Care and treatment of persons afflicted with leprosy : report of the Committee on Public Health and National Quarantine, United States Senate, on S. 4086, a bill to provide for the care and treatment of persons afflicted with leprosy, and to prevent the spread of leprosy in the United States.

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SENATE

REPORT
No. 306

CARE AND TREATMENT OF PERSONS AFFLICTED WITH LEPROSY

REPORT

OF THE

COMMITTEE ON PUBLIC HEALTH AND NATIONAL QUARANTINE UNITED STATES SENATE

ON

S. 4086

A BILL TO PROVIDE FOR THE CARE AND TREATMENT OF PERSONS AFFLICTED WITH LEPROSY, AND TO PREVENT THE SPREAD OF LEPROSY IN THE UNITED STATES

PRESENTED BY MR. RANSDELL

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The CHAIRMAN. How do you feel, Doctor, toward the passage of such a bill as this, and how does the profession in your State feel in regard to it?

Dr. FULTON. I am very much in favor of the passage of a bill of this sort. I do not think the profession in my State is very sensitive on the subject. Their experience is not such as to arouse them. At the Johns Hopkins Hospital, however, you would find a vigorous sentiment in favor of this legislation. They had to carry the whole load—service, sympathy, and cost—in the case of M. S.

The CHAIRMAN. Have you any other suggestion to make, Doctor?

Dr. FULTON. No; I have not.

The CHAIRMAN. We are very much obliged to you, Doctor.

Dr. FULTON. Not at all.

The CHAIRMAN. Dr. Hoffman, we will hear you now.

STATEMENT OF FREDERICK L. HOFFMAN, LL. D., STATISTICIAN, THE PRUDENTIAL INSURANCE CO. OF AMERICA, NEWARK, N. J.

The CHAIRMAN. Doctor, I will ask you to please discuss this question in your own way.

Dr. HOFFMAN. I have taken note of what has already been said in evidence, and I will try to answer some of the questions that have been raised, particularly by Senator Works. At the outset, however, I would like to explain my own interest in this matter, which extends over about 20 years, and which has included visits to the leper settlements at Molokai and in Louisiana, as well as to the isolation hospital at San Francisco, where some 15 cases are being taken care of. I have also seen isolated cases of leprosy, including the two patients for some time under confinement here in Washington. I have, therefore, the advantage of a fairly extended personal knowledge of actual cases, but, in addition thereto, I have quite extensively considered the statistics of leprosy throughout the United States and the remainder of the civilized world, with the result that I am absolutely convinced of the gradual increase of leprosy in this country in the absence of effective segregation. And I desire to impress upon you, Mr. Chairman, and upon your committee, the profound conviction that leprosy in America is a much more serious menace to the public than is generally assumed to be the case.

By way of illustration of the ever-present menace of leprosy, I would submit for inclusion in the record the following case reported in the New York Sun of this morning from Brooklyn, N. Y.:

> Tillie Davis, 18 years old, who died on Saturday in the Kings County Hospital and was buried yesterday in Mount Sinai Cemetery, was a victim of leprosy, according to the coroner's certificate. She was admitted to the hospital 10 months ago. About a year prior to that she came from Key West, where her parents live, to join a sister in Brooklyn.
>
> Deputy Supt. Price of the hospital said that when the girl was taken to the hospital the diagnosis showed that she was suffering from leprosy and internal ulcer.
>
> "We isolated her," Mr. Price said, "as much as possible. Men suffering from leprosy are sent to an isolated section of Blackwells Island, but no provision is made for women. Her condition did not develop sufficiently to threaten inoculation of other patients."

Only two weeks ago, under date of February 1, 1916, the New York Sun published the following account of a case of leprosy discovered in Jersey City:

Magdelina McLean, 17 years old, was taken from her home at 930 Westside Avenue, Jersey City, yesterday to the Hudson County Contagious Diseases Colony at Snake Hill, a victim of leprosy. The health authorities had just received their first knowledge of the case, although the girl had been suffering from the disease for five years.

When the girl's parents learned the nature of the disease they placed one room in their apartment under quarantine. Care was taken to see that nobody touched anything with which the girl's hands might have come in contact, and other members of the family were saved from contracting the disease. The girl was a pupil in public school No. 23 and a member of St. John's Episcopal Sunday School when stricken.

Physicians say that her case is too far advanced to make a cure possible.

Cases of this nature are sufficiently common to demand consideration. The history of the cases found at large is almost invariably to the effect that the disease was not recognized in its early stages, and that therefore there had been more or less promiscuous contact with the public, at the serious risk of infection. There are reasons, therefore, for believing that there are many more foci of leprosy in this country than we have positive knowledge of. Almost invariably when such cases are discovered proof is forthcoming of some antecedent connection with a case of leprosy or exposure to the disease in some focus of infection, chiefly the Philippines, Hawaii, Cuba, the West Indies, etc.

This bill, or rather the principle of this bill, has the official indorsement of the American Dermatological Association, the American Medical Association, the American Academy of Medicine, and the Thirteenth Annual Conference of State and Territorial Health Officers with the United States Public Health Service. With your permission, I shall read to you a resolution which I introduced at the last meeting of the conference and which, on motion of Dr. Dowling, State health officer of Louisiana, seconded by Dr. Hurty, the health officer of Indiana, was unanimously adopted:

Whereas leprosy exists or occurs in practically every State and Territory of the United States; and

Whereas there are only three public leprosaria under State control in the United States; and

Whereas there is no concerted movement on foot for the Federal control of leprosy: Therefore be it

Resolved, That this conference regards leprosy as a national problem and recommends to Congress the establishment of national leper homes in various parts of the United States in order that lepers may be effectively isolated and receive humanitarian treatment and that the spread of the disease may be effectively checked.

I subsequently had occasion to present a similar resolution at the meeting of the American Academy of Medicine, held in San Francisco, which was also unanimously adopted. Before presenting my resolution I had entered into correspondence with nearly every State health officer in this country, and I have here with me the letters received in reply to a circular request for information, including a number of letters from health officers of large municipalities. With a single exception, all of the letters are in favor of the principle of this bill, as incorporated in my question, "Are you in favor of a national leprosarium to provide for the adequate treatment and care of at least such lepers as are apprehended by the authorities

while in interstate transit and which are probably the only cases which at the present time can be properly taken care of by the Government?"

The CHAIRMAN. Did all of your correspondents reply to your inquiry?

Dr. HOFFMAN. Practically all were good enough to do so. A few made no reply, probably because no leprosy existed in the State or municipality concerned. In summarizing the results I find that 39 State health officers replied in the affirmative and only 1—California—replied in the negative. That health officer, however, is no longer connected with the California State Board of Health. What the attitude of the present officer is I do not know.

The CHAIRMAN. These are the replies of the health officers of 39 States?

Dr. HOFFMAN. Yes; the official health officers of 39 States, without qualification, indorsed the principle of this bill as set forth in the question contained in my circular letter of inquiry.

The CHAIRMAN. Was there any objection urged to the bill?

Dr. HOFFMAN. No specific objection was raised by anyone further than that the State health officer of California in office at the time simply replied in the negative. With your permission, I would like to incorporate in the record the following extracts from some of the letters received.

The secretary of the State Board of Health of Illinois replies:

"This board favors the establishment of an institution in which proper care of lepers may be taken. As an instance in which such an institution would have been of practical service, I would respectfully recall the experience of the city of Highland Park, Ill."

Dr. Hurty, State health officer of Indiana, writes as follows:

"I believe that segregation in all cases is advisable. Lepers should not be at large in the community. I favor a national leprosarium. Leprosy is a national problem, on account of its unusual features and the history of the disease."

The State health commissioner of Oklahoma writes as follows:

"Two cases of leprosy were reported to me and both were negroes. Both had come from New Orleans and both had spent several years in Mexico. One was discovered first in the State penitentiary, and he subsequently escaped. The guards were very much afraid of him. The other was a pauper on a poor farm, where he died. I am confident that there are many more lepers than we have any knowledge of. The lack of proper and humane places where they can be cared for causes them and their families to keep the knowledge of their trouble to themselves. The Government should provide a place for these unfortunates. There are too few in most of our States for the State to recognize its responsibility in leprosy. The United States Government can care for all of these and should provide a hospital for them, and that at once."

