of New Orleans, the following extract of his method is given:

1. Full diet, restricting only indigestible foods, is indicated. The disease seems in nowise to be affected by fish or any other particular article of diet.

2. Baths are essential in the treatment; hot baths twice a day, with or without soda, are effective.

3. The patient needs tonics, febrifuges, and should be watched for intercurrent or complicating diseases, such as malarial infection, pleurisy, pneumonia, grippe, and the like.

4. Strychnine is a *sine qua non* in the treatment of leprosy. My assistants

and I lay down the rule that a leper should always take strychnine—the sort and size of dose to be regulated by the patient himself.

5. When chaulmoogra oil is given it is better endured before meals than after. It is best taken in capsules, in hot milk, or in milk of magnesia. The dosage should be begun small, say 3 drops, and increased every second or third day until as much as 120 to 150 drops of the oil are taken at the dose.

At times it is advisable to give the oil in pill form. This can be done either combining it with extract of nux vomica and ordinary excipients or a very effective way is with tragacanth and common soap.

6. Above all things individualize the patient. Watch for improvement and if it does not show in three months wait six months—if it does not show in six months, wait a year, or longer. But keep on driving at the treatment until the patient dies or gets well. I have on record one patient who did not show any signs of improvement for two years, but who is now well.

7. When all evidences of the disease are gone, insist on a continuance of treatment. It may not be necessary, but it makes sure.

X-RAY TREATMENT.

The X-ray treatment of leprosy was continued during the year, but the results have not been so encouraging as heretofore. At the beginning of the fiscal year there were 27 cases under treatment; of these 2 died, one of organic heart disease, and the other of tuberculosis of the lungs, both of which diseases can in no way be connected with the use of the X-ray. In eight cases the treatment was discontinued because, after months of application, no further improvement could be noted. Five new cases were placed under treatment on the following dates: one on September 24, 1908, and one on the 26th; one on October 3, 1908; one on January 1, 1909, and one on the 22d. (At the close of the year 22 cases were under treatment. Of these 2 were somewhat improved, 7 improved, and the disease arrested in 13.

Of the new cases the one placed under treatment on October 3, 1908, A. B., is slightly improved. A. de la C. placed under treatment on November, 1906, shows the most improvement, the case being clinically cured, but upon microscopical examinations made of scrapings taken from the nasal septum the leper bacillus can be demonstrated.

The case of Leon Liuanag wich was reported apparently cured in last year's annual report, shows some evidence of the return of the disease in the face, and in August, 1908, leper bacilli were found in blood specimens taken from the lesions.

The experience of the year again shows that in practically every case treated with the X-ray the disease is arrested.

MALARIA.

The number of deaths from malaria reported in Manila was 111, which is a reduction of 53 cases as against the preceding year.

The reduction may be accounted for in part by the increased medical service which is now available, and the greater distribution of quinine in consequence. It is thought that the majority of the cases were

contracted outside of Manila, because malaria carrying mosquitoes are not frequently encountered in the city.

In those districts in which the disease has prevailed extensively in the past, provinces like Ambos Camarines, Albay, Bulacan, etc., in which large quantities of quinine have been distributed gratuitously, the reports indicate that there has also been a reduction in the number of cases. Throughout the Islands, around many Government institutions there has been considerable filling and draining done, and mosquitoes eliminated; but this work is not sufficiently extensive to make much impression on the problem in the Philippines as a whole. Before more can be done in this direction additional funds will be needed.

MEASLES.

In last year's report attention was called to the fact that measles was a common disease in the Philippine Islands, but on account of the fact that it was so much more mild than the measles encountered in the United States and Europe, it almost escaped notice; but that during the year the disease had been imported from the United States and had caused a number of severe outbreaks in Manila and the vicinity.

This year such cases as were imported were more promptly isolated and it is satisfactory to report that no severe outbreaks occurred.

OPIUM HABIT.

In the drug habit department of San Lazaro Hospital there were treated 106 cases of opium habit as against 400 for the preceding fiscal year. The admissions for the fourth quarter were only 3. This reduction in the number of cases may be explained by the fact that the majority of offenders against the Opium Law are now committed directly to Bilibid. Of the 106 cases admited to San Lazaro 100 per cent were discharged as cured. It is impossible to estimate with any degree of accuracy the percentage of permanent cures, but it is exceedingly rare that the same patient is admitted the second time.

In Bilibid Prison there were admitted during the year 256 morphine patients and 26 opium patients, making a total of 282 cases of which all but two were Chinamen; the two exceptions being Filipinos. On July 1, 1909, there were 17 cases on hand, making a total of 299 cases that were treated during the fiscal year. All of these cases have been discharged as cured except two which remained in the hospital at the close of the year and two which died from tuberculosis during the treatment. These two patients are the only ones that did not improve under treatment.

In Bilibid there is a better opportunity to observe the permanency of opium cures, and it has been noted that patients who have been properly treated very soon learn to get along without the use of the drug and rapidly improve under mild tonic treatment.

The experience had at San Lazaro in the treatment of opium patients shows that persons who smoke opium can give up the habit with little inconvenience, that those who use it by mouth have more difficulty, and that those who use it hypodermically require prolonged treatment and undergo considerable inconvenience. This experience is in accord with that reported by the Straits Settlement Opium Commission.

PLAGUE.

Another year has gone by without a case of plague in the Philippine Islands, although it has been prevalent in Japanese, Indian and Straits Settlements ports, all of which are in frequent communication with the Philippines, some being only two days distant.

Vessels from plague infected countries are thoroughly fumigated for the destruction of rats and other vermin. A detailed description of the new rat-proof wharves recently constructed in Manila will be found in this year's annual report of the chief quarantine officer for the Philippine Islands.

The campaign against the disease is conducted on the theory of the Indian Plague Commission, that bubonic plague in man comes from the plague-infected rat by means of the rat flea.

So far as the records show, there has never been a case of bubonic plague imported into the Philippine Islands, so the measures of protection are directed chiefly against the rat; though the possibility of the disease being spread through infected persons by means of the rat flea is not overlooked. Twenty cases of bubonic plague in San Lazaro Hospital would not be as dangerous to the community as a few plague infected rats at large.

The success which has attended the measures instituted by the United States Public Health and Marine-Hospital Service in the Philippine Islands and by the Bureau of Health has been sufficiently great to justify their continuance without change.

In reply to the numerous inquiries which have been received with regard to the methods which were employed finally to eradicate the disease from the Philippines in 1905 and 1906, the following outline is respectfully submitted:

The health officials of the city of Manila, Philippine Islands, for the five-year period from 1900 to 1905 made most valiant efforts to destroy the rats of the city; approximately $15,000 were paid in rat bounties and $325,000 in salaries and wages, and other expenses of rat catching; but at the end of that time the rats were apparently as plentiful as before and the plague was still present. The experience in Tokyo and Osaka had been practically the same. Professor Kitasato expressed the opinion that a given city could only have up to a certain number anyhow, because further increase was limited by the amount of available food and when the limit had been reached the rats commenced to eat

one another, which prevented more than a certain number ever being present, and that the increase by breeding was about as rapid as any method of destruction which had yet been tried.

The following plan was then tried and the plague among human beings soon disappeared, there having been no cases since April, 1906; and it has been eradicated among rats each time it has made its appearance.

A list of the places at which plague-infected rats were found was made. Each was regarded as a center of infection. Radiating lines, usually five in number, were prolonged from this center, evenly spaced like the spokes of a wheel. Rats were caught along these lines and examined. Plague rats were seldom found more than a few blocks away. The furthermost points at which infected rats were found were then connected with a line as is roughly shown in the following diagram.

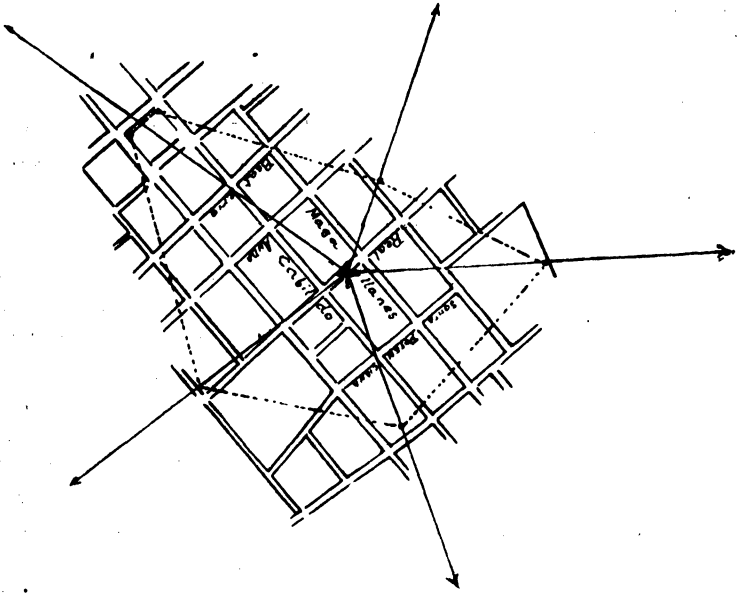


FIG. 1.—ISOLATED PLAGUE-INFECTED CENTER, CITY OF MANILA.

The space inclosed by the dotted line was regarded as a center of infection. The entire rat-catching force which had heretofore been employed throughout the city was then concentrated along the border of the infected section, that is, along the dotted line. It then commenced to move toward the center marked "X," catching the rats as it closed in. Behind them thorough rat proofing was carried out. One section after another was treated in this way until they had all been wiped out. Once weekly thereafter rats were caught in the previously infected sections and at other places which were insanitary and which had been infected in years gone by. This continued for one year.

The city was then divided as is shown in the following diagram, and rats are caught once weekly at each point at which the lines intersect, and sent to the laboratory for examination.

In addition, sanitary inspectors are instructed to bring in dead rats which have evidently died of disease, and more detailed rat catchings are made along the water front.

It is understood, of course, that rat proofing of the entire city should be thoroughly carried out and constantly maintained.

Conclusions.—Since the above system was adopted plague has disappeared in the city of Manila; among human beings in 1906, among rats in 1907, and it has not since reappeared.

That the cost is only a small fraction of that of general rat examination.

That the plan is thoroughly practical for any kind of a city."

SCARLET FEVER.

During the month of April there occurred the first case of scarlet fever that has been recorded in the Philippines during American occupation. The victim was a young physician attached to one of the local hospitals.

The case was immediately put into an isolation ward at San Lazaro Hospital and no spread of the disease took place.

If scarlet fever has ever prevailed in the Philippines its presence has previously been overlooked, as there is no record of it at any of the hospitals.

SMALLPOX.

This year the disease was again encountered in sections which had heretofore been thoroughly vaccinated, but upon investigation it was invariably found that the cases occurred either in children who had been born since the systematic vaccination had taken place and had not been vaccinated, or in persons who had come to such communities subsequent to the general vaccination. This experience makes further concrete proof that the infective principal of smallpox is widely distributed in the Philippines, and unless persons are protected by a previous attack or by vaccination, they are practically sure to contract the disease. Anti-vaccinationists are apparently especially prone to contract smallpox. During the year no less than two came to the notice of this office in the city of Manila alone, and both of them uselessly sacrificed their lives to this easily preventable disease.

A number of cases of varioloid occurred in persons who had been previously vaccinated, but not one single death from smallpox was reported to the Bureau of a person who had been successfully vaccinated within a few years of the time he had contracted the disease.

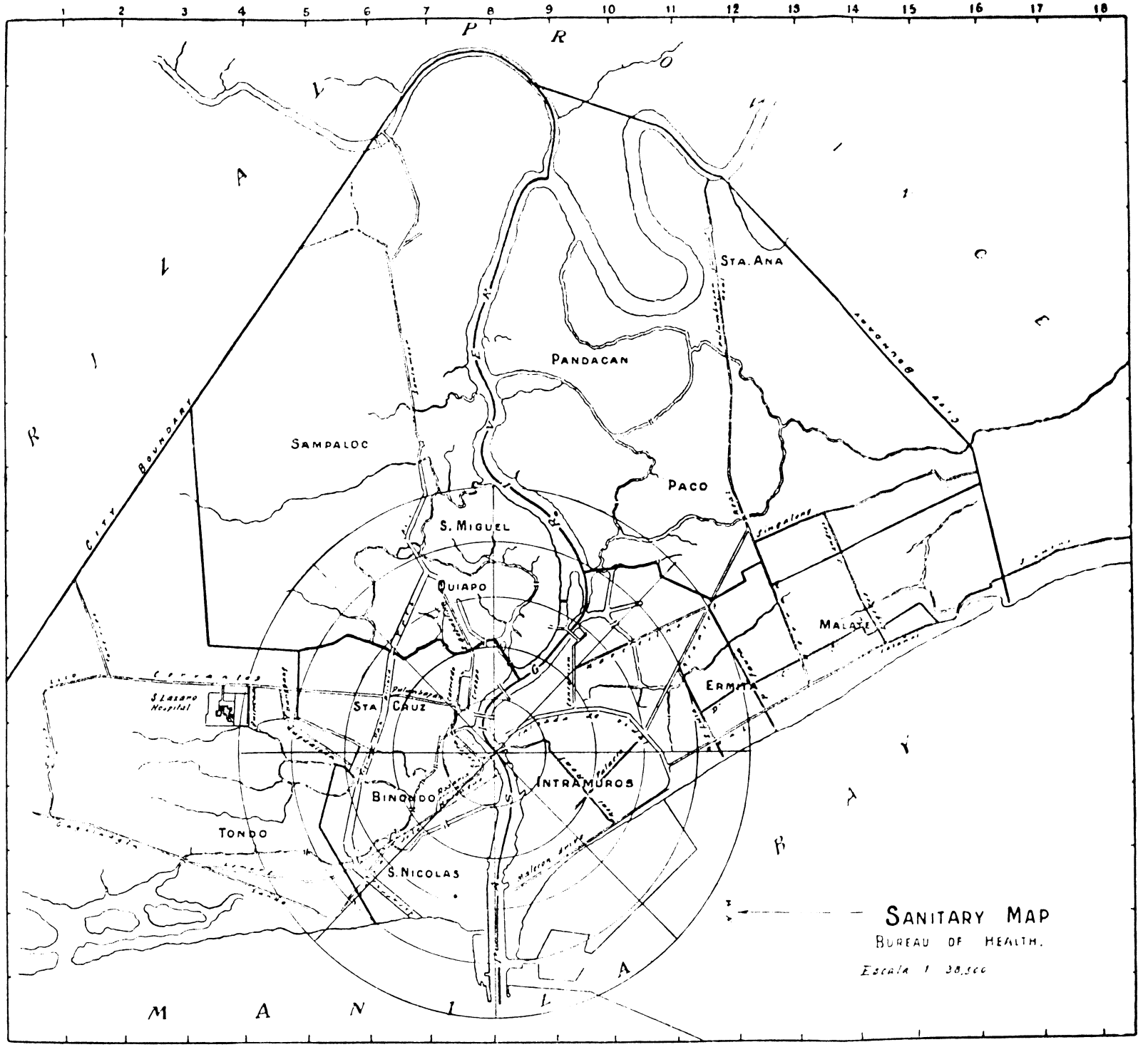


FIG. 2.—GENERAL SCHEME FOR TESTING PLAGUE RAT INFECTION, CITY OF MANILA

The following figures from Oriental Negros, with regard to smallpox, have just come to hand:

	Number of deaths.
1905	118
1906	127
1907	54
1908	23
1909	2

In this connection, it is pertinent to remark that the general vaccination was commenced in that province in 1907, and was completed in 1909. The foregoing experience has practically been duplicated in every portion of the Islands in which vaccination has been practiced. Reference to the statistical tables published by the Bureau of Health furnish ample confirmation of this statement.

SPRUE.

The hospital reports of the Bureau of Health show that 5 cases of sprue came under observation as compared with 2 cases for the preceding year.

The general impression seems to prevail among private practitioners that the disease is increasing. In the absence of statistics it is difficult to judge whether there is an actual increase or whether this fact is due to better diagnoses. At all events, the disease occurs only to a limited extent and can not be regarded as being serious from a public health standpoint.

No new treatment or special laboratory studies have come to the notice of the Bureau.

SUICIDE.

There has always been a general impression that there were fewer suicides in the Philippines than in Western countries, and this is well borne out by the following table which covers a period of five years. In the United States, for instance, the average number of suicides per year is 14 per 100,000, while in the Philippines according to this table there are only 4 to every 100,000 of the population. This is a most striking difference and offers considerable opportunity for speculation upon the cause for so great a difference between the Occident and the Orient.

Registered number of suicide cases during the last five years in the various provinces of the islands according to Form 46 B. of H.

Provinces.	1904.	1905.	1906.	1907.	1908.	Total.
Abra	0	0	0	0	4	4
Albay	3	1	0	3	3	10
Ambos Camarines	8	1	4	7	6	26
Antique	4	1	0	1	0	6
Bataan	1	1	0	0	3	5
Batangas	12	5	19	8	6	50
Bohol	4	3	10	16	16	49
Bulacan	9	19	5	6	6	45
Cagayan	9	10	8	0	16	43
Capiz	15	18	7	16	60	116
Cavite	13	6	4	6	9	38
Cebu	48	81	80	63	0	272
Ilocos Norte	0	5	0	7	30	42
Ilocos Sur	6	7	4	10	7	34
Iloilo	0	9	5	17	16	47
Isabela	18	4	1	2	10	35
Laguna	11	5	8	7	16	47
Leyte	0	27	0	0	0	27
Masbate	0	0	0	0	0	0
Misamis	17	10	6	4	0	37
Negros Occidental	7	10	29	24	7	77
Negros Oriental	0	4	5	14	19	42
Nueva Ecija	9	7	2	0	0	18
Pampanga	4	2	2	0	5	13
Pangasinan	25	18	12	40	28	123
Rizal	0	0	1	3	7	11
Romblon	0	0	2	2	2	6
Samar	2	0	0	1	0	3
Sorsogon	6	9	2	4	2	23
Tarlac	4	2	1	7	1	15
Tayabas	0	18	9	19	9	55
Union	8	0	0	8	10	26
Zambales	6	0	0	0	9	15
Lepanto-Bontoc	0	0	0	5	0	5
Total	249	283	226	300	307	1,365
Manila	6	4	1	7	3	21
Total	255	287	227	307	310	1,386

HUMAN TRYPANOSOMIASIS.

In last year's annual report the fact was mentioned that after the return from a leper trip a reëxamination of the slides was made which resulted in one being found which had excellent specimens of the *Trypanosomiasis gambiensi.* Most diligent effort was made to locate the person from whom the specimen was supposed to have been taken. By a process of exclusion the conclusion was finally reached that the person had died in the meantime. A number of indefinite reports were received that individuals existed in the same community who presented clinical symptons of sleeping sickness, but they could never be located accurately, so that in spite of the fact that a constant watch was kept for further cases during the year, not one came under observation.

THE INTERNATIONAL CONGRESS ON TUBERCULOSIS.

The International Congress on Tuberculosis composed of delegates from every part of the world, convened in Washington, September 21, last, and continued in session until October 12. The congress was divided into three periods of one week each. The first week was set apart to lectures in the cities of Washington, Baltimore, Philadelphia and New York, by men of prominence in the United States and from

abroad, and to the placing of exhibits in the great new National Museum building. During the second week, that is, from September 28 to October 3, occurred the important work of the congress—the work done in sections, seven in number—sessions of which, in two or more proceedings, were going on all the time. In these section meetings were read all the important papers, and in these the discussions following them took place. The third and last week was mainly given over to the public to view the exhibits for educational purposes.

The exhibits in all departments were extensive and excellent, and they conveyed much important information. They were arranged with the special object of being easily understood by even the laity. The best showing in these was made by New York, Pennsylvania, Massachusetts, Colorado, the Department of Animal Industry, Washington, D. C., the marine and naval exhibits, the Government Printing Office, etc., New York leading in all practical work done, with the largest percentage of cases and of improved sanitary measures established and enforced.

The United States and New York especially now easily lead the world in improved methods for the care of comsumptives and in the sanitary laws governing them.

The benefits that will result to this country from our having been hosts to the International Congress on Tuberculosis will be more general organization, general publicity, improved enforceable sanitary regulations, the separation of the sick from the well, and the treatment of advanced and incipient cases in hospitals, sanitariums and day and night camps.

His Excellency the Governor-General appointed Dr. Fernando Calderon, professor of obstetrics in the Philippine Medical School, and the Director of Health to represent the Philippine Islands in the International Congress on Tuberculosis. The following report was submitted by them upon their return:

To His Excellency the GOVERNOR-GENERAL,
(Through the Honorable, the Secretary of the Interior)
Manila, P. I.

SIR: In conformity with the letters of appointment to attend the Third International Congress on Tuberculosis to be held at Washington, D. C., from September 21 to October 12, 1908, as delegates from the Philippine Government, your representatives have the honor to submit the following report:

One of your delegates (Dr. Heiser) in order to comply with his instructions to report upon the Molokai leper settlement, left Manila August 5, and the other upon August 10; they traveled together from Honolulu and reached Washington, D. C., on the afternoon of September 21. The first session of the Congress was held on the evening of this date.

Your delegates were most hospitably received and were accorded the special privileges which were extended to delegates from foreign governments.

Recognized experts on tuberculosis were present from practically every civilized country in the world, more than 27 foreign countries being represented, and the governors of many States were present in person. The daily attendance upon the

scientific sessions was about 2,000, and upon popular sessions probably 5,000. A total of over 4,000 physicians registered. Some States had 200 physicians present. The foregoing figures demonstrate that this was the largest congress which has yet been held and that active interest in combating tuberculosis is rapidly increasing. The first session was opened by the honorable the Secretary of the Treasury of the United States, and the closing session was presided over by His Excellency the President of the United States, at which the following resolutions were passed:

"*Resolved*, That the attention of State and central governments be called to the importance of proper laws for the obligatory notification by medical attendants, to the proper health authorities, of all cases of tuberculosis coming to their notice, and for the registration of such cases in order to enable the health authorities to put in operation adequate necessaries for the prevention of the disease.

"*Resolved*, That the utmost efforts should be continued in the struggle against tuberculosis to prevent the conveyance from man to man of tuberculosis infection as the most important source of the disease.

"That preventive measures be continued against bovine tuberculosis, and that the possibility of the propagation of this to man be recognized.

"*Resolved*, That we urge upon the public and upon all governments the establishment of hospitals for the treatment of advanced cases of tuberculosis.

"The establishment of sanatoria for curable cases of tuberculosis.

"The establishment of dispensaries and day and night camps for ambulant cases of tuberculosis which can not enter hospitals and sanatoria.

"*Resolved*, That this congress indorse such well-considered legislation for the regulation of factories and workshops, the abolition of premature and injurious labor of women and children, and the obtaining of sanitary dwellings as will increase the resisting power of the community to tuberculosis and other diseases.

"That instruction in personal and school hygiene should be given in all schools for the professional training of teachers.

"That, whenever possible, such instruction in elementary hygiene should be intrusted to properly qualified medical instructors.

"That colleges and universities should be urged to establish courses in hygiene and sanitation, and also to include these subjects among their entrance requirements, in order to stimulate useful elementary instruction in the lower schools.

"That this congress indorses and recommends the establishment of playgrounds as an important means of preventing tuberculosis through their influence upon health and resistance to disease."

The interest exhibited by those who attended the Congress and that of the press of the United States was characterized by its earnestness and enthusiasm.

FIRST WEEK.

The work of the first week of the congress was devoted to a study of the tuberculosis exhibit which was pronounced by those who are in a position to judge to be the most complete of its kind that has yet been assembled anywhere. Since the closing of the congress the exhibit has been transferred to New York City and later will be sent to Boston and other places. An idea of its size may be obtained when it is stated that it occupied a floor and wall space over forty times greater than that of the Marble Hall at the Ayuntamiento, Manila. It consisted mainly of models of the proper way in which dwelling houses should be constructed, actual size and models of small and individual shacks or tents for the treatment of tuberculosis in different climates. These varied in style and

equipment from those that cost thousands of dollars down to some which could be constructed for $25. Statistics were presented in every conceivable form. One chart showed that there had been more deaths from tuberculosis in the past year than the total number of deaths in all the battles of the Civil War. Cuspidors, sputum cups, pocket flasks and methods for disinfecting their contents by burning, hot water or disinfecting fluids were shown in endless varieties. One exhibit that attracted much favorable comment was that of the Government Printing Office in Washington by which cuspidors are carried to a special room, cleansed and disinfected without being touched by the hands. The good that may be done by nurses appointed to visit the poor in their homes was well shown by the improved appearance of the houses and the disposal of the sputum of the afflicted ones in such manner as to avoid its being a source of danger to others. Windows were arranged so that they would ventilate, painted floors substituted for carpets, iron beds for wooden ones, light washable curtains for the heavy variety. In brief, every effort was made to show that the house should be light, well ventilated and contain few things in the way of furniture and other furnishings, instead of being dark and filled up with many furnishings.

The evil effects of sweeping with an ordinary broom, without first wetting the surfaces or using a special form of brush, was demonstrated by charts showing that tubercle germs have frequently been found in clouds of dust raised by the ordinary method. Many hundreds of other things too numerous to mention were shown. A catalogue of the exhibited is forwarded herewith marked "A."

SECOND WEEK.

The work of the second week of the congress was divided into seven sections, with a chairman at the head of each who had an international reputation in the special field over which he presided, viz:

Section 1.—Pathology and bacteriology, Dr. William Welch.

Section 2.—Clinical study and thereapy of tuberculosis, Dr. Vicent Y. Bowdich.

Section 3.—Surgery and orthopedics, Dr. Charles H. Mayo.

Section 4.—Tuberculosis in children, Dr. Abraham Jacobi.

Section 5.—Hygiene, social, industrial, and economic aspects of tuberculosis, Edward T. Devine.

Section 6.—State and municipal control, Dr. Walter Wyman.

Section 7.—Tuberculosis in animals and its relation to man, Dr. Leonard Pearson.

Under the section entitled "The States and municipal control of tuberculosis," the papers were read which were deemed by your delegates to be of the most practical interest to the Philippine Islands, and consequently, the greater portion of their time was devoted to this section.

All sections met daily from 9 to 12 and from 2 to 5, and at times two sections held combined meetings to discuss questions of common interest; a general meeting of all sections was also held every night beginning at 8 p. m.

On September 29, Doctor Heiser read a paper entitled "The Tuberculosis Problem in the Philippines and the Elimination of Intestinal Parasites as a Step in its Solution."

On October 1, Doctor Calderon read a paper entitled "Notes on Tuberculosis in the Philippines."

The scientific work of the congress was closely foflowed and your delegates were struck with the remarkable unanimity which prevailed among the delegates upon the following points:

1. That tuberculosis in its early stages is a curable disease.

2. That it is a house disease; that is to say, that people who live an outdoor life are not afflicted with tuberculosis, and the more confined the living quarters are, the more prevalent is the disease.

3. That it is a simple and practical matter to avoid contracting tuberculosis by introducing large volumes of air into the house, night and day, winter or summer, or better, by sleeping out of doors altogether.

4. That among the best ways to cure it is to live an outdoor life, regardless of what the climate may be, with only such exercise as a physician prescribes and a good simple diet which should consist mainly of eggs and milk.

5. That the successful treatment of the disease is not necessarily confined to specially favored localities but that many cures may be effected in almost any climate or locality.

THIRD WEEK.

The third week of the congress was devoted to a continuation of the exhibition, lantern demonstrations, lectures, and visits to Baltimore and the near-by places at which tubercular sanatoriums are located.

OFFICIAL VISITS.

At the close of the congress, October 12, your delegates proceeded to Philadelphia, Whitehaven, Saranac, Boston, New York and a number of other places for the purpose of witnessing the dispensary and hospital work in large cities and the manner in which the different kind of sanatoriums are conducted. After carefully inquiring into and seeing the foregoing it is again plainly evident that the authorities are practically unanimous in their methods of combating tuberculosis, the principal difference being to suit them to the financial abilities of the different communities in which they were in force.

The measures readily divide themselves into the following divisions:

1. Registration and classification of cases.
2. Popular lectures on tuberculosis and popular articles in the press.
3. Treatment of tuberculosis by the dispensary system.
4. Confining the hopeless cases in separate hospitals located in the city.
5. Sending early cases to a sanatorium in the country.

TUBERCULOSIS WORK IN PENNSYLVANIA.

As practically all the States are endeavoring to adopt the systems in use in Pennsylvania, Maryland, New York, and Massachusetts, that now used in Pennsylvania is hereby briefly outlined:

1. The collection and tabulation of statistics relating to tuberculosis, through official morbidity and mortality reports of each individual case.

2. The establishment of one or more sanatoria for the treatment of incipient cases, including infirmaries for advanced and hopeless cases.

3. The establishment of dispensaries in each county of the State for the care of cases which can not avail themselves of sanatorium treatment, including home visitations and the study of occupational conditions.

4. The maintenance of pathological laboratories for the free examination of sputum and tuberculous lesions, and biological laboratories for the possible development of immunitive and curative products.

5. The restriction of tuberculosis by the disinfection of rooms, buildings (private and public), conveyances and carriers, and by supervision and regulation over the general avenues of infection.

6. The dissemination of knowledge relative to the communicability, care and prevention of tuberculosis.

The last session of the Pennsylvania legislature appropriated $1,000,000, United States currency, for the continuation of the fight against tuberculosis in that State. The sums raised from private effort probably amounted to as much again. Dr. Lawrence Flick, the eminent authority on tuberculosis, estimates that as a result, at least 5,000 lives are already being saved annually in Pennsylvania alone.

WHITE HAVEN.

This institution differs from all of the others visited in that a systematic trial is being made on a large scale to make the sanatorium largely self-supporting by the labor of the patients. So par as our observations went it can not be said that this plan has proven successful up to this time.

After carefully reviewing the literature and evidence we have collected, we respectfully submit the following recommendations, with the earnest request that some action may be taken so that the Philippines may be able to show that as much is being done for the people of the Islands as in similar countries in other parts of the world.

Every effort has been made to make the recommendations practical, rather than theoretical, and capable of being put into effect with the resources at hand.

RECOMMENDATIONS.

1. That the compulsory registration of cases of pulmonary tuberculosis be put into effect immediately, at least in the city of Manila.

2. That one or more dispensaries solely for the out-patient treatment of tuberculosis be opened in Manila, to which one or more nurses be attached for the purpose of visiting patients in their homes. Also that provision be made for microscopical examination of sputa.

3. That the necessary funds be provided for a trial by the "open-air method," in Benguet or some other place where an equally low temperature may be had, for the treatment of not to exceed twelve tubercular patients.

4. That provision be made on an elevated site near Manila for treating a limited number of incipient cases of tuberculosis, for a period of not to exceed three months each, by requiring their presence only during the night in order that the advantages of the open-air method the disposal of sputa, and the precautions to be taken to avoid transmitting the infection to others may be demonstrated.

5. That in order to furnish a practical object lesson, sanitary cuspidors be provided and used in all public buildings, including public schools, and that the sweeping or cleansing of such buildings be done in such manner as to prevent the formation of clouds of dust.

6. That the public streets be swept only when in a wet condition, so as to avoid dust being blown about unnecessarily. In this connection it is suggested that the cleansing of streets by flushing, as is now done in Cincinnati and other cities of the United States, be thoroughly investigated with the view of discontinuing street sprinkling and sweeping in Manila.

7. That arrangements be made for supplying the public press with information with regard to tuberculosis.

8. That instruction on tuberculosis be continued in the public schools and begun in all other schools where it is not taught at present.

9. That in communities where hookworms prevail, steps be taken to eradicate them because the lowered vitality which they induce predisposes strongly to tuberculosis.

10. That as many of the above recommendations as possible be put in force in the provinces.

Literature of more than 50 pounds weight, which explains in detail the foregoing recommendations; was brought by us to Manila, which, owing to its bulk, does not accompany this report; but it is suggested that this be filed at the Bureau of Science or the Bureau of Health, where those who may be interested further may examine it at their leisure.

FERNANDO CALDERON,
Delegate from the Philippine Islands
to the Third International Congress on Tuberculosis.
VICTOR G. HEISER,
Delegate from the Philippine Islands
to the Third International Congress on Tuberculosis.

The foregoing recommendations received unanimous indorsement at the second session of the Sixth Annual Meeting of the Philippine Islands Medical Association, and have in effect been adopted by the Government as evidenced by the appropriation of ₱35,000 to commence antituberculous measures. It is proposed to do this by opening a tuberculosis dispensary in the city of Manila with a trained nurse on duty at the dispensary and another trained nurse to visit the patients in their homes all, of course, to be under the direction of a competent medical man. It is also proposed to start a night camp on one of the elevated sites near Manila where popular lectures on tuberculosis and practical instruction will be given, the latter to be on sleeping, eating, disposal of sputum, etc. Those who are actually afflicted with the disease will be provided with sleeping quarters for periods of several weeks, and it is hoped that when they return to their homes they will continue the régime taught at the night camp. It is believed that in this way a large number of people can permanently be benefited. For the actual treatment of incipient cases it is proposed to construct a number of individual shacks in the mountains of Benguet in order to ascertain whether the cool atmosphere and the elevation of that region can be counted upon to be of material aid in the treatment of tuberculosis in the Philippines.

REMEDIAL TUBERCULOSIS MEASURES.

Marion A. Spratt, in the Bulletin of the Missouri State Board of Health, has so admirably stated certain facts in connection with the tuberculosis problem that the article is freely quoted from without further acknowledgment.

The war on tuberculosis has two points of attack: (1) To cut off the supply of tubercle bacilli which cause the disease; and (2) to prevent the accumulation of susceptible persons. It is first to be remembered and always to be kept in mind that the war is on the disease, and not on the person afflicted with the disease. Every step taken is to check the spread of tuberculosis from one part of the body to another, from one person to another, simultaneously with the increase of chance for relief and cure of the tuberculous person.

The immediate thing to do is to get the confidence, coöperation, and control of every person who has tuberculosis. This involves first, the recognition of the disease in a tuberculous subject, and second, getting information of the existence of all cases of tuberculosis. Few cases of tuberculosis are recognized at the start.

It is common practice for a physician to be called in only upon severe hemmorrhage or some other debilitating and alarming sympton. For months, and perhaps for years, then, the majority of cases of tuberculosis are at large spreading infection broadcast before either subject or public are aware of the condition. But even after the disease is recognized by the attending physician, it is no easy task to learn that that case exists in the community. While, to be sure, this disease by its very communicable and dangerous nature comes under the general law requiring every case of such diseases to be reported by the attending physician and by the householder to the local health officer, yet the fact has been that popular prejudice, rather than the statute, has dictated public policy; so that neither physicians nor householders always observe the law which aims to have all cases recorded by local health officials and under their supervision. It must be said, however, that as fast as physicians find their clientele dropping this prejudice against being recorded as having tuberculosis, the law will be complied with and all cases of tuberculosis will be known.

The initial step is to talk a great deal about tuberculosis in every community, to familiarize the public of that locality with the possibility of cure if the disease is taken in time, with the salient dangers of tubercular infection, and the need of specific preventive measures to check the spread of the disease. Informal talks before special gatherings, as school children, working men, clerks, business men, mothers, teachers, young women's and young men's associations, making appeal for self-protection and relief and cure of this disease, the preventable and curable malady, will start public sentiment against tuberculosis. Free lectures accompanied by lantern slides, given by some acknowledged authority, are most profitable. Leaflets issued and distributed are a useful method of attack. Nothing, however, tells the story so well as an exhibit. Exhibits may range from the simplest, consisting of pictures, photographs, and diagrams; to the most extensive and pretentious, consisting of charts, models and elaborate details. Perhaps the simplest exhibit that can be devised is to extract from magazines pictures showing bad conditions as contrasted with pictures showing healthful conditions in the home, in the school, in the street, in the workshop, or in the cow barn. One contrivance which can be readily moved from room to room, in the schools, and from one school to another, is an easel, say 6 or 8 feet by 4 or 5 feet, stretched with canvass on which pictures and photographs can be pinned, pasted or hung * * * .

Such work should be followed by an attempt to instruct the tuberculous persons of the community, through the family physician, or otherwise, as to the safe and necessary régime in exercise, foods, outdoor life, preventive measure, etc.; and later a class may be formed to whom instruction, and explanation may be given regarding various special features of the anti-tuberculosis movement, as dispensaries, day camps, sanatoria, shacks, sleeping hoods for home use, porch sleeping rooms, outdoor amusements and diversions and other essentials for the good of the tuberculous person. The support of a trained nurse to visit tuberculous persons in their homes is a progressive, nay, an indispensable factor in this work against tuberculosis. The nurse makes effective the recommendations which your preliminary educational work has sought to make known. The whole policy works toward the establishment of a dispensary for either village or country, of a day camp for every town and toward the erection of sanatoria here and there throughout the State. To these channels of enlightenment, relief, and protection, tuberculous persons will easily be induced to go. Every locality should have readily accessible for its tuberculous persons a dispensary or its equivalent, where sanitary instruction and medical advice may be had free of cost. A day camp is a humane provision made in the city park, in a vacant lot or on an abandoned farm where tuberculous persons of a community may go and spend the entire day in rest, receiving there needed instruction, treatment, nourishment,

and diversion. Such a camp is supplied with reclining chairs, hammocks, possibly a tent, one nurse or more, and abundance of nourishing food, such as milk, eggs, etc. Both dispensary and day camp when properly conducted are not only sources of relief, comfort and perhaps cure, for the sick and suffering, but are important centers of education to the entire community. With these specific ends in view, the preliminary policy may be worked out by each locality, by each club, according to the local need. Success is assured if the educational policy is accompanied by practical relief and benefit even to a limited number of tuberculous persons. Every tuberculous person helped is a fighter won, and from a source of dangerous infection to his fellows, becomes a center of education and prevention to all those about him.

Although the immediate need is to obtain sanitary control of every tuberculous case, it is no less urgent to prevent susceptibility to tuberculosis, to learn what conditions foster the disease, and what must be done to remedy them. The most important improvements needed are in our school buildings and school régime.

Recommendations with reference to tuberculosis, made by Dr. Ariston Bautista y Lim, in his presidential address at the Sixth Annual Meeting of the Philippine Islands Medical Association:

(*a*) It is absolutely necessary to begin the struggle against tuberculosis by erecting dispensaries and hospitals where tuberculosis patients in certain stages may be sheltered or treated. It is likewise necessary that sanatoria be immediately erected for treatment on the highlands, in the open air, and at the seashore.

(*b*) The evolvement of a plan of sanitation and prophylaxis for the limitation of tuberculosis infection and its extinction.

(*c*) The inclusion of the elements of prophylaxis against tuberculosis in the public schools system, to be amplified in the higher grades.

Mercury treatment of tuberculosis.—The treatment was begun in Bilibid Hospital on January 14 this year and carried out according to the plan outlined in the report of Surgeon Wright, United States Navy, viz, by intramuscular injections of mercury succinimide, 0.013 gram every other day to toleration, with the result recorded in the following table:

Prisoner No.	Weights.						Destination.
	Jan. 9.	Feb. 6.	Mar. 6.	Apr. 3.	May 1.	Jun. 5.	
6051-1P	118.5	119	121	125	124.5	125	Returned to duty June 14, 1909.
4348-1P	124.5	119.5	121	118	122.5	123.5	Returned to duty June 25, 1909.
1812-1P	117.5	113.5	108.5	108	108.5	107.5	Returned to duty June 25, 1909.
783-1P	84.5	89	85.5	80.5	------	------	Died April 21, 1909.
5824-1P	95	97.5	95.5	83.5	------	------	Died May 7, 1909.
2180-1P	96.5	92.5	------	------	------	------	Died February 28, 1909.
5025-1P	102	96.5	------	------	------	------	Died March 3, 1909.
6667-1P	89	87.5	75.5	------	------	------	Died March 25, 1909.
3818-1P	92.5	87	78	------	------	------	Died July 13, 1909.
2703-1P	81	------	------	------	------	------	Died April 26, 1909.
3680-1P	------	136	135.5	139	140.5	144	Remaining in hospital.
5857-1P	110	111	113	120	121.5	122	Do.
299-1P	112.5	112	107.5	105	107.5	103	Do.
4054-1P	108	107.5	104.5	103.5	102.5	98	Do.
1490-1P	104	106.5	103.5	104.5	102.5	101	Do.
1097-1P	96	97.5	96.5	91	------	------	Do.
6442-1P	109	106.5	104	101.5	102.5	99.5	Do.
5106-1P	95	94.5	92.5	92.5	93	93.5	Do.
4955-1P	117	119.5	118	122.5	117.5	118	Do.
13042-1C	------	90	90	91.5	92	91.5	Do.

Cured, 15 per cent; died, 35 per cent; remaining, 50 per cent.

The cases were selected at random and were in fair condition; none were suffering from complications when the treatment began, but were purely cases of pulmonary tuberculosis. The percentage of cured was smaller than that obtained by the routine treatment.

TYPHOID FEVER.

It has been the prevailing impression among medical men that typhoid fever, especially that occurring among natives of the Islands, never originated in the Philippines, and that the cases which did occur could probably be traced to infection introduced from the outside; that is to say, from a foreign country. Cases among the American soldiers were attributed to infection brought from the United States either in food, clothing, or the intestines of individuals. Cases among the Japanese were attributed to the same cause, and those which occurred among Filipinos were thought to be due to direct or indirect contact with Americans or Japanese or other persons who introduced the disease. (It may be pertinent to remark that typhoid fever in the Philippines is much more prevalent among Japanese than among any other race. They seem also to be more prone to cholera.)