The director of Public Health and Charities of Philadelphia states that he favors segregation for all lepers, and he adds:

"The manner in which lepers are shunned is not a credit to an intelligent people. It would be ideal to have a national leprosarium; but it probably is not feasible on account of functions required of each State."

The secretary of the State Board of Health of Utah writes that he is "emphatically in favor of a national leprosarium."

The acting commissioner of health of the city of Seattle replies:

We think there should be a national leprosarium, and we are also of the opinion that arrangements should be made whereby the State and city authori-

ties could transfer all cases of leprosy to this institution. The writer is more or less familiar with leprosy problems, having lived in the Hawaiian Islands three and a half years.

The secretary of the State Board of Health of Wisconsin replies:

We are very much in favor of a national leprosarium, as it is always a difficult matter to properly segregate and provide for the treatment of unknown cases when discovered. As a result there is a constant temptation to either deport the cases or allow them to leave voluntarily, so that they will pass out of the jurisdiction where found. This we believe is very undesirable.

I have also here a letter from the secretary to the commissioner of health of the city of New York, who, in answer to a letter of mine dated February 9, 1916, writes:

The records of this department show 24 cases of leprosy in this city at the present time.

The secretary refers to the weekly bulletin of the department for October 30, 1915, in which is stated the official attitude of the department with reference to leprosy cases, it being held that "patients with suitable home surroundings, and where hygienic precautions are preserved, may be permitted to remain at their homes." Furthermore, it is said that "it is an accepted fact among physicians that the danger of transmitting leprosy in this climate is small, though there appears to be some danger in the South. When the leper has no open lesions and no discharge from the nose it is safe for him to be at large. A leper with open lesions, if careful and if home conditions are suitable, may be safely segregated in the home."

I would respectfully suggest, Mr. Chairman, that you request the official opinion of the Surgeon General of the United States Public Health Service as to whether these general and apparently extremely superficial precautions afford adequate protection to the public. I may be permitted to add in this connection that, so far as known, there is no direct relation between climate and leprosy occurrence, since the disease is met with in all climates, from Iceland to the Tropics.

Unless there is effective segregation and otherwise adequate provision for the care of lepers, it is extremely difficult, if not impossible, to ascertain the number of lepers in the community. According to the replies received from the health officers referred to, there are about 150 lepers known to be in the United States at the present time; but there is no question of doubt, in my own mind, that there are certainly three times as many lepers in this country, if not more.

Under date of May 15, 1915, or less than a year ago, the Lancet Clinic, an important medical paper contained the statement that "Eighty lepers walk the streets of Chicago daily." This statement was made by Dr. George A. Zeller, a member of the Illinois State Board of Administration, while in Chicago for the purpose of examining Angelo Lunardi, a leper found at Highland Park.

In reply to an inquiry of mine to the commissioner of health of Chicago, Dr. Bertson was good enough to wire me as follows: "Skin specialists of Chicago concur in Dr. Zeller's statement. Three cases of leprosy reported to department of health in 1915. All three isolated."

In the absence of adequate provision for the humane care of lepers under suitable conditions, many leprosy cases are unquestionably hidden and kept out of public notice, as best illustrated in the

Jersey City case, previously referred to. During recent years I have collected quite a number of individual cases, emphasizing the inhuman and often brutal and uncivilized treatment of lepers in this country, who are apprehended, transported, and isolated, frequently under most trying conditions.

The CHAIRMAN. Could you give us just a few of these cases?

Dr. HOFFMAN. I am pleased to say that I have the records with me, and shall be very glad to do so.

Senator WORKS. That, I presume, results more from the fear of contagion.

Dr. HOFFMAN. It is not so much the fear of contagion as it is the ignorance of the general public regarding the disease and the helplessness of the communities concerned as regards the best course to pursue. Where these isolated cases occur the community is, as a general rule, entirely unprovided with suitable facilities for treatment and care, and absolute isolation in the case of a single leper is without doubt an act of inhumanity in itself and a method precluding proper treatment, with the possible chance of an arrest of the disease and the more remote possibility of a cure.

Through the courtesy of the board of health of the city of San Francisco, I have obtained a copy of the entire official record of the notorious Grable case, than which there is no more conclusive evidence to be had in favor of this bill and the principle of a Federal leprosarium. E. R. Grable originally came from Pocatello, Idaho, on June 30, 1911, direct to San Francisco with an obvious case of leprosy, diagnosed by Dr. Blue on the first examination. He was admitted to the isolation hospital where the San Francisco lepers are cared for, and he thereupon became a charge upon the community, in no wise responsible for his condition, the disease having been contracted in the Philippines. All efforts to return him to Idaho proved unsuccessful, and equally so was an effort to have him cared for at the Federal quarantine station at Port Townsend, Wash. Grable absconded from the San Francisco isolation hospital in December, 1912, but in May, 1913, he applied again for admission, having in the meantime worked at his old occupation of railroading. Grable absconded again on September 9, 1913, and he was next heard from at St. Louis. Subsequently he appeared at Washington, D. C., where he was cared for for some time, absconding again to return to St. Louis, and subsequently to be cared for at Koch, Mo., where he is at the present time, according to an official statement by the health officer of the District of Columbia. Since his first apprehension in San Francisco, Grable had traveled extensively, apparently on a membership card of a railway union, visiting many other places—Salt Lake City, St. Louis, and points in Canada.

Senator WORKS. How did he get away from San Francisco? Did he escape?

Dr. HOFFMAN. Yes; he escaped, or more properly, perhaps, he absconded. The conditions of segregation at San Francisco are, fortunately, such as to have the least semblance to imprisonment or forcible detention. The hospital is surrounded by a wall, but escape would not be very difficult, in an emergency. It is the general experience at well-conducted leper settlements that few of the inmates even desire to leave. At the San Francisco isolation hospital lepers

are cared for in a humane manner and without risk to the community, although the institution is located within the city limits. There is no outcry against their care and detention such as has been common in the case of communities not familiar with the urgency of effective segregation. Nothing is left undone to make the conditions of existence as bearable and even as pleasant as possible. I can not speak too highly of the excellent work which is being done by Dr. A. A. O'Neill, the physician in charge. Each leper is allowed a room to himself and he has absolute freedom to do what he pleases. All who are able are more or less occupied at light labor suitable to their condition, but of their own free choice.

Senator WORKS. Do you know how many lepers there are at San Francisco at the present time?

Dr. HOFFMAN. Yes, Senator; I have here a special return which I would like to introduce in evidence, furnished through the courtesy of Dr. O'Neill, showing that at the present time 15 lepers are being cared for, including 3 ex-soldiers with former experience in the Philippines. The list is as follows, but in place of the name I give only the initials:

List of leper patients at isolation hospital, San Francisco, Cal.

Initials.	Age.	Place of birth.	Sex.	Type of disease.	Probable duration.	Admission to hospital.	Last residence.
					Years.		
O. T.	12	Manila, P. I.	Male	Mixed	2	Nov. 5, 1915	Vallejo, Cal.
F. W. L.*	57	Troy, Kans.	do	Tubercular	5	Dec. 15, 1915	Soldier's Home, Yountville, Cal.
M. V.	34	Greece	do	do	5	Dec. 16, 1912	San Francisco.
P. P.	40	Mexico	do	Nerve	27	Mar. 2, 1890	Do.
D. R.	30	Greece	do	Tubercular	7	June 7, 1911	Do.
W. L.	35	Honolulu, H. T.	do	do	7	Apr. 27, 1912	Do.
J. P.	35	Hilo, H. T.	do	do	10	June 24, 1908	Do.
P. P.	41	Greece	do	do	10	Apr. 25, 1908	Do.
S. J. (negro)*	62	Maryland	do	do	12	June 24, 1908	Berkeley, Cal.
F. S.	29	China	do	Nerve	(?)	May 15, 1911	San Francisco.
H. G.	57	do	do	do	18	Apr. —, 1896	Do.
L. H.	60	do	do	do	(?)	—, 1897	Do.
Y. F.	59	do	do	Tubercular	(?)	Mar. 2, 1903	Do.
F. G.	48	do	do	do	(?)	Oct. 2, 1902	Do.
E. M. N.*	40	Ohio	do	do	1	Feb. 12, 1916	Norwalk, Ohio.

* Those marked thus (*) are ex-soldiers, I have examined four others.—Dr. O'Neill.

I have also here a statement from the secretary of the State Board of Health of California to the effect that there are about 30 known cases of leprosy in the State.

The CHAIRMAN. Will you not describe the method of segregation followed at San Francisco, of which you speak so highly, a little more in detail?

Dr. HOFFMAN. The point, Senator, is this: That the practical question which will confront your committee in connection with this bill is, Where is the Federal leprosarium to be located? You will everywhere meet with a hue and cry that nobody wants these lepers; that nobody wants such a colony on account of the possible risk to the community. As a matter of fact there is no risk to the surrounding community in the case of a leper settlement, under proper conditions of segregation. The Molokai settlement occupies only a small area

of the island of Molokai, which is extensively cultivated for plantation purposes, and where there is no record of infection having spread from the settlement to the community. The reason why the San Francisco institution is so particularly deserving of consideration is that the same is located within the city limits, with reasonably satisfactory conditions of treatment and care, excepting, perhaps, that more help might be provided to relieve Dr. O'Neill of a heavy burden, which, however, is cheerfully borne. There is no evidence that during the years since the settlement has been in existence any infection whatsoever has been spread to the adjoining neighborhood.

There is sufficient space for some of the lepers to cultivate a small garden. One Chinese leper, although in a fairly advanced stage of the disease, has built himself an artificial fish pond. Another leper has done excellent work in the raising of vegetables and fruits, in conformity to advanced principles of intensive agriculture. A Japanese leper is an expert carpenter and he has furnished his room in a most attractive manner. There is entire harmony among the lepers and each one helps the other as far as is practicable. One of the lepers is entirely blind, but he still performs a considerable amount of useful work.

You will note by reference to the list that five of the patients under treatment at the present time were born in China, three were born in Greece, two in Hawaii, one in Mexico, one in the Philippines, and three in the United States, respectively, Kansas, Maryland, and Ohio. Not a single one of the patients was born in California; nearly all of them have a record of previous exposure in a known foci of infection.

The Massachusetts settlement is on Penikese Island, in the very heart of the most attractive summer resort region in New England. I have here a map which shows exactly where the island is located, so that you can judge for yourselves. It is in close proximity to Cape Cod and Marthas Vineyard.

Senator WORKS. Whereabouts is the leprosarium in San Francisco located?

Dr. HOFFMAN. It is at the Isolation Hospital, right near the outskirts of the city, at Army and De Haro Streets.

Now, if you can establish such an ideal colony as Massachusetts has in the heart of a summer resort region without detriment to the community and without risk of infection; and if you can establish such an excellent institution as San Francisco has reason to be proud of within the city limits, and without any practical difficulty, it is self-evident that when the question comes up as to where a Federal leprosarium should be located, it will not be so difficult to find a suitable location if the public is rationally and intelligently informed as regards the facts, derived from actual experience.

Senator WORKS. I suggested this morning that the Government might take over one or the other of the leprosariums that have already been established, which would, of course, create a great deal less friction than an effort to establish a new one.

The CHAIRMAN. Dr. Hoffman, do I understand that San Francisco has a sanitarium for leprosy, or is it merely one department of its big city hospital?

Dr. HOFFMAN. The best way I can describe the situation is that an adjoining yard of sufficient area has been fenced off from the isola-

tion hospital. Access to the institution is through the isolation hospital; but, as said before, the physician of the one is also in charge of the other institution. The lepers live in two large houses especially built for the purpose, each one having a room to himself. There is no connection between the isolation hospital and the great modern city and county hospital of San Francisco, which, in fact, is quite a distance from the leper settlement. The lepers have all the freedom they are properly entitled to without being a menace to the community, and they are, in their way, I am glad to say, happy and contented.

In contrast, permit me to direct your attention to the Early case in this city, where a single leper is isolated under only fairly satisfactory conditions. Even a leper remains human and desires company. The best way is to bring these afflicted people together in a settlement where they can be properly treated and where they feel that they are not looked upon as outcasts or prisoners.

At Molokai there are some six hundred and odd lepers, who constitute a happy and contented community. They have about all that goes to make life worth living under the trying conditions of their unhappy existence; they have, as far as practicable, their own houses, and many of them have their own families with them. The community has all the advantages of village life, including churches of different denominations, a well-equipped store, a baseball ground, a moving-picture show, etc. I can say in the light of my own experience that I never felt nearer to the attainment of peace on earth than I did among the lepers at Molokai. My personal investigations at Molokai, at San Francisco, and in Louisiana have profoundly impressed upon me the duty of a persistent effort in behalf of these most unfortunate and absolutely helpless victims of a peculiarly loathsome and practically hopeless disease. No words of mine can give expression to my own sorrow for these people; but in the light of my personal knowledge I can not but feel intensely the additional sorrow and suffering needlessly forced upon the helpless individual who suddenly and by no fault of his own finds himself the victim of leprosy in a State where he may be the only one of his kind. I believe that the Nation owes it to itself and to the cause of a broader civilization that it shall leave nothing undone to provide adequately and humanely for these unfortunates who, under present conditions, are often inhumanly treated.

Most of the lepers in Hawaii go to Molokai of their own free will and accord. They go with the understanding that they will be humanely and effectively treated by skillful physicians and nursed, if necessary, by those qualified to do so. Leprosy is a peculiar disease, and there are not many physicians who know how to diagnose and treat it. A leper is, therefore, infinitely better off in a leprosarium, such as the institutions in existence in Louisiana or San Francisco or on Penikese Island, where the physicians in charge are thoroughly familiar with the disease and not apprehensive of the risk of infection. I desire to put on record, Mr. Chairman, my conviction that what is being done in these institutions for the most afflicted of human beings reflects the finest traits of the American people and their highest achievement in philanthropy and humanity. Not much more could be done for the lepers if twice the amount of money were spent; but more unquestionably could be done to provide

adequately for the needs of those in charge of these institutions. Lepers require a considerable amount of medical care and nursing. Certainly at Molokai and at the settlement in Louisiana the burden which falls upon those in charge is, indeed, a very heavy one. Many of the lepers are blind and otherwise helpless. The Mother Superior in charge of the nurses at Molokai has been at the settlement for more than 20 years. The sisters perform the most menial service in the most efficient and uncomplaining way. Not a single case of leprosy infection has occurred among them. The Catholic sisters at the settlement in Louisiana perform a similar Christian and humane service under equally trying conditions.

The same conclusion applies to the sisters in charge of the Lazaretto at Tracadie, New Brunswick. There is, however, no exceptional martyrdom about this service, and the seclusion and isolation is self-imposed. The history of Christian service, however, affords no finer illustration of heroic self-secrifice than the work rendered by the physicians in charge and the nursing sisters and other lay helpers ministering to the needs of the most afflicted under the trying conditions of settlement life.

The CHAIRMAN. I wanted to ask you, before you get entirely away from the subject of California, whether the State maintains the leprosarium there or the city of San Francisco?

Dr. HOFFMAN. The entire cost of the maintenance of the leper settlement at San Francisco, so far as I know, is paid for by the city of San Francisco, under the direction and supervision of the city board of health.

The CHAIRMAN. Does the settlement take lepers from all over the State?

Dr. HOFFMAN. No, Senator; only, so far as I know, those who are apprehended within the city limits of San Francisco.

The CHAIRMAN. Then there is no State leprosarium in California?

Dr. HOFFMAN. No, Senator; there are no State institutions of this kind in California. Outside of San Francisco, there is a small leper settlement in or near Los Angeles, which, however, I had no opportunity to visit. There are probably six or seven patients there, but I understand they are adequately and suitably provided for. There are also one or two cases, I believe, at or near San Diego.

For the convenience of your committee, Mr. Chairman, I have prepared a list of leper settlements throughout the world for the purpose of making clear my point of view that in practically all other civilized countries the care of lepers is a matter of Government concern and in precise conformity to the principle of the bill under consideration providing for the establishment of a Federal leprosarium.

The CHAIRMAN. If there is no objection, we will have this list made a part of the testimony.

(The list referred to was subsequently submitted, and is here printed in full, as follows:)

LIST OF LEPER SETTLEMENTS OR COLONIES THROUGHOUT THE WORLD (PROBABLY INCOMPLETE).

Antigua.—Leper Asylum on Rat Island, harbor of St. Johns.

Australian Commonwealth.—Leper Lazaret, Little Bay, New South Wales; Leper Lazaret, Peel Island, near Brisbane, Queensland; Leper Lazaret, Day-

man Island, Torres Straits, Queensland; Leper Lazaret, Mud Island, Northern Territory.