While the hookworm commission was at work at Taytay, two cases of typhoid fever were encountered which presented all of the pathognomic symptoms of the disease, and the diagnoses were confirmed by positive Widal reactions. Both of these cases occurred in Filipinos who had not been outside of Taytay for many weeks prior to being stricken, and who had partaken only of the food and water which was common to the remainder of the inhabitants. They denied using any food introduced from the outside, with the exception of rice and fish, which, however, were common to all the residents. On account of the daily sanitary inspection which was made by the members of the Commission for more than five weeks before these cases came under observation, it is not likely that any case, of a recognizable form at least, existed in the town during the preceding five weeks. From the foregoing, it would appear that these cases were contracted from a local source.

It is generally held that typhoid fever is not as common in the tropics as in temperate climates, and while it is true that there are fewer cases in the Philippines, yet experience here would seem to indicate that this is not due so much to the peculiarity of the climate as to the fact that there are no reservoirs or other common sources of water supply which furnish water to a large number of people; hence, infection on a large scale is not possible. It is quite generally admitted now that one of the sources of spread of typhoid fever is through milk, which has been contaminated by infected water or indirectly through the hands of the bacilli carriers. In view of the fact that the use of milk on a large scale is practically unknown in the Philippines as well as in

many other tropical countries, it is evident that another common means of spreading the disease does not exist here.

From the foregoing it is obvious that the common vehicle by which typhoid fever is spread in temperate countries is, as a rule, not available in the Philippines, and what is true here is probably true in every tropical country, and for that reason the disease is not so commonly encountered.

YAWS OR FRAMBŒSIA.

During the year Captain Phalen of the Army Board for the Study of Tropical Diseases has been making a study of yaws, and he has collected much information which indicates that this disease has a third stage similar to that of syphilis. Many of the cases of extensive skin ulcerations which are so common in the Philippines and which produce such frightful deformities by the contractures caused by the scar formation, these often resulting in serious interference with the nerve and blood supply with the terminal results of that condition, are perhaps due to yaws, and show the importance of promptly treating this disease when first contracted.

BAGUIO HOSPITAL DIVISION.

This hospital has again afforded relief to large numbers of persons, no less than 1,760 out-patients being treated and 342 indoor patients.

It was again demonstrated that for amœbic dysentery, the climate and the hospital facilities for obtaining properly cooked food is almost a specific in the treatment of this disease and successful in every respect, and the hospital affords the same advantages which an institution of this kind offers in a temperate climate.

With the transfer of the hospital to the new building July 21, 1908, the Benguet Sanatorium ceased to exist, the name of the institution being changed to the Baguio Hospital, all sanatorium features having been discontinued.

During the month of April satisfactory arrangements were made with the different mining companies of Benguet whereby their employees may be admitted to the hospital upon reasonable terms, the companies guaranteeing the charges which may be incurred.

Subsistence.—There is probably no place in the Philippine Islands where a greater variety of fresh vegetables of good quality may be purchased in the market than in Baguio. Potatoes, tomatoes, parsley, parsnips, carrots, beets, lettuce, spinach, cabbage, green onions, string beans, peas, squash, vegetable marrow, salsify, radishes, kale, Brussels sprouts, mulberries, huckleberries, etc., being obtainable from the Government experimental station, in the Baguio market, and from Haight's place at Pawi. Local merchants have responded to the needs of the community by installing refrigerators, thereby enabling them to supply the public with refrigerated meats of excellent quality. Benguet coffee, which is

of excellent quality and flavor, may be purchased in the open market. The new ice plant at Camp John Hay furnishes ice to the public at a minimum of cost.

Water supply of Baguio.—From the point of view of preventive medicine, and with especial regard to water-borne diseases, the past year has been very satisfactory. The gastro-intestinal troubles, which heretofore have commonly appeared about the beginning of the heavy rains, have been almost entirely eliminated this year by instituting the proper precautions regarding drinking water.

Through the efforts of the commanding officer, an ice and distilling plant has recently been erected and put into operation at Camp John Hay, and information has been received from the surgeon on duty at that post to the effect that the garrison has suffered very little from diarrhœa during the season.

The Constabulary School, a recent acquisition to Baguio, is supplied with water free from any possible contamination, and its personnel has been noticeably free from gastro-intestinal disorders. All drinking water is boiled.

While an effort was made last year to boil all drinking water at the teachers' assembly grounds, the attempt was not very successful, as the plant was limited in capacity, and boiled water was not always obtainable. This year all water supplied passed through heated coils bringing it to the boiling point, and as a result there were practically no gastro-intestinal cases from this source.

Some little trouble occurred among the guests in the hotels and restaurants until distilled water was used, since which time no complaints have been noted in this respect.

The hospital water supply is free from surface contamination, at least from human pollution. Water for drinking, culinary, and hospital purposes is sterilized by boiling. No ill effects whatever were observed among the patients or employees that could be ascribed to drinking Baguio water. The few diarrhœa cases that were admitted to the hospital for treatment, although allowed to drink boiled Baguio water freely while in the hospital, promptly responded to treatment.

The adverse criticism regarding Baguio water is wholly unwarranted. Baguio has as pure water as any town in the Philippine Islands, and much purer than the vast majority of towns. This refers to towns using surface water only. It has yet to be shown that the people living along the course of and deriving their water supply from the Bued, Irisan, and Agno Rivers and their mountain tributaries do not enjoy as good health with reference to water-borne diseases as people living in similar locations anywhere in the Philippines. The gastro-intestinal troubles from which the lowland people residing along the above-named water courses suffer are largely the result of drinking water—not in

Baguio—but after the Baguio water has become polluted by flowing through the lowland country. One may not expect to drink unboiled water in the tropics, either in Baguio or elsewhere, and continue to enjoy good health.

BOARD OF DENTAL EXAMINERS.

During the year the Board held twelve regular meetings and one adjourned and one called meeting for the transaction of business, and examined three *cirujano* ministrantes and one Filipino dentist who graduated from a dental college in the United States and was the second to obtain a diploma from a recognized school since the dental law went into effect.

Many inquiries were received by the Board from persons residing in the United States who desired information with regard to the conditions which govern the practice of dentistry in the Islands.

There were collected from all sources ₱40, and expended for all purposes ₱334.

BOARD OF MEDICAL EXAMINERS.

The following extract is made from the report of the Board of Medical Examiners to the honorable the Secretary of the Interior:

Since the adoption of a definite preliminary educational qualification for matriculation in medical colleges of the Philippine Islands, the Board of Medical Examiners has been given recognition by the American Confederation of Reciprocating Examining and Licensing Medical Boards of the United States, and it would seem desirable to so modify the present medical law that graduates of accredited medical schools in the United States could, on presentation of undoubtable data, be able to register here without examination; also, that physicians who have been able to obtain civil-service certificates as medical inspectors should be granted like privileges.

It is of growing importance to the general public and to the medical profession that the elimination of the *cirujano ministrante* from legal recognition as a practictioner be accomplished speedily. It is practically impossible to limit his powers in the provinces and he has just sufficient knowledge to be a menace in a community. With the educated and trained Filipina nurses in the field, and the supply of young physicians steadily increasing from the classes of Santo Tomás University and the Philippine Medical School, there is not now the apparent necessity for the *cirujano ministrante* which at one time there might have been.

The status of the midwife is very unsatisfactory, and the Board wishes to put on record its earnest protest against the use or indorsement of so great an existing evil as the uneducated midwife, and it would urge that a certain number of the Filipina trained nurses be given especial training as midwives.

The growing list of physicians in the Philippine Islands, the constant calls for information concerning them or their standing, the fact that we are now "in line" with the boards in the United States, all seem to render imperative the publication at stated intervals of an official and certified list of duly registered physicians, and the Board therefore asks for an appropriation for such purpose.

The Board held its regular meetings during the year, and examined seven doctors, twenty licentiates of medicine, and seventeen *cirujano ministrantes*. Fifteen doctors, twenty-one licentiates, and sixteen *ciru-*

jano ministrantes were registered; of these four were under section 5 of Act No. 310; seven under Act No. 1632, the first graduating class of the Philippine Medical School; and two candidates failed to meet requirements.

The total collections of the Board for the year were ₱1,280, and expenditures ₱249.33, leaving a balance of ₱1,040.67.

BOARD OF PHARMACEUTICAL EXAMINERS.

The following extract is made from the report of the Board of Pharmaceutical Examiners to the honorable the Secretary of the Interior:

The Board held two examinations, the first on July 1, 1908, at which thirty-nine applicants were present, and the second on January 6, 1909, at which fifty-seven applicants were present, and two absent, making in all ninety-eight applicants for the year. Of this number, seventy per cent obtained the required average and received certificates.

There have been issued during the year sixty-nine apprentice certificates and eight temporary certificates without examination and two Chinese druggist certificates.

There have been collected from all sources the sum of ₱1,538. Of this amount ₱200 are examination fees for the examination to be held July 6, 1909.

Treasurer's receipts on hand, ₱1,538.

The following are the salaries and fees paid or to be paid this Board from funds of the Bureau of Health:

Salary, secretary-treasurer	₱300
Fees for one member, for 39 applicants for the examination on July 1, at ₱4 each	156
Fees for two members, for 57 applicants for the examination on January 6, 1909, at ₱4 each	456
Total	912

The Board of Pharmaceutical Examiners is composed of Mariano Torres Pamintuan, president; Ildefonso Ramirez, member, and Rafael Lopez, secretary-treasurer.

CIVIL HOSPITAL DIVISION.

The following extract from the report of the chief of the Civil Hospital division of the Bureau of Health is a brief résumé of the work of this division for the fiscal year:

The total number of patients admitted for treatment was 1,691 and they may be classified as follows: Americans and Europeans (Anglo-Saxons), 960; Filipinos, 682; Japanese and Chinese, 45; East Indians, 4. There were 1,285 males and 406 female patients. Of the total 1,691 patients, 986 may be classified as those paying for accommodation and subsistence; 449 were civil employees whose salaries do not exceed ₱80 per month and who are entitled to free hospital accommodation, subsistence, and treatment; the remaining 256 patients were emergency cases and were given free treatment.

The total number of deaths for the year was 36, or a percentage death rate of 2.128 of the 1,691 patients treated. * * *

There were 21,438 patients examined and prescribed for in the office; 3,127 calls were made in the city and all the patients confined in the hospital were seen twice daily. There were 360 major operations performed; 1,783 minor operations, and 15,350 dressings. * * *

The total number of prescriptions filled at the hospital dispensary was 17,663; this includes medicines dispensed to the Civil Government employees not confined in the hospital and also the medicines given to the patients that were in the hospital.

CLERICAL DIVISION.

The following interesting extract from the report of the chief of the clerical division of this Bureau reveals a condition that is generally not taken into consideration in the estimating of efficiency of the public service in the Philippines.

The difficulty in obtaining permanent personnel has not been abated. The restless tendency of American employees seems to be a permanent factor to be dealt with. The lack of an assured future in the service is believed to be the foundation for the constant movement. Those who go home go because they believe they should not waste time in a service which does not assure them a career; those who transfer do so because of slightly larger salaries and to obtain a little more money while in the Islands; those who resign do so to accept positions in private life which seem to hold out a future. A general restlessness prevails which will not be overcome until the average employee feels assured that he will not work for ten years and have to start over again at the end of that time.

Out of six American clerks in this division on June 30, 1909, there are only two who have had as much as two years' service, there having been during that period of time nine new clerks appointed and ten separations. The reasons for changes were as follows: Four resignations, ten transfers to other Bureaus.

The tendency to pay higher wages to Filipino employees is gradually raising the cost of clerical work far ahead of what is should be and will eventually end in Filipino employees receiving in their own country a wage greater than that paid for similar work in the United States. The reason for this tendency seems to be that the different Bureaus of the Government are in competition with each other and with commercial firms for desirable men who combine ability and faithfulness. A record kept of applications for clerical and messenger positions shows that for one week the average number of applicants was seven per day. These were generally without any training whatsoever and were looking for anything they could find to do in an office.

Effort has been made to obtain a mobile force to exchange duties and substitute in case of absence and it is believed that this end will be obtained.

The clerical force has performed a large amount of work during the year, being put under a severe strain during the cholera epidemic, having to supply trained clerks for the different hospitals and conduct the work of the Bureau in addition. Extra duty and overtime work was cheerfully performed.

The financial report for the year will be found in the Appendix.

CULION LEPER COLONY DIVISION.

The following extract from the report of the chief of the Culion leper colony division of this Bureau is a brief record of the colony for the year:

June 30, 1908, there were 1,333 lepers at the colony; on the same date this year there were 1,741. During the previous fiscal year there were eight trips made, aggregating 1,554 lepers; during the last corresponding period there were seven trips made, aggregating 1,318, on the following dates: August 10, 257;

November 30, 167; January 24, 196; February 5, 199; April 5, 171; May 13, 99; June 17, 229. Up to June 30, 1908, 2,654 lepers had been received at the colony; by the same date this year there had been received 3,972. Nearly every branch of the Filipino people is now represented with the exception of some of the non-Christian tribes. There are now two Spaniards, who, with three Chinese, are the only foreigners at the colony.

The following improvements have been accomplished during the year:

The new hospital, the excavation for which was referred to in last year's report, is now nearing completion. The first concrete for the foundation was placed early in November and the building is actually finished with the exception of the plumbing and the inside work. The reinforcing was exceptionally well done, and is, without doubt, the best piece of permanent work on the colony. This was constructed with unskilled native labor under the supervision of one American constructing foreman. It is 75 meters long, constructed as a double hospital, a wing for each sex, with central administration, operating, sterilizing rooms, kitchen, baths and toilet conveniences. Nearly as long a time was consumed in excavating the rock from the site chosen, which necessitated considerable blasting, as was used to do the actual construction work.

Tenement house.—A building 8 by 24 meters in close proximity to the above is under construction. It is also of reinforced concrete, and is intended as permanent quarters for lepers, as an annex to the hospital, for cripples and for those, who, while not actually sick, are unable to get around and can be better cared for in close proximity to the hospital.

New roads.—A new road has been made from the "proposed new municipal center" to the hospital, extending around the crest of the hill. This is an 8-foot level road, shaded and affords another means of communication with the new buildings without having to pass through the entire colony.

Another road runs from the canteen along the shore to Balala. This is the shortest and most convenient way of reaching the colony and after midday is entirely shaded. This road now enables the issuing of rations and supplies to better advantage than by lighter and boats, especially at low tides.

Repairs to buildings.—The typhoon which visited this vicinity last September and October blew down three nipa houses, among which was the theatre building. These buildings had been constructed with soft wood *harrigues* and collapsed when struck by the force of the storm. Although all were occupied at the time no one was injured.

Shade trees.—During this year the lepers have taken some interest in the planting of shade trees. So far these have been principally cocoanut trees set out along the roads.

At Balala, the nonleper resident part of the colony, the following has been accomplished:

Wharf.—The wharf mentioned in last year's report is now completed. This is 100 meters long and 5.5 meters in width and extends out to deep water. This is constructed of rock blasted out from the near-by hillside. An anchoring buoy has been placed 250 meters from the wharf, and after a short extension to the latter is made, it is believed that boats can discharge directly on wharf.

Temporary quarters for employees.—A light-material house intended for temporary quarters, necessitated by the increase of employees, has been erected.

Repairs to employees quarters.—The four upper buildings on the hillside are in bad condition and can be but temporarily repaired. The *harrigues* in all of these are mostly of soft wood and have been entirely eaten away by white ants below the ground. Temporarily bracing has been effected, but in the event of a typhoon these might collapse. The office building at present is in the worst condition.

Mortality.—The mortality during the year was as follows:

July, 1908	145	January, 1909	19
August, 1908	151	February, 1909	39
September, 1908	163	March, 1909	54
October, 1908	96	April, 1909	52
November, 1908	20	May, 1909	47
December, 1908	29	June, 1909	48

The early months of the year, July to October, the mortality rate was very high compared with the following months. These first four months claimed nearly twice the number as during the remaining eight months. This is believed to be due to the following reasons; the great number of new arrivals admitted during the last half of the last fiscal year (1,175 out of a total of 1,554 for the entire year) and naturally a large number of these were received in an extremely bad condition, many dying within a few months after admission; the climate conditions during these months, being the rainy season, is no inconsiderable factor. Those who were very sick stood poorly the changes in temperature and the different surroundings from their accustomed place of living. Beriberi was also prevalent during this period. * * * There were not as many admissions this year (1,318) as the previous one (1,554) and correspondingly not so many deaths occurred, 958 for last year and 863 for the present one. Thus it appears that in proportion to the number and rapidity with which new arrivals were received, and their condition on admission, does the mortality rise and fall. Since the arrival of the first lepers May 27, 1906, there have been 2,171 deaths of the 3,972 admitted. Of those admitted during the first years who now survive, a death is comparatively infrequent, notwithstanding the increased duration and the steady progress of their diseases.

The causes of death were as follows:

Asthma and bronchitis	1	Myocarditis and chronic nephritis	5
Beriberi	232	Nephritis	70
Cachexia leprosa	516	Postpartum hæmorrhage	1
Debility, senile and congenital	14	Stillborn	1
Dysentery	9	Septicemia	1
Enteritis acute and chronic	3	Tuberculosis	7
Embolism	1		
Infantile paralysis	1	Total	863
Malaria cachexia	1		

Four mild cases of smallpox occurred at the colony during April. After quarantine was established and vaccination performed no further cases developed.

The behavior of the colonists has been good. No serious offense has been committed this year. The number escaping or attempting to escape has increased, 36 having at various times escaped, 12 of whom have been returned, leaving 24 still at large. The last escapes succeeded in getting away by stealing a large *banca* from Balala, and there being no launch at the time here, it was impossible to apprehend them.

INSPECTION DIVISION.

The division is under the charge of the Assistant Director of Health, and has general supervision over the sanitation of the city of Manila and the management of the cholera in the provinces.

The work of this division was greatly increased owing to the cholera epidemic of August and September.

During the cholera campaign, the five health districts of Manila were subdivided into 62 subdistricts.

Total personnel—inspection division.

Assistant Director of Health	1
Medical inspectors	19
Municipal physicians	8
Sanitary inspectors	15
Assistant sanitary inspectors and sanitary police	85
Chief disinfector	1
Assistant chief disinfector	1
Assistant disinfectors	7

Personnel of inspection division—city of Manila.

	Subdivisions.	Medical inspectors.	Municipal physicians.	Sanitary inspectors.	Assistant sanitary inspectors and sanitary police.	Disinfectors.
Station A	22	1	3	3	23	[a] 1 [b] 4
Station C	14	1	2	1	17	0
Station I	9	1	1	1	11	0
Station J	10	1	1	1	13	[a] 1 [b] 3
Station L	7	1	1	1	7	0
Division of sanitary engineering	0	0	0	3	0	0
Total	62	5	8	10	71	9

[a] Chief. [b] Assistants. [c] Assistant chief.

This is the present organization. This force provides sufficient personnel to place one assistant sanitary inspector in each subdistrict, with three American sanitary inspectors in Meisic (one acting as chief disinfector), and one each in Tondo, Sampaloc, Intramuros, and Paco, with a sufficient reserve for leaves of absence and sickness.

Medical inspectors are on duty as follows:

Central office	1
In charge of stations	5
Prison sanitation division	1
San Lazaro Hospital Division	1
Baguio Hospital division	1
Total	9

Of the remaining medical inspectors, four have just arrived from the United States and are under instruction, three in Manila and one in field work combating cholera in Albay Province; two are en route from the United States; one Filipino medical inspector is critically ill

with an incurable disease; one medical inspector is on leave in the United States; one is in charge of a cholera campaign in Pampanga Province; one is in charge of the Las Piñas hookworm commission, and one is in charge of the cholera campaign in Ambos Camarines Province.

There are ten sanitary inspectors on duty in Manila in the health stations and the sanitary engineering division. There is one vacancy. Four sanitary inspectors are available for provincial duty. These are distributed as follows:

Antique in charge vaccination party	1
Ilocos Sur, acting district health officer	1
Rizal, in charge vaccinating party	1
Bataan, in charge vaccinating party	1

This organization also leaves a small reserve of fourteen Filipino assistant sanitary inspectors for provincial duty. They are at present placed as follows: Twelve with Medical Inspector Clements combating cholera in Pampanga Province, one with the vaccination party in Rizal Province, and one with the Las Piñas hookworm commission.

During the year there were 546,565 inspections exclusive of special inspections. There were 6,898 disinfections by the regular disinfection brigades exclusive of the measures of general disinfection of whole districts necessitated by the epidemic of cholera and carried out by emergency employees.

There were 6,719 inspections of license applications for food and drink.

The force available for provincial work was augmented by the addition of two competent district health officers whose districts were fortunately free from cholera, Dr. Vicente de Jesús from Tayabas and Doctor Montinola from Laguna, who were used in various provinces where the cholera outbreak was too much for the local officials.

It was not necessary to send assistance to Medical Inspector Pond in charge of Cebu and Oriental Negros, nor to Medical Inspector Cullen in charge of Samar and Leyte, although these districts were repeatedly reinfected from neighboring provinces.

The foregoing presents many examples of the ability of medical and sanitary inspectors sent out from Manila to suppress cholera outbreaks promptly. The force of medical and sanitary inspectors in Manila was limited, and their services could ill be spared from Manila even in July and August, while in September and October Manila faced a situation which demanded the presence of every available man at his post of duty. In view of these facts it was necessary in some instances to depend entirely upon the local health officers and their more or less organized provincial work. Certain district health officers seem to lack the initiative to devise means of accomplishing an end.

The lack of municipal health officers who could furnish prompt

information to the district health officer is entirely the fault of the district health officers. He recognizes the necessity for such subordinates, he has authority to secure and nominate them, but in many instances he has failed to complete his provincial organization, through sheer indifference or lack of energy. As a result, cholera often exists unreported for weeks, and a single focus becomes a widespread infection.

The imposition of intermunicipal quarantines is a lazy man's remedy for a cholera epidemic. Such measures, in a majority of instances, are worse than useless. They can rarely be made effective and in most instances constitute an unjustifiable restriction of commercial and personal rights.

PRISON SANITATION DIVISION.

The experience which the Bureau has had in prision sanitation makes concrete proof that modern sanitary science properly applied will yield certain definite results which can be foretold with almost mathematical precision; and there is probably no chapter in American sanitation of the Islands that is more satisfactory nor which has brought about a greater improvement in local conditions than the results obtained in prison sanitation.

The Bureau of Health is charged with the supervision of prison sanitation throughout the Philippine Islands, but as the Government penitentiary known as Bilibid Prison is located in Manila, the installation of improvements has usually been first carried out in this institution.

At the time the United States took possession of Bilibid Prison, it was found to consist of a large number of stone buildings that had been built in an age when the modern principles of sanitation were but imperfectly understood. It was but natural to expect that the morbidity and mortality rate of prisoners kept in such conditions would be necessarily high. From the very outset, it has been the object of the American Government to remedy these conditions as rapidly as the funds available would permit. This work has been carried steadily forward, and it has fully justified the confident expectations of a decreased sick report and death rate.

During the year covered by this report, a large amount of this work has been actually completed. A new, modern, reinforced concrete hospital of 376 beds capacity was completed in February, and has been occupied since that time. The overcrowding has been still further relieved by replacing a number of the old brigade buildings by reinforced concrete structures, which provide for an adequate amount of air space. Steel bunks were installed, which took the place of the insanitary bamboo fixtures that harbored so many vermin in the past and defied successful cleaning. The drains and sewers have been still further improved, and work is now actually under way for the installation of a complete modern sewer system, which will connect with the general city sewer that has also only recently been completed.

Under the auspices of Bilibid, a penal colony has been established at Iwahig, Palawan, where a Bureau of Health physician is also stationed.

The policy pursued in Bilibid has been practiced more or less in the provincial jails by the district health officers.

The hospital facilities of Bilibid comprise two distinct hospitals, designated as Hospital "A" and Hospital "B", the former for general cases, the latter for tuberculosis. Up to 1904 there had been but one hospital. The first separate hospital for tuberculosis patients was established in a rented building on Calle Marques de Comillas, near the Ayala Bridge. The present hospital for this class of patients is located on the prison grounds, and occupies a new modern structure erected for the purpose, with a roof garden, so that the open-air treatment can be carried out under very favorable conditions.

One of the prison rules is to provide each prisoner with some suitable form of employment. The shops, the offices, the band, the prison schools, and the various public works, are all utilized for this purpose.

The prison ration is carefully selected and varied on different days. (For the component part of ration see "Diet and Nutrition of the Filipino People.") When the prisoners are out on public work of an exacting nature, this ration is frequently supplemented from the local markets.

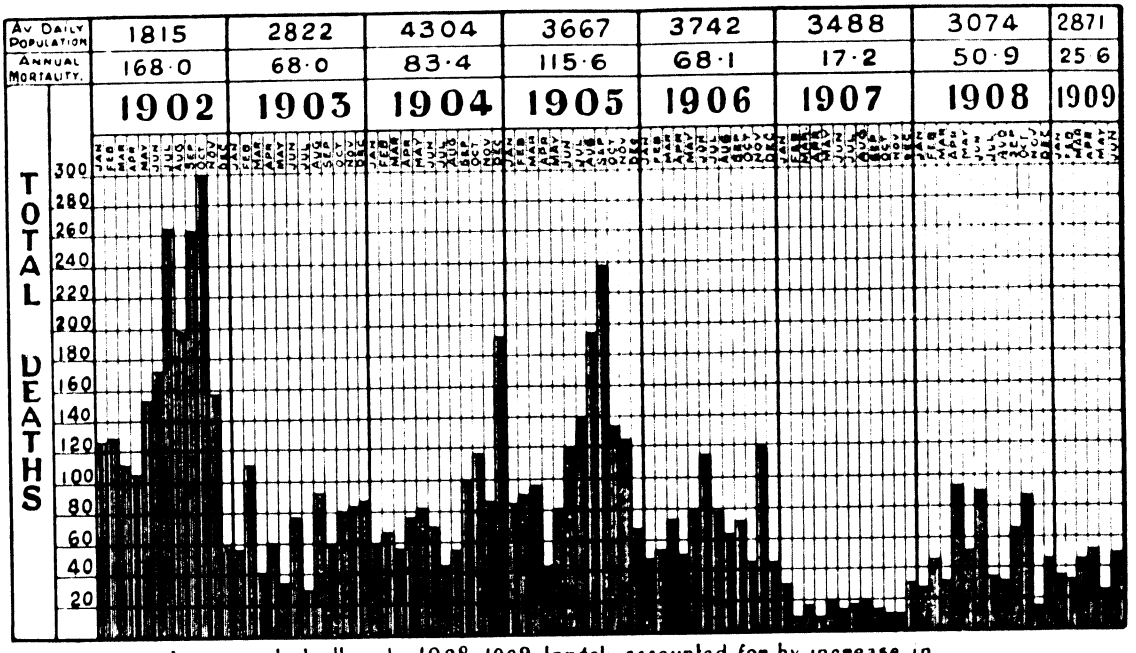
The drinking water is all sterilized and kept in barrels or cans having a locked cover and spigot. Water from any other source is forbidden under strict discipline.

Daily sanitary inspections are made by the hospital steward, who reports to the chief of the prison sanitation division any condition that he may find which requires further investigation or action. As soon as a case of dangerous, communicable disease is found, the patient is isolated, the building quarantined and disinfected, and all the prisoners quartered in it are given a bichloride of mercury bath, and their clothes submitted to a thorough disinfecting process. Cholera cases are treated in an isolation ward of the prison hospital, but all other patients suffering from dangerous communicable diseases are transferred to San Lazaro Hospital under guard. In case of smallpox, all contacts are vaccinated and after the cleansing process has been gone through with, the matter is at an end, as the patients themselves are retained at San Lazaro Hospital until there is no further danger of disseminating the infection.

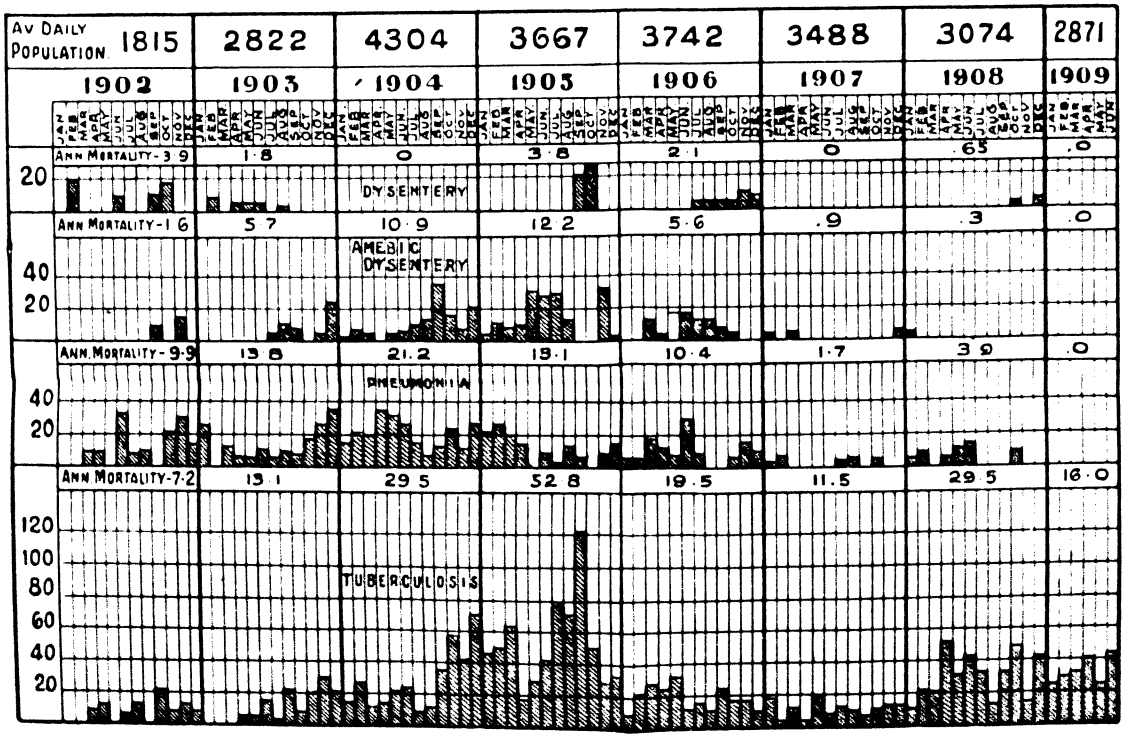
All latrines, garbage cans, night tubs, and sanitary pails are screened and made fly-proof. Night tubs and garbage cans are emptied daily.

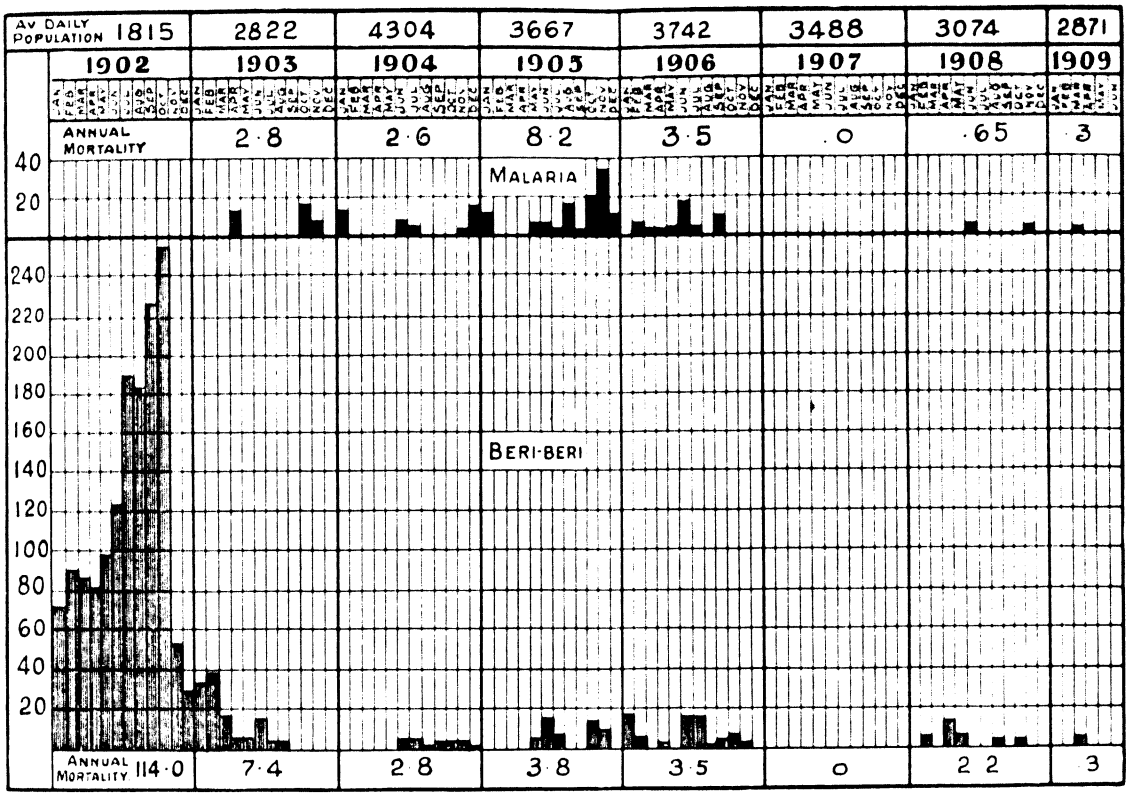
Cuspidors with covers are placed about the grounds at convenient intervals and the prisoners are required to use them. Expectorating on the ground is strictly prohibited.

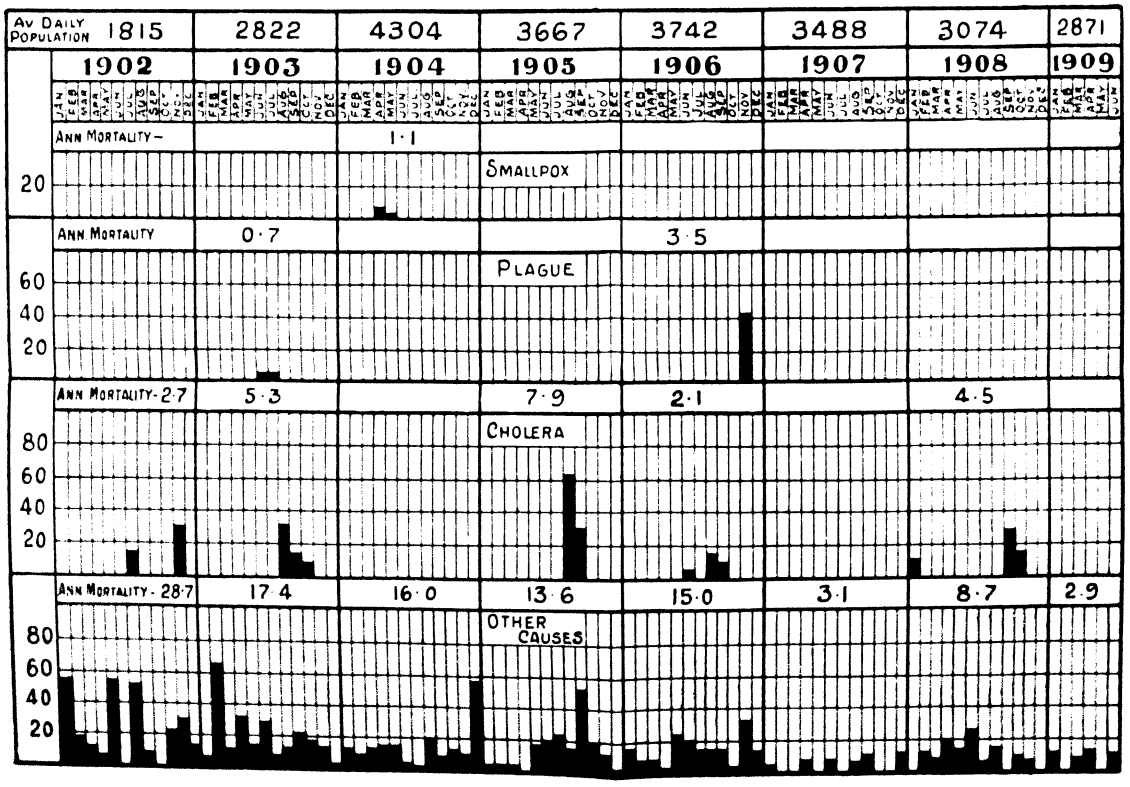
Mortality - Bilibid Prison



Increased death rate 1908-1909 largely accounted for by increase in tubercular prisoners admitted




Av Daily Population
1815
2822
4304
3667
3742
3488
3074
2871
1902
1903
1904
1905
1906
1907
1908
1909
Annual Mortality
2·8
2·6
8·2
3·5
·0
·65
·3
Malaria
Beri-beri
Annual Mortality 114·0
7·4
2·8
3·8
3·5
0
2·2
3

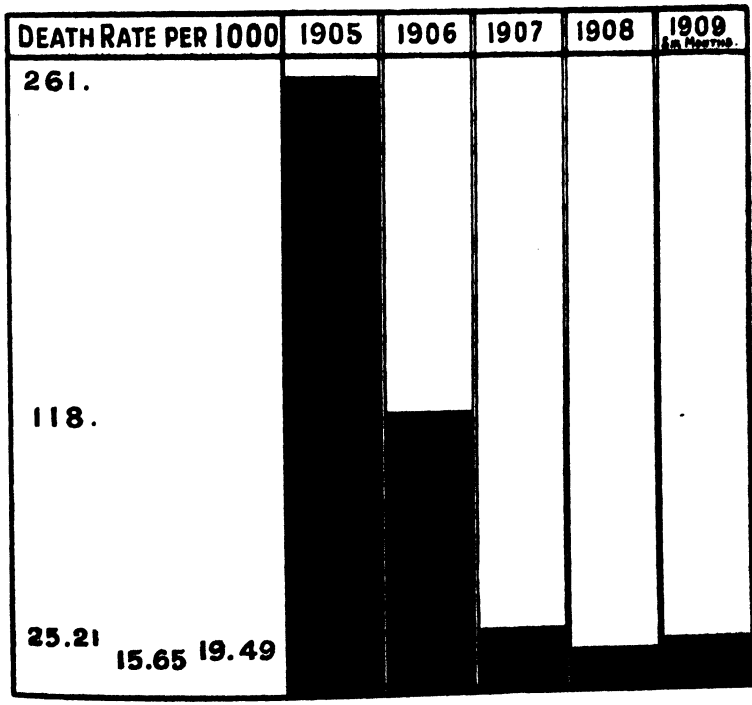

Av Daily Population
1815
2822
4304
3667
3742
3488
3074
2871
1902
1903
1904
1905
1906
1907
1908
1909
Ann Mortality—
1·1
Smallpox
Ann Mortality
0·7
3·5
Plague
Ann Mortality-2·7
5·3
7·9
2·1
4·5
Cholera
Ann Mortality-28·7
17·4
16·0
13·6
15·0
3·1
8·7
2·9
Other Causes

The prison grounds are sprinkled daily to allay the dust, by which means a source of irritation to the respiratory tract and its consequent dangers are obviated.

The buildings formerly painted red and more recently white, are now of a slate color, which prevents to a great extent the reflection of the glare of the tropical sunlight, and, together with the suppression of the dust by sprinkling, exercises a potent influence in the prevention of diseases of the eye.

The hospital discipline is necessarily strict. Before a patient is admitted he is placed in quarantine and while there the urine, feces, and sputum are microscopically examined as a routine measure; and if necessary, he is submitted to appropriate treatment.

The measures adopted by the Bureau of Health since it assumed charge of prison sanitation under the provisions of Act No. 1407 which went into effect November 1, 1905, have not been in vain, as may be seen from the following diagrams which, with the exception of the one for 1908 and the first half of 1909, were prepared by Dr. Edward S. Shattuck, formerly the chief of the prison sanitation division of this Bureau.



IWAHIG PENAL COLONY.

The Iwahig penal colony was established November 16, 1904, for the purpose of relieving the overcrowded conditions in Bilibid, and in order to give those prisoners who show a desire to reform a chance in life. The colony is located near Puerto Princesa, the capital of the Province of Palawan, on the site of a similar colony established by the Spanish and abandoned on account of the excessive death rate from malaria, dysentery, and beriberi. When the present colony was established it was generally predicted that it would be a failure on account of the unhealthfulness of the location, but the unfavorable apprehension has been doomed to disappointment. No experimental project of the Government has been more successful than this venture.

Deserving prisoners are allowed to join their families and begin life over again as colonists. When the colony was first established it was greatly feared by the prisoners who regarded a selection for residence there as equivalent almost to a death sentence. Now it is a veritable Mecca for those who desire to work out their own salvation. The colony is not only growing from accessions from Bilibid Prison, but also in the old fashioned anti-race-suicide way.

During the fiscal year 583 colonists were treated in the hospital. The death rate per thousand among the colonists was 18.69 while for the general population it was 16.58 per thousand. The average percentage of disability among the colonists was 2.32. There was a total of ten deaths among the prisoners, the majority being caused by tuberculosis. The physician in charge believes that the cases carried the infection with them to the colony and recommends the establishment of an observation camp for all new arrivals.

During the year 109 outsiders were admitted to the colony hospital upon application, which fact represents in a forcible way the favorable attitude of the people to the new order of things.

PROPERTY DIVISION.

The work of this division was unusually heavy during the year; in addition to the constant increase in the amount of property and requisitions filled, the cholera outbreak of last year required an extraordinarily large amount of supplies. During the cholera outbreak in Manila in order that anything and everything necessary might be had quickly, orders were issued that all persons connected with the Bureau would

buy direct or ask the property division to obtain it. This system resulted in supplies being received quickly, but the difficulty in passing upon the merits of the bills which were later submitted for payment can be well imagined. Frequently articles were delivered of which there was no record. As soon as the danger point in the cholera outbreak had passed, this practice was of course discontinued.

The chief of the division is entitled to much credit for the resolute manner in which he set to work to straighten out the resulting tangles and by the close of the year had almost succeeded. All of the employees of the division are entitled to the thanks of the public for the long hours they worked in aiding in suppressing the cholera outbreak.

The following is extracted from the report of the chief of the division, which shows the magnitude of the operations of the division and the difficulties connected therewith.

At 7 p. m. September 16 the Acting Director of Health called for the delivery of 300 sacks of lime at 7 a. m. the next morning. The division did not have 10 sacks on hand, not having used 100 sacks in two years outside of Bilibid Prison. All business houses were closed at that hour and the Bureau of Supply carries no stock. Three hundred sacks is a very large order for Manila, but the last of the 300 was delivered at 8.15 the next morning. From that date to November 25, 63,391 sacks of lime were purchased and delivered to all parts of the city. The few limekilns along the Caloocan road and at Malabon had to be pushed night and day to supply the quantity required and this meant a great amount of urging to keep the kilns at work. On more than a dozen different nights the time between 9 p. m. and 3 a. m. was spent by the undersigned between Manila and Malabon rousing out the Chinese and Filipino lime burners to get a supply for the next day. * * *

Incidentally the property division sold to the lime makers, at ₱10 per ton, 12 tons of coal dust and siftings, refuse that had been condemned by an Auditor's inspector and ordered turned over to the Bureau of Printing without charge for them to try and burn in their boilers, and after the first ten days arrangement was made allowing 5 centavos on each serviceable sack returned to the sellers. Several thousands of pesos were saved in this way.

The opening of the new insane building at San Lazaro as a cholera ward required the purchase of entire new equipment, and the same was true of the Mary Johnston Hospital, the building having just been completed and turned over to the Bureau of Health for the emergency.

All transportation used by the Bureau was ordered through this office and keeping account of the same in order that the bills might be checked was no small item, as for a time everyone connected with the Bureau seemed to be entitled to transportation, ranging from a saddle horse to an automobile.

The extra work was performed by the regular force and one additional American inspector used outside to check up supplies delivered to stations, and after November 20 one additional Filipino clerk to assist in the office paper work.

During the year 492 general requisitions were received and filled from the following sources:

Provincial requisitions	260
Health station requisitions (does not include verbal requests for cholera supplies)	65
Central free dispensary requisitions	16
Central office requisitions (does not include verbal requests for cholera supplies)	29
San Lazaro Hospital requisitions (does not include verbal requests for cholera supplies)	11
Civil Hospital requisitions	17
Prison sanitation division requisitions	17
St. Luke's Hospital requisitions	12
Mary Johnston' Hospital requisitions (does not include verbal requests for cholera supplies)	12
Philippine Medical School requisitions	4
Culion leper colony requisitions	19
Baguio Hospital requisitions	15
Iwahig penal colony requisitions	10
Board of pharmaceutical examiners requisitions	2
Board of medical examiners requisitions	1
Division of city schools requisitions	2
Total	492

To fill these requisitions 80 requisitions for general supplies were prepared and forwarded to the Bureau of Supply, 162 requisitions to the Bureau of Printing covering printed matter required by the Bureau, the balance being filled from stock or purchased from other Bureaus or in the open maket. * * *

In addition to the above, 1,380 requests for vaccine virus aggregating 2,792,250 units, were received and filled, necessitating the careful packing of from 2 to 100 tubes of vaccine in cotton and then in the mailing boxes, wrapped and addressed, and receipts typewritten and mailed to the requisitioners, careful check kept that these were returned and properly numbered and filed.

Ninety-two requests for the purchase of supplies were received and filled from individuals and other bureaus during the year.

Five hundred and six inter-Bureau vouchers were received from the Buerau of Supply, checked, entered on the card system, and receipts prepared and forwarded to the divisions for which the supplies were purchased.

Additional inter-Bureau vouchers covering supplies to the value of ₱40,277.15 purchased from the Bureau of Printing, Bureau of Science, Bureau of Public Works, and Bureau of Prisons were taken care of in the same manner.

Bills covering the open-market purchase of ₱80,203.45 of general supplies had to be carefully checked, entered on cards, and vouchers prepared and signed.

During the year 196 shipments were made by boat and 108 by railway, for which bills of lading had to be prepared and signed. In addition one spring wagon has been employed delivering these supplies to boat and railway and filling hospital and station orders in Manila.

The purchase, receiving and loading of freight for nine special trips of the Coast Guard cutter *Basilan* was supervised by this division in addition to the necessity of having at least one employee present on each sailing day of the regular boat to receive and check freight.

The total value of supplies, exclusive of subsistence, purchased during the year, amounted to ₱217,288.73 divided as follows:

Bureau of Supply	₱96,789.75
Bureau of Science	28,617.86
Bureau of Prisons	188.50
Bureau of Printing	10,274.86
Bureau of Public Works	1,195.93
Baguio Hospital division	18.38
Open market	80,203.45
Total	217,288.73

On July 1, 1908, there were on hand 9 simple-remedies packages. During the year 255 were prepared and 255 expended leaving 9 on hand June 30, 1909. Mosts of the tablets used in these packages were manufactured at the Civil Hospital division, the bottling of the same, labeling, and packing in cases being performed by this division. Over 210,000 tablets or pills and 2,500 bottles of an average size of 75 cubic centimeters were used in this way. Over 2,000 board feet of lumber was used in the manufacture of boxes for the above and other supplies to be shipped in addition to the use of all of the serviceable packing boxes received by the San Lazaro Hospital, Civil Hospital and this office.

Subsistence supplies to the value of ₱191,760.94 were purchased during the year being divided among the divisions as follows:

San Lazaro Hospital division	₱54,019.82
Civil Hospital division	41,351.63
Baguio Hospital division	5,989.91
Culion leper colony division	90,339.58
Total	191,760.94

Bids were requested from the leading dealers and it is believed that the most reasonable prices were obtained in all cases. By taking advantage of a long market or the overstock of some particular dealer very low prices were obtained on certain lines at various times.

The work required to obtain prices on subsistence supplies, write and place the orders, check the bills and keep in touch with both markets and hospitals, not to get caught short on an article and have to pay an exorbitant price or overstock and a loss from deterioration, takes a great deal of time and the many instances have meant hours of overtime work to keep up.

The installation of the new property accounting system will, in the opinion of the undersigned, required additional clerical assistance in the property division.

SANITARY ENGINEERING DIVISION.

This division has submitted several special reports on matters of sanitary importance, and has been the means of having many additional pails installed and the hydrant service extended in Manila.

Of the plans and work outside of Manila that has engaged the attention of this division, may be mentioned the water system for school buildings in Cuyo, Palawan; the closet, garbage, and water system of Antipolo; the tenement-house system and park plans for Culion, and also an office building for the colony.

The following extract of the report of the chief of the division is submitted:

During the past year this division has, probably to a greater extent than ever before, taken benefit of the liberality of the general laws giving the Bureau of Health supervisory authority over sanitary matters throughout Manila and the Philippine Islands. * * *

The routine functions of this office now consist as follows:

1. Supervisory control of all building operations throughout the city, with special reference to light, ventilation and drainage.

All building plans presented to the municipality are forwarded to this division for action on the above subjects before permits for construction are issued. The completed structure must be approved before same may be occupied.

2. All plumbing work is under the supervisory control of the sanitary engineer acting under instructions from the Director of Health. All approvals for completed plumbing work are countersigned by the sanitary engineer.

The sanitary engineer is a member and secretary of the Board of Plumbing Examiners.

3. The structural sanitation of all existing buildings of the municipality is handled directly from this office. A tabulated statement of work of this nature accomplished during the past fiscal year is appended.

4. In addition, under orders from the Director of Health the sanitary engineer inspects waterworks, drainage and sewer systems, streams and esteros within the limits of the city of Manila (and provinces), prepares plans and estimates of the cost for correcting insanitary conditions, etc., as specified in Act No. 1150 as modified by the Reorganization Act.

During October this office instituted strenuous efforts to rid the city of large numbers of insanitary shacks which had been allowed to remain and even accumulate throughout the city, and during the year 641 structures of this class were so removed.

It soon became apparent however that the city was not sufficiently provided with streets to provide for the expansion of the city naturally resulting from the removal of a surplus population from congested districts. Some subdivided land, however, was secured on the San Lazaro Estate, which is under the control of the Insular Government. With the use of this land 641 shacks as stated have been removed. A lot on the San Lazaro Estate was offered free of rent for six months to all persons evicted and 130 families taking advantage of the offer are now living on the estate. The others numbering about 511 families, preferred to scatter to the outlying portions of the city.

The number evicted however has been limited to the subdivided land available and for the past six months efforts have been made to have additional street areas opened by the municipality but with only indifferent success. In order to facilitate matters, plans have been prepared by this office of proposed subdivisions of three large tracts of land throughout the city which would easily accommodate a population of over 50,000.

Until new street systems can be laid out it will be impossible for this office to effectually correct insanitary conditions now existing in the interior of scores of places throughout the city.

As a result of the extensive fire at Paco on March 1909, a large part of that district was completely burned out. Taking advantage of conditions the districts of strong materials have been considerably extended. A project for additional streets is pending, but so far no final decision has been rendered by the Municipal

Board. The sanitary engineer has made every effort through official channels to have a system adopted at once.

On October 24, 1908, the Municipal Board made provisions for the expenditure of ₱5,000 by a committee composed of Messrs. Felix M. Roxas, alcalde of Manila; W. P. Wylie, city engineer, and the sanitary engineer of the Bureau of Health, under the direction of the Director of Health, for drainage purposes.

Of the amount appropriated ₱3,778.59 was spent on the San Lazaro Estate, ₱1,221.42 on the San Sebastian area. Later an additional sum of ₱5,000 was made available for use on interior drainage. This allotment was made by the Bureau of Lands under the approval of the honorable the Secretary of the Interior. The Municipal Board has also appropriated an additional ₱1,500 for the completion of all street drainage south of Calle Tayuman on the San Lazaro Estate. All streets are now supplied with properly graded drainage canals, as are also all of the interior alleyways. * * *

The small branch of esteros between the streets of Mendoza, San Sebastian, Bilibid Viejo, Iris, and the Estero de Bilibid had been cleaned of accumulated silt. Particular attention has been given as an experimental measure to the reclamation of a swampy area at the end of Calle Limasana, in the interior of Calle San Sebastian.

In this district a total length of 1,000 meters of esteros were cleaned out and 19.5 meters of retaining wall constructed.

On October 31, 1908, a report was submitted to the Director of Health upon the proposed drainage of the insanitary condition of the barrio de Santa Monica, district of Tondo. The sum estimated as necessary for this work was ₱4,560. The work included the construction of a tide gate at the point where the drainage of this area naturally enters the Estero de la Reina. A complete report upon this, however, has already been submitted, to which attention is respectfully invited.

On November 25, 1908, in accordance with instructions of the Director of Health, a report was submitted on a project for the immediate correction of the insanitary conditions due principally to lowlands, combined with lack of drainage and lack of streets, in the part of Manila bounded by Calles Herran, Georgia, Vermont, Wright, San Andres, and Dakota.

The project consisted of the construction of a system of tide-water and higher level street canals, with a simple tide gate fitted into the abutments of the highway bridge of Calle San Andres. These abutments will not be disturbed in any manner by the construction of said tide gate, which will be a simple affair, hinged from above so that it automatically opens as the tide goes out and shuts as it comes in.

The cost of excavation, labor and material required was estimated to be ₱5,609.12.

On December 5, 1908, in accordance with the instructions of the Director of Health, a report was submitted on a project for the drainage of the territory included between Calle Moriones, Estero de la Reina, and Manila Bay.

The project involves the combination of a street and drainage system for the purpose of relieving the insanitary congested conditions existing in that area.

The estimated expense of the projects is ₱8,772.11.

SAN LAZARO HOSPITAL DIVISION.

Besides the hospital for the insane, with a capacity of about 450, this division includes the hospitals for leprosy, smallpox, cholera, plague, diphtheria and other dangerous communicable diseases, and provisions

are also made for the treatment of victims of the opium habit. The total capacity of this division is about 800 patients. The following extract is made from the report of the chief of the division:

* * * There are at present seven insane Scout soldiers in this department (insane department) under contract with the United States Army.

In the leper department the X-ray treatment has been continued but there is nothing new to report. The cosmetic effect is generally very good, but the bacillus continues to be found.

During June, 1909, 124 cases of leprosy were transferred to Culion as this department of the hospital was becoming too crowded. Almost every day patients are entering this department at present, as the country around Manila is being cleared of lepers as rapidly as possible.

* * * The so-called "Towne" treatment was tried very carefully (opium department) in a couple of cases, but the result was neither better nor worse than the usual treatment used here.

[Smallpox department:] There has never been a fatal case of smallpox, with a history of a successful vaccination, in this hospital.

Cases of measles, whooping cough, diphtheria, tetanus, mumps, scabies, scarlet fever, and meningitis have been received from time to time, which will be seen tabulated in the Appendix.

One case of apparently genuine scarlet fever was admitted—said to be the first case in the Islands.

The hospital grounds are improving in appearance, new trees and plants having been set out, a tennis court built, and new walks laid. There are now several acres of land under cultivation, almost all kinds of vegetables being raised, and it is expected that in August if everything goes well the purchase of fresh vegetables for this hospital can be discontinued; this will mean a saving of at least ₱5 per day.

With the enlarging of our flock of hens it is hoped that sometime within the year the purchase of fresh eggs will also become unnecessary.

The ground in front of the hospital, between the wall and the street, has been brought under the control of this division; it has already been cleared to some extent, and trees will be placed along the entire front, on the roadside, as soon as the ground becomes thoroughly saturated; the delayed rainy season this year prevented the trees from being already planted. * * *

A motor-cycle has been ordered, to be used on the mail route, as one pony is not able to do the work constantly.

The statistics of this Division are appended.

STATISTICAL DIVISION.

This division is occupied with the collection of sanitary statistics throughout the Philippine Islands. Provincial statistics are collected by means of a system of quarterly reports. Presidents of municipal boards of health report to their respective district health officers, who consolidate the reports into quarterly reports of health districts, in which form they are received at this office. This system has been in operation several years, but it is only within the last few months that this Bureau has ventured to publish any provincial statistics other than those pertaining to vaccination, leprosy, and insanity. The report forms are modeled after those in use in the public medical service in the

United States and have been criticised on account of their comprehensiveness; but when it is remembered that their purpose for the present is as much educational as statistical, the wisdom of continuing them becomes apparent.

After years of patient effort the service has been rewarded in several municipalities by an improvement in accuracy and preparation that produces reports which would be a credit to any city of the United States. In their entirety, the provincial statistics of this Bureau are still far from perfection, but each year shows marked improvement.

The Manila statistics, with the exception of those relating to births, are as accurate as it is possible to make them under the present conditions, and may be safely employed for deductive conclusions and comparisons.

SUMMARY OF THE YEAR'S WORK.

The course which the Bureau of Health has been attempting to follow in improving the hygiene and sanitation of the Islands through improved water supplies, vaccination, isolation of lepers, elimination of intestinal parasites, systematic warfare against tubercle bacilli, the eradication of malarial mosquitoes, and better hygiene for infants, has been most difficult to follow on account of the many byways which must be entered to combat diseases like cholera and dysentery, outbreaks of smallpox among persons who fail to be vaccinated, enforcement of municipal cleanliness, and many other things, too numerous to mention, but, nevertheless, the main course is always resumed as soon as conditions permit, and it is satisfactory to record that in spite of the interruptions, considerable progress was made.

The incidence of leprosy has dropped from one leper among every 2,000 inhabitants to one among every 2,800.

The Bureau of Public Works opened 40 artesian wells and the provinces as many more.

There were vaccinated during the year 1,817,872 persons, and in those provinces in which the work was done in a proper systematic manner the deaths from smallpox are becoming less and less frequent. In Oriental Negros, for instance, the number dropped from 127 to 2.

Two hospitals with a total capacity of 420 were opened.

Aided by public sentiment, some progress was made in permanent improvements by the movement for proper housing of the masses in Manila, and over 3,000 persons were actually transferred to sanitary sites.

The hookworm campaign is well under way, and several thousand persons have already been relieved of their intestinal parasites.

The funds to start an antituberculosis crusade have been secured.

Localized filling and draining has been done in many parts of the Islands, and there has been a lessening of mosquitoes in consequence.

A small appropriation has been made available so that the Bureau is now in a position to aid societies that have for their object the protection of infants.

In addition to the foregoing results for sanitation and hygiene along permanent lines, even more work and funds were expended upon more or less evanescent matters.

The effective manner in which cholera, especially in Manila, was prevented from assuming epidemic proportions, undoubtedly saved thousands of lives and was an excellent demonstration of what may be accomplished by modern health organization. Judging by the experience had in Manila in former times it is evident that only dozens succumbed where thousands died in the past.

Cleaner municipalities have been insisted upon and secured.

The inspection under the food and Drugs Act has prevented the introduction of many foods that contained deleterious ingredients.

Medical or surgical relief has been furnished for several hundred thousand persons.

The use of sterile water in all bottling establishments has been brought about, so that the residents of the Philippines can feel reasonably safe that these drinks will not contain harmful germs.

Many hundreds of other things have been done which make for rendering life more safe and comfortable than was the case in former times.

Respectfully,

VICTOR G. HEISER,
Passed Assistant Surgeon, United States Public Health and Marine-Hospital Service, Director of Health.

The Honorable the SECRETARY OF THE INTERIOR,
Manila, P. I.

APPENDIX.

STATISTICAL TABLES, BUREAU OF HEALTH, JULY 1, 1908, TO JUNE 30, 1909.

GENERAL STATISTICS.

[Unless otherwise stated these statistics are for the fiscal year ended June 30, 1909.]

Population of the city of Manila.

[Health census of 1907.]

Nationality.	Population.	Nationality.	Population.
Americans	5,199	Chinese	18,028
Filipinos	195,292	All others	1,143
Spaniards	2,903		
Other Europeans	977	Total	223,542

Births reported.[1]

Nationality.	Male.	Female.	Total.	Annual average per 1,000.
Americans	50	41	91	17.50
Filipinos	4,367	4,134	8,501	43.52
Spaniards	16	15	31	10.67
Other Europeans	11	12	23	23.54
Chinese	24	14	38	2.10
All others		1	1	.87
Total and average	4,468	4,217	8,685	38.85

[1] Registration incomplete.

Births, by districts.

Health districts.	Number of legitimates.			Number of illegitimates.			Grand total.
	Male.	Female.	Total.	Male.	Female.	Total.	
No. 1, Intramuros	518	453	971	29	28	57	1,028
No. 2, Meisic	1,024	1,012	2,036	85	102	187	2,223
No. 4, Sampaloc	815	710	1,525	85	80	165	1,690
No. 5, Tondo	1,257	1,203	2,460	122	115	237	2,697
No. 6, Paco	520	509	1,029	18	5	18	1,047
Total	4,134	3,887	8,021	334	330	664	8,685

Births, by districts, and annual birth rate per 1,000.

Health districts.	Population.	Births.	Annual rate per 1,000.
No. 1, Intramuros	30,649	1,028	33.54
No. 2, Meisic	82,297	2,223	26.97
No. 4, Sampaloc	35,475	1,690	47.63
No. 5, Tondo	53,855	2,697	50.07
No. 6, Paco	21,166	1,047	49.46
Total and average	223,542	8,685	38.85

Births, by districts, according to number of children borne by mother.

Order in which the child was born.	Health districts.										Total.	
	No. 1.		No. 2.		No. 4.		No. 5.		No. 6.			
	Living.	Stillborn.	Living.	Stillborn.	Living.	Stillborn.	Living.	Stillborn.	Living.	Stillborn.	Living.	Stillborn.
First	257	13	596	20	468	11	557	18	238	7	2,116	69
Second	217	8	436	15	315	8	526	15	201	4	1,695	50
Third	146	13	345	14	228	9	455	10	172	4	1,346	50
Fourth	137	-------	280	9	215	7	369	16	132	4	1,133	36
Fifth	96	1	198	5	153	7	225	8	108	2	780	23
Sixth	42	4	120	7	99	2	188	5	65	2	509	20
Seventh	49	2	80	5	68	3	131	5	36	1	364	16
Eighth	25	-------	50	6	51	3	84	4	32	4	242	17
Ninth	28	1	41	5	31	1	66	3	18	2	184	12
Tenth	14	2	27	2	15	1	43	2	13	1	122	8
Eleventh	6	1	19	1	11	-------	21	-------	12	-------	69	2
Twelfth	5	-------	10	2	10	4	22	-------	10	-------	57	6
Thirteenth	2	2	11	-------	7	2	9	-------	2	1	31	5
Fourteenth	3	-------	2	-------	4	-------	3	-------	4	1	16	1
Fifteenth	-------	1	5	-------	3	-------	-------	-------	2	-------	10	1
Sixteenth	1	-------	1	-------	-------	1	3	-------	-------	-------	5	1
Seventeenth	-------	-------	2	-------	-------	-------	-------	-------	2	-------	4	-------
Eighteenth	-------	-------	-------	-------	1	-------	-------	-------	-------	-------	1	-------
Twenty-first	-------	-------	-------	-------	1	-------	-------	-------	-------	-------	1	-------
Total	1,028	48	2,223	91	1,690	59	2,697	86	1,047	33	8,685	317

Number of deaths and death rate per 1,000 among residents, by nationalities.

Nationality.	Number of deaths.	Annual average per 1,000.	Nationality.	Number of deaths.	Annual average per 1,000.
Americans	69	13.27	Chinese	300	16.64
Filipinos	9,307	47.65	All others	14	12.24
Spaniards	35	12.06			
Other Europeans	14	14.32	Total and average	9,739	43.56

A classified report of all deaths occurring in Manila, including transients.

Males.	Number.	Females.	Number.
Married	1,062	Married	867
Divorced	-------	Divorced	1
Widowers	303	Widows	580
Single	767	Single	289
Boys	3,360	Girls	2,973
Condition not stated	68	Condition not stated	27
Total	5,560		4,727
Grand total			10,287

Stillbirths, 320.

Number of deaths with medical attendance	5,639
Number of deaths without medical attendance	4,648
Total	10,287

Deaths, by age, including transients.

Age.	Number.	Age.	Number.
Under 30 days	1,043	40 years to 50 years	601
30 days to 1 year	3,557	50 years to 60 years	419
1 year to 2 years	722	60 years to 70 years	291
2 years to 5 years	798	70 years to 80 years	210
5 years to 10 years	210	80 years to 90 years	126
10 years to 15 years	96	90 years to 100 years	62
15 years to 20 years	333	Over 100 years	26
20 years to 25 years	437	Unknown	27
25 years to 30 years	490		
30 years to 40 years	826	Total	10,287

Table of infant mortality, by ages.

[Residents only.]

	Number.
Under 30 days	1,043
From 30 days to 1 year	3,557
From 1 to 5 years	1,520
Total	6,120

Deaths, by districts, including transients.

Health districts.	Population.	Deaths.	Annual rate per 1000.
No. 1, Intramuros	30,649	1,225	39.96
No. 2, Meisic	82,397	2,483	30.13
No. 4, Sampaloc	35,475	1,671	47.10
No. 5, Tondo	53,855	3,921	72.80
No. 6, Paco	21,166	987	46.63
Total and average	223,542	10,287	46.01

Comparative mortality from January 1, 1901, to June 30, 1909.

Month.	1901		1902		1903	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	753	[a]36.25	760	[a]36.58	602	[a]28.96
February	689	[a]36.72	706	[a]37.63	511	[a]27.23
March	885	[a]42.66	770	[a]37.06	589	[a]28.94
April	886	[a]44.07	1,327	[a]66.01	549	[a]27.31
May	908	[a]43.47	1,688	[a]81.26	770	[a]37.06
June	621	[a]30.89	1,418	[a]70.54	592	[a]29.45
July	608	[a]29.27	2,223	[a]107.02	620	[b]33.21
August	702	[a]33.79	1,712	[a]82.42	862	[b]46.17
September	767	[a]38.15	1,182	[a]56.31	1,228	[b]67.97
October	855	[a]41.16	927	[a]44.62	1,217	[b]65.19
November	848	[a]42.18	1,035	[a]51.48	974	[b]53.91
December	858	[a]41.30	753	[a]36.25	894	[b]47.89
Total	9,375	38.30	14,451	59.04	9,358	40.27

[a] Death rate computed on population of 244,732 (Health Department's census).
[b] Death rate computed on population of 219,941 (Official census, 1903).

Comparative mortality from January 1, 1901, to June 30, 1909—Continued.

Month.	1904		1905		1906	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
January	796	[a]42.64	685	[a]36.69	787	[b]39.47
February	709	[a]40.59	608	[a]36.05	595	[b]35.28
March	751	[a]40.23	563	[a]30.15	600	[b]32.18
April	748	[a]41.40	530	[a]29.32	555	[b]30.27
May	766	[a]41.08	526	[a]28.16	600	[b]32.13
June	800	[a]44.28	593	[a]32.81	698	[b]36.72
July	866	[a]46.39	747	[a]40.00	1,451	[b]77.72
August	1,082	[a]35.28	841	[a]45.03	1,182	[b]63.31
September	1,064	[a]58.89	1,013	[a]56.06	835	[b]46.22
October	1,018	[a]54.53	850	[a]45.51	684	[b]36.64
November	957	[a]52.97	944	[a]52.24	658	[b]36.14
December	794	[a]42.53	841	[a]45.03	597	[b]31.98
Total	10,801	46.83	8,741	39.74	9,182	41.07

	1907		1908		1909	
January	632	[c]33.31	1,117	[c]58.87	720	[c]37.94
February	473	[c]27.59	733	[c]41.29	616	[c]35.94
March	464	[c]24.45	720	[c]37.94	618	[c]32.57
April	416	[c]22.65	626	[c]34.09	550	[c]29.95
May	462	[c]24.35	633	[c]33.34	544	[c]28.67
June	402	[c]21.89	678	[c]36.92	552	[c]30.06
July	515	[c]27.14	977	[c]51.49		
August	653	[c]34.41	1,148	[c]60.50		
September	768	[c]41.82	1,362	[c]74.17		
October	877	[c]46.22	991	[c]52.23		
November	725	[c]39.48	837	[c]45.58		
December	900	[c]47.43	824	[c]43.42		
Total	7,287	[c]32.59	10,646	[c]47.62		

[a] Death rate computed on population of 244,732 (Health Department's census).
[b] Death rate computed on population of 219,941 (Official census, 1903).
[c] Death rate computed on population of 223,542 (Health census, 1907).

Mortality compared with same period of previous years.

Year.	First quarter.		Second quarter.		Third quarter.		Fourth quarter.	
	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.	Number of deaths.	Annual death rate per 1,000.
1901	2,827	42.98	2,410	43.97	2,077	37.49	2,561	46.22
1902	2,236	41.25	4,433	80.89	5,067	91.46	2,715	49.00
1903	1,652	30.48	1,911	34.87	2,710	48.91	3,085	55.68
1904	2,256	41.16	2,314	42.22	2,962	53.46	2,769	49.98
1905	1,856	34.24	1,649	30.09	2,601	46.94	2,635	47.56
1906	1,982	35.64	1,848	33.72	3,468	62.59	1,934	34.90
1907	1,569	28.48	1,280	22.98	1,936	34.88	2,502	44.42
1908	2,570	46.14	1,937	34.77	3,487	61.92	2,652	47.09
1909	1,954	35.47	1,646	29.55				

Number of deaths, with causes, occurring among residents in the city of Manila.

[Stillbirths not included in computing death rate of the city.]

Causes of death.	Americans.		Foreigners.		Filipinos.		Chinese.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases.									
1. Typhoid fever (abdominal typhus)			2	1	60	38			101
4. Intermittent fever and malarial cachexia	1		2		54	32	14		103
4a. Malarial cachexia					5	2	1		8
5. Smallpox	4	2			34	27	1		68
6. Measles						1			1
8. Whooping cough					4	5			9
9. Diphtheria and croup					1				1
9a. Diphtheria	1			1	3	1			6
10. Influenza			1		5	7			13
12. Asiatic cholera	5	4	5	4	279	261	29		587
14. Dysentery	1	1	1		181	159	8		351
17. Leprosy			1		25	23	2		51
18. Erysipelas					3	3			6
19. Other epidemic diseases (beriberi)		1			466	412	45		924
20. Purulent infection and septicæmia	1				6	7	1		15
21. Glanders and farcy					1				1
22. Malignant pustule					1				1
26. Tuberculosis of the larynx			1		11	3			15
27. Tuberculosis of the lungs			7	4	490	472	52		1,025
28. Tuberculosis of the meninges					20	15			35
29. Abdominal tuberculosis	1				23	17			41
30. Pott's disease					1	2			3
31. Cold abscess, abscess by congestion					1		1		2
33. Tuberculosis of other organs	1				1	4			6
34. General tuberculosis					14	9	1		24
35. Scrofula					2	2			4
36. Syphilis	1				2	3	2		8
37. Gonorrhea (5 years and over)						2			2
39. Cancer and other malignant tumors of the buccal cavity					1	7			8
40. Cancer and other malignant tumors of the stomach and liver		1	1		3	6	2		13
41. Cancer and other malignant tumors of the peritoneum, intestines, and rectum					3				3
42. Cancer and other malignant tumors of the female genital organs						10			10
43. Cancer and other malignant tumors of the breast					1	6			7
44. Cancer and other malignant tumors of the skin					2	1			3
45. Cancer and other malignant tumors of other organs or of organs not specified	1		2		12	5			20
46. Other tumors (tumors of the female genital organs excepted)					1	1			2
47. Acute articular rheumatism			1		6	4			11
48. Chronic rheumatism and gout					15	16			31
49. Scurvy					2	1			3
50. Diabetes		1							1
51. Exophthalmic goiter						2			2
53. Leukæmia					1		1		2
54. Anæmia chlorosis					1	4	1		6
55. Other general diseases					1				1
56. Acute and chronic alcoholism	2		1			1			4
II. Diseases of the nervous system and of the organs of special sense.									
60. Encepehalitis						1			1
61. Simple meningitis				1	258	270	1		525
62. Progressive locomotor ataxia						1	1		2
63. Other diseases of the spinal cord					7	1			8
64. Congestion and hemorrhage of the brain	1				45	52	4		102
65. Softening of the brain					1	3	8		12
66. Paralysis without specified cause					6	2			8
67. General paralysis					4	6	2		12
68. Other forms of mental alienation					7	4	1		12
69. Epilepsy						3			3
70. Convulsions (nonpuerperal, 5 years and over)						1			1
71. Convulsions (under 5 years)	1	2		1	874	726	7	8	1,619
72. Tetanus				1	101	75			177
73. Chorea						1			1
74. Other diseases of the nervous system			1						1

Number of deaths, with causes, occurring among residents in the city of Manila—Continued.

Causes of death.	Americans.		Foreigners.		Filipinos.		Chinese.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
III. Diseases of the circulatory system.									
77. Pericarditis					1				1
78. Acute endocarditis			1		10	18	1		25
79. Organic diseases of the heart	1		1		60	44	31		137
80. Angina pectoris					15	18	2		35
81. Diseases of the arteries (atheroma, aneurism, etc.)	1	1	2		11	14	1		30
82. Embolism and thrombosis					3				3
85. Hemorrhages						2	1		3
IV. Diseases of the respiratory system.									
88. Diseases of the larynx						1			1
90. Acute bronchitis		2	1	1	345	323	7		679
91. Chronic bronchitis			1		189	194	19	1	404
92. Broncho-pneumonia	2				45	31	1		79
93. Pneumonia		1			17	14	1		33
94. Pleurisy					4	2			6
95. Congestion and apoplexy of the lungs					9	8			17
96. Gangrene of the lungs					1				1
97. Asthma					8	9	4		21
98. Pulmonary emphysema					1	1			2
99. Other diseases of the respiratory system (phthisis excepted)					2	1			3
V. Diseases of the digestive system.									
100. Diseases of the mouth and its adnexa					1	1			2
101. Diseases of the pharynx					1	2			3
102. Diseases of the esophagus					1		1		2
103. Ulcer of the stomach					2	2			4
104. Other diseases of the stomach (cancer excepted)		1			11	7	1		20
105. Diarrhea and enteritis (under 2 years)	2	3	2		134	100	1		242
105a. Chronic diarrhea and enteritis (under 2 years)					103	112	1		216
106. Diarrhea and enteritis (2 years and over)	1	1		1	160	155			318
107. Intestinal parasites					3	3			6
108. Hernias and intestinal obstructions	1				9	5	1	1	17
109. Other diseases of the intestines					2				2
110. Acute yellow atrophy of the liver					3	2	1		6
112. Cirrhosis of the liver	1				9	2	2		14
113. Biliary calculi					3	2			5
114. Other diseases of the liver			4		8	6	2		20
116. Simple peritonitis (nonpuerperal)		1		1	5	6	1		14
117. Other diseases of the digestive system (cancer and tuberculosis excepted)					2				2
118. Appendicitis and abscess of the iliac fossa	1				6	3			10
VI. Diseases of the genito-urinary system and its adnexa.									
119. Acute nephritis					16	14			30
120. Bright's disease	1			1	45	57	4		108
122. Calculi of the urinary tract			1		4				5
123. Diseases of the bladder					3	2			5
124. Diseases of the urethra, urinary abscess, etc.					1				1
127. Metritis						3			3
128. Uterine hemorrhage (nonpuerperal)						2			2
129. Uterine tumor (noncancerous)						2			2
130. Other diseases of the uterus						1			1
131. Cysts and other tumors of the ovary						1			1
132. Other diseases of the female genital organs		1				3			4
133. Nonpuerperal diseases of the breast (cancer excepted)						1			1
VII. The puerperal state.									
134. Accidents of pregnancy		1				4			5
135. Puerperal hemorrhage						37			37
136. Other accidents of labor						1			1
137. Puerperal septicæmia						48		1	49
138. Puerperal albuminuria and convulsions						16			19
140. Other puerperal accidents—sudden death						2			2

Number of deaths, with causes, occurring among residents in the city of Manila—Continued.

Causes of death.	Americans.		Foreigners.		Filipinos.		Chinese.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
VIII. Diseases of the skin and cellular tissue.									
142. Gangrene	1				1	3			5
143. Furuncle					3				3
144. Acute abscess, phlegmon					1	2			3
145. Other diseases of the skin and its adnexa					1	1			2
IX. Diseases of the organs of locomotion.									
146. Nontuberculous diseases of the bones	1	1	1		6	4			13
X. Malformations.									
150. Congenital malformations (stillbirths excluded)	1		1		3				5
XI. Early infancy.									
151. Congenital debility, icterus and sclerema	2	1	1		321	274	3	1	603
152. Other diseases peculiar to early infancy					13	9			22
153. Lack of care		1			24	20			45
XII. Old age.									
154. Senile debility			2		76	156			234
XIII. External causes.									
156. Suicide by asphyxia					1				1
159. Suicide by firearms	1								1
164. Fractures					6				6
166. Other accidental traumatisms	1				22	2	8		33
167. Burns and scalds					1	4	1		6
171. Electric shock	1								1
172. Accidental drowning			2		16	2	6		26
173. Inanition (starvation)		1			1	3		1	6
175. Other acute poisonings	1								1
176. Other external violence					1				1
XIV. Ill-defined diseases.									
177. Dropsy					1	1			2
178. Sudden death						2			2
179. Causes of death unspecified or ill defined					27	12	1		40
Total	41	28	46	17	4,618	4,499	267	13	9,729
Grand total	69		63		9,307		280		9,729

Number of deaths, with causes, occurring among transients in the city of Manila.

[Stillbirths not included in computing death rate of the city.]

Causes of death.	Americans.		Foreigners.		Filipinos.		Chinese.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
I. General diseases.									
1. Typhoid fever (abdominal typhus)	-----	-----	2	-----	7	1	1	-----	11
4. Intermittent fever and malarial cachexia	-----	-----	-----	-----	4	2	-----	-----	6
4a. Malarial cachexia	-----	-----	-----	-----	3	-----	-----	-----	3
5. Smallpox	-----	-----	-----	-----	3	-----	-----	-----	3
10. Influenza	-----	-----	-----	-----	1	-----	-----	-----	1
12. Asiatic cholera	1	-----	2	-----	42	18	4	-----	62
14. Dysentery	1	2	1	-----	9	6	-----	-----	19
17. Leprosy	-----	-----	-----	-----	3	-----	-----	-----	3
19. Other epidemic diseases (beriberi)	-----	-----	-----	-----	27	10	-----	-----	37
20. Purulent infection and septicæmia	-----	-----	-----	-----	1	-----	-----	-----	1
26. Tuberculosis of the larynx	-----	-----	-----	-----	1	-----	-----	-----	1
27. Tuberculosis of the lungs	-----	-----	2	-----	75	16	2	-----	95
28. Tuberculosis of the meninges	-----	-----	1	-----	3	-----	-----	-----	4
29. Abdominal tuberculosis	-----	-----	-----	-----	4	1	-----	-----	5
34. General tuberculosis	-----	-----	-----	-----	5	-----	-----	-----	5
36. Syphilis	-----	-----	1	-----	-----	1	-----	-----	2
39. Cancer and other malignant tumors of the buccal cavity	-----	-----	-----	-----	1	1	-----	-----	2
40. Cancer and other malignant tumors of the stomach and liver	1	-----	1	-----	2	2	-----	-----	6
41. Cancer and other malignant tumors of the peritoneum, intestines, and rectum	-----	-----	-----	-----	1	1	-----	-----	2
42. Cancer and other malignant tumors of the female genital organs	-----	-----	-----	-----	-----	1	-----	-----	1
43. Cancer and other malignant tumors of the breast	-----	-----	-----	-----	-----	1	-----	-----	1
45. Cancer and other malignant tumors of other organs or of organs not specified	-----	-----	1	-----	1	1	-----	-----	3
47. Acute articular rheumatism	-----	-----	1	-----	-----	-----	-----	-----	1
48. Chronic rheumatism and gout	-----	1	-----	-----	-----	-----	-----	-----	1
54. Anæmia chlorosis	-----	-----	-----	-----	2	-----	-----	-----	2
56. Acute and chronic alcoholism	-----	-----	1	-----	-----	-----	-----	-----	1
II. Diseases of the nervous system and of the organs of special sense.									
61. Simple meningitis	1	-----	-----	1	10	8	1	-----	21
64. Congestion and hemorrhage of the brain	1	-----	1	-----	2	3	1	-----	8
66. Paralysis without specified cause	-----	-----	-----	-----	-----	1	-----	-----	1
68. Other forms of mental alienation	-----	-----	-----	-----	1	-----	-----	-----	1
71. Convulsions (under 5 years)	-----	-----	-----	-----	15	24	-----	-----	39
72. Tetanus	-----	-----	-----	-----	-----	1	-----	-----	1
III. Diseases of the circulatory system.									
77. Pericarditis	-----	-----	-----	-----	1	-----	-----	-----	1
78. Acute endocarditis	-----	-----	-----	-----	1	-----	-----	-----	1
79. Organic diseases of the heart	3	-----	2	-----	9	4	-----	-----	18
80. Angina pectoris	-----	-----	-----	-----	1	2	-----	-----	3
81. Diseases of the arteries (atheroma, aneurism, etc.)	-----	-----	1	-----	-----	-----	-----	-----	1
IV. Diseases of the respiratory system.									
90. Acute bronchitis	-----	-----	-----	1	14	18	-----	-----	33
91. Chronic bronchitis	-----	-----	1	-----	5	8	-----	-----	14
92. Broncho-pneumonia	-----	-----	-----	-----	4	4	-----	-----	8
93. Pneumonia	-----	-----	-----	-----	3	1	1	-----	5
94. Pleurisy	-----	-----	-----	-----	1	-----	-----	-----	1
96. Gangrene of the lungs	-----	-----	-----	-----	1	-----	-----	-----	1
97. Asthma	-----	-----	1	-----	-----	-----	-----	-----	1
V. Diseases of the digestive system.									
103. Ulcer of the stomach	-----	1	-----	-----	-----	-----	-----	-----	1
104. Other diseases of the stomach (cancer excepted)	-----	-----	-----	-----	-----	1	-----	-----	1
105. Diarrhea and enteritis (under 2 years)	-----	-----	-----	-----	-----	5	-----	-----	5
105a. Chronic diarrhea and enteritis (under 2 years	-----	-----	-----	-----	5	5	-----	-----	10
106. Diarrhea and enteritis (2 years and over)	-----	-----	-----	-----	6	8	-----	-----	14
108. Hernias and intestinal obstructions	-----	-----	-----	-----	2	-----	-----	-----	2

Number of deaths, with causes, occurring among transients in the city of Manila—Continued.