Bahama Islands.—Leper Infirmary, Nassau.

Barbados.—Leper Lazaretto (121 inmates).

Brazil.—Hospital dos Lazaros, Rio de Janeiro.

British Guiana.—Mahaica Leper Asylum (387 inmates).

British North Borneo.—Segregation camps for lepers, Kapuan Island; leper settlement at Berhala.

Canada.—Leper Lazaretto, Tracadie, New Brunswick (14 inmates); Leper Asylum, Vancouver, British Columbia.

Ceylon.—Leper Asylum near Colombo, Hendala (376 inmates); leper colony, island of Mantivu, Batticaloa.

China.—Leper Asylum, Canton (300 inmates); Leper Asylum, Hokchiang, south of Foochow (100 inmates); Leper Asylum, Foochow; Leper Asylum Kucheng, Fuh Kien Province; Leper Asylum, Lake Home, Hangchow; Leper Asylum, Siao Kan, Hankow; Leper Home, Tunkun, Quantung Province (140 inmates).

Corea.—Fusan Leper Asylum, Fusan.

Costa Rica.—Hospital de Leprosos, San Jose (63 inmates).

Cuba.—San Lazaro Hospital for Lepers, Habana.

Cyprus.—Leper farm, near Nicosia (97 inmates).

Danish West Indies.—Leper Hospital, St. Croix.

Dutch Guiana (Surinam).—Leper colony, Bethesda (Moravian mission); leper colony, Groot Chatillon (Government).

Egypt.—Hospital des Lepreux, Cairo.

Federated Malay States.—Leper Asylum, Pulau Bangkor Laut, Perak, for Malays and Javanese (62 inmates); Leper Asylum, Selangor (368 inmates).

Fiji Islands.—Leper Asylum, Suva.

Finland.—Leprasjukhus, Tavastehus län (Government institution, 25 inmates).

French West Indies.—Hospital des Lepreux, island of La Desirade.

Germany.—Lepra Heim, Memel, East Prussia (20 inmates).

Greece.—Leper Asylum of Samos.

Guam.—Leper colony.

Hawaii.—Kalihi Leper Hospital, Honolulu (30 inmates); the Molokai settlement (638 inmates).

Iceland.—Leper Asylum, Reykjavik (51 inmates).

India.—Ahmedabad, Kagrapeth Leper Asylum; Allahabad Leper Asylum, United Provinces; E. F. Allbless Leper Home at Trombay; Alleppey Leper Asylum, Native State of Travancore; Almora Leper Asylum, Province of Kumaon (100 inmates); Ambala Leper Asylum, Punjab (20 inmates); Ankai Leper Asylum, Lower Burma; Asansol "Christaram" Leper Asylum for Homeless Lepers, Bengal; Baba Lakhan Leper Asylum, Punjab; Baidyanath Leper Asylum, Bengal; Bankura Leper Asylum, Bengal; Bhagalpur Leper Asylum, North Bengal; Calcutta Leper Asylum, Bengal; Calicut Leper Asylum, Madras Presidency; Chamba Leper Asylum, Native State of Chamba, Punjab (Himalayas); Champa Leper Asylum, Central Provinces; Chandag Leper Asylum near Pithoragash, Almora District; Chandkuri, Central Province; "Christaram; Leper Asylum for Homeless Lepers, see Asansol; Claire (Chandkuri) Leper Asylum, Central Provinces; Dehra Leper Asylum, Punjab (Himalayas); Dhamtari Leper Asylum, Central Provinces; Dhar Leper Asylum, Central India; Dharmsala Leper Asylum, Punjab; Ellichpur Leper Asylum, Central Provinces; Govindpur Leper Asylum, Bengal; Grace Away Mayne Leper Asylum, see Meerut, United Provinces; Hurda Leper Asylum, Central Provinces; Holt Skinner Memorial Hospital, see Rurki, Punjab; Kagrapeth Leper Asylum, see Ahmedabad; Kodur Leper Asylum, Madras Presidency; Kothara Leper Asylum, Central Provinces; Lohardaga Leper Asylum, Bengal; Ludhiana Leper Asylum, Punjab; Mandalay Leper Asylum, Burma (140 inmates); Mangaolore Leper Asylum, Madras Presidency; Matunga Leper Asylum, near Bombay; Maulmain Leper Asylum, Lower Burma; Meerut, Grace Olway Mayne Leper Asylum, Miraj Leper Asylum, Bombay Presidency; Mourbhanj Leper Asylum, Orissa, Bengal; Moradabad Leper Asylum, United Provinces; Mungeli Leper Asylum, Central India; Muzaffarngar Leper Asylum, United Provinces; Muzaffarpur Leper Asylum, Bengal; Naim Leper Asylum, United Provinces; Nasik Leper Asylum Bombay Presidency; Neyoor Leper Asylum,

Native State of Travancore; Patpara Leper Asylum, Central India; "Philadelphia" Leper Asylum, see Sulur, Madras Presidency; Pithora Leper Asylum, Punjab; Poladpur Leper Asylum, Bombay Presidency; Poona Leper Asylum, Bombay Presidency; Pui Leper Asylum, Bombay Presidency; Purulia Leper Asylum, Bengal (700 inmates); Raipur Leper Asylum, Central Provinces; Ramachandrapuram Leper Asylum, Madras Presidency; Raniganj Leper Asylum, Bengal; Rawal Pindi Leper Asylum, Punjab; Rivaz Wards Leper Asylum, see Tarn Taran, Punjab; Rurki, Holt Skinner Memorial Hospital, Punjab; Sabathu Leper Asylum, near Simla, Punjab; Saharanpur Leper Asylum, Punjab; Salur (Vizagapatam) Leper Asylum, Madras Presidency; Salur "Philadelphia" Leper Asylum, Madras Presidency; Sehore Leper Asylum (Bhopal), Central India; Sholapur Leper Asylum, Hyderabad; Sialkot Leper Asylum, Punjab; Sylhet Leper Asylum, Bengal; Tarn Taran Leper Asylum Rivas Wards, Punjab; Trivandrum Leper Asylum, Native State of Travancore; Trombay, see E. F. Allbless Leper Home, Salsette Island, Bombay Presidency; Udaipur Leper Asylum, Rajputana; Ujjain Leper Asylum, Central India; Wardha Leper Asylum, Central Provinces.

NOTE.—According to the census of 1911, there were then 73 leper asylums in India, with 5,116 inmates.

Jamaica.—Lepers' Home, Kingston (117 inmates).

Japan.—Aomori Leper Asylum (Government); Kagawa Leper Asylum (Government); Kioto Leper Asylum; Kumamoto Leper Asylum (Government); Kumamoto Christian Leper Asylum; Osaka Leper Asylum (Government); Tokyo Leper Asylum (Government); Tokyo Christian Leper Asylum; "I-hai-en" Leper Asylum, Meguro near Tokyo.

Madagascar.—Leper Lazar-house at Ilafy, Antananarivo; Leper Colony, Abohivaraka.

Mauritius.—St. Lazare Leper Asylum (95 inmates).

New Caledonia.—Leper Asylum, Pic des Morts, Bay of Canala; Leper Asylum, Isle of Goats, Nouméa.

Norway.—St. Jörgens Hospital, Bergen (20 inmates); Pleiestiftelsen No. 1, Bergen (74 inmates); Reitjerdets Pleiestiftelse, Strinden ved Trondhjem (83 inmates).

Panama Canal Zone.—Palo Seco Leper Asylum (58 inmates).

Philippines.—Culion Leper Settlement (3,602 inmates); San Lazaro Leper Hospital, Manila (205 inmates).

Porto Rico.—Leper colony on the Isle de Cabras, at the entrance of San Juan Harbor; leper colony on Goat Island.

Portugal.—Hospital de San Lazaro, Lisbon (74 inmates); Leper Lazaretto, Funchal, Madeira.

Russia.—Hospital for Lepers, Riga.

NOTE.—There are 21 leper institutions in Russia, of which 17 are supported by voluntary contributions. During the year 1911, 1,621 leprous patients were treated by physicians. (Russian Yearbook, 1915.)

St. Kitts, British West Indies.—St. Kitts Leper Asylum (69 inmates).

St. Vincent.—St. Vincent Leper Asylum (9 inmates).

Siberia.—Leper Colony, Villuisk, Eastern Siberia.