Causes of death.	Americans.		Foreigners.		Filipinos.		Chinese.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
110. Acute yellow atrophy of the liver					1				1
112. Cirrhosis of the liver			2		4	2			8
114. Other diseases of the liver	1		1						2
116. Simple peritonitis (nonpuerperal)					2	1	1		4
118. Appendicitis and abscess of the iliac fossa					1				1
VI. Diseases of the genito-urinary system and its adnexa.									
119. Acute nephritis		1			4	1	1		7
120. Bright's disease	1				3				4
121. Other diseases of the kidneys and their adnexa					3				3
122. Calculi of the urinary tract					1				1
124. Diseases of the urethra, urinary abscess, etc					1				1
131. Cysts and other tumors of the ovary						2			2
VII. The puerperal state.									
134. Accidents of pregnancy						1			1
137. Puerperal septicæmia						2			2
140. Other puerperal accidents—sudden death						2			2
IX. Diseases of the organs of locomotion.									
146. Nontuberculous diseases of the bones					1				1
147. Arthritis and other diseases of the joints (tuberculosis and rheumatism excepted)						1			1
148. Amputation					1				1
XI. Early infancy.									
151. Congenital debility icterus and sclerema		1			1				2
153. Lack of care					1	2			3
XII. Old age.									
154. Senile debility					2	4			6
XIII. External causes.									
157. Suicide by hanging or strangulation					1				1
159. Suicide by firearms	1								1
160. Suicide by cutting instruments					1				1
164. Fractures					3				3
166. Other accidental traumatisms					3				3
167. Burns and scalds						1			1
172. Accidental drowning			2						2
173. Inanition (starvation)						1			1
176. Other external violence					7				7
XIV. Ill-defined diseases.									
179. Causes of death unspecified or ill defined					3	3			6
Total	11	6	24	2	320	173	12		548
Grand total	17		26		493		12		548

Number of deaths by nationality, sex, and age.

Causes of death.	Less than 1 day to 30 days.								From 30 days to 1 year.								From 1 to 5 years.								From 5 to 10 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
I. General diseases.																																
1. Typhoid fever (abdomial typhus)														1							8	9							3	4		
4. Intermittent fever and malarial cachexia																					4	3								1		
4a. Malarial cachexia																					1											
5. Smallpox										1			8	3			1	1			13	17							3	4	1	
6. Measles																														1		
8. Whooping cough													4	2								3										
9. Diphtheria and croup													1																			
9a. Diphtheria																	1			1	2	1							1			
10. Influenza						1								1								1										
12. Asiatic cholera										1			3	6			2			1	62	52				1			20	13		
14. Dysentery													18	9				1			90	85							34	18		
18. Erysipelas					1	1							2	1																		
19. Other epidemic diseases (beriberi)					25	10				1			304	256							25	9							7	2		
20. Purulent infection and septicæmia						1			1				1								1	1										
26. Tuberculosis of the larynx																													1			
27. Tuberculosis of the lungs													1	2							14	8							3	7		
28. Tuberculosis of the meninges													8	4							10	10										
29. Abdominal tuberculosis																					8	6							2			
33. Tuberculosis of other organs																													1	2		
34. General tuberculosis													1								2	2							2	1		
35. Scrofula																					2	2										
36. Syphilis														1																		
47. Acute articular rheumatism																			1										1			
48. Chronic rheumatism and gout										1																				1		
49. Scurvy																					1	1										
53. Leukæmia																													1			
55. Other general diseases																					1											
II. Diseases of the nervous system and the organs of special sense.																																
61. Simple meningitis					2	2							142	141	1		1			1	101	122							10	7		
63. Other diseases of the spinal cord																					1											
64. Congestion and hemorrhage of the brain														1								1							1	1		

67. General paralysis																					1											
70. Convulsions (nonpuerperal, 5 years and over)																														1		
71. Convulsions (under 5 years)				1	158	103			1	1			718	636	6	6		1			13	11	1									
72. Tetanus				1	87	59																							1	2		
III. Diseases of the circulatory system.																																
78. Acute endocarditis														1							2								1	1		
79. Organic diseases of the heart													1	1							1	4										
85. Hemorrhages														1																		
IV. Diseases of the respiratory system.																																
88. Diseases of the larynx																						1										
90. Acute bronchitis					11	9				2	1	2	290	261	5						57	63	1						1	7		
91. Chronic bronchitis													91	99							53	67	1						5	1		
92. Broncho-pneumonia					2				1				17	13			1				12	13								1		
93. Pneumonia													1	2							3	8				1			1			
94. Pleurisy													1	1																		
95. Congestion and apoplexy of the lungs					6	7																										
97. Asthma													1								1											
V. Diseases of the digestive system.																																
100. Diseases of the mouth and its adnexa																														1		
101. Diseases of the pharynx																						2										
104. Other diseases of the stomach (cancer excepted)					1								4	3				1			1	2										
105. Diarrhea and enteritis (under 2 years)					10	4			2	3	2		94	69	1						30	32										
105a. Chronic diarrhea and enteritis (under 2 years)					1								57	52							50	65	1									
106. Diarrhea and enteritis (2 years and over)																		1			142	140						1	6	7		
107. Intestinal parasites																					2	3							1			
108. Hernia and intestinal obstructions					2								1								1	1										
109. Other diseases of the intestines					1																											
110. Acute yellow atrophy of the liver																					1											
112. Cirrhosis of the liver																													1			
113. Biliary calculi													1																			
114. Other diseases of the liver					1																									1		
116. Simple peritonitis (nonpuerperal)						3																										
118. Appendicitis and abscess of the iliac fossa																					1											
VI. Diseases of the genito-urinary system and its adnexa.																																
119. Acute nephritis													7	4							6	2										
120. Bright's disease													1	2							7	3							2	2		
122. Calculi of the urinary tract																													1			
123. Diseases of the bladder													1																			

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	Less than 1 day to 30 days.								From 30 days to 1 year.								From 1 to 5 years.								From 5 to 10 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
VIII. Diseases of the skin and cellular tissue.																																
142. Gangrene																	1					1							1			
143. Furuncle																					1											
144. Acute abscess, phlegmon													1									1										
145. Other diseases of the skin and its adnexa													1	1																		
IX. Diseases of the organs of locomotion.																																
146. Nontuberculous diseases of the bones										1	1		4	2								3	1							1	
X. Malformations.																																
150. Congential malformations (stillbirths excepted)			1		2								1				1															
XI. Early infancy.																																
151. Congenital debility, icterus and sclerema	2	1	1		263	224	3	1		1			59	50																		
152. Other diseases peculiar to early infancy					13	9																										
153. Lack of care					3	3				1			20	16								2	3									
XIII. External causes.																																
166. Other accidental traumatisms																						1							1			
167. Burns and scalds																						1								1		
172. Accidental drowning																													4			
173. Inanition (starvation)						3		1		1			1									1										
XIV. Ill-defined diseases.																																
178. Sudden death																						1										
179. Causes of death unspecified or ill defined						1							8	2								4	4						1			
Total	2	1	2	2	589	440	3	4	5	14	4	2	1,869	1,644	13	6	8	5	1	3	740	759	4			2		1	118	88	1	
Grand total	3		4		1,029		7		19		6		3,513		19		13		4		1,499		4		2		1		206		1	

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 10 to 15 years.								From 15 to 20 years.								From 20 to 25 years.								From 25 to 30 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
I. General diseases.																																
1. Typhoid fever (abdomical typhus)					10	7						1	18	5					1		6	5					1		8	2		
4. Intermittent fever and malarial cachexia					1	3							12	4							6	7	1				1		4	4	4	
4a. Malarial cachexia					1								1								1											
5. Smallpox					1								5	1							6	2			1				1			
10. Influenza													1								1	1										
12. Asiatic cholera					5	6					1		43	28					1		39	32	1		2	1	8	2	31	29	4	
14. Dysentery					4	7							5	3							7	10					1		5	4		
17. Leprosy					2	2							2	1							6	6							6	3		
19. Other epidemic diseases (beriberi)					2	3							24	10	2						15	16	3						12	43	2	
20. Purulent infection and septicæmia														1	1						1	1								2		
22. Malignant pustule																					1											
26. Tuberculosis of the larynx					1																2	1										
27. Tuberculosis of the lungs					11	2						1	37	28							74	67	4						90	74	8	
28. Tuberculosis of the meninges					1								2																	1		
29. Abdominal tuberculosis						2							2								2	2							1	1		
30. Pott's disease						1								1																		
31. Cold abscess and abscess by congestion																													1			
33. Tuberculosis of other organs													1								2	1	1		1				3	2		
34. General tuberculosis													1									1								1		
36. Syphilis																						1								1		
37. Gonorrhea (5 years and over)																													1			
41. Cancer and other malignant tumors of peritoneum, intestines, and rectum														1													1			1		
43. Cancer and other malignant tumors of the breast														1												1				1		
45. Cancer and other malignant tumors of other organs or of organs not specified																													1			
46. Other tumors (tumors of the female genital organs excepted)													1	1							3	1							2	1		
47. Acute articular rheumatism						1							1		1						1	2								1		
48. Chronic rheumatism and gout														1																		
51. Exophthalmic goiter														1																		
54. Anæmia, chlorosis																																
56. Acute and chronic alcoholism																																

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 10 to 15 years.								From 15 to 20 years.								From 20 to 25 years.								From 25 to 30 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
II. Diseases of the nervous system and of the organs of special sense.																																
60. Encephalitis						1																										
61. Simple meningitis					2								2	1							1								2	1		
63. Other diseases of the spinal cord													3																			
64. Congestion and hemorrhage of the brain																					1								1	6		
67. General paralysis																						1							1			
68. Other forms of mental alienation																					2								3	1		
72. Tetanus					1	1							3	1							1								1	1		
78. Chorea																						1										
III. Diseases of the circulatory system.																																
78. Acute endocarditis						1								1							1	1							3	1		
79. Organic diseases of the heart						1	1						6								4	4	1						4	3	1	
80. Angina pectoris													1	2							2								1	4		
81. Diseases of the arteries, atheroma, aneurism, etc																															1	
85. Hemorrhages																						1										
IV. Diseases of the respiratory system.																																
90. Acute bronchitis															1																	
91. Chronic bronchitis													1																1			
92. Broncho-pneumonia					2								1	1							3	1							1			
93. Pneumonia													2	1							1	2							3	2		
94. Pleurisy													1								1								1			
95. Congestion and apoplexy of the lungs													1																1			
96. Gangrene of the lungs																					1											
97. Asthma														1								2							1	1		
99. Other diseases of the respiratory system (phthisis excepted)																					1											
V. Diseases of the digestive system.																																
100. Diseases of the mouth and its adnexa					1																											
101. Diseases of the pharynx													1																			
103. Ulcer of the stomach																														1		
104. Other diseases of the stomach (cancer excepted)																														1		
106. Diarrhea and enteritis (2 years and over)					2																1	1							1	4		
108. Hernia and intestinal obstructions																	1				1	1										

110. Acute yellow atrophy of the liver													1								1	1										
112. Cirrhosis of the liver													1																2			
113. Biliary calculi																													1	1		
114. Other diseases of the liver											1		1																1	1	1	
116. Simple peritonitis (nonpuerperal)												1	1									1							1			
117. Other diseases of the digestive system (cancer and tuberculosis excepted)																					1											
118. Appendicitis and abscess of the iliac fossa													1																1			
VI. Diseases of the genito-urinary system and its adnexa.																																
119. Acute nephritis																					1									1		
120. Bright's disease					1								4	2							1	6			1			1	1	3		
122. Calculi of the urinary tract													1								1											
123. Diseases of the bladder																						1										
127. Metritis																														1		
128. Uterine hemorrhage (nonpuerperal)																						1										
130. Other diseases of the uterus																														1		
131. Cysts and other tumors of the ovary																						1								1		
132. Other diseases of the female genital organs														1				1														
VII. The puerperal state.																																
134. Accidents of pregnancy																						3										
135. Puerperal hemorrhage														6								5								11		
136. Other accidents of labor														1																		
137. Puerperal septicæmia						1								6								16								14		
138. Puerperal albuminuria and convulsions														9								2										
140. Other puerperal accidents—sudden death																						1								2		
IX. Diseases of the organs of locomotion.																																
146. Nontuberculous diseases of the bones																									1							
XIII. External causes.																																
156. Suicide by asphyxia																					1											
157. Suicide by hanging or strangulation																													1			
159. Suicide by firearms																	1															
164. Fractures													4								1											
166. Other accidental traumatisms					5								5	1							3	1							2		1	
167. Burns and scalds							1						1	2																		
172. Accidental drowning						2															3								2		1	
176. Other external violence																					2								3			
XIV. Ill-defined diseases.																																
177. Dropsy																													1	1		
179. Causes of death unspecified or ill defined													3								2								2	4		
Total					53	41	2				2	3	201	122	5		2	1	2		211	210	11		6	1	7	3	206	242	25	
Grand total					94		2				5		323		5		3		2		421		11		7		10		448		25	

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 30 to 35 years.								From 35 to 40 years.								From 40 to 45 years.								From 45 to 50 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
I. General diseases.																																
1. Typhoid fever (abdominal typhus)			1		4	2	1						2	3					1		1								2			
4. Intermittent fever and malarial cachexia			1		5	2	2						5	1	4		1				6	2	2						6	3	1	
4a. Malarial cachexia					2	1									1															1		
5. Smallpox	2																															
10. Influenza													1																			
12. Asiatic cholera	1	1			22	17	5		1				25	20	10					1	17	14	6				2		18	22	4	
14. Dysentery		1			5	4	2					1	5	6	5		1	1			4	2			1				6	4	1	
17. Leprosy					2	4							2	1	1				1		1	2	1						2	1		
18. Erysipelas																						1										
19. Other epidemic diseases (beriberi)					7	24	7						14	12	10						6	9	8						10	5	7	
20. Purulent infection and septicæmia						1							1																1			
21. Glanders and farcy													1																			
26. Tuberculosis of the larynx					2	1							1	1															1			
27. Tuberculosis of the lungs			1	1	60	57	7				3	1	77	66	10				2	1	52	44	8				1		44	39	8	
28. Tuberculosis of the meninges			1																													
29. Abdominal tuberculosis					2								3	2							1				1				1	1		
31. Cold abscess and abscess by congestion							1																									
33. Tuberculosis of other organs																														1		
34. General tuberculosis					1	1							2	1							2								1			
36. Syphilis					1				1														1				1				1	
39. Cancer and other malignant tumors of the buccal cavity														1																1		
40. Cancer and other malignant tumors of the stomach and liver						1									1				1			1				1			2	1	1	
41. Cancer and other malignant tumors of peritoneum, intestines, and rectum					1									1							1								1			
42. Cancer and other malignant tumors of the female genital organs						1								1								2								2		
43. Cancer and other malignant tumors of the breast														1																1		
44. Cancer and other malignant tumors of the skin													1																			
45. Cancer and other malignant tumors of other organs or of organs not specified									1		1		5								1	1							3	1		
47. Acute articular rheumatism																			1													
48. Chronic rheumatism and gout													1								1								2	1		
51. Exophthalmic goiter																														1		
53. Leukæmia							1																									
54. Anæmia, chlorosis					1									1																		
56. Acute and chronic alcoholism	2		1								1																					

II. Diseases of the nervous system and of the organs of special sense.																																
61. Simple meningitis						2							1																1			
62. Progressive locomotor ataxia																															1	
63. Other diseases of the spinal cord					1																											
64. Congestion and hemorrhage of the brain					3		1		1				3	4	1						8	1	3						4	3		
65. Softening of the brain							1								4								1									
66. Paralysis without specified cause																													1			
67. General paralysis						1								2	2														1			
68. Other forms of mental alienation					1									1	1						1	2							1			
69. Epilepsy																						1										
72. Tetanus					2	4							8	1								2								1		
III. Diseases of the circulatory system.																																
77. Pericarditis																													1			
78. Acute endocarditis					1						1		1	2	1						1									1		
79. Organic diseases of the heart	2		1		8	5	4						3	3	3		1		2		6	4	9						8	3	8	
80. Angina pectoris						1							4	1	1						3	3	1						1	4		
81. Diseases of the arteries, atheroma, aneurism, etc			1						1		1								1		1								2			
82. Embolism and thrombosis																					1											
85. Hemorrhages																							1									
IV. Diseases of the respiratory system.																																
91. Chronic bronchitis			1		3	6	1						1		1							2	2						4	2	2	1
92. Broncho-pneumonia					1	4							1																2	1		
93. Pneumonia					3	2								1							1	1	1									
95. Congestion and apoplexy of the lungs						1							1																			
96. Gangrene of the lungs					1																											
97. Asthma			1		1																1	1	2						1			
99. Other diseases of the respiratory system (phthisis excepted)					1	1																										
V. Diseases of the digestive system.																																
102. Diseases of the esophagus															1																	
103. Ulcer of the stomach										1																			1			
104. Other diseases of the stomach (cancer excepted)					1									1															1			
105. Diarrhea and enteritis (2 years and over)					3	1							2	3							1	1			1				1	8		
108. Hernia and intestinal obstructions						1		1													2								2			
109. Other diseases of the intestines																					1											
110. Acute yellow atrophy of the liver						1							1																			
112. Cirrhosis of the liver	1				1	2							1		1				1		8						1			1	1	
113. Biliary calculi					1																											
114. Other diseases of the liver	1				1						1		8		1				1								1					
115. Simple peritonitis (nonpuerperal)		1			2	1	1							1							1	1							2		1	
118. Appendicitis and abscess of the iliac fossa					2	1			1												1											

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 30 to 35 years.								From 35 to 40 years.								From 40 to 45 years.								From 45 to 50 years.							
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
VI. Diseases of the genito-urinary system and its adnexa.																																
119. Acute nephritis	---	1	---	---	1	2	---	---	---	---	---	---	1	1	---	---	---	---	---	---	---	1	---	---	---	---	---	---	2	---	1	---
120. Bright's disease	---	---	---	---	1	2	---	---	---	---	---	---	4	5	---	---	---	---	---	---	1	1	2	---	---	---	---	---	4	1	2	---
121. Other diseases of the kidneys and their adnexa	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	2	---	---	---
122. Calculi of the urinary tract	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
123. Diseases of the bladder	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---
124. Diseases of the urethra, urinary abscess, etc	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---
127. Metritis	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---
128. Uterine hemorrhage (nonpuerperal)	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
129. Uterine tumor (noncancerous)	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---
131. Cysts and other tumors of the ovary	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
132. Other diseases of the female genital organs	---	---	---	---	---	1	---	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
133. Nonpuerperal diseases of the breast (cancer excepted)	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VII. The puerperal state.																																
134. Accidents of pregnancy	---	---	---	---	---	1	---	---	---	1	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
135. Puerperal hemorrhage	---	---	---	---	---	11	---	---	---	---	---	---	---	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
137. Puerperal septicæmia	---	---	---	---	---	8	---	1	---	---	---	---	---	5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
138. Puerperal albuminuria and convulsions	---	---	---	---	---	3	---	---	---	---	---	---	---	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
VIII. Diseases of the skin and cellular tissue.																																
143. Furuncle	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
144. Acute abscess, phlegmon	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---
IX. Diseases of the organs of locomotion.																																
147. Arthritis and other diseases of the joints (tuberculosis and rheumatism excepted)	---	---	---	---	---	---	---	---	---	---	---	---	---	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

XIII. External causes.																																
159. Suicide by firearms	1																															
160. Suicide by cutting instruments																													1			
164. Fractures					1														1										2			
166. Other accidental traumatisms					3		2						1		1		1		1		1								1		1	
171. Electrical shocks	1																															
172. Accidental drowning					1		1								2				1										1			
176. Other external violence					1								1						1													
XIV. Ill-defined diseases.																																
179. Causes of death unspecified or ill defined					1	1														1									4	1		
Total	11	4	9	1	163	180	37	2	6	2	9	1	177	162	62		4	1	12	2	126	102	49		3	1	6		146	108	40	1
Grand total	15		10		343		39		8		10		339		62		5		14		228		49		4		6		254		41	

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 50 upward.								Unknown.								Total.								Grand total.
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
I. General diseases.																									
1. Typhoid fever (abdominal typhus)					5	1													4	1	67	39	1		112
4. Intermittent fever and malarial cachexia					9	4											1		2		58	34	14		109
4a. Malarial cachexia					1																8	2	1		11
5. Smallpox																	4	2			37	27	1		71
6. Measles																						1			1
8. Whooping cough																					4	5			9
9. Diphtheria and croup																					1				1
9a. Diphtheria																	1			1	3	1			6
10. Influenza			1		3	2													1		6	7			14
12. Asiatic cholera					32	35	3						4				6	4	7	4	321	274	33		649
14. Dysentery					12	13											2	3	2		190	165	8		370
17. Leprosy					4	3							1						1		28	23	2		54
18. Erysipelas																					3	3			6
19. Other epidemic diseases (beriberi)					42	23	6											1			493	422	45		961
20. Purulent infection and septicæmia					1								1				1				7	7	1		16
21. Glanders and farcy																					1				1
22. Malignant pustule																					1				1
26. Tuberculosis of the larynx			1		4														1		12	3			16
27. Tuberculosis of the lungs			2		102	94	8								1				9	4	565	488	54		1,120
28. Tuberculosis of the meninges					2														1		23	15			39
29. Abdominal tuberculosis					5	4											1				27	18			46
30. Pott's disease					1																1	2			3
31. Cold abscess and abscess by congestion																					1		1		2
33. Tuberculosis of other organs																	1				1	4			6
34. General tuberculosis					2	1															19	9	1		29
35. Scrofula						1															2	2			4
36. Syphilis																	1		1		2	4	2		10
37. Gonorrhœa (5 years and over)																						2			2
39. Cancer and other malignant tumors of the buccal cavity					2	6															2	8			10
40. Cancer and other malignant tumors of the stomach and liver			1		3	5			1								1	1	2		5	8	2		19
41. Cancer and other malignant tumors of peritoneum, intestines, and rectum																					4	1			5
42. Cancer and other malignant tumors of the female genital organs						5																11			11

43. Cancer and other malignant tumors of the breast					1	3																1	7			8
44. Cancer and other malignant tumors of the skin					1	1																2	1			3
45. Cancer and other malignant tumors of other organs or of organs not specified			1		4	2											1		3			13	6			23
46. Other tumors (tumors of the female genital organs excepted)						1																1	1			2
47. Acute articular rheumatism						1													2			6	4			12
48. Chronic rheumatism and gout					9	14												1				15	16			32
49. Scurvy					1																	2	1			3
50. Diabetes		1																1								1
51. Exophthalmic goiter																							2			2
53. Leukæmia																						1		1		2
54. Anæmia chlorosis																						3	4	1		8
55. Other general diseases																						1				1
56. Acute and chronic alcoholism																	2		2				1			5
II. Diseases of the nervous system and of the organs of special sense.																										
60. Encephalitis																							1			1
61. Simple meningitis				1	1	1											1			2	263	278	2			546
62. Progressive locomotor ataxia						1																	1	1		2
63. Other diseases of the spinal cord					2	1																7	1			8
64. Congestion and hemorrhage of the brain	1		1		31	38											2		1			47	55	5		110
65. Softening of the brain					1	3	2															1	3	8		12
66. Paralysis without specified cause					5	3																6	3			9
67. General paralysis					1	2																4	6	2		12
68. Other forms of mental alienation																						8	4	1		13
69. Epilepsy						1									1								3			3
70. Convulsions (nonpuerperal, 5 years and over)																							1			1
71. Convulsions (under 5 years)																	1	2		1	889	750	7	8		1,658
72. Tetanus					2	4														1	101	76				178
73. Chorea																							1			1
74. Other diseases of the nervous system			1																1							1
III. Diseases of the circulatory system.																										
77. Pericarditis					1																	2				2
78. Acute endocarditis					1	4																11	13	1		25
79. Organic diseases of the heart	1				33	20	4										4		3			69	48	31		155
80. Angina pectoris					4	5																16	20	2		38
81. Diseases of the arteries, atheroma, aneurism, etc		1			8	14											1	1	3			11	14	1		31
82. Embolism and thrombosis					2																	3				3
85. Hemorrhages																							2	1		3
IV. Diseases of the respiratory system.																										
88. Diseases of the larynx																							1			1
90. Acute bronchitis						1												2	1	2	359	341	7			712
91. Chronic bronchitis			1		36	24	12												2		194	202	19	1		418
92. Broncho-pneumonia					7	1										1	2				49	35	1			87
93. Pneumonia					5	1	1											1			20	15	2			36

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 50 upward.								Unknown.								Total.								Grand total.
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
IV. Diseases of the respiratory system.—Continued.																									
94. Pleurisy					1	1															5	2			7
95. Congestion and apoplexy of the lungs																					9	8			17
96. Gangrene of the lungs																					2				2
97. Asthma					3	4	1												1		8	9	4		22
98. Pulmonary emphysema					1	1															1	1			2
99. Other diseases of the respiratory system (phthisis excepted)																					2	1			3
V. Diseases of the digestive system.																									
100. Diseases of the mouth and its adnexa																					1	1			2
101. Diseases of the pharynx																					1	2			3
102. Diseases of the esophagus					1																1		1		2
103. Ulcer of the stomach					1	1												1			2	2			5
104. Other diseases of the stomach (cancer excepted)					3	1	1											1			11	8	1		21
105. Diarrhea and enteritis (under 2 years)																	2	3	2		134	105	1		247
105a. Chronic diarrhea and enteritis (under 2 years)																					108	117	1		226
106. Diarrhea and enteritis (2 years and over)					7	3											1	1		1	166	163			332
107. Intestinal parasites																					3	3			6
108. Hernia and intestinal obstructions					2	2	1										1				11	5	1	1	19
109. Other diseases of the intestines																					2				2
110. Acute yellow atrophy of the liver							1														4	2	1		7
112. Cirrhosis of the liver					4	1											1		2		13	4	2		22
113. Biliary calculi						1															3	2			5
114. Other diseases of the liver			1		1	4											1		5		8	6	2		22
116. Simple peritonitis (nonpuerperal)																		1		1	7	7	2		18
117. Other diseases of the digestive system (cancer and tuberculosis excepted)					1																2				2
118. Appendicitis and abscess of the iliac fossæ					2	1											1				7	3			11
VI. Diseases of the genito-urinary system and its adnexa.																									
119. Acute nephritis					2	4			1								2	1			20	15	1		37
120. Bright's disease					21	30											2			1	48	57	4		112

121. Other diseases of the kidneys and their adnexa					1														3				3
122. Calculi of the urinary tract			1		1												1		5				6
123. Diseases of the bladder					2														3	2			5
124. Diseases of the urethra, urinary abscess, etc					1														2				2
127. Metritis																				3			3
128. Uterine hemorrhage (nonpuerperal)																				2			2
129. Uterine tumor (noncancerous)																				2			2
130. Other diseases of the uterus																				1			1
131. Cysts and other tumors of the ovary																				3			3
132. Other diseases of the female genital organs																1				3			4
133. Nonpuerperal diseases of the breast (cancer excepted)																				1			1
VII. The puerperal state.																							
																1							
134. Accidents of pregnancy																				5			6
135. Puerperal hemorrhage																				37			37
136. Other accidents of labor																				1			1
137. Puerperal septicæmia																				50		1	51
138. Puerperal albuminuria and convulsions																				16			16
140. Other puerperal accidents—sudden death												1								4			4
VIII. Diseases of the skin and cellular tissue.																							
142. Gangrene						2									1				1	3			5
143. Furuncle					1														3				3
144. Acute abscess, phlegmon																			1	2			3
145. Other diseases of the skin and its adnexa																			1	1			2
IX. Diseases of the organs of locomotion.																							
146. Nontuberculous diseases of the bones															1	1	1		7	4			14
147. Arthritis and other diseases of the joints (tuberculosis and rheumatism excepted)																				1			1
148. Amputation												1							1				1
X. Malformations.																							
150. Congenital malformations (stillbirths excepted)															1		1		3				5
XI. Early infancy.																							
151. Congenital debility, icterus and sclerema															2	2	1		322	274	3	1	605
152. Other diseases peculiar to early infancy																			13	9			22
153. Lack of care															1				25	22			48
XII. Old age.																							
154. Senile debility			2		78	160											2		78	160			240

Number of deaths by nationality, sex, and age—Continued.

Causes of death.	From 50 upward.								Unknown.								Total.								Grand total.
	Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		Americans.		Foreigners.		Filipinos.		Chinese.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
XIII. External causes.																									
156. Suicide by asphyxia																					1				1
157. Suicide by hanging or strangulation																					1				1
159. Suicide by firearms																	2								2
160. Suicide by cutting instruments																					1				1
164. Fractures																					9				9
166. Other accidental traumatisms					1								1		2		1				25	2	8		36
167. Burns and scalds						1															1	5	1		7
171. Electric shocks																	1								1
172. Accidental drowining			2		3						1		2		2				4		16	2	6		28
173. Inanition (starvation)																		1			1	4		1	7
175. Other acute poisonings									1								1								1
176. Other external violence																					8				8
XIV. Ill-defined diseases.																									
177. Dropsy																					1	1			2
178. Sudden death						1																2			2
179. Causes of death unspecified or ill defined					2								3	1	1						30	15	1		48
Total	2	2	15	1	526	561	40		3		1		13	3	7		52	34	70	19	5,138	4,662	299	13	1,0287
Grand total	4		16		1,087		40		3		1		16		7		86		89		9,800		312		10,287

Deaths, by occupations.

Occupation.	Number.	
	Male.	Female.
Professional:		
Architects, artists, teachers of art, etc	6	1
Clergymen, priests, nuns, etc	9	6
Engineers and surveyors	3	------
Journalists	1	------
Lawyers	6	------
Musicians and teachers of music	14	------
Nurses and midwives	------	4
Physicians and surgeons	2	------
Teachers (schools)	7	4
Others of this class	5	------
Clerical and official:		
Bookkeepers, clerks, and copyists	115	1
Bankers, brokers, and officials of companies	7	------
Collectors, auctioneers, and agents	3	------
Stenographers and typewriters	------	------
Telegraph and telephone operators	3	------
Others of this class	6	------
Mercantile and trading:		
Apothecaries, pharmacists, etc	3	------
Commercial travelers	3	1
Merchants and dealers	78	2
Hucksters and peddlers	4	2
Shopkeepers	19	91
Others of this class	3	------
Public entertainment:		
Hotel and boarding house keepers	1	------
Saloon keepers, liquor dealers, bartenders, and restaurant keepers	5	------
Personal service, police and military:		
Barbers and hairdressers	17	------
Janitors and sextons	14	1
Policemen, watchmen, and detectives	14	------
Soldiers, sailors, and marines	11	------
Others of this class	2	------
Laboring and servant:		
Laborers (not agricultural)	732	14
Launderers	15	229
Servants	104	42
Manufacturing and mechanical industry:		
Artificial flower and paper-box makers	------	------
Bakers and confectioners	8	------
Blacksmiths	5	------
Boot, shoe, and slipper makers	15	------
Brewers, distillers, and rectifiers	------	------
Butchers	5	2

Occupation.	Number.	
	Male.	Female.
Manufacturing and mechanical industry—Continued:		
Cabinet makers and upholsterers	2	------
Carpenters and joiners	96	------
Cigar makers and tobacco workers	33	93
Clock and watch repairers, jewelers, etc	26	2
Compositors, printers, etc	16	------
Coopers	------	------
Embroiderers	2	14
Engineers and firemen (not locomotive)	27	------
Glass blowers and glass workers	------	------
Hat and cap makers	2	------
Iron and steel workers	1	------
Leather makers	1	------
Leather workers	6	------
Machinists	5	------
Marble and stone cutters	1	------
Masons (brick and stone)	14	------
Mill and factory operatives (textiles)	1	2
Millers (flour and grist)	------	------
Milliners	------	3
Painters, glaziers, and varnishers	25	------
Plumbers, gas and steam fitters	------	------
Tailors, dressmakers, and seamstresses	35	201
Tinners and tinware makers	7	------
Others of this class	37	4
Agriculture, transportation, and other outdoor:		
Boatmen and canalmen	24	------
Draymen, drivers, and teamsters	78	------
Farmers, planters, and farm laborers	56	4
Gardeners, florists, nurserymen, etc	10	1
Livery-stable keepers and hostlers	3	------
Lumbermen and raftsmen	------	------
Miners and quarrymen	3	------
Sailors, pilots, fishermen, and oystermen	105	3
Steam railroad employees	------	------
Stock raisers, herders, and drovers	2	1
Others of this class	6	------
All other occupations	104	51
Total	1,973	784
Grand total	2,757	

Report of sick and wounded poor attended by municipal physicians.

Health districts and physicians.	Americans.		Foreigners.		Filipinos.			
	Adults, male.	Children, female.	Adults, male.	Children, female.	Adults.		Children.	
					Male.	Female.	Male.	Female.
No. 1, Intramuros, Dr. V. Cavanna	12	-------	38	1	1,104	1,105	415	337
No. 2, Meisic, Drs. F. Herrera and C. Reyes	27	-------	8	-------	466	229	162	119
No. 4, Sampaloc, Dr. F. Castañeda	-------	-------	-------	-------	651	963	686	600
No. 5, Tondo, Drs. V. Pantoja and P. Gabriel	1	-------	-------	-------	575	347	196	147
No. 6, Paco, Dr. J. B. Cabarrus	1	2	-------	-------	334	361	234	254
Dr. Tee Han Kee	8	-------	-------	-------	66	40	6	5
Total	49	2	46	1	3,196	3,045	1,699	1,462

Health districts and physicians.	Chinese.			Total.	Cured.		Deaths.		Number of visits.
	Adults.		Children, male.		Male.	Female.	Male.	Female.	
	Male.	Female.							
No. 1, Intramuros, Dr. V. Cavanna	-------	-------	-------	3,012	812	718	36	35	8,657
No. 2, Meisic, Drs. F. Herrera and C. Reyes	33	-------	-------	1,044	536	284	25	13	4,196
No. 4, Sampaloc, Dr. F. Castañeda	-------	-------	-------	2,900	235	271	63	55	3,782
No. 5, Tondo, Drs. V. Pantoja and P. Gabriel	4	-------	-------	1,270	314	210	35	24	2,807
No. 6, Paco, Dr. J. B. Cabarrus	2	-------	-------	1,188	285	296	33	45	2,905
Dr. Tee Han Kee	331	5	5	466	251	29	22	2	2,057
Total	370	5	5	9,880	2,433	1,808	214	174	24,404

Report of prescriptions filled at the municipal dispensary.

Health districts.	Americans.				Foreigners.		Filipinos.				Chinese, adults, male.	Total.
	Adults.		Children.		Adults, male.	Children, male.	Adults.		Children.			
	Male.	Female.	Male.	Female.			Male.	Female.	Male.	Female.		
No. 1, Intramuros	1,251	390	3	16	46	1	4,155	2,932	975	740	1	10,510
No. 2, Meisic	37	1	-------	-------	17	-------	995	725	406	252	10	2,443
No. 4, Sampaloc	18	-------	-------	1	1	-------	2,141	1,310	1,274	668	-------	5,413
No. 5, Tondo	3	-------	-------	-------	2	-------	1,161	1,027	271	230	-------	2,694
No. 6, Paco	174	34	-------	3	-------	-------	888	587	529	585	1	2,781
Total	1,483	425	3	20	66	1	9,340	6,581	3,455	2,455	12	23,841

General inspection of houses, premises, vaults, etc., with improvements ordered, whitewashed, cleaned, etc., by medical inspectors, sanitary inspectors, and assistant sanitary inspectors.

1. Inspections of houses by sanitary inspectors	25,873
2. Reinspections of houses for verification of work ordered	3,526
3. Inspections of houses by assistant sanitary inspectors and sanitary policemen	520,692
4. Reinspections of houses by assistant sanitary inspectors and sanitary policemen	149,404
5. Houses ordered cleaned (written)	0
6. Houses ordered cleaned (verbal)	121,257
7. Houses cleaned	120,496
8. Houses ordered whitewashed and painted	243
9. Houses whitewashed and painted	237
11. Number of houses recommended condemned and removed	0
12. Number of houses condemned and removed	0
13. Number of localities where "squatters" are located	12
14. Number of samples of water, foods, etc., sent to laboratory	1,530
15. Number of reports for same	1,253
16. Number of fire plugs opened or closed for sanitary purposes	0
17. Number of hydrants recommended reopened	0

General inspection of houses, premises, vaults, etc., with improvements ordered, whitewashed, cleaned, etc., by medical inspectors, sanitary inspectors, and assistant sanitary inspectors—Continued.

18. Number of houses where garbage has not been removed for two days	1,698
19. Number of persons reported sick to municipal physicians	10,884
20. Cesspools and vaults ordered cleaned	268
21. Cesspools cleaned	208
22. Yards ordered cleaned	69,135
23. Yards cleaned	68,107
24. Yards ordered repaired (repaved, etc.)	2
25. Yards repaired	2
26. Number of cholera cases reported by sanitary inspectors	282
27. Number of cholera cases found alive	535
28. Number of cholera cases found dead	313
29. Number of orders issued during the year	596
30. Number of orders complied with during the year	337
31. Number of orders awaiting action	52
32. Number of orders pending in court	119
33. Average number of food tiendas in the districts	2,865
34. Number of persons convicted for violation of food prohibition orders	129
35. Average number of regular inspectors on duty	35
36. Average number of regular emergency inspectors on duty	20
37. Number of leprosy cases sent to San Lazaro Hospital	35
38. Number of plague cases reported	0
39. Number of smallpox cases reported	190
40. Average number of houses in which traps were set	250
41. Average number of houses in which bane was placed	0
42. Average number of traps set	406
43. Average number of plates with ratsbane placed	5
44. Rats caught by rat catchers	74
45. Rats caught by traps	1,318
46. Rats caught by poison	36
47. Rats found dead	2
48. Average number of rat catchers employed	0
49. Number of persons vaccinated during the year	61,465

Report of disinfections.

Causes for disinfections.	Number of disinfections.	Number of contacts.	Causes for disinfections.	Number of disinfections.	Number of contacts.
Beriberi	140		Pulmonary gangrene	1	
Cattle disease	5		Rinderpest	20	
Chicken cholera	1		Septicemia	1	
Cholera	1,165	11,624	Smallpox	155	1,261
Cholera, suspected	81	1,008	Smallpox, suspected	9	19
Diphtheria	9	52	Syphilis	2	6
Dysentery	3	11	Tetanus	25	55
Exhumations	401		Tuberculosis	296	
Foot-and-mouth disease	91		Typhoid fever	84	163
Glanders	7		Undetermined	12	78
Glanders, suspected	1		Varicella	9	42
Insanitary conditions	4,281	698	Varioloid	43	475
Leprosy	88	405	Vermin	4	
Leprosy, suspected	3	17	Whooping cough	7	
Lymphangitis	1		Total	6,898	15,927
Malignant tumor	1	3			
Measles	2	10			

Report of operations of the pail-conservancy system.

Where cleaned.	Pail collections.				Cleaned by odorless excavators.		
	Number of installations.	Number of installations in use.	Pails in use.	Pails cleaned.	Vaults cleaned.	Vaults removed.	Gallons removed.
Private houses	4,361	1,899	6,589	733,121	2,108	2,361	1,420,509
Public buildings	121	55	969	67,816	74	1,549½	774,760
Midden sheds	136	125	5,898	463,964			
Military buildings	30	7	103	26,248	16	137	68,500
Mariquina				21,152			
Total	4,648	2,026	13,509	1,312,301	2,198	4,047½	2,273,769

Disposition of dead bodies.

Disposition.	Number.	Disposition.	Number.
Buried:		Buried—Continued.	
Norte cemetery	6,556	San Pedro Macati cemetery	5
Paco cemetery (1 fœtus)	294	Chinese cemetery	321
Santa Cruz cemetery	121	Maytubig cemetery	41
Binondo cemetery	367	Otherwise disposed of:	
Balicbalic cemetery	1,350	Embalmed for shipment to United States	15
San Marcelino cemetery	234	Transferred to provinces	40
Ermita cemetery	262	Preserved in alcohol (fœtuses)	4
Malate cemetery (1 fœtus)	418	Cremated	21
Pandacan cemetery, Roman Catholic	98	Remaining in Malecon Morgue	13
Pandacan cemetery, Filipino Church	210	Total	[a]10,642
Santa Ana cemetery	272		

[a] Of this total 12 are from the Malecon Morgue remaining from last year; 22 dead bodies brought from the provinces; 1 remains unearthed and 320 fœtuses. The 2 fœtuses appearing in parentheses were buried with their mothers.

Disinterments.

Cemeteries.	Number.	Cemeteries.	Number.
Paco	119	Malate	22
Norte	17	Balicbalic	25
Loma	4	Chinese	102
Tondo	36	Recoletos Church	1
Santa Cruz	81		
Binondo	8	Total	415

89 disinterments are not included here, requested by the Administrator of Santa Cruz cemetery on account of expiration of legal term.

Report of cremations at Palomar crematory.

Disposition.	Number.	Disposition.	Number.
Animals cremated:		Animals cremated—Continued.	
Native ponies	28	Chinese horses	1
Carabaos	37	Hogs	105
Calves	7	Total	3,271
Dogs	291		
Goats	71		
Cats	232	Refuse cremated:	
Rats	21	Garbage	186
Sheep	4	Beach refuse	7
Fowls	1,639	Trade refuse	212
Pigs	696	Organic matter	92
Australian horses	2	Market refuse	397
Cows	124	Slops	2,010
Monkeys	4	Condemned goods	303
Deer	8		
American horses	1	Total	3,157

Report of Malecon Morgue.

Disposition of dead bodies.	Number.	Disposition of dead bodies.	Number.
Remaining from last year	12	Transferred to Army Morgue	1
Received	554	Transferred to Philippine Medical School	[a]2
Total	566	Transferred to provinces	8
		Remaining in Morgue	13
Buried by family	55		
Buried by city	484	Total	566
Transferred to San Lazaro Morgue	8		

[a] 1 embryo and 1 fœtus.

Report of action taken on application for licenses.

Kind of license applied for.	Approved.	Disapproved.	Total acted upon.	Kind of license applied for.	Approved.	Disapproved.	Total acted upon.
Liquor:				Embalming	4		4
First-class bars	92		92	To sell fresh milk	3		3
Second-class bars	85		85	Tattooers	9		9
First-class bars and restaurants	40	5	45	Ice cream, sweetmeats, and soft drinks	6	3	9
First-class bars and second-class restaurants	3	1	4	Ferry boats	2		2
Second-class bars and restaurants	14		14	Dyeing	13	1	14
Wholesale	52		52	Stock yards	2		2
Groceries	87	1	88	Merry-go-rounds	2		2
Druggists	6		6	Junk shops	2		2
Theaters	15		15	Shooting gallery	2		2
Hotels	19	1	20	To conduct a dairy, also to sell fresh milk	1		1
Restaurants	713	217	930	Dance halls	28	5	33
Boarding houses	19	3	22	Bill posting and street advertising agency	2		2
Lodging houses	14	3	17	Slot machines	1		1
Distilleries	9	1	10	Pawnbrokers	2		2
Native wines	2,751	81	2,832	Theaters	7		7
Breweries	1		1	Cinematographs	1		1
Auctioneers	2		2	Aerated water	1		1
Clubs	44	2	46	Groceries	3		3
Cooked foods, fruits, bakery products, and soft drinks	2,737	220	2,957	Matches	2		2
Bakeries	8		8	Firecrackers	1		1
Manufactures	254	45	299	Master plumbing	1		1
Livery stables	57	1	58	Kerosene oil	1		1
Barber shops	435	16	451	Parade, circus	1		1
Laundries	32	3	35				
Billiard and pool tables	117	16	133	Total	7,703	625	8,328

Reports received of lepers living in the various provinces of the Philippine Islands.

Province.	Race.	Number of—		Children.		Single.		Married.		Widowers.	Widows.	Total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.			
Abra	Filipino	1	2				1	1	1			3
Albay	do	2		1				1				2
Ambos Camarines	do											10
Bulacan	do											15
Cagayan	do											20
Cebu	do											10
Culion	(1)	1,087	654	203	106	478	275	344	180	62	93	1,741
Ilocos Norte	Filipino											5
Ilocos Sur	do											5
Iloilo	do	8	1			2		6	1			9
Isabela	do											2
Lepanto-Bontoc	do											15
Misamis	do											2
Moro	do	143	77	3	3	86	44	45	18	9	12	220
Nueva Ecija	do	32	15	1		11	4	16	8	4	3	47
Pampanga	do											2
Rizal	do											3
Samar	do											2
Sorsogon	do		1						1			1
Tayabas	do											3
Zambales	do											2
San Lazaro Hospital	(2)	102	58	14	6	48	28	33	8	7	11	155
Total		1,375	808	222	115	625	352	446	217	82	119	2,278

[1] Filipinos, 1,736; Chinese, 3; and Europeans, 2. Total, 1,741.
[2] Filipinos, 149; Chinese, 5; and Other, 1. Total, 155.

Reports received of insane persons living in the various provinces of the Philippine Islands.

Province.	Race.	Number of—		Children.		Single.		Married.		Widowers.	Widows.	Total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.			
Abra	Filipino	29	14	1	------	21	6	7	4	------	4	43
Albay	do	39	58	1	1	27	40	7	10	4	7	97
Ambos Camarines	do	88	56	3	1	61	39	11	8	8	8	139
Antique	do	34	32	------	------	21	18	10	10	3	4	66
Bataan	do	16	13	------	------	7	4	7	3	2	6	29
Batangas	do	68	58	4	------	45	39	9	8	5	11	121
Bohol	do	279	280	11	7	209	212	50	45	9	16	559
Bulacan	do	33	32	------	------	22	17	7	9	4	6	65
Cagayan	do	17	15	------	------	12	8	3	4	2	3	32
Capiz	do	62	66	2	1	44	28	12	21	4	16	128
Cavite	do	35	37	------	------	21	21	7	11	7	5	72
Cebu	do	175	108	20	13	129	78	24	9	2	8	283
Ilocos Norte	do	69	35	------	------	49	25	16	6	4	4	104
Ilocos Sur	do	94	53	1	------	67	32	17	18	9	3	147
Iloilo	do	71	67	1	------	53	41	12	15	5	11	138
Isabela	do	9	6	------	------	4	1	5	5	------	------	15
La Laguna	do	33	31	------	------	24	14	6	5	3	12	64
Lepanto-Bontoc	do	20	21	4	1	14	10	2	7	------	3	41
Leyte	do	34	17	3	------	27	13	3	4	1	------	51
Masbate	do	19	8	------	------	14	7	4	1	1	------	27
Mindoro	do	9	7	------	------	8	4	1	2	------	1	16
Misamis	do	57	49	------	------	41	31	11	11	5	7	106
Negros Occidental	do	61	32	------	------	45	19	9	7	7	6	93
Negros Oriental	do	64	47	------	------	49	38	11	4	4	5	111
Nueva Ecija	do	22	23	------	1	18	13	3	7	1	2	45
Nueva Vizcaya	do	4	5	------	------	4	1	------	3	------	1	9
Pampanga	do	37	39	------	------	27	17	10	13	------	9	76
Pangasinan	do	114	95	2	------	60	41	34	36	18	18	209
Rizal	do	47	30	------	------	32	16	9	10	6	4	77
Romblon	do	6	------	------	------	3	------	3	------	------	------	6
Samar	do	19	8	------	1	14	3	4	3	1	1	27
Sorsogon	do	65	48	2	2	49	31	13	8	1	7	113
Surigao	do	6	3	------	------	3	2	2	------	1	1	9
Tarlac	do	15	10	1	------	6	6	7	2	1	2	25
Tayabas	do	127	114	2	5	100	74	22	21	3	14	241
Union	do	45	30	1	4	21	16	19	8	4	2	75
Zambales	do	5	8	------	------	5	5	------	------	------	3	13
San Lazaro Hospital	(1)	120	16	------	------	73	8	36	6	11	2	136
Total		2,037	1,571	59	87	1,429	978	413	344	136	212	3,608

[1] Americans, 2; Filipinos, 129; Chinese, 2; Europeans, 2; and Others, 1. Total, 136.

Reports received of blind persons living in the various provinces of the Philippine Islands.

Province.	Race.	Number of—		Children.		Single.		Married.		Widowers.	Widows.	Total.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.			
Abra	Filipino	42	57	3	------	12	6	6	12	21	39	99
Albay	do	77	61	6	5	46	44	21	5	4	7	188
Ambos Camarines	do	98	67	8	6	53	41	27	4	10	16	165
Antique	do	72	59	9	4	28	23	20	10	15	22	181
Bataan	do	9	8	------	------	7	7	2	------	------	1	17
Batangas	do	31	17	3	------	16	6	10	3	2	8	46
Bohol	do	211	160	37	16	109	82	47	29	18	33	371
Bulacan	do	122	82	14	6	44	35	37	17	27	24	204
Cagayan	do	51	64	3	4	15	14	18	13	15	33	115
Capiz	do	92	77	3	3	35	31	43	15	11	28	169
Cavite	do	75	52	6	3	31	20	29	16	9	13	127
Cebú	do	74	44	8	2	37	17	18	12	11	13	118
Ilocos Norte	do	78	72	3	------	21	21	27	9	27	42	150
Ilocos Sur	do	75	86	6	3	22	29	30	27	17	27	161
Iloilo	do	49	46	9	5	27	24	7	2	6	15	95
La Laguna	do	76	56	11	3	26	20	24	11	15	22	182
Lepanto-Bontoc	do	49	32	------	------	------	------	------	------	------	------	81
Leyte	do	326	195	64	22	168	95	57	29	37	49	521
Masbate	do	27	18	1	1	18	9	4	4	4	4	45
Misamis	do	54	23	7	3	33	10	9	7	5	3	77
Negros Occidental	do	105	84	7	7	50	32	20	16	28	29	189
Nueva Ecija	do	43	42	8	8	16	13	12	9	12	17	85
Pampanga	do	128	112	11	10	64	50	32	15	21	37	240
Pangasinan	do	63	51	2	6	21	16	26	13	14	16	114
Rizal	do	102	69	5	4	43	32	44	9	10	24	171
Romblon	do	22	10	5	1	9	4	6	4	2	1	32
Samar	do	133	69	------	------	67	29	32	20	34	20	202
Sorsogon	do	183	105	27	18	120	66	28	8	8	13	288
Surigao	do	1	------	------	------	------	------	1	------	------	------	1
Tarlac	do	32	26	2	1	12	11	8	4	10	10	56
Tayabas	do	37	32	6	2	18	9	8	9	5	12	69
Unión	do	34	40	5	7	13	9	8	10	8	14	74
Zambales	do	18	10	------	------	10	2	6	2	2	6	28
Total	----------	2,589	1,926	274	145	1,191	807	667	344	408	598	4,515

Returns of vaccinations from the provinces where systematic vaccinations have been made during the fiscal year 1908–9.

[Closed July 14, 1909.]

Province.	Period.		Number of vaccinations.	Number of inspections.	Successful vaccinations.	Unsuccessful vaccinations.	Average vaccinations per 1,000 population.
	From—	To—					
Capiz	Nov. 6, 1906	May 31, 1909	370,505	202,685	117,981	90,704	1,646.01
Iloilo[a]	Jan. 8, 1907	June 30, 1909	767,382	492,189	314,428	180,872	1,899.78
Misamis	Jan. 11, 1909	May 31, 1909	32,330	18,288	7,528	10,712	288.64
Mountain	Feb. 1, 1909	------do------	23,190	Inspection not possible.			78.51
Occidental Negros	Oct. 1, 1906	------do------	474,598	288,288	238,888	182,550	1,562.90
Surigao	Jan. 1, 1908	Oct. 31, 1908	88,407	68,275	86,118	82,162	890.92
Total and average	----------	----------	1,756,407	1,064,672	714,878	457,000	1,184.42

[a] Report for April 1909 not received.

Amount of vaccine virus distributed by the Bureau of Health.

	Units.
Number on hand July 1, 1908	2,861
Received from the Bureau of Science	2,782,700
Found at the Stations	24,989
Total to be accounted for	2,810,550
Distributed as per itemized statement	2,792,250
Remaining on hand June 30, 1909	18,300

Places at which vaccine virus was distributed.

Provinces:	Units.
Albay	69,700
Ambos Camarines	67,300
Antique	15,700
Bataan	44,900
Batanes	2,000
Batangas	41,800
Benguet	5,800
Bulacan	28,600
Capiz	172,000
Cavite	47,700
Cebú	490,000
Culion	9,400
Cuyo	1,500
Ilocos Norte	30,000
Ilocos Sur	24,900
Iloilo	860,000
Isabela	500
Laguna	47,300
Lepanto-Bontoc	22,000
Leyte	1,400
Marinduque	4,200
Mindoro	2,500
Misamis	40,000
Nueva Ecija	61,950
Nueva Vizcaya	7,000
Occidental Negros	15,000
Palawan	3,900
Pampanga	58,100
Pangasinan	67,500
Rizal	114,300
Romblon	500
Samar	25,000
Sorsogon	28,400
Surigao	50,600
Tarlac	37,900
Tayabas	21,300
Union	19,300
Zambales	78,900
Total	2,618,850
Manila:	
Health Districts	146,300
Other Institutions	27,100
Total	173,400
Grand total	2,792,250

Report of sera.

	Antipestic.	Plague prophylactic.	Assorted.
Bottles on hand at the beginning of the year	230	1,024	121
Received from the Bureau of Science			119
Total to be accounted for	230	1,024	240
Issued			107
Total bottles at end of the year	230	1,024	133

Smallpox and plague[a] report for Manila.

Nationality.	Smallpox.			
	Cases.		Deaths.	
	Male.	Female.	Male.	Female.
Americans	10	4	4	2
Filipinos	130	80	37	27
Foreigners	9	8		
Chinese	2		1	
Total	151	92	42	29

[a] No cases of plague.

Smallpox and plague[a] report for Manila—Continued.

District and age.	Smallpox.	
	Cases.	Deaths.
Health districts:		
No. 1, Intramuros	64	10
No. 2, Meisic	66	15
No. 4, Sampaloc	39	19
No. 5, Tondo	55	19
No. 6, Paco	17	8
Total	243	71
Ages:		
Under 1 year	17	10
1 year to 10 years	110	40
10 years to 20 years	40	9
20 years to 30 years	46	10
30 years to 40 years	25	2
40 years to 50 years	4	----
Over 50 years	1	----
Total	243	71

[a] No cases of plague.

Number of cases found alive	223
Number of cases found dead	20

Cholera report, city of Manila.

Nationality.	Cases.		Deaths.	
	Male.	Female.	Male.	Female.
Americans	20	9	6	4
Filipinos	488	385	321	274
Foreigners	29	13	7	4
Chinese	37	----	33	----
Total	574	407	367	282

District and age.	Cases.	Deaths.
Health districts:		
No. 1, Intramuros	163	80
No. 2, Meisic	297	208
No. 4, Sampaloc	166	102
No. 5, Tondo	276	200
No. 6, Paco	79	59
Total	981	649
Ages:		
Under 1 year	7	7
1 year to 10 years	201	156
10 years to 20 years	148	82
20 years to 30 years	277	149
30 years to 40 years	156	102
40 years to 50 years	97	77
Over 50 years	87	70
Unknown	8	6
Total	981	649

Number of cases found alive	646
Number of cases found dead	335

Cases and deaths from cholera in the city of Manila, from January 1, 1908 to January 1, 1909.

BY AGES.

Age.	Cases.	Deaths.	Mortality.
			Per cent.
Under 30 days			
1 month to 2 years	49	41	83.67
2 to 5 years	125	108	86.40
5 to 10 years	71	47	66.19
10 to 15 years	39	20	51.28
15 to 20 years	135	84	62.22
20 to 25 years	185	101	54.59
25 to 30 years	162	104	64.19
30 to 35 years	90	60	66.66
35 to 40 years	103	71	68.93
40 to 45 years	53	37	69.81
45 to 50 years	62	53	85.48
50 to 55 years	19	14	73.68
55 to 60 years	41	36	87.80
60 to 65 years	12	9	75.00
65 to 70 years	14	12	85.71
70 to 75 years	8	7	87.50
75 to 80 years	6	5	83.33
80 to 85 years	3	3	100.00
85 to 90 years	1	1	100.00
Over 90 years			
Unknown	8	6	75.00
Total	1,186	819	69.05

BY RACE.

Race.	Cases.	Deaths.	Mortality.	1 case to—	Date of last case.
			Per cent.		
Americans	37	12	32.43	140	Dec. 26, 1908
Filipinos	1,047	745	71.15	186	Dec. 26, 1908
Chinese	51	46	90.19	353	Nov. 22, 1908
Foreigners	51	16	31.37	98	Nov. 23, 1908
Total	1,186	819	69.05	188	

Cholera in the provinces.

Towns.	Cases.	Deaths.
Abra:		
Bangued	52	30
Bucay	1	1
Danglas	5	
Dolores	1	
Total	59	31
Albay:		
Camalig	32	23
Libog	1	
Libon	39	8
Oas	93	73
Polangui	81	34
Total	246	138
Ambos Camarines:		
Nabua	17	17
Antique:		
Aniny	133	28
Bugasson	53	27
Dao	186	43
Pandan	1	1
Patnongon	236	101
San Jose	353	216
Antique—Continued.		
Sibalom	420	199
Total	1,412	615
Bataan:		
Mariveles	1	1
Olongapo	3	3
Orani	1	1
Total	5	5
Batangas:		
Bauan	7	4
Bohol:		
Calape	8	5
Dauis	14	12
Loay	9	7
Loon	336	183
Maribojoc	77	48
Panglao	15	11
Tagbilaran	46	29
Tubigon	117	83
Total	622	378

Cholera in the provinces—Continued.

Towns.	Cases.	Deaths.
Bulacan:		
Angat	1	1
Baliuag	59	39
Bigaa	1	1
Bocaue	23	15
Bulacan	76	62
Calumpit	16	10
Hagonoy	29	23
Malolos	67	44
Maycauayan	12	8
Obando	79	54
Paombong	39	26
Polo	8	4
Pulilan	40	39
Quingua	93	61
San Rafael	1	1
Santa Maria	10	9
Total	554	397
Cagayan:		
Abulug		1
Alcala	136	77
Amulung	13	13
Aparri	72	47
Baggao	26	26
Camalaniugan	39	35
Enrile	22	20
Gattaran	71	71
Iguig	24	11
Manauan	28	9
Pamplona	1	1
Peñablanca	15	9
Piad	1	1
San Antonio	4	4
Santo Niño	31	18
Solana	6	2
Tuguegarao	191	103
Total	680	443
Capiz:		
Calibo	528	300
Capiz	45	33
Dao	37	22
Dumalag	40	24
Dumarao	82	52
Ibahay	463	238
Ibisan	7	8
Jamindan	24	22
Manbusao	24	12
Navas	149	75
New Washington	57	31
Panay	68	42
Panitan	15	12
Pilar	66	44
Pontevedra	82	59
Sapian	13	11
Taft	184	101
Tapas	127	93
Total	2,006	1,179
Cavite:		
Bacoor	1	
Cavite	48	36
Imus	19	11
Kawit	49	40
Maragondon	1	1
Naic	8	6
Noveleta	80	17
Rosario	58	39
San Francisco Malabon	14	9
Total	228	159
Cebu:		
Balamban	13	13
Carcar	7	4
Cebu	6	6

Towns.	Cases.	Deaths.
Cebu—Continued.		
Daan Bantayan	3	2
Oslob	13	4
Toledo	4	2
Total	51	31
Ilocos Norte:		
Bacarra	1	1
Batac	61	28
Dingras	24	13
Laoag	272	199
Paoay	12	8
Piddig	2	2
San Miguel	16	7
San Nicolas	5	5
Total	393	263
Ilocos Sur:		
Banayoyo	37	27
Cabugao	17	10
Candon	496	423
Magsingal	2	2
Nagbuquel	35	23
Narvacan	339	249
Peñarrubia	5	1
Pilar	4	
San Esteban	3	2
Santa	123	68
Santa Catalina	34	25
Santa Cruz	190	102
Santa Lucia	242	159
Santa Maria	272	220
Santiago	29	21
Santo Domingo	5	3
Vigan	397	266
Total	2,280	1,611
Iloilo:		
Alimodian	72	43
Anilao	127	84
Arévalo	24	18
Bacacay	9	4
Balasan	3	1
Banate	334	208
Barotac Nuevo	385	241
Buenavista	124	74
Cabatuan	279	141
Dingle	242	126
Dumangas	711	354
Estancia	4	4
Guimbal	264	144
Iloilo	552	423
Janiuay	468	279
Jaro	365	249
Lambunao	25	13
Leganes	194	119
Leon	131	77
Lucena	96	56
Maasin	3	3
Miagao	50	26
Mina	102	33
Oton	321	167
Passi	215	106
Pavia	72	58
Pototan	686	515
San Miguel	99	69
Santa Barbara	310	206
Sara	33	16
Tigbauan	120	61
Zarraga	424	352
Total	6,949	4,210
Isabela:		
Ilagan	126	75
Tumauini	18	18
Total	144	93

Cholera in the provinces—Continued.

Towns.	Cases.	ths.
Laguna:		
Bifian	16	14
Cabuyao	4	4
Calamba	29	20
Lumbang	1	1
Paete	1	
Pagsanhan	1	1
Pangil	26	15
Pila	1	1
San Pedro Tunasan	34	18
Santa Cruz	17	10
Santa Rosa	36	18
Total	166	102
Leyte:		
Babatungon	17	13
Basey	4	
Burauen	1	
Carigara	12	8
Dagami	31	20
Dulag	4	1
Gandara	23	14
Naval	3	
Palo	10	8
Tacloban	100	58
Tanawan	51	30
Total	256	147
Misamis:		
Balingasag	161	65
Cagayan	816	241
Mambajao	67	41
Tagoloan	118	38
Total	1,162	385
Moro:		
Dapitan	87	62
Davao	32	14
Lasang	16	12
Madaan	12	8
Piso	4	4
Samal Island	2	2
Santa Cruz	1	
Siraoan	11	8
Zamboanga	2	2
Total	167	112
Mountain:		
Antimoc	1	1
Ambaugonan	7	7
Baguio	4	1
Bagulin	11	11
Camp-Six-and-a-half	1	
Cervantes	1	1
Pagsan	2	2
Tagudin	74	50
Tongan	2	1
Tinglayan	27	15
Twin Peaks	1	
Total	131	89
Nueva Ecija:		
Cabanatuan	3	1
Cabiao	1	
Cuyapo	317	260
Gapan	1	1
Licab	6	6
Nampicuan	1	1
San José	48	35
San Juan	9	6
Santo Domingo	4	4
Total	390	314

Towns.	Cases.	Deaths.
Occidental Negros:		
Bacolod	182	99
Bago	294	172
Binalbagan	158	106
Cabancalan	276	163
Cadiz	58	40
Cauayan	52	27
Escalante	362	189
Ilog	457	206
Isabela	227	139
Jimamaylan	208	119
Jinigaran	282	187
La Carlota	483	351
Manapla	79	43
Murcia	58	14
Pontevedra	247	133
Sagay	145	91
San Carlos	89	37
Saravia	150	127
Silay	348	301
Talisay	103	75
Valladolid	420	322
Victorias	45	33
Total	4,708	2,974
Oriental Negros:		
Ayuquitan	61	43
Tayasan	16	4
Total	77	47
Pampanga:		
Angeles	4	4
Apalit	4	1
Arayat	7	5
Bacolor	49	33
Betis	44	39
Candaba	3	1
Floridablanca	1	1
Guagua	18	13
Lubao	12	11
Mabalacat	1	1
Macabebe	1	
Masantol	5	4
Mexico	4	3
Minalin	4	3
Porac	17	6
San Fernando	63	49
Santa Rita	4	4
Sexmoan	56	38
Total	297	216
Pangasinan:		
Aullar	1	1
Alaminos	1	
Alava	3	3
Alcala	177	63
Asingan	142	92
Balungao	95	54
Bautista	53	46
Bayambang	70	56
Binalonan	104	48
Bolinao	1	1
Calasiao	46	31
Camp One	2	1
Dagupan	27	25
Malasiqui	27	17
Manaoag	144	109
Mangaldan	84	54
Mangataren	20	8
Natividad	56	35
Pozorrubio	278	122
San Carlos	202	86
San Fabian	4	6
San Jacinto	29	14

Cholera in the provinces—Continued.

Towns.	Cases.	Deaths.
Pangasinan—Continued.		
San Manuel	98	61
San Nicolas	388	248
San Quintin	194	182
Santa Maria	57	39
Tayug	241	124
Umingan	40	29
Urbistondo	199	106
Urdaneta	17	9
Total	2,800	1,665
Palawan:		
Cuyo	88	70
Rizal:		
Antipolo	4	2
Binangonan	14	11
Cainta	5	4
Caloocan	22	15
Jalajala	4	4
Las Piñas	2	2
Malabon	62	47
Mariquina	160	134
Montalban	5	2
Muntinlupa	1	1
Navotas	73	63
Parañaque	18	14
Pasay	27	26
Pasig	114	98
San Felipe Neri	4	3
San Juan del Monte	8	5
San Mateo	128	95
San Pedro Macati	6	5
Taguig	49	22
Tanay	1	1
Taytay	30	28
Total	737	577
Samar:		
Allen	3	3
Balanginga	6	6
Bobon	2	2
Calbayog	66	43
Calbiga	17	8
Catbalogan	79	36
Catuayan	28	28
Guiuan	302	280
Laoang	3	4
Santa Cruz	4	
Santa Margarita	2	
Tanauan	7	6
Samar—Continued.		
Villareal	22	20
Wright	4	
Zumarraga	3	3
Total	548	436
Sorsogon:		
Dimasalang	62	43
Masbate	57	45
Milagros	8	6
Mobo	44	36
Sorsogon	4	3
Total	175	133
Surigao:		
Butuan	93	44
Hinatuan	150	150
Total	243	194
Tarlac:		
Camiling	249	197
Gerona	1	1
Moncada	98	69
Paniqui	27	19
Tarlac	1	1
Victoria	13	12
Total	334	299
Tayabas:		
Mauban	1	1
Union:		
Agoo	60	35
Aringay	17	16
Bacnotan	61	58
Balaoan	138	102
Bangar	55	49
Bawang	142	117
Camp Wallace	1	1
Luna	142	70
Naguilian	171	144
Pidigan	1	1
Rosario	7	4
San Fernando	320	210
San Juan	71	45
Santo Tomas	29	25
Tubao	31	19
Total	1,309	915

SUMMARY BY PROVINCES.

	Cases.	Deaths.	Mortality.
			Per cent.
Abra	59	31	52.87
Albay	246	138	56.09
Ambos Camarines	17	17	100.00
Antique	1,412	615	43.55
Bataan	5	5	100.00
Batangas	7	4	57.14
Bohol	622	378	60.86
Bulacan	554	397	71.66
Cagayan	680	443	65.14
Capiz	2,006	1,179	58.77
Cavite	228	159	69.78
Cebu	51	31	60.78
Ilocos Norte	293	263	89.76
Ilocos Sur	2,230	1,611	72.24
Iloilo	6,949	4,210	60.58
Isabela	144	93	64.58
Laguna	166	102	61.44
Leyte	256	147	57.42
Misamis	1,162	385	33.08
Mountain	131	89	67.93
Moro	167	112	67.06
Nueva Ecija	390	314	80.51
Occidental Negros	4,708	2,974	63.16
Oriental Negros	77	47	61.03
Pampanga	297	216	72.72
Pangasinan	2,800	1,665	59.46
Paragua	83	70	84.33
Rizal	737	577	78.29
Samar	548	438	79.92
Sorsogon	175	138	78.85
Surigao	243	194	79.83
Tarlac	384	293	76.40
Tayabas	1	1	100.00
Union	1,309	915	69.90
Grand total and average	28,137	18,251	64.90

NOTE.—The information in this table is based upon corrected and revised reports, including delayed reports, received up to July 14, 1909.

Cholera statistics arranged in the order in which the towns became infected.

Date of first case.	Town.	Province.	Highest number of cases.	Date of last case.	Total number of cases.
July 1	Capiz	Capiz	July 30	Feb. 17	45
July 1	Jamindan	do	Jan. 8	Feb. 26	24
July 1	Mambusao	do	July 5	July 28	24
July 1	Panay	do	Dec. 23	Apr. 4	68
July 1	Panitan	do	Feb. 1	Mar. 25	15
July 1	Santa Maria	Ilocos Sur	July 19	Sept. 23	272
July 1	Balingasag	Misamis	July ?	Aug. 12	161
July 1	Tagoloan	do	Aug. 8	Sept. 3	118
July 1	Cuyapo	Nueva Ecija	July 22	Aug. 30	317
July 1	Alcala	Pangasinan	July 3	Aug. 16	177
July 1	Asingan	do	July 14	Aug. 22	142
July 1	Balungao	do	July 4	Aug. 17	95
July 1	Bautista	do	July 4	Aug. 6	53
July 1	Bayambang	do	July 13	Aug. 12	70
July 1	Binalonan	do	July 6	Aug. 1	104
July 1	Calasiao	do	July 15	Sept. 13	46
July 1	Dagupan	do	July 3	July 17	27
July 1	Manaog	do	July 7	Sept. 28	144
July 1	Natividad	do	July 15	July 29	56
July 1	Pozorrubio	do	July 13	Aug. 29	278
July 1	San Jacinto	do	July 15	July 27	29
July 1	San Manuel	do	July 3	July 27	98
July 1	San Quintin	do	July 5	Aug. 13	194
July 1	Santa Maria	do	July 21	Aug. 23	57
July 1	Tayug	do	July 12	Aug. 12	241
July 1	Urbiztondo	do	July 1	July 25	199
July 1	Urdaneta	do	July ?	July 19	17
July 1	Caloocan	Rizal	Sept. 18	Nov. 7	22
July 1	Camiling	Tarlac	July 14	Aug. 14	249
July 1	San Fernando	Union	July 16	Sept. 13	320
July 2	Pontevedra	Capiz	Mar. 16	May 2	82

Cholera statistics arranged in the order in which the towns became infected—Ctd.

Date of first case.	Town.	Province.	Highest number of cases.	Date of last case.	Total number of cases.
July 2	Malasiqui	Pangasinan	July 11	July 26	27
July 2	San Carlos	do	July 11	Aug. 21	202
July 2	San Nicolas	do	July 11	Dec. 12	388
July 3	Pilar	Capiz	July 13	May 3	66
July 3	Mangaldan	Pangasinan	July 6	Aug. 23	84
July 3	Umingan	do	July 3	July 25	40
July 4	San José	Nuva Ecija	July 10	Aug. 13	48
July 4	Santo Tomas	Union	Aug. 18	Aug. 25	29
July 6	Cagayan	Misamis	July 9	Mar. 15	816
July 6	Moncada	Tarlac	July 8	Aug. 17	93
July 6	Paniqui	do	July 16	Aug. 30	27
July 6	Bauang	Union	Aug. 7	Aug. 28	142
July 6	Naguilian	do	July 14	Aug. 26	171
July 9	Bacolor	Pampanga	June 23	June 30	49
July 10	Narvacan	Ilocos Sur	July 30	Sept. 13	339
July 10	Parañaque	Rizal	Nov. 10	Jan. 10	18
July 10	San Juan	Union	Aug. 2	Oct. 19	71
July 11	Camp One	Pangasinan	July 11	Oct. 4	2
July 11	Bacnotan	Union	Aug. 9	Sept. 18	81
July 12	Barrotac Nuevo	Iloilo	Sept. 2	Nov. 17	385
July 12	Gerona	Tarlac	July 12	July 12	1
July 13	Camp 6½	Mountain	July 13	July 13	1
July 14	Candon	Ilocos Sur	Aug. 7	Sept. 7	496
July 14	Nagbuquel	do	Aug. 1	Aug. 10	35
July 15	Baguio	Mountain	July 15	May 26	4
July 15	Santa Lucia	Ilocos Sur	Aug. 8	Sept. 11	242
July 15	Luna	Union	Aug. 31	Sept. 18	142
July 17	Bulacan	Bulacan	Aug. 3	Dec. 3	76
July 17	Santa Cruz	Ilocos Sur	Aug. 26	Sept. 7	190
July 18	Guagua	Pampanga	Mar. 19	June 24	18
July 18	San Fernando	do	July 20	June 29	68
July 19	Jaro	Iloilo	Aug. 12	Nov. 4	365
July 19	Victoria	Tarlac	July 20	Sept. 7	13
July 20	Tongan	Mountain	July 20	July 20	2
July 20	Nampicuan	Nueva Ecija	July 20	July 20	1
July 20	Betis	Pampanga	Mar. 11	Jan. 28	44
July 21	Ibisan	Capiz	July 22	Nov. 15	7
July 22	Santiago	Ilocos Sur	July 28	Aug. 16	29
July 23	Navotas	Rizal	Aug. 13	Nov. 11	73
July 24	Twin Peaks	Mountain	July 24	July 24	1
July 24	Dumangas	Iloilo	Aug. 17	Nov. 15	711
July 24	Santa Barbara	do	Sept. 29	Nov. 11	310
July 24	Tarlac	Tarlac	July 24	July 24	1
July 25	San Fabian	Pangasinan	July 26	July 31	4
July 26	Bagulin	Mountain	Aug. ?	Aug. 27	11
July 26	Malolos	Bulacan	Sept. 14	Feb. 22	67
July 26	Tagbilaran	Bohol	Jan. 14	Feb. 24	46
July 26	San Esteban	Ilocos Sur	July 26	July 26	3
July 26	Angeles	Pampanga	Aug. 11	Oct. 9	4
July 27	Banayoyo	Ilocos Sur	Aug. 8	Aug. 28	87
July 27	Zarraga	Iloilo	Aug. 7	Oct. 7	424
July 28	Iloilo	do	Aug. 19	June 12	552
July 28	Malabon	Rizal	Oct. 14	Nov. 8	62
July 30	Leganes	Iloilo	Aug. 8	Oct. 6	194
July 31	Pototan	do	Sept. 5	Jan. 7	696
August 1	Santa Rita	Pampanga	Aug. 7	Nov. 26	4
August 1	Alava	Pangasinan	Aug. ?	Aug. 13	3
August 1	Agoo	Union	Aug. 1	Oct. 31	60
August 1	Balaoan	do	Aug. 31	Sept. 29	158
August 1	Bangar	do	Aug. 27	Nov. 3	88
August 1	Tubao	do	Aug. ?	Sept. 14	31
August 1	Bangued	Abra	Nov. 12	Nov. 16	52
August 2	San Juan	Nueva Ecija	Aug. 10	Aug. 13	9
August 3	Antimoc	Mountain	Aug. 3	Aug. 3	1
August 4	Bocaue	Bulacan	Aug. 10	Nov. 9	23
August 4	Buenavista	Iloilo	Nov. 19	Nov. 25	124
August 4	Leon	do	Oct. 3	Dec. ?	191
August 5	Aringay	Union	Aug. 3	Aug. 25	17
August 6	Lucena	Iloilo	Sept. 29	Sept. 30	98
August 7	Obando	Bulacan	Sept. 6	Nov. 28	79
August 7	Valladolid	Occidental Negros	Sept. 15	Nov. 7	420
August 8	Cabatuan	Iloilo	Sept. 8	Oct. 23	279
August 8	Bago	Occidental Negros	Sept. 28	Nov. 14	294
August 9	Maasin	Iloilo	Aug. 9	Aug. 13	3
August 9	Licab	Nueva Ecija	Aug. 9	do	6
August 10	Santo Damingo	do	Aug. 14	Aug. 15	4
August 11	Polo	Bulacan	Sept. ?	Oct. 16	8
August 11	Navas	Capiz	Jan. 8	Feb. 19	149
August 11	Bolinao	Pangasinan	Aug. 11	Aug. 11	1
August 11	Cabancalan	Occidental Negros	Sept. 11	Feb. 12	276
August 11	Binalbagan	do	Sept. 16	Oct. 27	186

Cholera statistics arranged in the order in which the towns became infected—Ctd.

Date of first case.	Town.	Province.	Highest number of cases.	Date of last case.	Total number of cases.
August 13	Pidigan	Union	Aug. 13	Aug. 13	1
August 14	Vigan	Ilocos Sur	Aug. 24	Dec. 28	397
August 14	Janiuay	Iloilo	Sept. 17	do	468
August 14	Oton	do	Sept. 23	Nov. 5	321
August 15	La Carlota	Occidental Negros	Sept. 11	Nov. 13	483
August 16	Baliuag	Bulacan	Sept. 3	Nov. 4	59
August 16	Rosario	Union	Aug. 23	Sept. 24	7
August 16	Ilog	Occidental Negros	Sept. 9	Oct. 10	457
August 17	Santa	Ilocos Sur	Sept. 3	Dec. 19	128
August 18	Mangatarem	Pangasinan	Aug. 18	Sept. 7	20
August 18	Jinigaran	Occidental Negros	Sept. 15	Nov. 26	282
August 19	Banate	Iloilo	Sept. 12	Oct. 27	384
August 19	Aguilar	Pangasinan	Aug. 19	Aug. 19	1
August 20	Arévalo	Iloilo	Sept. 24	Oct. 6	24
August 20	Cavite	Cavite	Oct. 6	Feb. 11	48
August 21	Santa Maria	Bulacan	Aug. 22	Nov. 27	10
August 21	Silay	Occidental Negros	Sept. 3	Nov. 11	348
August 24	Pilar	Ilocos Sur	Aug. 24	Aug. 24	4
August 24	Santa Catalina	do	Sept. 3	Dec. 19	34
August 24	Saravia	Occidental Negros	Oct. 15	Jan. 28	150
August 25	Peñarrubia	Ilocos Sur	Aug. 25	Aug. 26	5
August 25	Aniao	Iloilo	Sept. 22	Sept. 30	127
August 25	Pasig	Rizal	Sept. 25	Jan. 17	114
August 25	Jimamaylan	Occidental Negros	Sept. 3	Nov. 13	203
August 26	Dumarao	Capiz	Sept. 20	Oct. 31	82
August 26	Talisay	Occidental Negros	Oct. 10	Nov. 3	103
August 27	Paombong	Bulacan	Sept. 17	Oct. 18	39
August 28	Alimodian	Iloilo	Sept. 25	Sept. 30	72
August 28	San Miguel	do	Sept. 12	Nov. 28	99
August 28	San Carlos	Occidental Negros	Sept. 10	Sept. 20	89
August 29	Dingle	Iloilo	Sept. 29	Dec. ?	242
August 30	Quingua	Bulacan	Sept. 1	Feb. 3	93
August 30	Aniny	Antique	Sept. 2	Sept. 16	133
August 30	Patnongon	do	Sept. ?	Oct. 27	286
August 30	Sibalom	do	Oct. 14	Nov. 10	420
August 30	Dao	do	Sept. 19	Nov. 29	186
August 31	Tagudin	Mountain	Sept. 7	Nov. 27	74
August 31	Pavia	Iloilo	Sept. 1	Sept. 22	72
September 1	Maycauayan	Bulacan	Sept. 3	Dec. 2	12
September 1	Passi	Iloilo	Sept. 22	Oct. 16	218
September 1	Murcia	Occidental Negros	Oct. 20	Oct. 25	53
September 1	Bauan	Batangas	Sept. ?	Sept. 16	7
September 2	Manapla	Occidental Negros	Oct. 24	Nov. 2	79
September 2	Pontevedra	do	Sept. 8	Nov. 9	247
September 3	Santo Domingo	Ilocos Sur	Nov. 5	Nov. 5	5
September 3	Miagao	Iloilo	Oct. 6	Dec. 28	50
September 3	Taguig	Rizal	Oct. 3	Jan. 23	49
September 4	Balasan	Iloilo	Sept. 4	Sept. 22	3
September 4	Estancia	do	Sept. 12	do	4
September 6	Cabugao	Ilocos Sur	Sept. 7	Sept. 15	17
September 6	San Mateo	Rizal	Sept. 12	Jan. 12	128
September 6	Isabela	Occidental Negros	Sept. 23	Nov. 21	227
September 7	San Pedro Tunasan	Laguna	Nov. 1	Dec. 9	34
September 8	San José	Antique	Oct. 12	Jan. 12	383
September 8	Mina	Iloilo	Sept. 16	Sept. 30	102
September 9	Mariquina	Rizal	Dec. 27	June 16	160
September 9	San Juan del Monte	do	Sept. 19	Oct. 21	8
September 9	Bacolod	Occidental Negros	Oct. 7	Nov. 23	182
September 9	San Pedro Macati	Rizal	Oct. 11	Oct. 16	6
September 12	Calumpit	Bulacan	Sept. 19	Oct. 11	16
September 12	Hagonoy	do	Sept. 17	Dec. 13	29
September 12	Sagay	Occidental Negros	Jan. 10	Feb. 5	145
September 13	Mambajao	Misamis	Apr. 16	Apr. 21	67
September 14	Bigaa	Bulacan	Sept. 14	Sept. 14	1
September 14	San Felipe Neri	Rizal	Oct. 16	Oct. 20	4
September 14	Cuyo	Paragua	Oct. 8	Dec. 10	83
September 15	Lambunao	Iloilo	Sept. 15	Sept. 25	25
September 16	Antipolo	Rizal	Jan. 3	Jan. 14	4
September 16	Pasay	do	Oct. 3	Nov. 15	27
September 16	Camalaniugan	Cagayan	Feb. ?	Feb. ?	39
September 17	Ambangonan	Mountain	Sept. 20	Sept. 20	7
September 17	Dumalag	Capiz	Jan. 11	Jan. 21	40
September 17	Bacoor	Cavite	Sept. 17	Sept. 17	1
September 18	Naic	do	Dec. 28	Jan. 19	8
September 18	Noveleta	do	Sept. 22	Oct. 21	30
September 19	Cauayan	Occidental Negros	Sept. 25	Feb. 6	52
September 20	Mabalacat	Pampanga	Sept. 20	Sept. 20	1
September 20	Masantol	do	Sept. 21	Oct. 8	5
September 20	Taytay	Rizal	Jan. 13	Apr. 7	30
September 20	Victoria	Occidental Negros	Nov. 12	Nov. 22	45
September 21	Ibahay	Capiz	Oct. 29	Mar. 11	463

Cholera statistics arranged in the order in which the towns became infected—Ctd.