Sierra Leone.—Male Leprosy Segregation Ward, Kissy.

South Africa.—Almora Leper Asylum, Robben Island, off Capetown (612 inmates); Leper Hospital, Emjanyana, Cape Colony (645 inmates); Leper Hospital, Amatikulu, Natal (175 inmates); Leper Hospital, Pretoria, Transvaal (792 inmates); Leper Hospital, Johannesburg.

Southern Nigeria.—Leper asylums at Lagos, Ibusa, and Onitsha.

Spain.—Colonia Sanitaria de San Francisco de Borja, Fontilles (Laguar), Provincia de Alicante; Hospital de San Lazaro, Santiago.

Straits Settlements.—Leper Asylum, Pulau Jerejak (403 inmates); Leper Asylum, Singapore (52 inmates); Female Leper Asylum, Jelutong (21 inmates).

Sumatra.—Leper Asylum Huta Salem (100 inmates); Lagubot Leper Asylum.

Sweden.—Järfso sjukhus för spetälske, Järfsö (33 inmates).

Togoland.—Aussaetzigenheim Bogida (19 inmates).

Trinidad.—Leper Asylum Cocorite (318 inmates).

Turkey.—Moravian Leper Asylum, Jerusalem; Leper Lazaretto, Damascus, Syria.

United States.—Isolation Hospital, San Francisco, Cal. (15 inmates); County Hospital, leper ward, Los Angeles, Cal. (6 inmates); Leper Home of the State

of Louisiana, Carville, La. (104 inmates); leper colony, island of Penikese, Buzzards Bay, Mass. (11 inmates).

United States of Colombia.—Leper Lazaretto, Agua de Dios (520 inmates); Leper Lazaretto, Contracion, Province of Santander.

Venezuela.—Leper Lazaretto, Maracaibo, Zulia (477 inmates); Leper Lazaretto, Caracas (125 inmates); Leper Lazaretto, Estado de Sucre (9 inmates).

Zanzibar.—Walezo Leper Asylum (95 inmates).

Dr. HOFFMAN. The foregoing list emphasizes the almost universal practice regarding leper segregation in the civilized countries of the world. In many of the far eastern countries the settlements are not government institutions, but are administered by Christian missions, or otherwise, and maintained by philanthropy and charity. I can not sufficiently emphasize my conviction, based upon a careful consideration of all the available evidence, that segregation alone provides an effective means of controlling the disease.

The CHAIRMAN. Segregation, you say, is the only means?

Dr. HOFFMAN. I am absolutely of this opinion, which is, I believe, shared by all the leading authorities on the subject throughout the world.

The CHAIRMAN. Do you regard the public as being seriously endangered by the methods at present pursued in this country?

Dr. HOFFMAN. I am unconditionally of that opinion, Senator: and I will go further and say that such cases as those which have recently occurred in New York and New Jersey show a reckless and almost criminal disregard of known safety precautions. I say this with reluctance, but really there seems no other word for this fatuous policy of indifference than "criminal," in, of course, a qualified sense of the term. If you have ever seen a single leper in the terminal state of the disease—and I have seen many of them—you will realize how needlessly the public is menaced by permitting 30 and 80 lepers to be at large in New York and Chicago, respectively, as is claimed to be the case——

The CHAIRMAN (interposing). You mean 80 lepers in Chicago?

Dr. HOFFMAN. Yes; 80, and, as said at the outset of my evidence, I had this statement confirmed by the board of health; but, as stated, the number actually known to the board is only three or four, the remaining number of cases being known to experts or specialists in skin diseases who are, as a rule, first consulted by lepers in the initial stages of the disease.

The CHAIRMAN. And is there no segregation whatever?

Dr. HOFFMAN. There is no effective segregation other than that the few apprehended cases are probably isolated in some poorhouse or isolation hospital, under conditions which must be more or less of a menace to the community.

The CHAIRMAN. You think, then, Doctor, it is a very serious menace to the health of the people of the United States to allow the present methods to go on?

Dr. HOFFMAN. I can, perhaps, best explain my point of view by stating that my professional duties as statistician of the Prudential require me to cooperate with public-health authorities and health-promoting agencies in every reasonable manner as regards methods and means of preventing disease and prolonging human life; and that if I did not feel that leprosy was of sufficient present or future importance to life insurance interests I would probably not have

gone as extensively into this matter as I have. It is, of course, only one of many phases of our public-welfare work, but having had these exceptional opportunities for observation and inquiry, I conceive it to be my duty to present the facts of a lamentable situation to the public for consideration. Aside, however, from the professional point of view, I feel strongly, on the one hand, the seriousness of the present situation as regards the general public, and as best illustrated by the two cases of the last few days just brought to your attention; and, on the other, the urgency of more humane methods of treatment and care as regards the lepers themselves.

The CHAIRMAN. That, in other words, is your official point of view as statistician of the Prudential Insurance Co. and your private view as regards the Christian and humanitarian duty on the part of the general public?

Dr. HOFFMAN. Yes, Senator.

The CHAIRMAN. How would you describe, Doctor, the danger to the public? Do you mean to say that the disease is on the increase and that as the lepers at large travel about they infect others?

Dr. HOFFMAN. Unquestionably; for how could it be otherwise? Every case that we know of, Senator, at least every case that has been sufficiently investigated, indicates some previous connection with a center or focus of infection. The leper girl referred to in this morning's *Sun* came from Key West, which, notoriously, has been more or less infected with leprosy at different times from Cuba or other parts of the West Indies, where the disease is quite common. I have among my records another case of a man afflicted with leprosy in the city of New York whose infection was traced to Key West. The Bahama Islands are also a source of infection. Most of the lepers, for some unknown reason, are poor people, and they often live for months, and even for years, in back-room tenements, with the practical certainty of infection to others. No one knows exactly how the disease is spread from person to person, but practically every case can be traced back to some center or focus of infection.

The CHAIRMAN. Is the disease exclusively among poor people, or does it exist also among people of means?

Dr. HOFFMAN. Leprosy is almost entirely confined to the poor, but there are some very curious and marked exceptions. In Honolulu during my visit to the islands last year a well-known and highly esteemed school-teacher—a white woman—was found to be a leper, and she is now at Molokai. When finally diagnosed as a leper she was in a fairly advanced stage of the disease, and Dr. McCoy, who was a member of the board who examined her, is present in this room. How she contracted the disease, or whether she contaminated others, is unknown. There are some such cases every year. While the disease is diminishing in most countries, it is apparently decreasing only where it is under control by unconditional segregation.

Senator WORKS. I asked a question a while ago as to the number of new patients that are taken in at Molokai. Can you inform me about that?

Dr. HOFFMAN. Yes, Senator; I have with me the statistics for Molokai for a period of years, and I submit the following table for inclusion in the record.

The CHAIRMAN. If no objection is made, the table will be printed.

(The table referred to is here printed in full, as follows:)

Statistics of the leper settlement at Molokai, 1870–1915.

Year.	Lepers admitted to Molokai.	Admission rate per 10,000 of population of Hawaii.	Year.	Lepers admitted to Molokai.	Admission rate per 10,000 of population of Hawaii.
1870–1879	1,495	23.8	1912	91	4.4
1880–1889	1,968	24.3	1913	113	5.2
1890–1899	1,276	11.7	1914	67	2.9
1900–1910	805	4.5	1915	49	2.1
1911	40	2.0			

Dr. HOFFMAN. You will note, Senator, that according to this table the leper admission rate has diminished from 23.8 per 10,000 of population to 2.1 per 10,000 during 1915. During the earlier years, however, the apprehensions were less complete, so that the actual diminution in the frequency of leprosy has been even greater than shown by the table. The number of new admissions during 1915 was only 49.

Senator WORKS. Have you also the death rate for the number of deaths per annum?

Dr. HOFFMAN. Yes, Senator; I have with me a table showing in the same manner the number of lepers who died at Molokai.

The CHAIRMAN. If no objection is made, the table will be printed.

(The table referred to is here printed in full, as follows:)

Deaths of lepers at Molokai, Hawaii, 1870–1915.

Years.	Population.	Deaths.	Rate per 10,000.	Years.	Population.	Deaths.	Rate per 10,000.
1870–1879	627,258	1,157	18.4	1912	209,132	64	3.1
1880–1889	809,576	1,447	17.9	1913	217,744	49	2.3
1890–1899	1,091,059	1,443	13.2	1914	227,391	75	3.3
1900–1909	1,714,394	1,070	6.2	1915	231,210	62	2.7
1911	200,520	61	3.0				

Dr. HOFFMAN. You will note, Senator, that according to this table 62 lepers died during the year 1915.

Senator WORKS. My question is as regards the island of Molokai.

Dr. HOFFMAN. The deaths from leprosy at Molokai probably constitute the entire mortality; but I have not with me at this moment a separation of the deaths from leprosy at Molokai from all the deaths from leprosy in the Territory of Hawaii.

Senator WORKS. Then it would appear that in some years there are more new patients taken in at Molokai than there are deaths during the year.

Dr. HOFFMAN. Yes, Senator; at least it would seem to be so.

Senator WORKS. Practically, I assume, there are none discharged as cured.

Dr. HOFFMAN. Some are discharged, not as cured, but in a sufficiently arrested stage of the disease to be harmless as regards the community at large. As far as my information enables me to answer this question, there have been 118 persons discharged from Molokai, not as cured, but as well and free from clinical evidence of leprosy after prolonged treatment. The final judgment in this matter rests with a board of qualified experts appointed for the purpose. Simi-

lar results have been reported for the leper settlement at Louisiana by Dr. Hopkins and Dr. Dyer. My statement as regards Molokai is on the authority of the physician in charge, Dr. William J. Goodhue. I am also informed as regards successful cases of treatment at many other leper settlements where the patients were taken care of under proper conditions. No one questions, in the light of a world-wide experience, that through segregation alone can leprosy be brought under public control with the practical certainty of ultimate, though very gradual, eradication.

Senator WORKS. Does your data show the proportionate number of deaths that have occurred during the period since segregation has been practiced in Hawaii?

Dr. HOFFMAN. I have not all the data with me for the purpose, but I have before me a table showing the mortality from leprosy in the Territory from 1902 to 1914.

The CHAIRMAN. Do you include both of those years?

Dr. HOFFMAN. Yes; both years are inclusive—1902 to 1914.

Senator WORKS. What would be the leprosy mortality rate of Hawaii per annum?

Dr. HOFFMAN. The rate per annum during the period under observation has varied between a maximum of 5 per 10,000 during 1902 and a minimum of 2.2 per 10,000 during 1908; during 1914 the rate was 2.6. In other words, in proportion to the total mortality, the leprosy mortality is comparatively small. Out of 3,707 deaths from all causes during 1914, the number of deaths from leprosy in the Territory of Hawaii was 59, or 1.6 per cent.

The CHAIRMAN. Does it appear from these statistics as though we could reasonably expect leprosy to be completely eradicated from the islands in the future?

Dr. HOFFMAN. Unquestionably.

The CHAIRMAN. In the near future?

Dr. HOFFMAN. No; that would be quite impossible. In fact, Senator, your question brings me precisely to the main point of this discussion, for if leprosy once gains a foothold it is extremely hard to eradicate the disease, which may continue to prevail, though to a very limited extent, for many years.

At Tracadie, New Brunswick, for illustration, the Government leprosarium was established in, I think, 1846. The number of cases under treatment has probably never exceeded 30. Between 1815 and 1915 only 193 deaths from leprosy appear to have been recorded in the Province. By 1891 the number of lepers under treatment was 22. It has fluctuated slightly, about 16 since that time, but according to the last official report for year ending January 1, 1916, the number under treatment was only 14, which, as far as I know, is the smallest number on record. There can be no question of doubt that if there had been no segregation the disease would have spread widely over the Maritime Provinces and into New England; under effective segregation leprosy has been under control, and, as shown by the statistics, the number of lepers has now been reduced to 14.

I may call your attention in this connection to the fact that the lazaretto at Tracadie, New Brunswick, is owned and controlled by the Canadian Government, which has another leprosarium on the Pacific coast, near Vancouver. Considering the introduction of foreign lepers into the Dominion chiefly orientals, but also a few Icelanders,

it is self-evident that segregation has been actually more effective than would appear from the statistics just quoted. There has, however, for at least 100 years been a local foci of the disease in New Brunswick and a small adjoining portion of the Province of Quebec. On March 31, 1914, according to an official return, there were then 19 lepers, of whom 15 were native of the Province of New Brunswick, and of the 4 others 1 was Canadian born, 1 was from Barbados, 1 from Iceland, and 1 from Russia. The Russian woman was discovered in Winnipeg during the preceding year in an advanced stage of the disease.

One of the preceding witnesses referred to the new admissions to the leprosarium at Culion, in the Philippines. His statement seemed to imply that no new cases of leprosy were discovered in the islands, when, as a matter of fact, there are many new admissions every year.

Senator WORKS. Will you give us the figures about that?

Dr. HOFFMAN. Yes, Senator; the number of lepers admitted to the Culion leper colony during 1914 was 859; the number of lepers at the colony at the end of that year was 3,602. I can give you the record for the past 10 years if you care to include the statistics in the record.

Senator WORKS. I think it would be well to include all of your statistics in the record.

The CHAIRMAN. If you have a table there, Doctor, you might put it in.

Dr. HOFFMAN. I have here an entire set of tables, Senator, which I am sure would make a valuable addition to the record. They have all been derived from official sources and can be relied upon as trustworthy. They constitute what is probably the most complete statistical account of leprosy throughout the world.

The CHAIRMAN. I think they should all go into the record, and we shall be pleased to put them in.

(The tables referred to are here printed in full, as follows:)

List of tables—leprosy statistics.

No.	Locality.	Period.	Title.
1	United States registration area	1900–1914	Mortality.
2	Louisiana	1896–1915	Admissions to leper home.
3	do	1912–1914	Type of disease, by age.
4	do	1914	Inmates, by race.
5	Hawaii	1902–1915	Mortality.
6	do	1911–1914	Mortality, by race.
7	do	1866–1915	Statistics of Molokai.
8	Philippine Islands	1903–1914	Known lepers.
9	do	1906–1914	Admissions to Culion.
10	do	1906–1914	Mortality at Culion.
11	Panama Canal Zone	1907–1914	Statistics of Palo Seco Leper Asylum.
12	New Brunswick	1890–1916	Statistics of Tracadie.
13	Cuba	1903–1913	Mortality.
14	St. Kitts, Nevis, and Anguilla	1901–1914	Do.
15	Antigua and Barbuda	1901–1911	Do.
16	Trinidad and Tobago	1901–1913	Do.
17	do	1909–1915	Statistics of Cocorite Leper Asylum.
18	do	1909–1915	Admissions to Cocorite, by nativity.
19	British Guiana	1913	Inmates of Mahaica Leper Asylum, by race.
20	do	1902–1913	Deaths, by duration of disease.
21	do	1902–1913	Deaths, by age and sex.
22	do	1902–1913	Deaths, by cause.
23	Venezuela	1905–1912	Mortality and number of lepers.
24	Brazil, Rio de Janeiro	1891–1912	Mortality.

List of tables—leprosy statistics—Continued.

No.	Locality.	Period.	Title.
25	Brazil, Rio de Janeiro	1910–1912	Mortality, by age and sex.
26	Brazil, Pernambuco	1907–1912	Mortality.
27	Brazil, Sao Paulo	1904–1912	Do.
28	Iceland	1901	Lepers, by age and sex.
29	.....do	1910	Do.
30	Norway	1856–1910	Number of lepers.
31	.....do	1910	Lepers, by domicile.
32	.....do	1901–1910	Average age and duration of disease.
33	.....do	1910	Lepers, by age and sex.
34	.....do	1910	Mortality, by age and sex.
35	.....do	1856–1913	Inmates in leper asylums.
36	Sweden	1907–1913	Number of lepers.
37	.....do	1912	Lepers, by domicile.
38	Finland	1910	Number of lepers.
39	Prussia	1911	Do.
40	Spain	1904	Lepers, by Provinces.
41	Italy	1896–1912	Mortality.
42	Bosnja and Herzegovina	1906–1912	Mortality and number of lepers.
43	Cyprus	1906–1914	Statistics of leper farm.
44	Egypt	1907	Lepers, by sex.
45	.....do	1907	Lepers, by Provinces.
46	Sierra Leone	1908–1913	Cases treated in hospitals.
47	Gold Coast Colony	1910–1913	Do.
48	Zanzibar	1909	Number of lepers.
49	Union of South Africa	1912	Inmates in asylums.
50	Mauritius	1890–1914	Mortality.
51	India	1881–1911	Lepers, by Provinces.
51a	Ceylon	1910–1914	Mortality, by race.
52	Straits Settlements	1914	Inmates of Pulau Jerejak Leper Asylum, by race.
53	.....do	1914	Inmates of Pulau Jerejak Leper Asylum, by occupation.
54	Federated Malay States	1909–1914	Lepers treated in hospitals.
55	Japan	1907–1911	Mortality, by sex.
56	Commonwealth of Australia	1907–1911	New cases of leprosy.