Date of first case.	Town.	Province.	Highest number of cases.	Date of last case.	Total number of cases.
September 24	Tigbauan	Iloilo	Oct. 7	Nov. 26	120
September 24	Porac	Pampanga	June 25	June 29	17
September 24	Rosario	Cavite	Oct. 2	Nov. 14	58
September 25	Paete	Laguna	Sept. 25	Sept. 25	1
September 25	Apalit	Pampanga	do	Oct. 12	4
September 26	Imus	Cavite	Oct. 15	Dec. 16	19
September 27	Guimbal	Iloilo	Oct. 9	Dec. 8	364
September 27	Cabiao	Nueva Ecija	Sept. 27	Sept. 27	1
September 28	Las Piñas	Rizal	Sept. 28	Nov. 8	2
September 29	Sexmoan	Pampanga	Jan. 30	June 24	56
September 30	Sara	Iloilo	June 2	June 6	33
October 1	Pulilan	Bulacan	Nov. 29	Dec. 18	40
October 1	Dao	Capiz	Oct. 25	Mar. 4	87
October 1	New Washington	do	Feb. 14	Mar. 18	57
October 1	Laoag	Ilocos Norte	Nov. 8	Jan. 15	272
October 2	Kawit	Cavite	Nov. 12	Dec. 22	49
October 2	Floridablanca	Pampanga	Oct. 2	Oct. 2	1
October 3	Macabebe	do	Oct. 3	Oct. 3	1
October 4	Orani	Bataan	Oct. 4	Oct. 4	1
October 4	San Francisco de Malabon	Cavite	Nov. 8	Jan. 18	14
October 4	Pangil	Laguna	Oct. 7	Oct. 30	26
October 4	Santa Cruz	do	Oct. 30	Dec. 19	17
October 4	Villareal	Samar	Oct. ?	Nov. 9	22
October 5	Arayat	Pampanga	Oct. 6	Oct. 8	7
October 5	Lumbang	Laguna	Oct. 5	Oct. 5	1
October 6	Babatungon	Leyte	Oct. ?	Nov. 9	17
October 9	Calbiga	Samar	Oct. ?	Dec. 21	17
October 13	Tuguegarao	Cagayan	Jan. 3	Apr. ?	191
October 14	Naval	Leyte	Oct. ?	Oct. 21	3
October 14	Davao	Moro	Nov. 22	Dec. 10	32
October 16	Gapan	Nueva Ecija	Oct. 16	Oct. 16	1
October 17	Mauban	Tayabas	Oct. 17	Oct. 17	1
October 18	Candaba	Pampanga	Oct. 18	Oct. 19	3
October 18	Jalajala	Rizal	Oct. 20	Oct. 23	4
October 19	Escalante	Occidental Negros	Mar. 27	May 4	362
October 20	Santa Rosa	La Laguna	Oct. 26	Dec. 9	36
October 20	Madawan	Moro	Oct. ?	Oct. 31	12
October 20	Piso	do	Oct. ?	Oct. 24	4
October 20	Santa Cruz	do	Oct. 20	Oct. 20	1
October 20	Siraoan	do	Oct. ?	Oct. 31	11
October 20	Hinatuan	Surigao	Oct. ?	Oct. 24	150
October 21	Bifian	La Laguna	Feb. 7	Feb. 28	16
October 21	Tacloban	Leyte	Dec. ?	Jan. 14	100
October 22	Bucay	Abra	Oct. 22	Oct. 22	1
October 22	Danglas	do	do	do	5
October 22	Dolores	do	do	do	1
October 23	Maragondon	Cavite	Oct. 23	Oct. 23	1
October 23	Pagsanhan	La Laguna	do	do	1
October 25	Dingras	Ilocos Norte	Nov. 2	Dec. 20	24
October 25	Lasang	Moro	Oct. ?	Oct. 31	16
October 26	Samal Island	do	Oct. 26	Oct. 26	2
October 27	Mariveles	Bataan	Oct. 27	Oct. 27	1
October 27	Aparri	Cagayan	Jan. ?	Jan. 31	72
October 28	Tanay	Rizal	Oct. 28	Oct. 28	1
October 30	Paoay	Ilocos Norte	Dec. ?	Dec. 31	12
October 31	Palo	Leyte	June ?	June 25	10
October 31	Montalban	Rizal	Oct. 31	Feb. 6	5
October 31	Balanguinga	Samar	do	Oct. 31	6
October?	Amulung	Cagayan	Mar. 15	Mar. 15	13
October?	Gattaran	do	Jan. ?	Jan. ?	71
October?	Abulug	do	Oct. ?	Oct. ?	
October?	Tayasan	Oriental Negros	Oct. ?	Nov. 12	16
November 1	Camp Wallace	Union	Nov. 1	Nov. 1	1
November 1	San Rafael	Bulacan	do	Nov. 1	1
November 1	Cabuyao	La Laguna	do	Dec. 8	4
November 2	Catbalogan	Samar	Nov. ?	June 25	79
November 3	Guiuan	do	Dec. ?	Dec. 15	302
November 6	Calibo	Capiz	Nov. 17	Feb. 8	523
November 8	Cadiz	Occidental Negros	Dec. 4	Jan. 7	88
November 8	Calbayog	Samar	Nov. ?	Jan. 21	66
November 9	Zumarraga	do	Nov. 9	Nov. 9	3
November 10	Pandan	Antique	Nov. 10	Nov. 10	1
November 11	Pila	La Laguna	Nov. 11	Nov. 11	1
November 12	Pidig	Ilocos Norte	Nov. 12	Nov. 13	2
November 13	Iguig	Cagayan	Dec. 13	Feb. 28	4
November 13	Cervantes	Mountain	Nov. 13	Nov. 13	1
November 14	Batac	Ilocos Norte	Dec. 10	Jan. 15	61
November 14	Lubao	Pampanga	Jan. 22	Mar. 17	12
November 15	Carigara	Leyte	Jan. 15	Jan. 23	13
November 15	Allen	Samar	Nov. 15	Nov. 15	3

Cholera statistics arranged in the order in which the towns became infected—Ctd.

Date of first case.	Town.	Province.	Highest number of cases.	Date of last case.	Total number of cases.
November 16	Alcala	Cagayan	Dec. 21	Mar. 31	136
November 16	Magsingal	Ilocos Sur	Nov. 16	Nov. 21	2
November 18	Dagami	Leyte	Nov. ?	June 3	31
November 18	Tanauan	do	Oct. ?	Nov. 30	51
November 19	Enrile	Cagayan	Dec. 17	Mar. 15	22
November 24	Bugason	Antique	Nov. 24	Dec. 27	53
November 25	Tanauan	Samar	Nov. 25	June 3	7
November 27	Angat	Bulacan	Nov. 27	Nov. 27	1
November 27	San Miguel	Ilocos Norte	Dec. 31	Jan. 4	16
November 28	Peñablanca	Cagayan	Nov. ?	Dec. 17	15
November 29	Taft	Capiz	Dec. 14	Jan. 31	184
November 30	Mexico	Pampanga	June 15	June 21	4
December 1	Olongapo	Bataan	Dec. 4	Dec. 5	3
December 1	Santa Cruz	Samar	Dec. 1	Dec. 1	4
December 4	Bacarra	Ilocos Norte	Dec. 4	Dec. 4	1
December 12	Butuan	Surigao	Jan. ?	Feb. 5	93
December 18	Solana	Cagayan	Dec. 18	Dec. 18	6
December 14	Tubigon	Bohol	Jan. 24	Mar. 14	117
December 14	Pagsan	Mountain	Dec. ?	Dec. 17	2
December 16	Basey	Leyte	Dec. 16	Dec. 16	4
December 17	Gandara	do	Dec. 17	Dec. 17	23
December 19	Cebu	Cebu	Dec. 19	Jan. 29	6
December 22	Calape	Bohol	Mar. 9	Mar. 12	8
December 28	Pamplona	Cagayan	Dec. 28	Dec. 28	1
December 25	Tapas	Capiz	Dec. 29	Jan. 8	127
December 30	Wright	Samar	Dec. 30	Dec. 30	4
January 1	Calamba	Laguna	Jan. 10	Feb. 28	29
January 1	Masbate	Sorsogon	Jan. 6	Apr. 27	57
January 4	San Nicolas	Ilocos Norte	Jan. 9	Jan. 11	5
January 5	Cainta	Rizal	Jan. 5	Jan. 17	5
January 7	Carcar	Cebu	Jan. 7	Jan. 11	7
January 9	Balamban	do	May ?	May 23	18
January 13	Binangonan	Rizal	Jan. ?	Jan. 17	14
January 15	Piad	Cagayan	Jan. 15	Jan. 15	1
January 19	Muntinlupa	Rizal	Jan. 19	Jan. 19	1
January 24	Ilagan	Isabela	Mar. ?	Apr. 21	126
January 27	Mobo	Sorsogon	Jan. 30	Feb. 7	44
January ?	Baggao	Cagayan	Jan. ?	Jan. ?	26
February 4	Loon	Bohol	Mar. 12	Apr. 17	336
February 10	Cabanatuan	Nueva Ecija	Feb. 10	Feb. 10	3
February 15	Laoay	Bohol	Feb. 15	Feb. 18	9
February 18	Santo Niño	Cagayan	Feb. 28	Mar. 8	31
February 18	Sorsogon	Sorsogon	Feb. 24	Feb. 27	4
February 20	Panglao	Bohol	Feb. 21	Mar. 10	15
February 21	Dauis	do	Feb. 25	Mar. 23	14
February 26	Dulag	Leyte	Feb. 26	Feb. 27	4
February 27	Lasang	Samar	Feb. 27	Mar. 7	3
February ?	Tumauini	Isabela	Feb. ?	Feb. ?	18
March 1	Sapian	Capiz	Mar. ?	Mar. 19	13
March 9	Maribojoc	Bohol	Mar. 10	Apr. 25	77
March 31	Oslob	Cebu	Mar. 31	Apr. 1	13
March ?	San Antonio	Cagayan	Mar. ?	Mar. 15	4
March ?	Dimasalang	Sorsogon	Mar. ?	Apr. 4	62
April 6	Bobon	Samar	Apr. 6	Apr. 6	2
April 14	Milagros	Sorsogon	May ?	May 9	8
April 15	Toledo	Cebu	Apr. 15	Apr. 17	4
April 20	Dapitan	Moro	May 8	June 6	87
April 29	Camalig	Albay	June ?	June ?	32
April ?	Manauan	Cagayan	Apr. ?	Apr. ?	28
May 11	Ayuquitan	Oriental Negros	June 13	June 20	61
May 22	Santa Margarita	Samar	May 22	May 22	2
June 1	Bacacay	Iloilo	June 1	June 11	9
June 1	Alaminos	Pangasinan	June 1	June 1	1
June 3	Burauen	Leyte	June 3	June 3	1
June 5	Cauayan	Samar	June ?	June 15	28
June 7	Tinglayan	Mountain	June ?	June 18	27
June 10	Oas	Albay	June ?	June 30	93
June 14	Minalin	Pampanga	June 21	June 28	4
June 15	Nabua	Camarines	June ?	June 30	17
June 16	Libon	Albay	June ?	June ?	39
June 22	Polangui	do	June ?	June 30	81
June 23	Zamboanga	Moro	June 23	June 23	2
June 24	Daan Bantayan	Cebu	June 24	June 24	3
June 29	Libog	Albay	June 29	June 29	1
Total number of cases					28,117

Chinese hospital sick report.

[Dr. Tee Han Kee, physician in charge.]

Status.	Number.		Total.
	Male.	Female.	
In hospital at last report	47		47
Received	191	2	193
Discharged	138	2	140
Transferred	2		2
Died	77		77
Remaining in hospital	21		21

Number of cases treated for the cure of the opium habit.

Place and nationality.	In hospital July 1, 1909.	Admitted during year.	Recovered.	Not improved.	Remaining at close of year.
San Lazaro:					
Chinese	21	94	115		
Filipinos		7	7		
Others		4	4		
Total	21	105	126		
Bilibid Prison:					
Chinese	17	274	289	[a]2	
Filipinos		2			2
Others		0			
Total	17	276	289	2	2
Mission, Iloilo:					
Chinese		1	1		
Filipinos					
Others					
Total		1	1		
Grand total	38	382	416	2	2

[a] Died from tuberculosis during treatment.

Opium cases admitted at San Lazaro during the year:

Chinese	94
Filipinos	5
Filipinas	2
East Indian	1
American—	
Male	2
Female	1
Total	105

Statement of insane supported at Government expense in the Hospital de San José.

Status.	Americans.		Europeans.		Filipinos.		Chinese.		Others.		Total.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
In Hospicio July 1, 1908	1		9	2	50	62	2				126
Admitted				1		2					3
Discharged							1				1
Escaped											
Died					3	7					10
Remaining	1		9	1	47	53	1				112

BAGUIO HOSPITAL DIVISION.

Cases treated.

[NOTE.—Nine cases remaining from fiscal year 1908 not included in this table. Igorots are classed among Filipinos.]

Diseases.	Operations.	Americans.	Europeans.	Afro-Americans.	Filipinos.	Japanese.	Chinese.	Total.	Female.
Abscesses:									
Alveolar	1	1						1	1
Inguinal	1	1						1	
Right leg					1			1	
Right tonsil	1	1						1	
Scrotum	1				1			1	
Abortion, accidental					2			2	2
Abrasion, right arm, extensive					1			1	
Adenitis, inguinal, suppurative	1				1			1	
Alcoholism:									
Acute		1						1	
Chronic				1				1	
Arterio sclerosis					1			1	
Amputations:									
Second finger, right hand	1				1			1	
Second and third finger, right hand	1				1			1	
Third fourth and fifth metacarpal bones, left hand	1				1			1	
Forefinger, left hand	1				1			1	
Right leg at knee	1				1			1	
Little finger, right hand	1				1			1	
Arthritis, septic, elbow joint	1				1			1	
Asthenia		1						1	1
Autointoxication, cause undetermined					1			1	
Bartholinitis, acute, suppurative, gonorrheal	2				2			2	2
Beriberi					1			1	1
Bronchitis:									
Acute		1			4			5	
Chronic					1			1	
Burns, right leg and arm, severe, involving both arms, trunk, and right leg					1			[b]1	
Cephalalgia, chronic, cause undetermined					1			1	
Cerebral concussion					1			1	
Chancroid, phagedenic	1	1						1	
Cholelithiasis						1		1	1
Circumcision	5	4			1			5	
Contusion:									
Right hip						1		1	
Of face, and sprain of muscles of neck		1						1	1
Convalescence		5			2			7	3
Conjunctivitis, acute					7			7	
Curettage, and trachel orrhaphy					1			1	1
Cystitis, acute						1		1	1
Dengue fever		2			1			3	1
Diabetes mellitus		1						1	
Diarrhea, acute		14			1	1		16	4
Dislocation:									
Backward, of elbow		1						1	
Backward, head of right radius					1			1	
Dysentery:									
Amebic—									
Acute		7			2			9	5
Chronic		4			1			5	3
Bacillary							1	1	
Catarrhal—									
Acute		1	1		4	1		7	
Chronic		4			1			5	3
Endometritis, (curettage)	1					1		1	1
Epididymitis, gonorrheal	1	1	1	1	2		1	6	
Epulis, removal of	1				1			1	
Eye, enucleation of	1				1			1	
Fever:									
Hemoglobinuric (malarial)						1		[c]1	
Undetermined					1			1	
Fissure of anus	1		1					1	

Cases treated—Continued.

Diseases.	Operations.	Americans.	Europeans.	Afro-Americans.	Filipinos.	Japanese.	Chinese.	Total.	Female.
Fistula, chronic, over right patella	1		1					1	1
Fractures:									
Left clavicle					1			1	
And laceration, scalp					1			1	
Colles'					1			1	
Patella, and laceration of capsule of knee-joint	1				1			1	
Scapula, comminuted, and severe powder burns					1			1	
Skull—									
Left parietal, with compression of brain	1					1		1	
Frontal, outer table	1					1	1	2	
Frontal, outer table and Colles'							1	1	
Humerus—									
Supra-condyloid ("T" fracture)			1					1	1
Compound comminuted, lower fourth (bone wired) and fracture of right ilium	1				1			1	
Ulna	1				1			1	
Furuncle, external auditory canal						1		1	
Gastritis:									
Acute					2			2	
Chronic		2			1	1		4	
Gastro-enteritis, acute, from orchid poisoning		1						1	
Glossitis, acute, severe		1						1	
Hemiplegia		1			1			2	1
Convalescent			1					1	
Hemorrhage:									
Internal					1			[4]1	
Pulmonary, traumatic		1						1	
Hemorrhoids, internal	1	2		1				3	1
Impetigo contagiosa					1			1	
Infection:									
Foot	4	1			6	1		8	2
Leg	1								
Wrist	1					1		1	
Severe; foot (defect of skin, repaired by skin-grafting)	1				1			1	
Keratitis, ulcerative		1						1	
Malaria:									
Estivo-autumnal		3			5	5		[5]13	1
Type undetermined		4		2	16	2		24	1
Malarial cachexia						1		1	
Meibomian cyst (left upper eyelid) removed	1				1			1	
Muscles; acute spastic contraction of right psoas and iliacus; traumatic					1			1	
Nephritis, chronic		1	1					2	1
Neuralgia, intercostal, rheumatic					1		1	2	
Neurasthenia		1						1	
Otitis media:									
Catarrhal, double		1						1	
Suppurative		1						1	
Parasites, intestinal:									
Ankylostomiasis		4			33	7		44	1
Ascariasis		2			8			10	3
Tenia solium					3			3	
Parotitis					1			1	
Poisoning, accidental (carbolic acid)				1				1	
Parturition	1	2			3			5	5
Pemphigus contagiosa					1			1	
Peritonitis, suppurative					[6]1			[7]1	
Pneumonia:									
Bronchial					1			1	
Croupous					1			1	
Lobar					1			1	
Lobar double					1			[8]1	
Prostatititis, chronic (and chronic interstitial nephritis)					1			1	
Ptomaine poisoning					1			[9]1	

Cases treated—Continued.

Diseases.	Operations.	Americans.	Europeans.	Afro-Americans.	Filipinos.	Japanese.	Chinese.	Total.	Female.
Puerperal septicemia (curettage) and malaria	1				1			1	1
Pyonephrosis (and amebic dysentery, chronic)	1					1		[i]1	1
Pyosalpingitis (refused operation)					1			1	1
Rheumatism:									
Articular—									
Acute					1			1	
Chronic						1		1	
Muscular, acute		1			2	1		4	1
Rupture of attachment outer head of biceps-femurus					1			1	
Salpingitis, catarrhal					1			1	1
Skin lesions, undetermined					1			1	1
Sprains:									
Ankle		1						1	
Both ankles						1		1	
Lumbar region					1			1	
Synovitis, rheumatic		1						1	
Syphilis, secondary		1			1			2	1
Trachoma, chronic	1				1			1	
Trachelorrhaphy	1				1			1	1
Traumatic shock					1			[k]1	
Tuberculosis, pulmonary					1			1	1
Ulcers:									
Buttock, chronic		1						1	
Right leg chronic					1			1	
Under observation		7			4	2		13	3
Undetermined					3			[l]3	
Uterus, prolapse of					1			1	1
Vaginitis, gonorrheal					1			1	1
Wounds:									
Contused, right foot				1				1	
Crushing, foot					1			1	
Gunshot, left thigh					1			1	
Incised—									
(Spear), thigh					1			1	
(Spear), chest	1				1			1	
Index finger right hand					1			1	
Foot					2			2	
Infected, foot					1			1	
Lacerated—									
Cheek					1			1	
Index finger left hand					1			1	
Hand and finger					1			1	
Knee					1			1	
Thumb					1			1	
Scalp, face, and legs					1			1	
Scalp					1			1	
Upper lip, completely severing orbicularis oris	1				1			1	
Stab—									
Left hip					1			1	
Pleural cavity and liver					1			[m]1	
Total	47	93	7	7	196	34	5	342	63

[a] Igorot, adult, male, died March 25, 1909, of sapremia, 45 days after amputation.
[b] Igorot, child, male, died December 9, 1908, of extensive burns both arms, leg, and body (from boiling water), about 12 hours after admission.
[c] Japanese, adult, male, died July 8, 1908, of hemoglobinuric fever.
[d] Igorot, adult, male, died February 23, 1909, of internal hemorrhage; brought to hospital in dying condition, died 1 hour after admission.
[e] Filipino, adult, male, died February 28, 1909, of estivo-autumnal malaria (cerebral type); brought to hospital in comatose condition (1 case only).
[f] Igorot, adult, male, died April 22, 1909, of perforative peritonitis 45 minutes after admission.
[g] Filipino, adult, male, died April 23, 1909, of lobar pneumonia (double).
[h] Filipino, child, male, died July 17, 1908, of ptomaine poisoning.
[i] Japanese, adult, female, died May 17, 1909, of chronic amebic dysentery; operation for pyonephrosis; died of dysentery 15 days after operation.
[k] Filipino, adult, male, died March 25, 1909, of traumatic shock; injured by falling from bridge on Benguet Road; died 17 hours after admission.
[l] Igorot, adult, male, died March 8, 1909, of undetermined fever, as per laboratory report (supplementary) No. 67628, Bureau of Science.
[m] Filipino, adult, male, died December 27, 1909, of stab wound, pleural cavity and liver.

Outdoor department, Baguio Hospital.

Diseases.	Number of cases.
Abortion, accidental	1
Abrasions:	
Arm	2
Buttock	3
Face	5
Finger	4
Foot	11
Hand	5
Knee	4
Leg	8
Thigh	2
Thumb	1
Toe	2
Wrist	1
Abscesses:	
Alveolar	4
Arm	1
Buttock	1
Chin	1
Externo-auditory canal	1
Foot	1
Leg	3
Mastoid	1
Thigh	1
Tonsil	1
Peritonsilar	1
Acne	1
Adenitis, cervical	1
Adenitis, inguinal, suppurative, gonorrheal	2
Amputations, finger	2
Anemia	8
Angina pectoris	1
Anus, fissure of	1
Arterio-sclerosis	1
Asthenia	38
Asthma	2
Bartholinitis	1
Bronchitis, acute	127
Bronchitis, subacute	16
Bronchitis, chronic	20
Bubo, nonvenereal	2
Burns:	
Arm	1
Back	1
Finger	1
Neck	1
First degree (general)	1
Carbuncle	1
Cephalalgia (undetermined)	8
Chancroid	3
Chancroid phagedenic	2
Cholera Asiatica	1
Circumcision	2
Clavus	1
Conjunctivitis, acute	58
Conjunctivitis, chronic	11
Constipation, acute	105
Constipation, chronic	17
Contusions:	
Ankle	1
Breast	1
Chest	1
Face	2
Head	1
Knee	1
Cystitis, acute	3
Cystitis, chronic	3
Dengue fever	2
Dental caries	11
Dentition, difficult	2
Dermatitis (undetermined)	47
Dhobie itch	26
Diarrhea, acute	66
Dislocation, first metacarpo-phalangeal joint right hand	1
Distichiasis	1
Dysentery	37
Eczema, acute	4
Eczema, aurum	1
Endometritis	4
Epididymitis, gonorrheal	3
Exostosis; left nasal bone (excision of)	1
Foreign body in eye	2
Foreign body imbedded in cornea	3
Fractures:	
Humerus (inner condyle)	1
Metacarpal bone	1
Rib	1
Ulna	1
Furuncle	11
Gastric hyperacidity	3
Gastric lavage	1
Gastritis, acute	57
Gastritis, chronic	9
Gastro-enteritis, acute	15
Gastro-enteritis, chronic	4
Goiter	2
Heart, aortic stenosis of	1
Heart, insufficiency of	1
Heart, mitral regurgitation of	2
Hemiplegia	3
Hemorrhoids, external	3
Hemorrhoids, internal	2
Herpes zoster	1
Hordeolum	2
Impetigo contagiosa	7
Impacted cerumen	4
Indigestion, intestinal, acute	2
Indigestion, intestinal, chronic	1
Infections:	
Arm	3
Finger	3
Foot	1
Hand	9
Knee	2
Leg	6
Shoulder	1
Thumb	2
Inflammation, submaxiliary glands	1
Insanity	1
Insomnia	2
Keratitis	1
Laryngitis, acute	1
Leucorrhea	1
Lymphangitis, head and neck	1
Malaria	161
Malarial cachexia	6
Meatotomy	1
Menorrhagia	3
Menstruation, difficult	1
Miliaria	1
Nausea of pregnancy	1
Nephritis, chronic	4
Neuralgia, rheumatic	3
Neurasthenia	3
Otitis media, acute, catarrhal	3
Otitis media, acute, suppurative	6
Oxaluria	1
Paralysis, infantile	1
Parasites, intestinal:	
Ascariasis	23
Ankylostomiasis	1
Tenia solium	1
Parotitis	7
Pediculosis capitis	1
Pemphigus contagiosa	2
Pertusis	2
Pharyngitis	2
Pyorrhea alveolaris	3
Rectal sinus	1
Removal of finger nail	2
Removal of toe nail	2
Rheumatism, articular, chronic	1
Rheumatism, muscular, acute	152
Rheumatism, muscular, chronic	3
Rhinitis, acute	12
Rhinitis, chronic	1
Rhinitis, hypertrophic	5
Sciatica, rheumatic	1
Seminal vesiculitis, acute gonorrheal	1
Seminal vesiculitis, chronic	7
Sinusitis, frontal, catarrhal	1
Sprains:	
Ankle	4
Foot	1

Outdoor department, Baguio Hospital—Continued.

Diseases.	Number of cases.	Diseases.	Number of cases.
Sprains—Continued.		Wounds—Continued.	
Knee	1	Incised, face	1
Leg	1	Incised, finger	6
Thigh	1	Incised, foot	3
Thumb	1	Incised, hand	7
Toe	1	Incised, knee	1
Wrist	3	Incised, scalp	2
Sprue	1	Incised, thumb	2
Stomatitis, parasitic, acute	24	Infected, arm	1
Stricture, posterior urethra	8	Infected, cheek	2
Syphilis, secondary	16	Infected, face	3
Teeth extracted (cases)	80	Infected, finger	14
Tinea circinata	2	Infected, foot	30
Tinea imbricata	7	Infected, hand	9
Tinea versicolor	2	Infected, head and face	1
Tonsilitis, follicular, acute	7	Infected, heel	2
Trachoma, acute	3	Infected, leg	9
Trachoma, chronic	13	Infected, scalp	4
Tuberculosis, intestinal	1	Infected, thumb	2
Tuberculosis, pulmonary	26	Infected, toe	9
Ulcers:		Lacerated, arm	1
Chronic, buttock	1	Lacerated, cheek	2
Face, chronic	1	Lacerated, ear	1
Groin, chronic	1	Lacerated, face	2
Leg, chronic	4	Lacerated, finger	5
Foot	1	Lacerated, foot	10
Furuncular	1	Lacerated, hand	9
Nasal	1	Lacerated, knee	2
Urethritis:		Lacerated, leg	4
Gonorrheal, female	2	Lacerated, lip	1
Gonorrheal, acute, anterior	9	Lacerated, scalp	10
Gonorrheal, acute, posterior	10	Lacerated, scalp and leg	1
Gonorrheal, chronic, posterior	2	Lacerated, thumb	3
Posterior, simple	2	Lacerated, toe	1
Uterus, prolapse of	1	Lacerated, wrist	1
Vaginitis, simple	1	Punctured, arm and chest	1
Vomiting of pregnancy	1	Punctured, finger	1
Wounds:		Punctured, foot	8
Contused, finger	2	Punctured, leg	1
Contused, leg	2	Punctured, neck and groin	1
Contused, scalp	2	Stab, left hip	1
Contused, thumb	3		
Incised, cheek	1	Total	1,760
Incised, ear	1		

Specimens examined at the hospital laboratory.

Specimens.	American.	European.	Afro-American.	Filipino.	Japanese.	Chinese.	Total.
Feces	145	8	11	294	52	3	513
Pus	2	------	------	12	1	1	16
Semen	------	------	1	------	------	------	1
Sputum	------	1	------	5	------	------	6
Stomach contents	14	1	------	------	1	------	16
Urine	70	7	1	32	10	------	120
Blood:							
Malaria	7	------	------	16	8	1	32
Leucocyte count	1	------	------	3	------	1	5
Red cell count	2	------	------	2	------	1	5
Spirocheta pallida	1	------	------	------	------	------	1
Total	242	17	13	364	72	7	715

Intestinal parasites.

	American.	European.	Afro-American.	Filipino.	Igorot.	Japanese.	Chinese.	Total.
Number of persons examined	70	7	40	94	42	18	2	287
Parasites found:								
Ameba	9	------	------	4	2	2	------	17
Ascaris lumbricoides	3	------	------	20	14	3	------	40
Ankylostomum intestinalis	3	------	------	20	13	5	------	41
Circomona hominis	2	1	------	4	------	4	------	11
Tenia solium	------	------	------	2	2	------	------	4
Tricocephalus hominis	1	------	------	44	13	3	------	61
Tricomonas	1	------	------	------	------	------	------	1
Total	19	1	------	94	44	17	------	175

Miscellaneous statistics.

Number of cases treated from July 1, 1908, to June 30, 1909	339
Average number of days spent in hospital by all patients	3,346
Average number of days spent in hospital, per patient	9.53
Average number of days spent in hospital, per amebic dysentery patients	22
Number of prescriptions filled from July 1, 1908, to June 30, 1909	2,457
Number of cases, outdoor department	1,759
Average cost per capita of subsistence:	
From July 1, 1906, to June 30, 1907	₱0.8589
From July 1, 1907, to June 30, 1908	₱0.7822
From July 1, 1908, to June 30, 1909	₱0.6383
Number of laboratory examinations performed at the hospital laboratory	715
The approximate cost of water pumped by hospital pumping plant per liter	₱0.000211

Sources of revenue.

Month.	Hospital charges.	Prescriptions.	Surgical dressings.	Extra subsistence.	Sales of property.	Hotel rent.	Total. 1909	Total. 1908
1908—July	₱220.00	₱22.00	------	₱8.25	₱80.00	₱175.00	₱505.25	₱445.00
August	141.50	8.50	------	6.00	------	175.00	331.00	285.00
September	71.00	8.00	------	21.00	------	175.00	275.00	409.75
October	72.75	8.00	₱6.00	18.75	------	175.00	280.50	321.75
November	149.75	10.50	11.00	18.00	------	175.00	364.25	259.50
December	79.13	10.00	1.00	39.75	24.00	175.00	328.88	170.25
1909—January	175.50	7.00	------	6.75	------	175.00	346.25	577.00
February	71.50	4.50	1.00	7.50	------	175.00	259.50	274.25
March	185.00	12.00	------	27.00	------	175.00	399.00	199.00
April	507.75	43.00	17.00	21.75	------	175.00	764.50	596.75
May	1,231.25	22.00	------	9.50	1.50	175.00	1,439.25	630.50
June	1,030.50	27.00	5.00	18.00	1.50	175.00	1,257.00	782.75
Total	3,917.63	182.50	41.00	202.25	107.00	2,100.00	6,550.38	4,891.50

NOTES ON "ANKYLOSTOMA" CASES.

The ankylostoma cases gave the following towns throughout the various provinces, as their place of residence:

Albay Province: Bagakay, Guinobatan, Ligao.

Ambos Camarines: Nueva Caceres.

Benguet: Antimok, Baguio, Camps Nos. 1, 4, 6, (Benguet Rd.), Esperanza, Kapangan, La Trinidad, Tublay.

Laguna: Calamba.

Misamis: Misamis.

Negros Occidental: Bacolod.

Pampanga: Calumpit, Macabebe.

Pangasinan: Binmaley, Mangaldan, Pozorrubio, Santa Barbara, Urdaneta.

Samar: Basay.

Union: Kuba, San Fernando, San Juan.

Manila.

Average cost of subsistence per person, per day, including patients and employees, etc., of the Baguio Hospital division.

July, 1908	₱0.71
August, 1908	.65
September, 1908	.72
October, 1908	.63
November, 1908	.60
December, 1908	.559
January, 1909	.61
February, 1909	.565
March, 1909	.609
April, 1909	.70
May, 1909	.65
June, 1909	.65
Net average cost per person, per day for twelve months, fiscal year 1909..	.63775

BILIBID PRISON.

Report of sick at Bilibid Prison.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged.	Remaining.
Abscesses	7	104			105	6
Abscess, ischio-rectal	2	13			14	1
Anemia		5			3	2
Anemia, pernicious	3	3			6	
Angina pectoris		4			4	
Ankylostomiasis	19	436			454	1
Anorexia		2			2	
Aortic insufficiency		2			2	
Ascariasis		118			118	
Adenitis		9			7	2
Adenitis, tuberculous		2			2	
Asiatic cholera		30	11	10	9	
Amblyopia		1			1	
Arthritis, purulent		4			2	2
Asthma		10			7	3
Amebiasis		12			12	
Balantidium coli		2			2	
Beriberi	39	40	3		76	
Bronchitis, acute	12	157			154	15
Bronchitis, chronic	2	94			75	21
Biliary lithiasis		1			1	
Bunions		1			1	
Burns		1			1	
Broncho-pneumonia		3	1		1	1
Carcinoma of liver		1				1
Cardiac insufficiency		3			3	
Cardio-sclerosis	1				1	
Cataract	1					1
Carbuncle		6			5	1
Catarrh, acute		1			1	
Chancroid		2			2	
Cerebral hemorrhage		1	1			
Colic, intestinal		21			21	
Colitis		42	1		38	3
Conjunctivitis	1	53			50	4
Constipation		124			120	4
Conjunctivitis, granular		1			1	
Compound fracture		1			1	
Congestion of liver		2			2	
Cystitis	1	1			2	
Cyst, below left ear		2			2	
Circumcision		1			1	
Cirrhosis of liver		2	1			1
Coryza		1			1	
Cicatricial contracture		2			1	1
Dementia		3			3	
Dermatitis, toxic		1			1	
Dhobie itch		1			1	
Diarrhea	1	68			62	7
Dysentery, acute	1	18	1		17	1
Dysentery, amebic	31	103			133	1
Dysentery, chronic		4	1		2	1
Dislocation of shoulder		1			1	
Dyspepsia	2	193			190	5
Elephantiasis	1	3			4	
Enteritis, acute	3	13			16	
Entero-colitis	1	28	1		28	
Enteritis, chronic		1			1	

Report of sick at Bilibid Prison—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Transferred.	Discharged	Remaining.
Enteritis, subacute		5			5	
Endocarditis		2			2	
Emphysema, pulmonary		3			3	
Epilepsy		1			1	
Eczema		3			3	
Furunculosis		2			2	
Furuncle		2			2	
Fistula in ano	5	65			60	10
Fistula, urinary	1				1	
Gangrene, pulmonary		1	1			
Glaucoma		3			3	
Gastritis, acute	10	31			41	
Gastritis, chronic		1			1	
Gastro-enteritis		3			3	
Gonorrhea		5			5	
Grippe	2	5			7	
Gingivitis		1			1	
Heat exhaustion		1			1	
Hepatic cirrhosis	1	2	2		1	
Hepatitis, acute		2			2	
Hemiplegia	1	1			2	
Hemorrhoids	2	24			22	4
Hernia, inguinal	1	22			18	5
Herpes zoster	2				2	
Hemoptysis		9			8	1
Hematoma		1			1	
Helminthiasis		289			289	
Hiccough		1			1	
Hydrocele	1	13			14	
Intestinal obstruction		1			1	
Iritis	2				2	
Icterus, catarrhal		1			1	
Jaundice		2			1	1
Keratitis		7			7	
Laryngitis, acute		3			2	1
Leprosy	2	2		4		
Lipoma		3			3	
Locomotor ataxia	1				1	
Lumbago		2			2	
Meningitis, acute		3			3	
Malaria	17	271			283	5
Malarial cachexia		3	2		1	
Mania		3			3	
Mastoid abscess	1				1	
Measles		4			4	
Migraine		12			12	
Morphinism	17	250			265	2
Mitral insufficiency		5			3	2
Myalgia		2			2	
Myelitis		1			1	
Myositis		1			1	
Mumps	3	10			13	
Neuralgia		4			4	
Neurasthenia		3			3	
Nephritis, interstitial	6	4			10	
Nephritis, acute		4	2		2	
Nephritis, chronic		2			1	1
Neuritis		3			3	
Ophthalmia		6			6	
Opiumism		26			24	2
Orchitis		8			7	1
Osteitis	1				1	
Osteomyelitis		1				1
Otitis media		1			1	
Paragonimus Westermanii		2			2	
Paraplegia		6			2	4
Paralysis		1			1	
Parturition		1			1	
Pemphigus, contagiosa	1	1			2	
Peritonitis		5	1		2	2
Pneumonia, lobar	3	16	1		18	
Pneumonia, tuberculous		1	1			
Pneumonia, acute		7			7	
Parasites, intestinal		72			72	
Pleurisy		2			2	
Pharyngitis, acute		1			1	
Penetrating wound of chest		1			1	
Posterior sclerosis	1				1	
Prolapse of rectum		7			7	
Pterygium	2	1			3	
Pulmonary congestion		6			5	1

Report of sick at Bilibid Prison—Continued.

Diseases.	Remaining at last report	Admitted.	Died.	Transferred.	Discharged.	Remaining.
Pulmonary edema		1	1			
Proctitis		1			1	
Pericarditis, chronic		1	1			
Phimosis		1			1	
Rheumatic fever		1			1	
Rheumatism, acute	5	35			36	4
Rheumatic arthritis		4			4	
Redundance of scrotum	1	1			2	
Retention of urine		2			2	
Staphyloma		1				1
Sarcoma, retro-peritoneal		1	1			
Sebaceous cyst		5			5	
Septicemia		1	1			
Septicemia, puerperal		1	1			
Scald of face		1			1	
Sprains		2			2	
Sprue		1			1	
Serpiginous ulcer	1				1	
Spastic paraplegia	2	3			3	2
Senile debility		16			13	3
Spinal sclerosis	3	1			4	
Stomatitis		6			6	
Syphilis	2	8			8	2
Trachoma	7	7			13	1
Tenia saginata		1			1	
Tenia		7			7	
Tenia imbricata		5			5	
Trichophytosis		3			3	
Tuberculosis, pulmonary	162	193	86	3	142	124
Tuberculosis, miliary		1	1			
Tuberculosis, general		4	4			
Tuberculosis of peritoneum		2			1	1
Tuberculosis, intestinal		1	1			
Tumors	1	1			2	
Troubles of pregnancy		2			2	
Typhoid fever		1	1			
Ulcers		51			44	7
Urethral stricture	1	10			11	
Urticaria		2			2	
Vaccinia		2			2	
Varicella		1			1	
Varicocele		2			2	
Varicose veins		9			9	
Varioloid		31			31	
Vibrio carriers		22			22	
Vibrio carriers, suspects		3			3	
Wounds	3	71			73	1
Yaws		1				1
Total	399	3,556	129	17	3,534	275

Bilibid prison report of deaths.

Diseases.	Presidio.			Carcel.			Total.	Condition.			Norte cemetery.
	Filipinos.			Filipinos.							
	Female.	Male.	Chinese, male.	Male.	Female.	Chinese, male.		Single.	Married.	Widower.	
Typhoid fever (abdominal typhus)	1						1		1		1
Malarial cachexia	2						2	1	1		2
Asiatic cholera	11		1	3		2	17	7	8	2	17
Dysentery	2						2		1	1	2
Other epidemic diseases (beriberi)	2			1			3	1	1	1	3
Tuberculosis of the lungs	80	1		7		2	90	36	44	10	90
Abdominal tuberculosis	1						1		1		1
General tuberculosis	3	1					4	2	1	1	4
Cancer and other malignant tumors of the buccal cavity	1						1	1			1
Anemia chlorosis	1						1	1			1
Congestion and hemorrhage of the brain	1						1		1		1
Other forms of mental alienation	2			1			3	1	2		3
Pericarditis	1						1		1		1
Broncho-pneumonia	1						1			1	1
Pneumonia				1			1		1		1
Diarrhea and enteritis (2 years and over)	2						2		2		2
Cirrhosis of the liver	2						2		2		2
Other diseases of the liver						1	1	1			1
Simple peritonitis (non puerperal)						1	1			1	1
Acute nephritis	2			1			3	1	2		3
Diseases of the urethra, urinary abscess, etc				1			1			1	1
Puerperal septicemia					1		1			1	1
Other external violence				7			7	2	4	1	7
Total	115	2	1	22	1	6	147	54	78	20	147

Died in Bilibid Hospitals, 129; legally executed, 7; died in San Lazaro Hospitals, 10; and died in Hospicio de San José, 1. Total, 147.