TABLE NO. 1.—*Mortality from leprosy in the United States registration area, 1900–1914.*

Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.	Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.
1900	30,794,273	4	0.1	1908	46,789,913	11	0.2
1901	31,370,952	6	.2	1909	50,870,518	9	.2
1902	32,029,815	5	.2	1910	53,843,896	10	.2
1903	32,701,083	4	.1	1911	59,275,977	7	.1
1904	33,349,137	4	.1	1912	60,427,133	11	.2
1905	34,094,605	8	.2	1913	63,299,164	6	.1
1906	41,983,419	3	.1	1914	65,989,295	12	.2
1907	43,016,990	7	.2				

TABLE NO. 2.—*Statistics of the leper home of Louisiana, 1896–1916.*

[Source: Tenth biennial report of the board of control for the leper home of the State of Louisiana, 1914.]

Year.	New cases admitted.	Number of inmates.[1]	Year.	New cases admitted.	Number of inmates.
1896	3	.....	1907	8	.....
1897	6	.....	1908	8	47
1898	4	23	1909	18	.....
1899	7	.....	1910	17	66
1900	3	30	1911	15	.....
1901	10	.....	1912	12	74
1902	10	38	1913	25	.....
1903	11	.....	1914	22	87
1904	14	38	1915	21	102
1905	9	.....	1916	.....	104
1906	11	47			

[1] Census of inmates is recorded only biennially.

TABLE No. 3.—*Cases of leprosy under treatment in the leper home of Louisiana according to type of disease, 1912–1914.*

Age.	Total.		Anesthetic.		Tubercular.		Mixed.		Type not stated, white.
	White.	Colored.	White.	Colored.	White.	Colored.	White.	Colored.	
Under 15	12	2	1	.....	8	.....	3	2	.....
15–24	23	2	4	.....	8	1	11	1	.....
25–34	16	1	7	.....	1	1	8	.....	.....
35–44	12	8	4	1	4	6	4	1	.....
45–54	15	6	2	1	5	2	8	3	.....
55–64	6	2	1	1	4	.....	1	1	.....
65 and over	4	3	.....	1	1	2	3	.....	.....
Not stated	7	.....	1	.....	2	.....	3	.....	1
Total	95	24	20	4	33	12	41	8	1

TABLE No. 4.—*Number of inmates of the leper home of the State of Louisiana, Apr. 16, 1914, by race.*

	Population of Louisiana.	Lepers.	Rate per 1,000,000.
White	1,025,674	72	70.2
Colored	739,102	15	20.3
Total	1,764,776	87	49.3

TABLE No. 5.—*Mortality from leprosy in Hawaii, 1902–1915.*

[Source: Annual reports of the registrar general of the Territory of Hawaii.]

Year ending June 30.	Population.	Deaths from leprosy.	Rates per 1,000,000.	Year ending June 30.	Population.	Deaths from leprosy.	Rates per 1,000,000.
1902	160,078	80	499.8	1911	200,520	47	234.4
1903	163,917	46	280.6	1912	209,132	50	239.1
1904	167,756	56	333.8	1913	217,744	48	220.4
1905	171,595	64	373.0	1914	227,391	59	259.5
1902–1905	663,346	246	370.8	1911–1914	854,767	204	238.7
1906	175,434	58	330.6	1915	229,300	39	170.1
1907	179,273	56	312.4				
1908	183,112	41	223.9				
1909	186,951	45	240.7				
1910	190,790	68	356.4				
1906–1910	915,560	268	292.7				

TABLE No. 6.—*Mortality from leprosy by race in Hawaii, July 1, 1911–June 30, 1914.*

[Source: Annual reports of the registrar general of the Territory of Hawaii.]

Race.	Aggregate population.	Deaths from leprosy.	Rate per 1,000,000.	Race.	Aggregate population.	Deaths from leprosy.	Rate per 1,000,000.
Hawaiian	86,173	131	1,520.2	Japanese	263,665	3	11.4
Part Hawaiian	41,404	4	96.6	All others	98,303	2	20.3
Portuguese	73,791	6	81.3				
Chinese	71,695	11	153.4	Total	635,031	157	247.2

TABLE No. 7.—*Statistics of the leper settlement at Molokai, Hawaii, 1866–1915.*

Years.	Population of Hawaii.	Admissions to Molokai.	Deaths of all lepers.	Rate per 1,000,000.	Number of lepers in Molokai Dec. 31.	Lepers per 1,000,000.
1866	62,959	141	36	571.8	115	1,826.6
1867	61,949	91	24	387.4	170	2,744.2
1868	60,939	131	27	443.1	267	4,381.4
1869	59,929	190	59	984.5	392	6,541.1
1866–1869	245,776	552	146	594.0	944	3,840.9
1870	58,919	57	57	967.4	392	6,653.2
1871	57,909	178	52	898.0	518	8,945.1
1872	56,897	91	63	1,107.3	546	9,596.3
1873	58,870	415	142	2,412.1	810	13,759.1
1874	60,843	78	141	2,317.4	731	12,014.5
1870–1874	293,438	819	455	1,550.6	2,997	10,213.4
1875	62,816	178	149	2,372.0	754	12,003.3
1876	64,790	75	119	1,836.7	704	10,865.9
1877	66,764	122	129	1,932.2	694	10,394.8
1878	68,738	209	111	1,614.8	792	11,522.0
1879	70,712	92	194	2,743.5	688	9,729.6
1875–1879	333,820	676	702	2,102.9	3,632	10,880.1
1880	72,685	51	151	2,077.5	589	8,103.5
1881	74,658	195	129	1,727.9	654	8,759.9
1882	76,631	70	111	1,448.5	613	7,999.4
1883	78,604	300	150	1,908.3	763	9,706.9
1884	80,578	108	167	2,072.5	702	8,712.1
1880–1884	383,156	724	708	1,847.8	3,321	8,667.5
1885	82,146	103	142	1,728.6	663	8,071.0
1886	83,715	43	101	1,206.5	600	7,167.2
1887	85,284	220	111	1,301.5	708	8,301.7
1888	86,853	571	236	2,717.2	1,033	11,893.7
1889	88,422	307	149	1,685.1	1,187	13,424.3
1885–1889	426,420	1,244	739	1,733.0	4,191	9,828.3
1890	89,990	185	158	1,755.8	1,213	13,479.3
1891	93,161	141	210	2,254.2	1,142	12,258.4
1892	96,333	105	152	1,577.9	1,095	11,366.8
1893	99,504	209	151	1,517.5	1,153	11,587.5
1894	102,675	129	159	1,548.6	1,123	10,937.4
1890–1894	481,663	769	830	1,723.2	5,726	11,888.0
1895	105,846	105	141	1,332.1	1,087	10,269.6
1896	103,020	142	114	1,045.7	1,115	10,227.5
1897	120,265	124	140	1,164.1	1,099	9,138.2
1898	131,510	75	114	866.9	1,059	8,052.6
1899	142,755	61	104	728.5	1,014	7,103.1
1895–1899	603,396	507	613	1,005.9	5,374	8,818.6
1900	154,001	109	134	870.1	983	6,383.1
1901	157,792	94	172	1,090.0	900	5,703.7
1902	161,583	80	106	656.0	874	5,409.0
1903	165,374	114	101	610.7	872	5,272.9
1904	169,165	92	107	632.5	856	5,060.1
1900–1904	807,915	489	620	767.4	4,485	5,551.3
1905	172,956	95	95	549.3	854	4,937.7
1906	176,747	64	84	475.3	834	4,718.6
1907	180,538	78	88	487.4	809	4,481.1
1908	184,329	32	59	320.1	771	4,182.7
1909 [1]	191,909	47	[1] 124	430.8	614	3,199.4
1905–1909	906,479	316	450	448.9	3,882	4,282.5
1911 [2]	200,520	40	61	304.2	592	2,952.3
1912 [2]	209,132	91	64	306.0	622	2,974.2
1913 [2]	217,744	113	49	225.0	686	3,150.5
1914 [2]	227,391	67	75	329.8	666	2,928.9
1915 [2]	231,210	49	62	268.2	638	2,759.4
1911–1915	1,085,997	360	311	286.4	3,204	2,950.3

[1] 18 months, Jan. 1, 1909–June 30, 1910.