Iwahig penal colony, sick report.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
Abscesses		11		11	
Abscess, ischio-rectal		2		2	
Adenitis		1		1	
Anemia		2		2	
Angina pectoris		1		1	
Anthrax		1		1	
Apoplexy, cerebral		1	1		
Arterio-sclerosis		5		5	
Beriberi		1		1	
Bites of poisonous animals		2		2	
Bronchitis, acute	2	13		15	
Broncho-pneumonia		1	1		
Burns		1		1	
Cholera		1		1	
Congestion, pulmonary		1		1	
Conjunctivitis		4		3	1
Constipation	1	5		6	
Contusions		17		17	
Cysts		1		1	
Cystitis		1		1	
Diabetes		1		1	
Diarrhea and enteritis		4		4	
Dermatitis		3		3	
Disease of the nasal fossae		1		1	
Dysentery		1		1	
Dysentery, amœbic		1		1	
Dysentery, chronic		1	1		
Eczema		6		6	
Enteritis		3		3	
Epilepsy	1	4		4	1
Erythema		1		1	
Filariasis		1		1	
Fistula, anal		1		1	

Iwahig penal colony, sick report—Continued.

Diseases.	Remaining at last report.	Admitted.	Died.	Discharged.	Remaining.
Fistula, maxillary sinus		1		1	
Furuncle		1		1	
Gastritis, acute		2		2	
Gingivitis		1		1	
Gonorrhea		3		3	
Hemorrhoids		2		2	
Hernia, inguinal		1		1	
Herpes		6		5	1
Hydrarthrosis		1		1	
Hydrocele		1			1
Iritis		1		1	
Keratosis, palms and soles		1			1
Laryngitis		2		2	
Laryngo-bronchitis		6		6	
Lymphangitis		2		2	
Malaria	3	264	1	267	4
Mental alienation		1		1	
Muscular contracture		1		1	
Myelitis		2		2	
Naso-laryngitis, catarrhal, acute		2		2	
Naso-pharyngitis		2		2	
Orchitis		1		1	
Organic disease of the heart		2		2	
Ozena		1		1	
Palpitation of the heart		1		1	
Panaris		1		1	
Paragonimus Westermanii	1		1		
Parasites intestinal		1		1	
Parotiditis		1		1	
Periostitis		5		5	
Pleurisy		2		2	
Pneumonia		1	1		
Pulmonary emphysema		1		1	
Rheumatism		20		20	
Scleritis		1		1	
Stomatitis		1		1	
Synovitis		1		1	
Syphilitic arthritis		1		1	
Tonsilitis		2		2	
Tuberculosis, intestinal		1			1
Tuberculosis, peritoneal, chronic		1		1	
Tuberculosis, pulmonary	2	9	3	4	4
Ulcers	2	8		10	
Under observation	1	55		56	
Urticaria		1		1	
Wounds from various weapons	2	64	1	65	
Total	20	585	10	581	14

CIVIL HOSPITAL DIVISION.

Medical cases.

Diseases.	Male.	Female.	Deaths.	Diseases.	Male.	Female.	Deaths.
Albuminuria		2		Delirium	1		
Alcoholism	28			Dementia	11		
Amœbiasis intestinalis	45	8	1	Dengue	41	8	
Apoplexy	5		1	Diabetes mellitus	1		
Asthma	8		1	Dysentery (nonamœbic)	30	14	2
Beriberi	62	6		Dyspepsia	8	2	
Bronchitis:				Enteritis:			
Acute	29	7		Acute	31	6	
Chronic	14	4		Chronic	11	5	
Bronchopneumonia	5	1		Gastro-	20	7	
Cholera Asiatica (suspects)	11			Epilepsy	3		
Cirrhosis of liver	1			Epistaxis	1		
Colic:				Fatigue	1		
Intestinal	20	1		Febricula	6		
Renal	3			Gastric dilatation	2		
Constipation:				Gastric ulcer		2	
Acute	16	1		Gastralgia	2		
Chronic	6	2		Gastritis:			
Convalescence, from malaria	21	1		Acute	13	3	
Croup, spasmodic		1		Chronic	15	1	
				Heat exhaustion	1		

Medical cases—Continued.

Diseases.	Male.	Female.	Deaths.
Hemiplegia (see Apoplexy)	3		
Hemophilia	1		
Hemoptysis	6		
Hepatitis		1	
Hypochondriasis	1		
Hysteria		1	
Influenza	13	1	
Intestinal parasites:			
Ascaris lumbricoides	18	3	
Hookworms	6		
Monads	10	3	
Oxyuris vermicularis	1		
Paragonimus Westermanii	1		
Strongyloides stercoralis	1		
Tenia	2		
Trichuris trichura	20	3	
Trichocephalus dispar	9		
Uncinaria	4		
Iodine poisoning	1		
Jaundice, catarrhal	4		
Locomotor ataxia	1		
Lumbago	3		
Malaria:			
Cachexia	1		
Estivo-autumnal	45	1	
Quartan	2		
Tertian	90	4	
Malingering	10	1	
Malnutrition	3		
Marasmus			2
Migraine	5	2	
Mitral disease	3	1	1
Morphinism	1	1	
Mumps	8		
Myalgia	6	2	
Nephritis:			
Acute	1		
Chronic parenchymatous	2		
Chronic tubercular			1
Neuralgia	1		
Neurasthenia	3	6	
Neuritis optic	1		
Neuritis traumatic	1		
Pharyngitis	1		
Pleurisy	1		
Pneumonia lobar	4	2	
Ptomaine poisoning	5	1	
Rheumatism chronic	2		
Sciatica	5		
Smallpox, suspected	3	1	
Syncope, cardiac	1		
Sprue	2	1	1
Syphilis:			
Primary	1		
Secondary	2		
Tertiary	10		
Teething		1	
Tuberculosis	25	1	5
Typhoid fever	13	1	1
Undetermined (those leaving before diagnosis and those for observation)	37	3	
Varicella		11	
Vertigo	1		
Total	868	139	16

Surgical cases (*including eye, ear, nose, throat and skin*).

Diseases.	Male.	Female.	Deaths.
Abdominal adhesions	1	2	
Abdominal fistula		1	[a]1
Abcess:			
Arm and forearm	5		
Breast		4	
Ear		1	
Face	1		
Foot	1		
Frontal sinus	1		
Gluteal	1		
Leg	2		
Liver	6		
Palmar	1		
Perineal	3	1	
Peritonsillar	3	2	
Prostatic	1		
Scrotal	2		
Submaxillary	5		
Subphrenic	1		[a]1
Thigh	1	1	
Adenitis, cervical	6	2	
Adenitis, axillary		1	
Amputation:			
Fingers	3		
Leg	2		
Toes	5		
Aneurysm, aortic	1		
Ankylosis of hip joint	1		
Appendectomy	64	38	
Appendicitis:			
Catarrhal acute	19	10	
Catarrhal chronic	35	17	
Suppurative	10	2	[b]2
Arthritis, gonorrheal	5		
Astigmatism	1		
Blastomycosis of skin		1	
Buboes	6		
Burns	4		
Bursitis	1		
Carbuncle	3		
Carcinoma:			
Of breast		3	
Of jaw	2		
Of liver	1		
Of neck			1
Cataract:			
Senile	3	6	
Traumatic	3		
Cellulitis:			
Of back	1		
Of foot	2		
Of thigh	1		
Chancroids	8		
Cholecystitis	4	4	
Cholelithiasis (gallstones)	6	1	
Circumcision	9		
Concussion of brain	3		
Conjunctivitis:			
Catarrhal	3		
Gonorrheal	2		
Mucopurulent	2		
Traumatic	4		
Contusions:			
Of body	6		
Of chest	2		
Of eyelids	1		
Of foot	3		
Of head	1		
Of hip	2		
Of jaw	2		
Of knee	1		
Of leg	5		
Corneal:			
Rupture	2		
Ulcers	10		
Cyst, sebaceous	1	1	
Cystitis	11	4	
Dermatitis	5		
Dhobie itch	1		

[a] Filipinos.

[b] White.

Surgical cases (including eye, ear, nose, throat and skin)—Continued.

Diseases.	Male.	Female.	Deaths.
Dislocation:			
Of elbow	1		
Of knee	1		
Of shoulder	1		
Eczema	2	1	
Eczema seborrheica	1		
Empyema of antrum	1		
Enucleation of eye	3	1	
Episcleritis	1		
Epididymitis	2		
Erythema	1		
Extraction of teeth		1	
Excision of shoulder joint	1		
Fissure, rectal	1	1	
Fistula in ano	15	3	
Foreign body in esophagus			[a]1
Fracture:			
Of clavicle	2		
Of leg	3		
Of metacarpals	2		
Of rib	1		
Of skull	2		[a]1
Of spine			[a]1
Of thigh	2		
Furunculosis of ear	1		
Glaucoma		1	
Goitre, cystic		1	
Gonorrhea	27		
Hematuria	1		
Hemorrhage, cerebral			[b]1
Hemorrhoids	12	1	
Hernia:			
Inguinal	9		
Ventral	1	1	
Hydrocele	4		
Hypermetropia	1		
Ingrowing toe nails	2		
Insect bites	1		
Iridocyclitis	2		
Iritis	7		
Keloids	1		
Keratitis	1		
Kidney, movable		2	
Laryngitis	3	2	
Meningitis			[b]1
Nasal:			
Obstruction	1		
Polypus	1		
Nephrolithiasis	1		
Orchitis:			
Gonorrheal	10		
Tubercular	1		
Otitis:			
External	4		
Media	7	4	
Pancreatitis			[a]1
Paraphimosis	1		
Phlebitis		1	
Prickly heat		1	
Proctitis	1		
Prolapse of rectum	1		
Prostatitis	2		
Psoriasis	1		
Pterygium	6		
Pyelitis and Pyonephrosis	5		
Pyemia	1		
Retinitis		1	
Rhinitis	6		
Rupture of eye	2		
Splenoptosis		2	
Sprain:			
Of ankle	5	1	
Of knee	3	1	
Of thigh	1		
Strabismus	6		
Stricture:			
Of rectum	1		
Of urethra	4		
Supernumerary fingers	1		
Synovitis of knee	1		
Tetanus (convalescent)	1		
Tonsilitis	2	1	
Trachoma		2	
Tumor:			
Of brain	1		
Of breast (nonmalignant)		1	
Of buttocks		2	
Of ear	1		
Of eye	1		
Of face	1		
Of foot	1		
Of head	1		
Of mesentery	1		
Of neck	1		
Ulcers:			
Of foot	3		
Of leg	7	1	
Of uveitis	1		
Varicocele	5		
Varicose veins		1	
Vesicular calculus			[a]1
Wounds, gunshot:			
Of arm	1		
Of chest	2		
Of foot	1		
Of leg	1		
Wounds, incised:			
Arm and hand	6		
Of abdomen	1		
Of back	2		
Of chest	4		
Of face	2		
Of leg	1		
Of neck	2		
Of thigh	1		
Wounds, infected:			
Of arm and forearm	2		
Of foot	6		
Of hand and fingers	4		
Of leg	1		
Of lip	1		
Of toes	2		
Wounds, lacerated:			
Of arm	2		
Of ear	1		
Of face	1		
Of fingers	6		
Of foot	2		
Of hand	5		
Of leg	2		
Of lip	1		
Of nose	1		
Of scalp	6		
Of toe	2		
Wounds, punctured:			
Of foot	1		
Of forearm	1		
Total	601	136	13

[a] Filipinos.

[b] White.

Obstetrical and gynecological cases.

Diseases.	Female.	Deaths.	Diseases.	Female.	Deaths.
Abortion	2		Placenta previa	1	
Abortion, threatened	3		Pregnancy	11	
Cancer of uterus	[a]4		Pregnancy, extrauterine	4	
Cervitis	1		Premature birth		[b]1
Childbirth	60		Rectocele	1	
Curettage	29		Retroversion and retroflexion	6	
Cystocele	1		Salpingitis and pyosalpingitis	10	[c]1
Eclampsia		[b]1	Septicemia, puerperal	1	[b]2
Endometritis:					
Acute	5		Stillborn		[c]1
Chronic	14		Trachelorrhaphy	2	
Insanity of pregnancy		[b]1	Vaginal lacerations	1	
Myofibroma	1		Vaginitis	1	
Oöphoritis	7				
Ovarian cyst	3		Total	174	7
Perineorrhaphy	6				

[a] Two hysterectomies. [b] Filipinos. [c] White.

Medicines dispensed.

Department.	Bureau.	Number.
Legislative	Commission and Assembly	163
Executive	Executive	182
	Audits	219
	Civil Service	88
Interior	Agriculture	116
	Forestry	46
	Health	400
	Lands	300
	Science	156
	Weather	8
Commerce and Police	Constabulary	212
	Public Works	255
	Navigation	148
	Posts	346
	Coast and Geodetic Survey	69
Justice and Finance	Justice	135
	Customs	350
	Internal Revenue	180
	Treasury	109
Public Instruction	Education	1,813
	Supply	127
	Prisons	119
	Printing	295
Judicial	Courts at large	108
	Secret service	78
Municipal service of Manila	Police department	1,074
	Fire department	196
	Other departments	269
	Charity and emergency	1,848
	Discharged patients	427
Total		8,781
Medicines supplied to the wards and operating room		8,882
Total medicines dispensed during the fiscal year		17,663

Average cost of subsistence per patient, per day, of the Civil Hospital Division.

July, 1908	₱1.23
August, 1908	1.11
September, 1908	1.06
October, 1908	1.12
November, 1908	1.40
December, 1908	1.27
January, 1909	1.29
February, 1909	1.26
March, 1909	0.96
April, 1909	0.967
May, 1909	0.7855
June, 1909	0.769

CULION LEPER COLONY DIVISION.

Status of lepers.

Status.	Europeans, male.	Filipinos.		Chinese, male.	Total.
		Male.	Female.		
Remaining July 1, 1908	1	837	493	2	1,333
Admitted	1	844	476	2	1,323
Born		11	5		16
Discharged		8	10	1	19
Escaped		48	2		50
Died		554	308		862
Remaining	2	1,082	654	3	1,741

Average cost of subsistence per leper, per day, at the Culion leper colony.

July, 1908	₱0.14
August, 1908	0.144
September, 1908	0.144
October, 1908	0.128
November, 1908	0.135
December, 1908	0.162
January, 1909	0.136
February, 1909	0.133
March, 1909	0.13
April, 1909	0.136
May, 1909	0.1252
June, 1909	0.1379

SANITARY ENGINEERING DIVISION.

Number of orders issued.

Month issued.	Sanitary engineer division.	Health districts.					
		No. 1.	Nos. 2 & 3.	No. 4.	No. 5.	No. 6.	Total.
1908.							
July	147	10	15	4	0	24	200
August	102	12	6	1	0	0	121
September	75	18	2	0	0	1	96
October	192	10	28	4	0	10	244
November	136	16	55	12	7	42	268
December	276	19	2	2	2	2	303
1909.							
January	271	20	21	13	5	0	330
February	79	11	5	13	0	1	109
March	59	13	18	3	0	1	94
April	69	70	14	70	1	0	224
May	110	18	11	13	0	0	152
June	31	10	19	10	2	5	77
Total	1,547	227	196	145	17	86	2,218

Number of orders obeyed.

Month issued.	Sanitary engineer division.	Health districts.					
		No. 1.	Nos. 2 & 3.	No. 4.	No. 5.	No. 6.	Total.
1908.							
July	62	2	0	3	8	0	75
August	73	1	2	2	0	0	78
September	87	10	2	0	0	0	99
October	81	0	17	0	0	0	98
November	190	6	24	12	4	33	269
December	105	0	21	4	3	0	133
1909.							
January	142	0	5	9	2	0	158
February	177	11	10	4	2	0	204
March	163	13	5	2	1	0	184
April	77	67	0	67	1	0	212
May	79	0	0	9	0	0	88
June	107	10	15	11	2	0	145
Total	1,343	120	101	123	28	33	1,748

Number of orders canceled.

Month issued.	Sanitary engineer division.	Health districts.					
		No. 1.	Nos. 2 & 3.	No. 4.	No. 5.	No. 6.	Total.
1908.							
July	7	0	6	4	0	0	17
August	3	0	0	1	0	0	4
September	7	0	0	0	0	0	7
October	2	0	0	4	0	0	6
November	9	8	0	0	3	0	20
December	29	0	0	1	2	0	32
1909.							
January	9	0	0	3	3	0	15
February	1	0	0	3	1	0	5
March	6	0	0	0	0	0	6
April	4	0	0	0	0	0	4
May	6	0	0	6	0	0	12
June	8	0	0	5	0	0	13
Total	91	8	6	27	9	0	141

Number of orders uncompleted.

Month issued.	Sanitary engineer division.	Health districts.					
		No. 1.	Nos. 2 & 3.	No. 4.	No. 5.	No. 6.	Total.
1908.							
July	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0
December	8	0	0	0	0	0	8
1909.							
January	12	0	0	0	0	0	12
February	4	0	0	0	0	0	4
March	3	0	0	0	0	0	3
April	18	0	0	0	0	0	18
May	60	0	0	0	0	0	60
June	26	0	4	0	0	0	30
Total	131	0	4	0	0	0	135

Prosecutions for failure to comply with sanitary orders.

Month.	Number of prosecutions.	Amount of fines.
1908.		
July	1	₱20.00
August	1	10.00
September	6	60.00
October	1	20.00
November	36	296.00
December	7	51.00
1909.		
January	8	125.00
February	16	146.00
March	29	125.00
April	6	30.00
May	4	10.00
June	0	
Total	115	893.00

Plans for light and strong material buildings approved.

LIGHT MATERIALS.

Month.	Health districts.					
	No. 1.	Nos. 2 & 3.	No. 4.	No. 5.	No. 6.	Total.
1908.						
July	7	3	39	48	26	123
August	4	2	19	47	25	97
September	1	2	28	36	13	80
October	5	0	18	45	26	94
November	2	1	4	33	13	53
December	6	0	16	40	10	72
1909.						
January	9	0	31	67	32	139
February	3	0	33	35	25	96
March	0	0	31	65	35	131
April	0	0	37	42	51	130
May	0	0	38	78	58	174
June	2	1	20	43	29	95
Total	39	9	314	579	343	1,284

STRONG MATERIALS.

1908.						
July	2	7	1	3	2	15
August	8	4	3	2	0	17
September	4	5	8	10	3	30
October	2	10	5	4	2	23
November	3	7	1	2	2	15
December	3	6	1	0	0	10
1909.						
January	4	4	4	3	2	17
February	5	5	1	1	1	13
March	10	15	6	1	2	34
April	7	2	2	1	1	13
May	7	6	5	3	4	25
June	8	4	3	5	4	24
Total	63	75	40	35	23	236

New strong material buildings completed according to approved plans.

Month.	Health districts.					
	No. 1.	Nos. 2 & 3.	No. 4.	No. 5.	No. 6.	Total.
1908.						
July	2	2	1	2	0	7
August	2	5	0	2	0	9
September	0	3	3	0	1	7
October	2	2	3	2	0	9
November	2	4	1	4	0	11
December	1	6	2	3	2	14
1909.						
January	0	0	2	0	0	2
February	1	12	0	0	0	13
March	1	2	1	0	0	4
April	1	2	0	1	0	4
May	0	4	2	0	3	9
June	1	5	1	1	0	8
Total	13	47	16	15	6	97

STATISTICS FOR SAN LAZARO HOSPITALS DIVISION.

Report of sick.

Patients in hospital July 1, 1908	347
Patients admitted during the year	1,334
Patients discharged during year	765
Patients transferred during year	226
Patients escaped during year	6
Patients died during year	391
Patients remaining June 30, 1909	293

Average number of patients treated per day.

July, 1908	350	January, 1909	308
August, 1908	341	February, 1909	314
September, 1908	419	March, 1909	315
October, 1908	416	April, 1909	330
November, 1908	381	May, 1909	336
December, 1908	316	June, 1909	367

General average for the year, 349.41.

Average cost of subsistence per patient per day.

July, 1908	₱0.338	January, 1909	₱0.368
August, 1908	0.314	February, 1909	0.368
September, 1908	0.342	March, 1909	0.340
October, 1908	0.378	April, 1909	0.295
November, 1908	0.383	May, 1909	0.299
December, 1908	0.408	June, 1909	0.274

General average for the year, ₱0.341.

REPORT OF SAN LAZARO HOSPITALS.

Cholera department.

Month.	In hospital July 1, 1908.	Admitted.	Discharged not cholera.	Discharged cured.	Transferred not cured.	Died.	Remaining.
1908.							
July	2	13	8	1	----------	2	4
August	----------	21	3	4	----------	12	6
September	----------	340	31	57	18	156	94
October	----------	169	28	129	----------	63	23
November	----------	57	13	50	----------	23	4
December	----------	12	1	9	----------	5	1
1909.							
January	----------	4	2	1	----------	----------	2
February	----------	3	2	2	----------	1	----------
May	----------	5	3	----------	----------	2	----------
June	----------	4	3	----------	----------	----------	1
Total	2	628	94	253	18	264	1

NOTE.—The two cases that died in May and the one case remaining in June diagnosed "not cholera."

Patients from the provinces, and suspicious patients are included. This table is the corrected report and supersedes all others.

Cholera department, by race.

Race.	In hospital July 1, 1908.		Admitted.		Discharged.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans	------	------	24	4	20	2	4	2	------	------
Filipinos	2	------	334	236	195	126	140	110	1	------
Chinese	------	------	6	------	3	------	3	------	------	------
Others	------	------	16	8	12	7	4	1	------	------
Total	2	------	380	248	230	135	151	113	1	------

Insane department.

Status.	Americans, male.	Europeans, male.	Filipinos.		Chinese, male.	Others, male.	Total.
			Male.	Female.			
In hospital at last report	1	2	97	20	3	2	125
Admitted	7	1	37	5	------	1	51
Discharged	6	1	10	4	------	2	23
Died	------	------	11	5	1	------	17
Remaining	2	2	113	16	2	1	136

Insane department, by race.

Race.	In hospital July 1, 1908.		Admitted.		Discharged.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans	1	------	7	------	6	------	------	------	2	------
Europeans	2	------	1	------	1	------	------	------	2	------
Filipinos	97	20	37	5	10	4	11	5	113	16
Chinese	3	------	------	------	------	------	1	------	2	------
Others	2	------	1	------	2	------	------	------	1	------
Total	105	20	46	5	19	4	12	5	120	16

Leper department.

Status.	Europeans, male.	Filipinos.		Chinese, male.	Others, male.	Total.
		Male.	Female.			
In hospital at last report	------	115	75	2	------	192
Admitted	1	161	94	18	1	275
Discharged	------	15	16	13	------	44
Transferred to Culion	------	133	75	------	------	208
Escaped	------	5	1	------	------	6
Died	1	29	22	2	------	54
Remaining	------	94	55	5	1	155

Leper department, by race.

Race.	In hospital July 1, 1908.		Admitted.		Discharged.		Transferred to Culion.		Escaped.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Europeans	------	------	1	------	------	------	------	------	------	------	1	------	------	------
Filipinos	115	75	161	94	15	16	133	75	5	1	29	22	94	55
Chinese	2	------	18	------	13	------	------	------	------	------	2	------	5	------
Others	------	------	1	------	------	------	------	------	------	------	------	------	1	------
Total	117	75	181	94	28	16	133	75	5	1	32	22	100	55

Smallpox department.

Month.	In hospital July 1, 1908.	Admitted.	Discharged not smallpox.	Discharged cured.	Died.	Remaining.
1908.						
July	7	48		36	11	8
August		16		11	4	9
September		21		15	9	6
October		18		8	2	14
November		2		13	1	2
December		9		8	2	1
1909.						
January		8	2		5	2
February		16		8	1	9
March		30		23	7	9
April		59		52	4	12
May		13		19	4	2
June		8		8	1	1
Total	7	243	2	196	51	1

Smallpox department, by race.

Race.	In hospital July 1, 1908.		Admitted.		Discharged.		Died.		Remaining.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Americans			8	6	5	6	3			
Europeans			4	3	4	3				
Filipinos	2	5	125	79	101	62	25	22	1	
Chinese			2		2					
Others			9	7	9	6		1		
Total	2	5	148	95	121	77	28	23	1	

Opium habit department.

Month.	In hospital July 1, 1908.	Admitted.	Discharged.	Died.	Remaining.
1908.					
July	21	33	38		16
August		15	24		7
September		14	21		
October		3			3
November		6	2		7
December		3	3		2
1909.					
January		5	2		5
February		24	17		12
March			12		
April		2	2		
May		1			1
June			1		
Total	21	106	127	0	0

Miscellaneous department.

Diseases.	In hospital July 1, 1908.	Admitted.	Discharged.	Died.	Remaining.
Diphtheria		11	9	2	
Measles		1	1		
Meningitis		1	1		
Tetanus		8		8	
Mumps		6	6		
Varicella		2	2		
Whooping cough		2	2		
Scarlet fever		2	[a]2		
Scabies		3	3		
Total	0	31	26	5	0

[a] One of these cases apparently scarlet fever; one case discharged not scarlet fever.

Morgue and crematory department.

Month.	Diphtheria.	Cholera.	Leprosy.	Suspected cholera.	Other causes.	Smallpox.	Total.
1908.							
July	1	12	4	1	18	19	50
August	1	47	4	2	8	9	71
September		408	5		5	10	423
October		141	8		5	4	158
November	8	45	10		5	2	65
December	1	8	2		3	2	16
1909.							
January			4		7	8	19
February		1	4		6	1	12
March			2			7	9
April			2		6	4	12
May					9	4	13
June			9		6	1	16
Total	6	657	54	3	73	71	864

Autopsies held, 90; bodies cremated, 22; pauper burials, 560.

San Lazaro Morgue report.

Disposition.	Number of bodies.	Disposition.	Number of bodies.
Remaining from last year	0	Other causes of death	59
Received:		Total	864
Cholera	657		
Suspected cholera	3		
Smallpox	71	Dropped:	
Leprosy	54	Buried by family	262
Tetanus	6	Buried by city	560
Typhoid fever	1	Buried by Bureau of Prisons	19
Diphtheria	6	Cremated	22
Stillborn	4	Donated to Manila High School	[a]1
Glanders	1	Remaining after the year	0
Measles	1		
Human bones	1	Total	864

[a] Lot of human bones.

Number of autopsies held, 90.

GENERAL RETURN OF BIRTHS AND DEATHS IN THE PRINCIPAL PROVINCES OF THE PHILIPPINE ISLANDS, DURING THE CALENDAR YEAR 1908.

	Abra.	Albay.	Ambos Camarines.	Bataan.	Batangas.	Bohol.	Bulacan.
Population	54,880	233,793	228,181	45,166	276,282	269,223	223,985
Births	1,963	11,862	9,656	2,033	15,742	11,414	11,816
Annual birth rate per 1,000	36.09	50.73	42.31	45.01	56.98	42.39	50.58
Deaths:							
From 0 to 1 year	244	3,010	999	575	3,010	1,444	3,163
From 1 to 2 years	84	918	267	226	918	354	816
From 2 to 10 years	207	1,204	592	368	1,204	548	1,717
From 10 to 20 years	95	323	344	77	323	232	373
From 20 to 60 years	481	1,686	1,378	398	1,686	998	2,155
Over 60 years	248	680	575	149	680	668	861
Unknown	26	2	44	0	2	117	8
Typhoid fever	30	25	1	36	77	68	170
Malarial fever	190	576	758	254	1,338	215	442
Malarial cachexia	85	98	40	75	188	19	44
Smallpox	0	12	0	207	32		473
Whooping cough	50	48	50	6	15	210	72
Cholera	154	0	0	26	0	40	377
Dysentery	38	113	114	74	728	97	516
Beriberi	0	7	74	5	50	7	217
Tuberculosis:							
Of lungs	88	460	556	91	629	247	915
Of other organs	18	52	39	7	204	78	156
Cerebral congestion and hemorrhage	0	27	5	10	15	10	68
Convulsions of children	64	727	507	297	1,301	27	2,716
Acute bronchitis	1	114	62	42	290	8	139
Diarrhea and enteritis:							
Under 2 years	1	112	81	22	183	37	82
Chronic	1	14	1	11	209	19	81
2 years and over	20	98	55	30	358	28	118
Violence	67	30	39	14	67	36	66
All other diseases	583	2,548	1,872	586	2,144	3,210	2,498
Total	1,885	5,061	4,199	1,793	7,823	4,356	9,112
Males	701	2,702	2,230	960	4,151	2,174	4,796
Females	684	2,359	1,969	833	3,672	2,182	4,316
Annual death rate per 1,000	25.46	22.50	18.40	39.69	28.39	16.17	40.68

	Cagayan.	Capiz.	Cavite.	Ilocos Norte.	Ilocos Sur.	Iloilo.	Isabela.
Population	147,930	226,299	134,779	198,195	189,279	400,037	66,798
Births	6,998	9,469	5,437	8,318	8,489	16,291	3,219
Annual birth rate per 1,000	47.30	41.84	40.33	41.96	44.84	40.72	48.79
Deaths:							
From 0 to 1 year	1,064	1,391	1,430	1,084	1,400	2,661	368
From 1 to 2 years	270	755	511	395	581	1,460	140
From 2 to 10 years	552	1,691	952	797	1,469	3,776	396
From 10 to 20 years	363	600	148	242	278	1,563	206
From 20 to 60 years	1,308	2,068	1,180	1,107	1,584	5,159	515
Over 60 years	558	780	487	754	640	1,196	226
Unknown	9	21	0	6	9	13	13
Typhoid fever	56	86	78	61	117	32	11
Malarial fever	539	689	545	784	465	1,160	327
Malarial cachexia	180	114	345	150	19	509	59
Smallpox	0	550	141	0	58	585	0
Whooping cough	57	166	8	21	18	49	18
Cholera	205	1,090	220	302	1,602	1,985	0
Dysentery	314	593	338	219	354	41	67
Beriberi	22	26	38	19	7	30	6
Tuberculosis:							
Of lungs	182	573	228	349	414	1,201	196
Of other organs	37	41	37	65	15	214	11
Cerebral congestion and hemorrhage	6	9	39	6	23	61	3
Convulsions of children	525	312	1,020	331	168	1,491	181
Acute bronchitis	23	32	76	34	48	194	6
Diarrhea and enteritis:							
Under 2 years	37	79	137	94	141	178	33
Chronic	23	68	91	31	42	119	23
2 years and over	40	93	159	166	161	948	39
Violence	38	168	30	49	56	57	14
All other diseases	1,831	2,617	1,178	1,654	2,208	7,784	980
Total	4,115	7,306	4,708	4,335	5,911	15,923	1,966
Males	2,178	3,660	2,504	2,250	3,055	8,171	993
Females	1,937	3,646	2,204	2,085	2,856	7,697	973
Annual death rate per 1,000	27.81	32.28	34.18	21.87	31.22	39.56	27.12

	Laguna.	Negros Occidental.	Negros Oriental.	Pampanga.	Pangasinan.	Rizal.	Romblon.
Population	148,606	304,668	194,862	225,118	436,084	148,502	54,582
Births	7,529	10,865	7,842	12,026	23,828	8,314	2,018
Annual birth rate per 1,000	50.66	35.99	40.24	53.42	54.64	56.25	37.00
Death:							
From 0 to 1 year	1,949	2,224	1,395	2,950	5,096	2,930	290
From 1 to 2 years	526	1,089	391	728	2,707	864	92
From 2 to 10 years	947	2,792	529	1,180	6,437	1,821	175
From 10 to 20 years	268	1,015	222	247	1,280	328	90
From 20 to 60 years	1,576	3,916	1,007	1,467	5,340	1,820	317
Over 60 years	586	868	368	763	1,953	798	129
Unknown	17	53	6	5	15	30	17
Typhoid fever	66	10	8	191	262	116	22
Malarial fever	726	1,099	665	884	2,185	463	126
Malarial cachexia	189	591	9	225	216	147	24
Smallpox	111	139	23	95	4,043	679	0
Whooping cough	26	41	157	21	122	7	3
Cholera	120	2,718	2	228	4,562	656	0
Dysentery	440	894	369	361	834	768	47
Beriberi	34	83	48	43	32	245	14
Tuberculosis:							
Of lungs	688	1,082	183	725	1,437	386	83
Of other organs	99	24	229	44	162	138	2
Cerebral congestion and hemorrhage	20	15	8	30	35	76	15
Convulsions of children	1,024	1,150	237	1,864	281	1,410	134
Acute bronchitis	97	53	28	160	146	284	8
Diarrhea and enteritis:							
Under 2 years	114	141	110	107	89	109	7
Chronic	107	19	42	41	77	67	15
2 years and over	182	209	108	56	351	168	5
Violence	56	48	32	53	123	49	25
All other diseases	1,770	3,591	1,665	1,572	7,821	2,828	580
Total	5,869	11,907	3,918	7,290	22,778	8,591	1,110
Males	3,035	6,241	2,052	3,876	11,702	4,494	597
Females	2,834	5,666	1,866	3,414	11,076	4,097	513
Annual death rate per 1,000	39.49	39.09	20.10	32.38	52.23	57.85	20.35

	Sorsogon.	Tarlac.	Tayabas.	Union.	Zambales.
Population	120,454	139,971	201,936	175,655	52,972
Births	6,087	7,494	8,599	6,558	2,834
Annual birth rate per 1,000	50.53	53.06	42.58	53.97	53.49
Deaths:					
From 0 to 1 year	760	1,659	1,485	1,071	462
From 1 to 2 years	225	752	308	647	213
From 2 to 10 years	351	1,609	649	1,696	426
From 10 to 20 years	185	252	347	420	102
From 20 to 60 years	674	1,128	1,775	1,447	549
Over 60 years	393	478	650	559	133
Unknown	2	4	9	16	33
Typhoid fever	6	102	103	220	19
Malarial fever	266	588	620	468	183
Malarial cachexia	11	320	400	106	55
Smallpox		604	17	22	111
Whooping cough	9	29	20	144	3
Cholera		358	1	1,493	192
Dysentery	54	365	184	647	172
Beriberi	35	37	81	27	16
Tuberculosis:					
Of lungs	278	465	774	181	240
Of other organs	38	48	90	83	17
Cerebral congestion and hemorrhage	6	8	57	18	4
Convulsions of children	460	833	484	688	222
Acute bronchitis	61	53	111	109	14
Diarrhea and enteritis:					
Under 2 years	14	29	58	47	15
Chronic	4	21	12	76	13
2 years and over	18	26	40	212	49
Violence	16	38	39	67	22
All other diseases	1,319	1,958	2,282	1,303	571
Total	2,590	5,882	5,223	5,856	1,918
Males	1,370	3,167	2,692	2,995	957
Females	1,220	2,715	2,531	2,861	961
Annual death rate per 1,000	21.50	42.02	25.86	46.60	36.58

STATEMENT OF EXPENDITURES.

The following statement shows the expenditures made during the fiscal year 1909 chargeable against the appropriation made by Act No. 1873 for the Bureau of Health during that period:

Amount appropriated		₱1,300,000.00
Amount carried from prior fiscal year allowed by the Insular Auditor		33,277.87
Total		1,333,277.87
Expenses chargeable as follows:		
General:		
Salaries and wages	₱138,191.17	
Miscellaneous, property division	4,530.00	
Stationary and office supplies	3,605.27	
Printing and binding	10,083.81	
Periodicals	91.02	
Rent post-office box	32.00	
Postage and telegrams	3,068.52	
Cablegrams	235.57	
Rent telephones	1,241.48	
New furniture	1,422.09	
Repairs	1,009.25	
Incidentals	4,040.36	
Transportation, city of Manila	23,442.70	
Commutation and traveling expenses from and to United States	22,470.16	
Traveling expenses, employees	8,324.58	
Transportation of freight	1,013.01	
Medicine, Central Free Dispensary	3,034.88	
Incidentals, Central Free Dispensary	884.94	
Medicines and medical supplies, indigent persons	6,981.78	
Rent, sanitary station	240.00	
Light, sanitary station	37.35	
Incidental, sanitary station	296.03	
Disinfectants and apparatus	10,539.44	
Asilo de San Vicente de Paul	1,449.00	
Hospicio de San Jose	44,372.10	
Colegio de Santa Isabel	3,624.40	
Board of Medical Examiners	786.16	
Total		295,647.07
Emergency fund:		
General and cholera, city of Manila		188,163.21
Inspection division:		
Salaries and wages	106,177.29	
Serum, antiplague	33.00	
Sera, miscellaneous	180.75	
Photographs	211.35	
Traveling expenses, district health officers and medical inspectors	12,063.74	
Total		118,666.13

STATEMENT OF EXPENDITURES—Continued.

Prison sanitation division:		
Salaries and wages	₱6,981.65	
Disinfectants	682.45	
Medicines, medical and surgical supplies	4,524.54	
Total		₱12,188.64
Baguio Hospital division:		
Salaries and wages	8,501.96	
Subsistence supplies	6,431.75	
Medical and surgical supplies	1,150.14	
Hospital equipment	3,949.89	
Laundry	521.07	
Fuel	738.80	
Incidentals	10,427.64	
Freight	650.09	
Total		32,371.34
Culion leper colony:		
Salaries and wages	23,397.88	
Subsistence	90,867.26	
Equipment, kitchen	340.79	
Equipment, hospital	568.50	
Bedding, towels, lepers	1,712.67	
Clothing	2,077.66	
Disinfectants	14,25	
Medicines and medical supplies	7,006.06	
Stationary and office supplies	13.28	
Fuel	764.22	
Gratuity, lepers	11,173.60	
Constructions	21,244.16	
Freight	3,218.48	
Collection of lepers	24,740.43	
Incidentals	8,662.06	
Total		195,801.30
Vaccination division:		
Salaries and wages	40,844.68	
Antiseptic supplies and dressings	6,697.60	
Vaccine virus	26,375.00	
Ice for virus	308.84	
Traveling expenses, vaccinators	2,374.70	
Total		76,600.82
San Lazaro Hospitals division:		
Salaries and wages	37,718.67	
Subsistence supplies	54,019.82	
Medicines	3,219.38	
New furniture	1,670.95	
Clothing, insane	214.29	
Clothing, lepers	454.19	
Towels	621.04	
Gratuity to lepers	1,748.86	
Bedding	4,088.59	
Soap	1,080.12	

STATEMENT OF EXPENDITURES—Continued.

San Lazaro Hospital division—Continued.		
Fuel	₱3,188.51	
Cigarrettes, tobacco, etc	52.00	
Telephone rent	242.87	
Lights	4,447.50	
Transportation	260.60	
Shoeing and forage	608.91	
Incidentals	7,557.61	
Total		₱121,193.91
Civil Hospital division:		
Salaries and wages	56,156.68	
Subsistence	41,351.63	
Rent buildings	10,470.00	
Rent telephones	312.00	
Lights	4,913.70	
Repairs	590.00	
Coal and oil	1,310.80	
Medicines, medical and surgical supplies	11,642.67	
Miscellaneous supplies	13,606.81	
Laundry	4,620.24	
Forage and horseshoeing	100.70	
Extra transportaion	1,455.84	
Incidentals	145.55	
Total		146,676.62
Amount expended for prior fiscal year's obligations as per Auditor's entries		28,249.17
Difference as per Auditor's books, change of charges between different fiscal years		2,864.57
Expenditures during fiscal year 1909		1,218,422.78

In addition to the foregoing statement of actual expenditures during the fiscal year, 1909, there are obligations outstanding in the sum of ₱195,000.

The following amounts as receipts were collected during the fiscal year:

Cashier, Bureau of Health	₱52,404.44
Superintendent and cashier, Civil Hospital	20,093.41
Superintendent and cashier, Baguio Hospital	6,471.88
Inter-Bureau vouchers, Board of Dental, Medical and Pharmaceutical Examiners, credits by journal entries, Bureau of Audits	29,395.34
Total	108,370.07

From the amount collected during the fiscal year 1909, the amount of ₱28,905.53 was credit to appropriation and the balance ₱79,464.54 was receipt from operation.

Total available at the beginning of the fiscal year 1909	₱1,333,277.87
Expenditures during the fiscal year	1,218,422.78
Credits to appropriation	28,905.53
Net expenditures during the year	1,189,517.25
Outstanding liabilities	195,000.00
Receipts from operation	79,464.54
Balance available	28,295.16

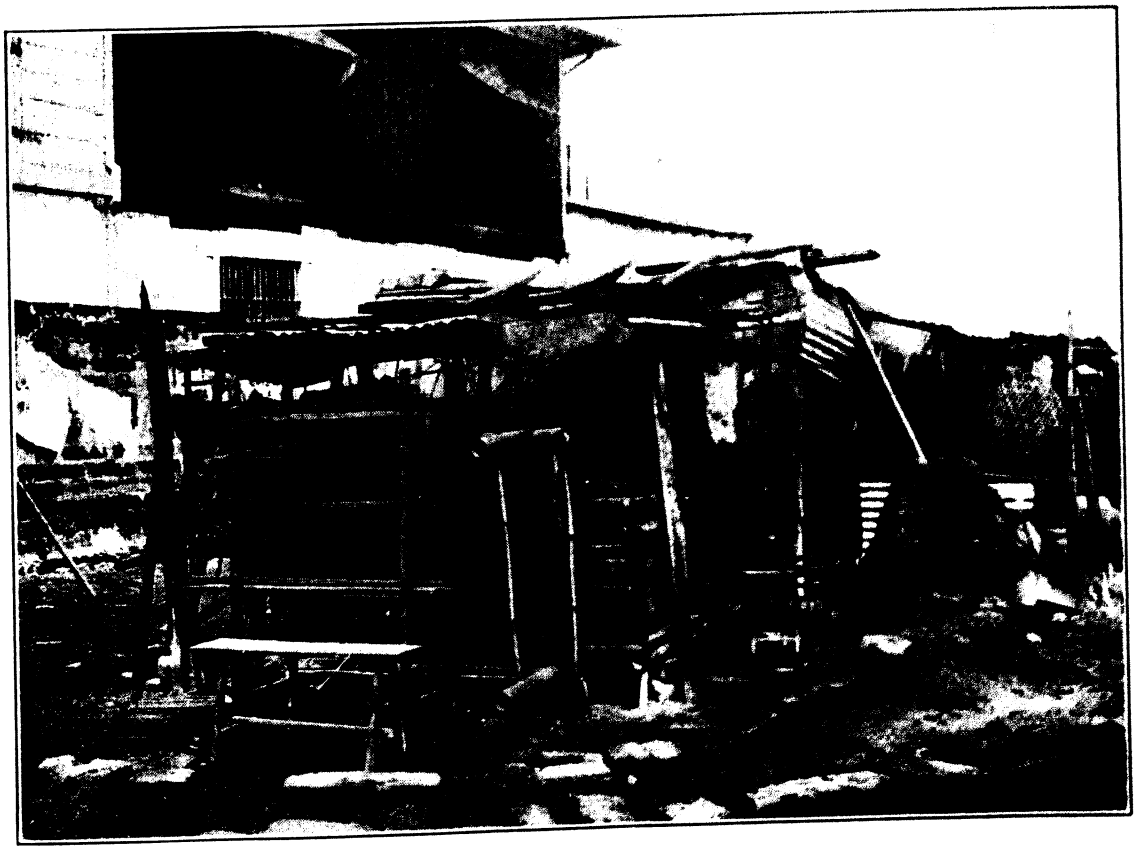
INDEX.

89132——13

○

A CONGESTED SECTION WITHOUT STREETS.

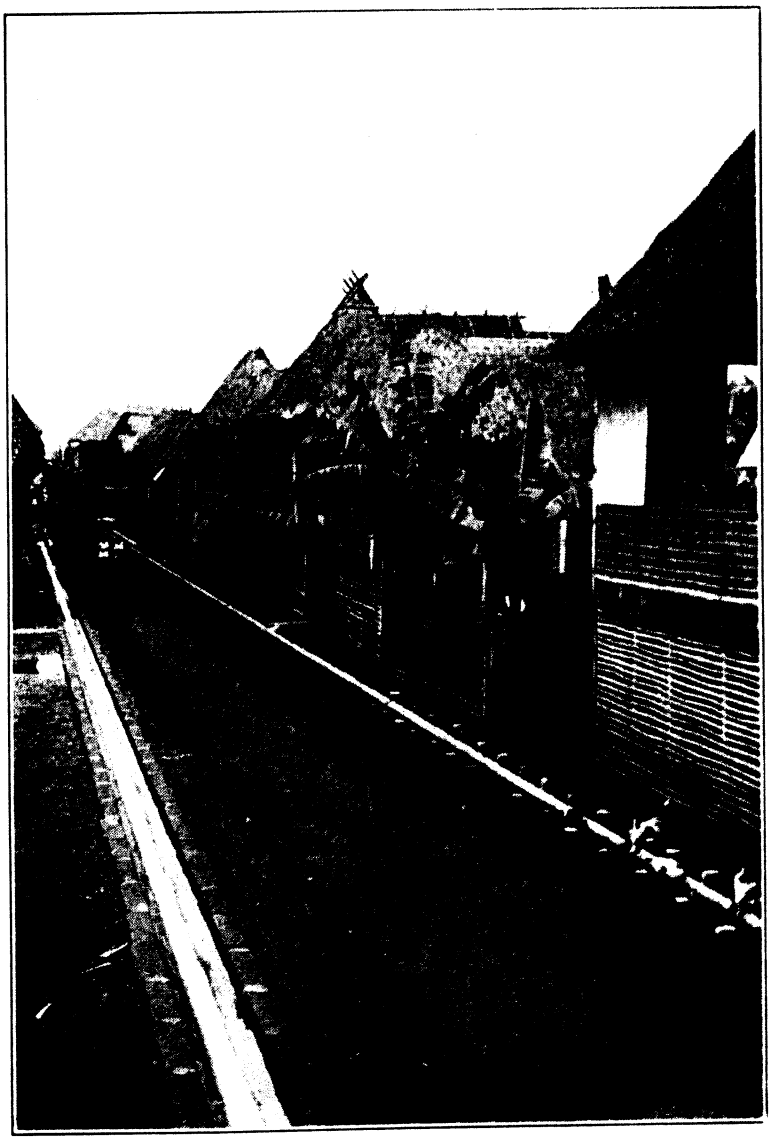
AN ALLEY IN SAN LAZARO ESTATE WITH NEW DRAINAGE SYSTEM.



THE CLASS OF HOUSES THE BUREAU OF HEALTH IS ATTEMPTING TO HAVE REMOVED.

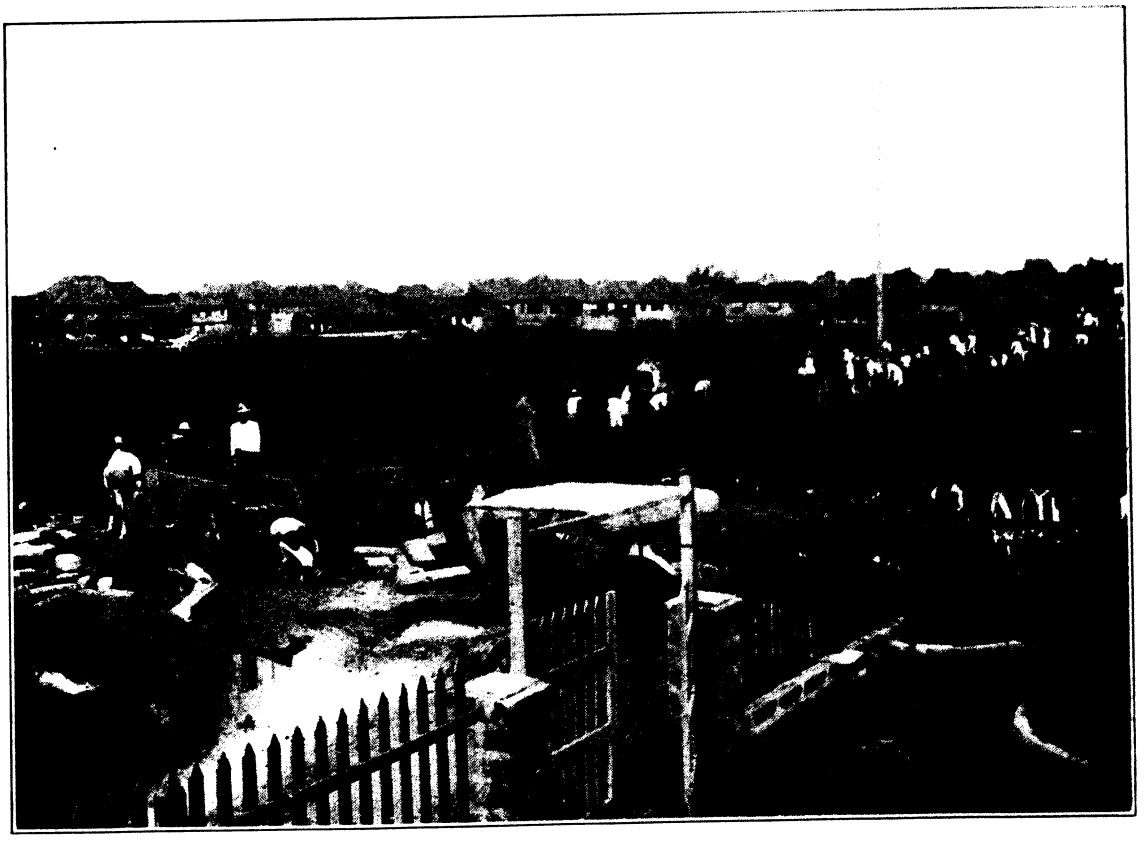
ANOTHER EXAMPLE OF THE CLASS OF HOUSES THE BUREAU OF HEALTH IS ATTEMPTING TO HAVE REMOVED.

AN UNDRAINED INSANITARY STREET IN SAN LAZARO ESTATE.

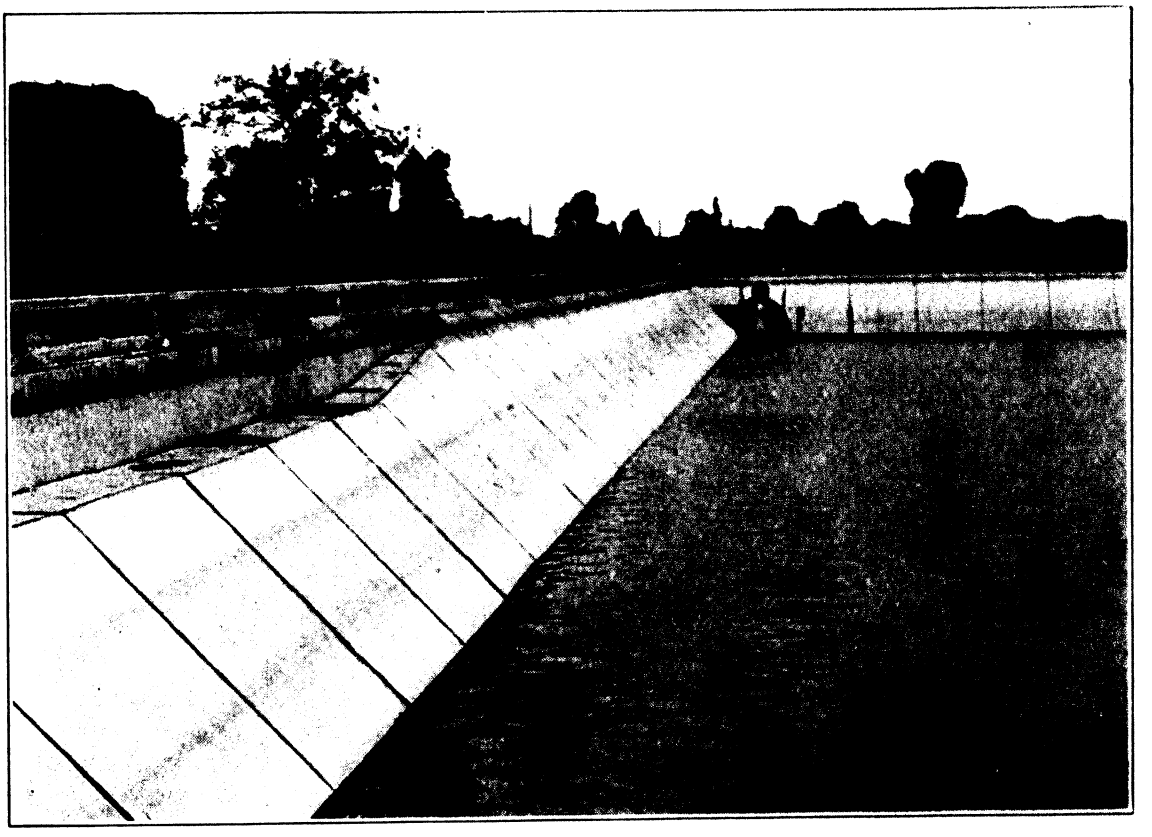


STREET IN SAN LAZARO ESTATE WITH NEW DRAINAGE SYSTEM.

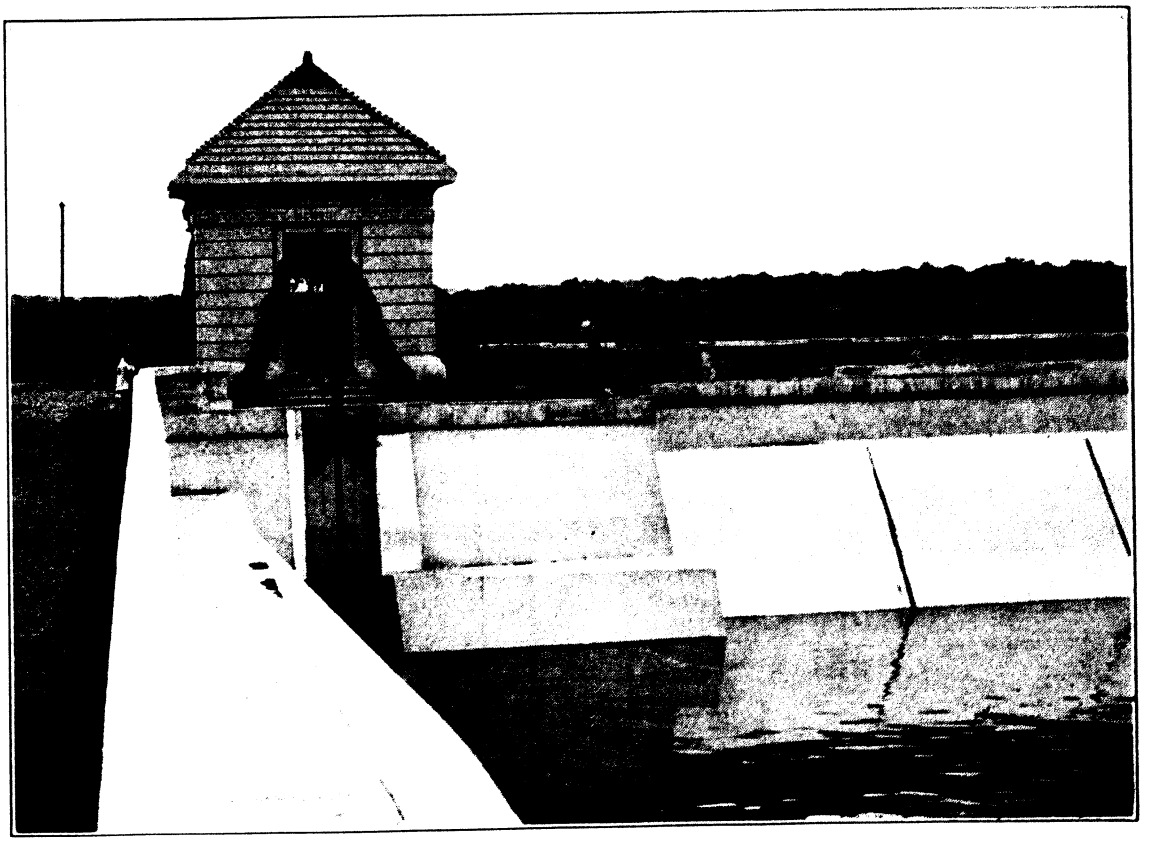
DRAINING SAN LAZARO ESTATE.



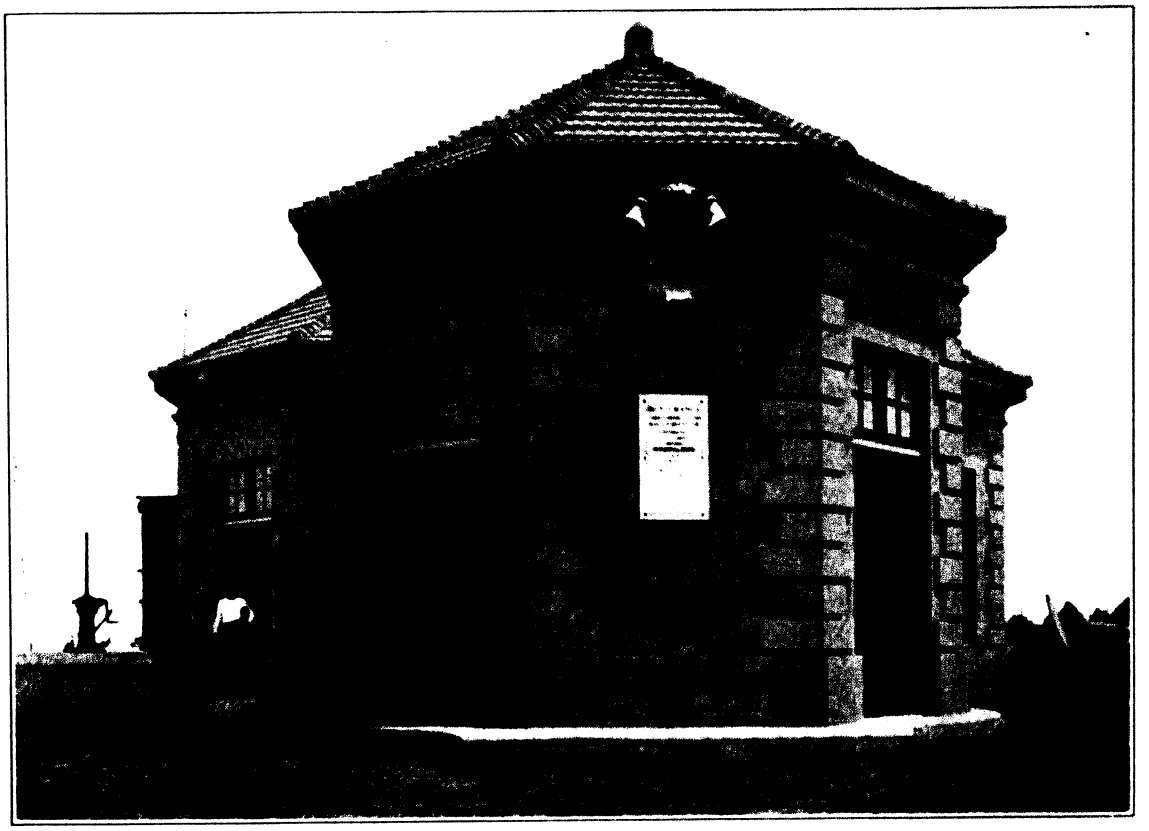
DRAINING SAN LAZARO ESTATE.



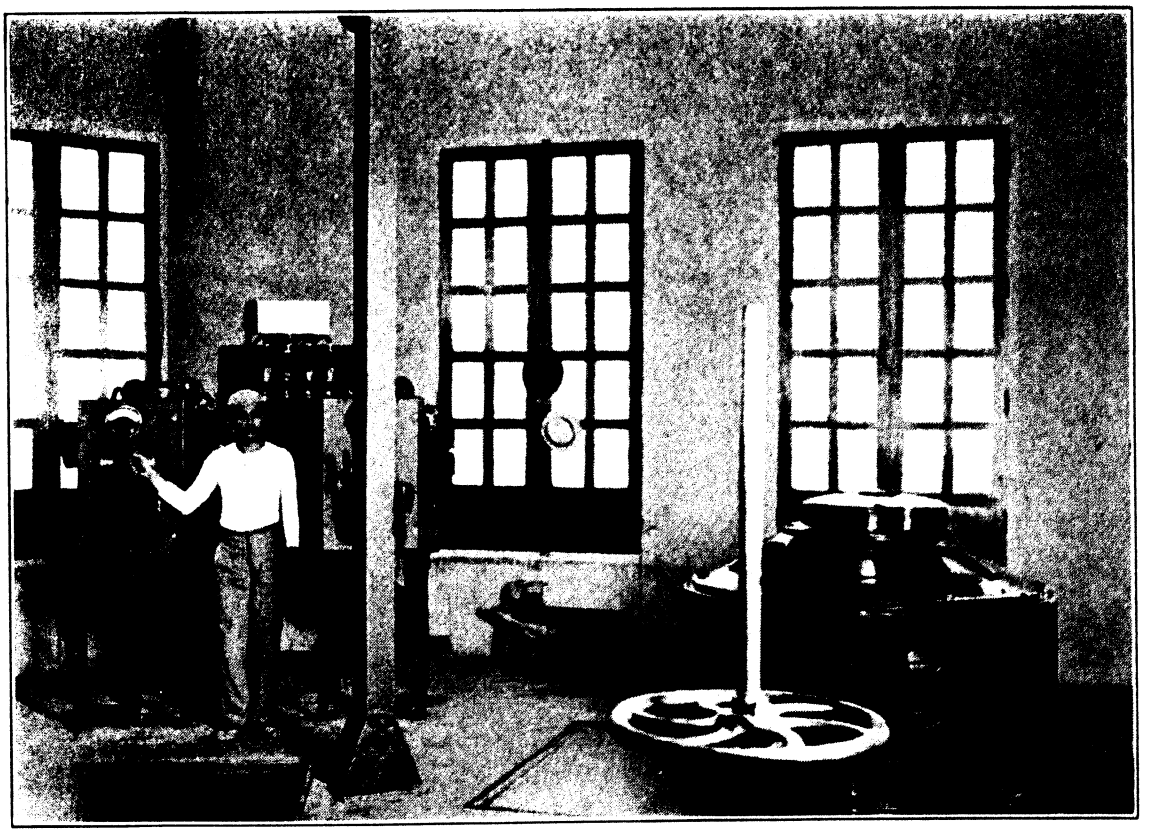
THE STORAGE BASIN OF THE NEW WATER SUPPLY.



GATE HOUSE OF NEW RESERVOIR.

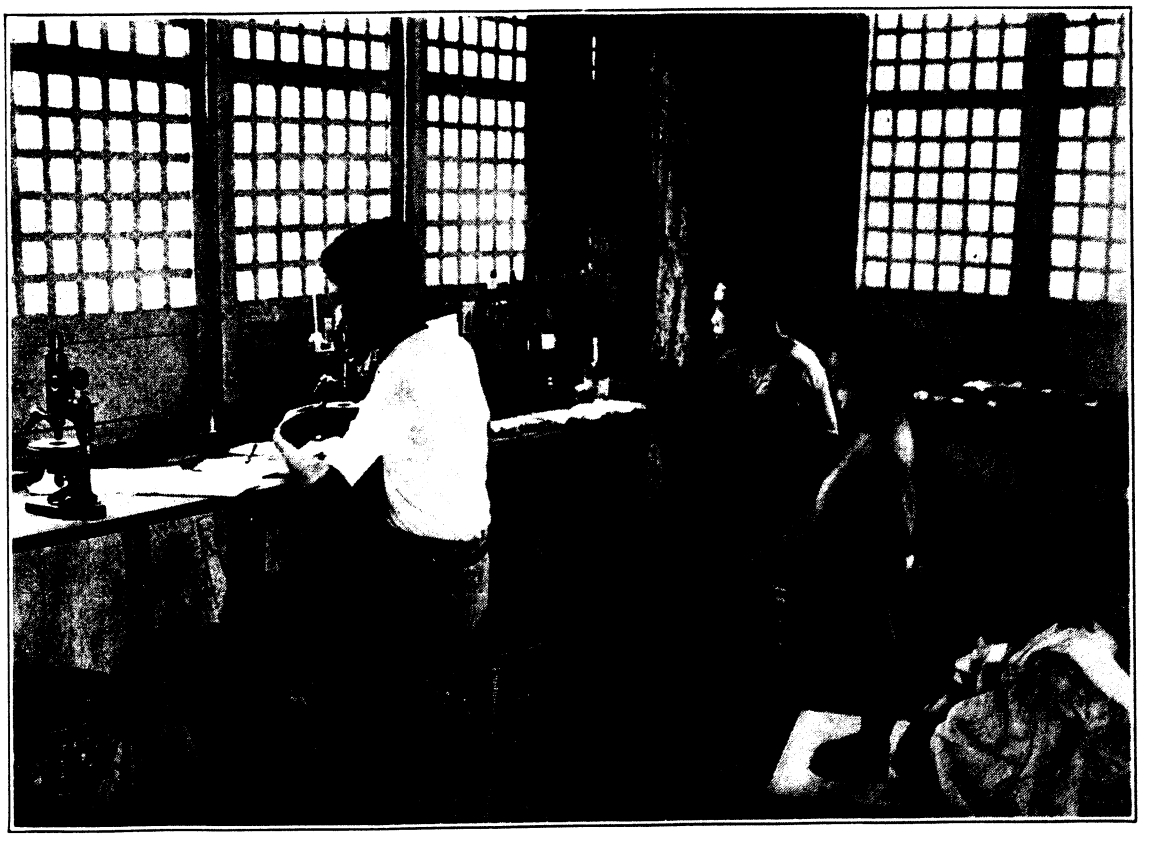


CENTRAL PUMPING STATION OF NEW SEWER SYSTEM, TONDO BEACH—EXTERIOR VIEW.

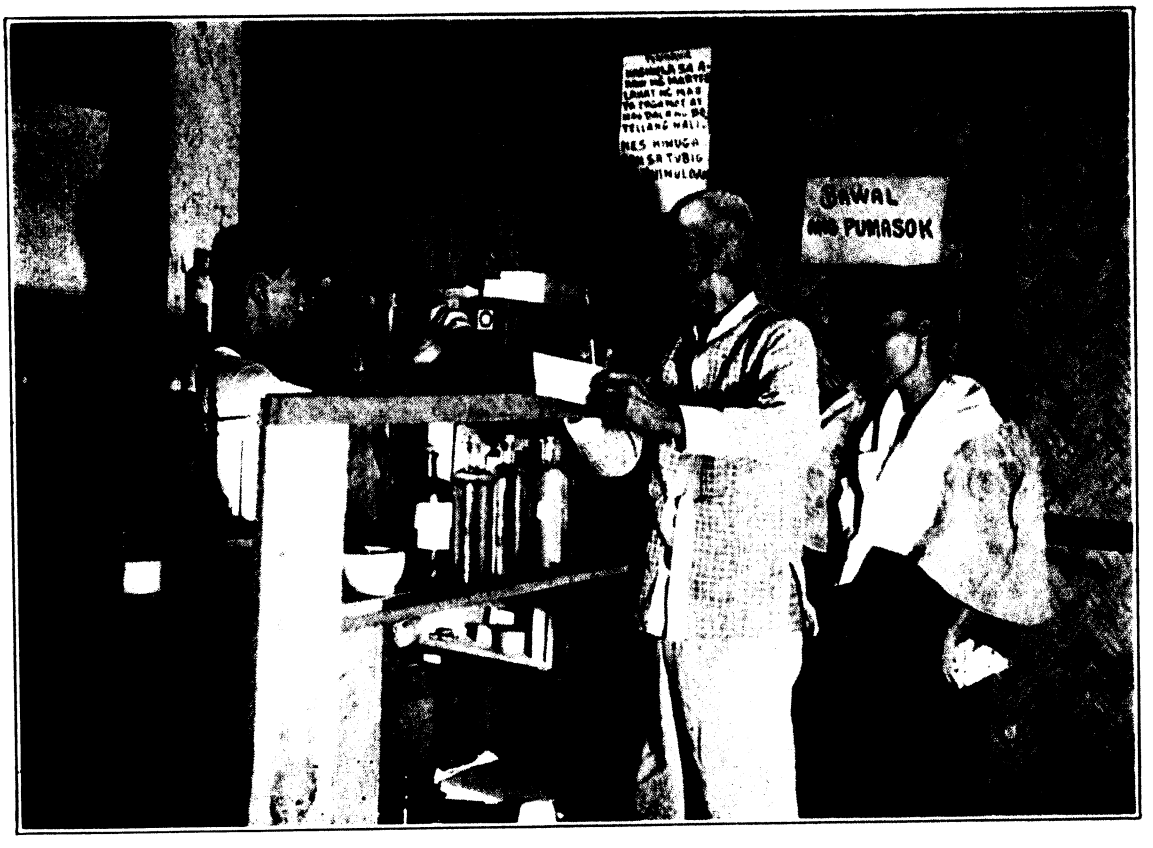


CENTRAL PUMPING STATION OF NEW SEWER SYSTEM, TONDO BEACH—INTERIOR VIEW.

HOOKWORM CAMPAIGN HEADQUARTERS, LAS PIÑAS, RIZAL.

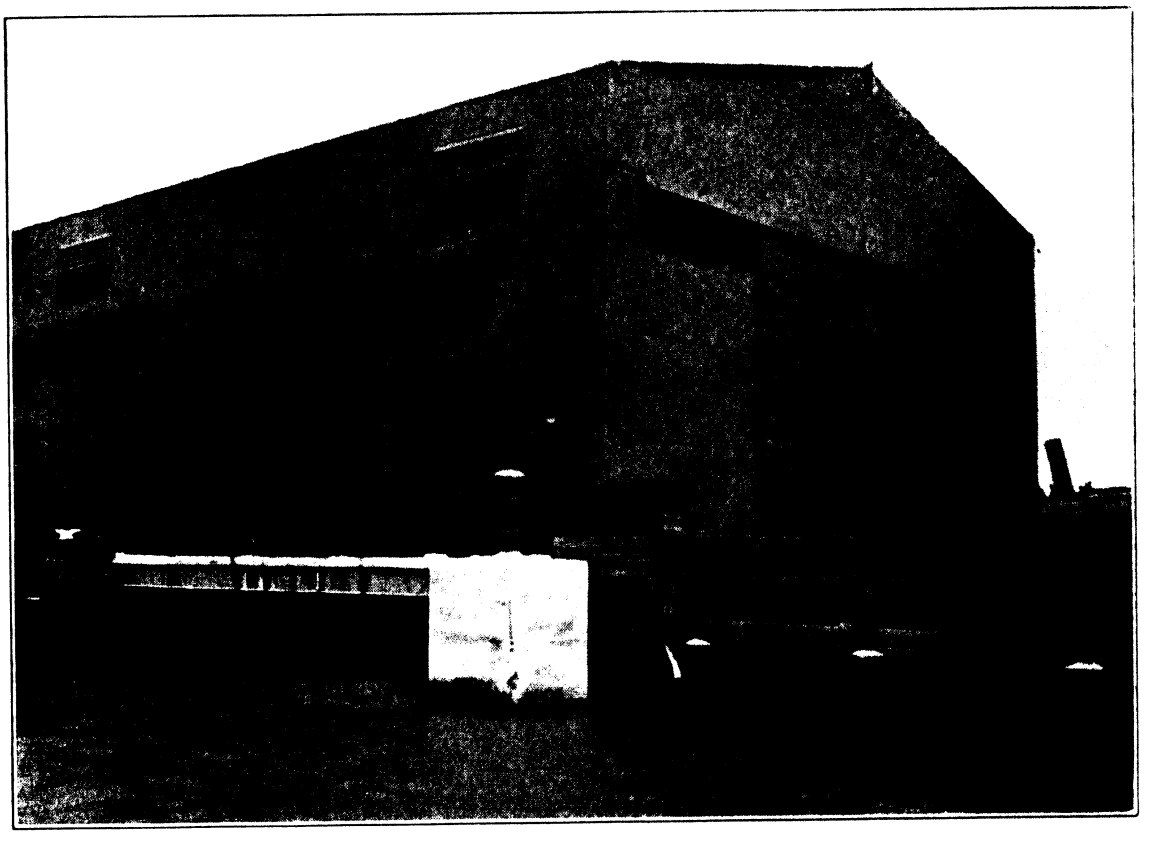


LABORATORY AT HOOKWORM CAMPAIGN HEADQUARTERS, LAS PIÑAS, RIZAL.



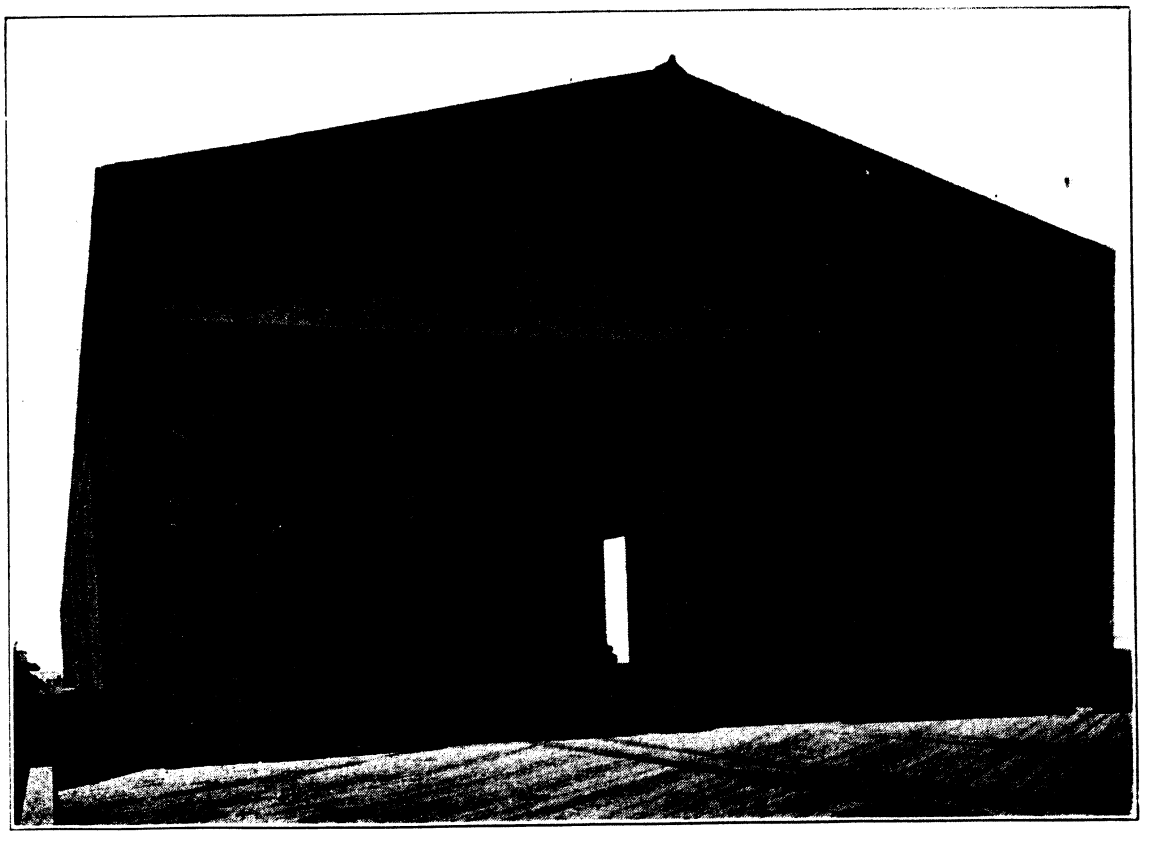
HOOKWORM CAMPAIGN, LAS PIÑAS, RIZAL—FREE DISPENSARY.

UNDRAINED INSANITARY GROUND.



NEW RAT-PROOF WHARF CONSTRUCTION.

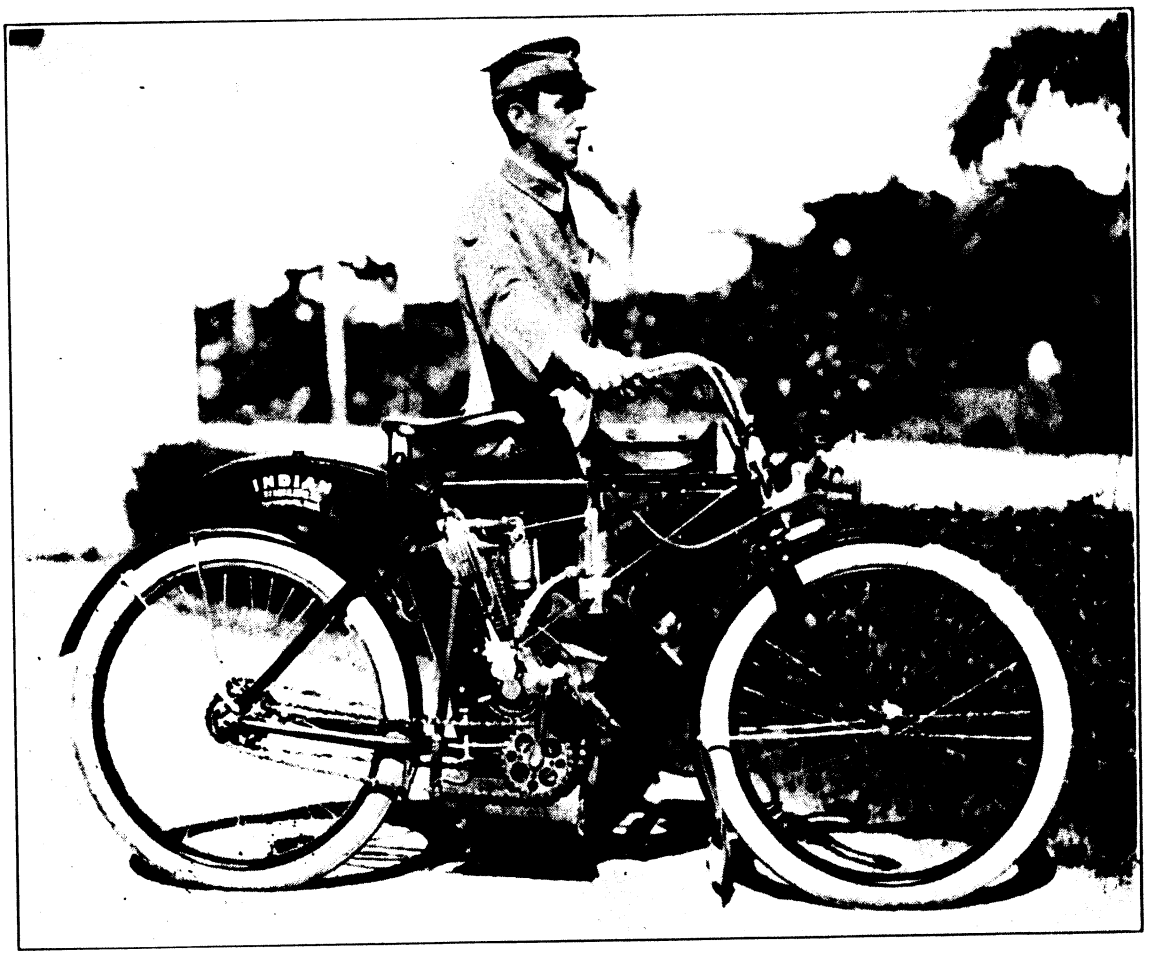
(Note iron flashing which effectually prevents rats from coming ashore.)



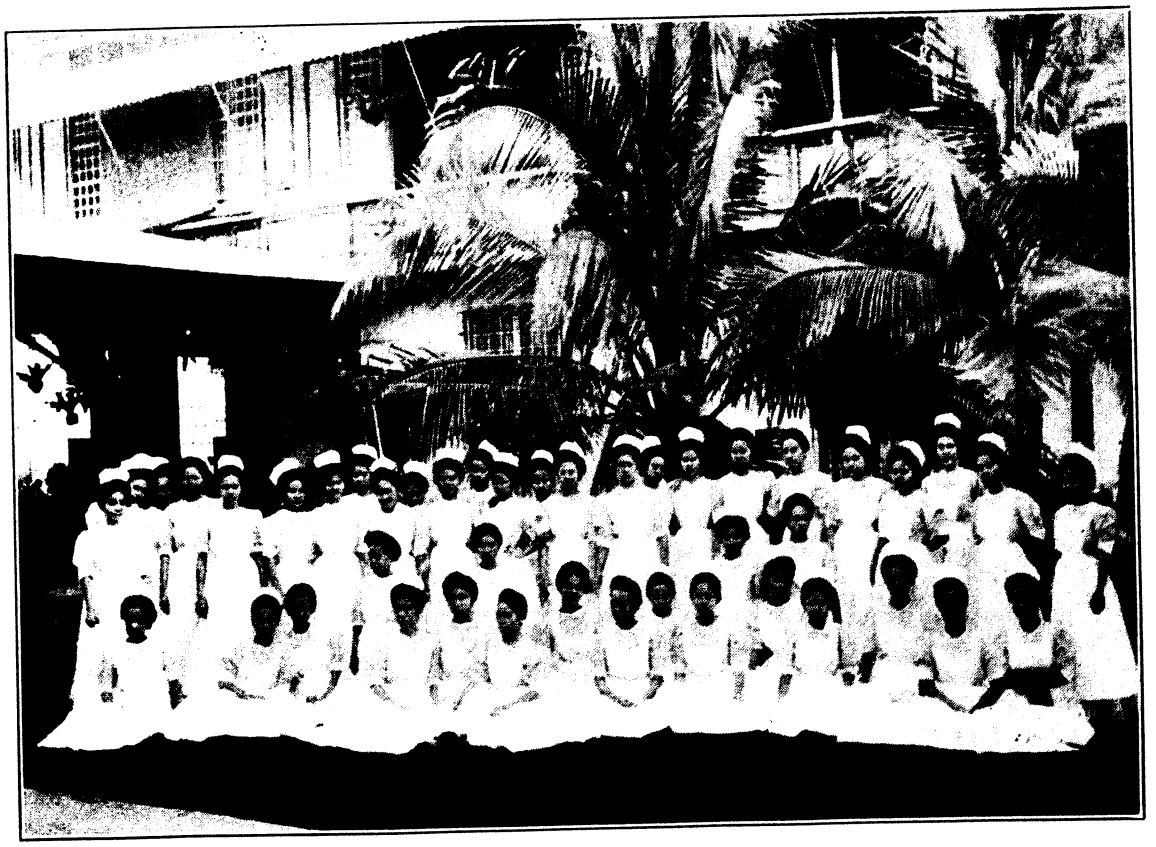
NEW RAT-PROOF WHARF CONSTRUCTION.

(Note iron drop gates. One raised to permit passage of traffic.)

NEW PHILIPPINE GENERAL HOSPITAL IN PROCESS OF CONSTRUCTION.



SANITARY INSPECTOR, BURUEAU OF HEALTH, WITH MOTOR CYCLE.



FILIPINA PUPIL NURSES.