[2] Years ending June 30.

NOTE.—Settlement established Jan. 6, 1866.

TABLE No. 8.—*Number of known lepers in the Philippine Islands, 1903–1914.*

[Source: Annual Reports of the Bureau of Health for the Philippine Islands.]

Year.	Population.	Known lepers in the islands.	Rate per 1,000,000.	Year.	Population.	Known lepers in the islands.	Rate per 1,000,000.
1903	6,987,686	3,323	475.6	1909	7,446,920	2,273	305.2
1904	7,064,225	3,632	514.1	1910	7,523,459	2,272	302.0
1905	7,140,764	3,580	501.3	1911	7,600,000	2,506	329.7
1906	7,217,303	3,494	484.1	1912	7,676,537	2,912	379.3
1907	7,293,842	2,826	387.5	1913	7,753,076	3,442	444.0
1908	7,370,381	2,488	337.6	1914	7,830,000	3,807	486.2

TABLE No. 9.—*Admissions to the leper colony at Culion, Philippine Islands, 1906–1914.*

[Source: Report of the Bureau of Health for the Philippine Islands, 1914.]

Year.	Population of Philippine Islands.	Admissions of lepers.	Rate per 1,000,000.	Year.	Population of Philippine Islands.	Admissions of lepers.	Rate per 1,000,000.
1906	7,217,303	802	111.1	1911	7,600,000	889	117.0
1907	7,293,842	690	94.6	1912	7,676,537	965	125.7
1908	7,370,381	1,603	217.5	1913	7,753,076	795	102.5
1909	7,446,920	1,378	185.0	1914	7,830,000	887	113.3
1910	7,523,459	930	123.6				

TABLE No. 10.—*Mortality of lepers in the Culion Leper Colony, P. I., 1907–1914.*

[Source: Annual Reports of the Bureau of Health for the Philippine Islands.]

Fiscal year ending June 30—	Population.	Deaths.	Rate per 1,000,000.	Fiscal year ending June 30—	Population.	Deaths.	Rate per. 1,000,000.
1907 [1]	5,441,679	205	37.7	1912	7,638,268	531	69.5
1908	7,332,111	958	130.7	1913	7,714,806	385	49.9
1909	7,408,650	862	116.4	July 1–Dec. 31, 1913	3,876,538	290	74.8
1910	7,485,189	838	112.0	Calendar year 1914	7,830,000	513	65.5
1911	7,561,729	427	56.5				

[1] 9 months only.

TABLE No. 11.—*Statistics of Palo Seco Leper Asylum, Panama Canal Zone, 1907–1915.*

[Source: Annual Reports of the Department of Sanitation of the Isthmian Canal Commission.]

Year.	Population of Canal Zone.	Deaths in asylum.	Rate per 1,000,000.	Inmates, Dec. 31.	Rate per 1,000,000.
1907	102,133	.....	.....	14	137.1
1908	120,097	0	.....	22	183.2
1909	135,180	1	7.4	34	251.5
1910	151,591	3	19.8	36	237.5
1911	156,936	2	12.7	49	312.2
1912	146,510	7	47.8	48	327.6
1913	129,104	9	69.7	45	348.6
1914	123,592	6	48.5	50	404.6
1915	121,650	2	16.4	58	476.8

NOTE.—Of the 62 lepers treated during the year ended June 30, 1915, 5 were white and 57 colored.

TABLE No. 12.—*Statistics of the leper lazarette at Tracadie, New Brunswick, 1890–1916.*

Year.	Number of patients Jan. 1.			Admitted during the year.			Total.	Desertions or discharged, disease arrested.			Deaths.		
	Men.	Women.	Total.	Men.	Women.	Total.		Men.	Women.	Total.	Men.	Women.	Total.
90	9	11	20	2	2	4	24	[1]1	.....	1	2	3	5
91	8	10	18	4	2	6	24	.....	.....	.....	1	1	2
92	11	11	22	3	.....	3	25	.....	.....	.....	.....	3	3
93	14	8	22	1	3	4	26	.....	.....	.....	4	2	6
94	11	9	20	1	.....	1	21	.....	.....	.....	.....	1	1
95	12	8	20	1	.....	1	21	.....	.....	.....	.....	2	2
96	13	6	19	4	.....	4	23	.....	.....	.....	3	.....	3
97	14	6	20	8	4	12	32	.....	.....	.....	4	4	8
98	18	6	24	.....	.....	.....	24	[2]1	.....	1	2	.....	2
99	15	6	21	2	3	5	26	.....	.....	.....	2	1	3
00	15	8	23	1	.....	1	24	.....	.....	.....	3	1	4
01	14	7	21	1	1	2	23	[3]2	.....	2	3	1	4
02	9	7	16	1	.....	1	17	.....	.....	.....	.....	.....	.....
03	10	7	17	1	2	3	20	.....	.....	.....	3	1	4
04	8	8	16	2	1	3	19	.....	.....	.....	1	3	4
05	9	6	15	.....	1	1	16	[4]1	.....	1	.....	.....	.....
06	8	7	15	.....	1	1	16	.....	.....	.....	.....	1	1
07	8	7	15	1	1	2	17	.....	[5]1	1	.....	.....	.....
08	9	7	16	2	1	3	19	.....	.....	.....	.....	1	1
09	10	8	18	1	1	2	20	.....	.....	.....	1	.....	1
10	10	9	19	4	.....	4	23	.....	.....	.....	1	1	2
11	14	9	23	1	.....	1	24	[6]1	.....	1	2	1	3
12	13	8	21	.....	2	2	23	[6]1	.....	1	.....	.....	.....
13	13	8	21	.....	.....	.....	21	.....	.....	.....	2	.....	2
14	9	10	19	1	2	3	22	.....	.....	.....	3	3	6
15	7	9	16	.....	.....	.....	16	.....	.....	.....	1	1	2
16	6	8	14	.....	.....	.....	14	.....	.....	.....	1	1	2

[1] Disease arrested.
[2] Went to Bermuda, his native land.
[3] Deserters.
[4] Deserter; came back in 1909.
[5] Sent out by Dr. Smith; came back in 1912.
[6] Disease arrested; discharged by Dr. Langis.

TABLE No. 13.—*Mortality from leprosy in Cuba, 1903–1913.*

[Source: Sanidad y Beneficencia, Boletin Oficial de la Secretaria, Habana.]

Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.	Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.
3	1,810,889	31	17.1	1909	2,116,402	25	11.8
4	1,870,412	17	9.1	1910	2,150,112	35	16.3
5	1,929,935	29	15.0	1911	2,183,823	53	24.3
6	1,989,458	39	19.6	1912	2,217,534	37	16.7
7	2,048,980	47	22.9				
1903–1907	9,649,674	163	16.9	1908–1912	10 750,562	180	16.7
8	2,082,691	30	14.4	1913	2,251,245	43	19.1

BLE No. 14.—*Mortality from leprosy in St. Kitts, Nevis, and Anguilla, 1901–1914.*

urce: Medical reports on the sanitary condition of the Presidency of St. Kitts-Nevis and the Island of Anguilla, Leeward Islands Colony.]

Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.	Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.
	46,776	9	192.4	1909	44,674	16	358.2
	46,580	2	42.9	1910	44,508	11	247.1
	46,346	12	258.9				
	46,086	7	151.9	1906–1910	225,271	50	222.0
	45,865	15	327.0				
				1911	43,303	6	138.6
1901–1905	231,653	45	194.3	1912	43,711	10	228.8
				1913	44,279	4	90.3
	45,655	5	109.5	1914	44,847	6	133.8
	45,335	11	242.6				
	45,099	7	155.2	1911–1914	176,140	26	147.6

TABLE No. 15.—*Mortality from leprosy in Antigua and Barbuda, 1901–1911.*

[Source: Annual reports of the registrar general on the vital statistics, Antigua.]

Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.	Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.
1901	35,073	7	199.6	1907	33,390	4	119.8
1902	34,792	3	86.2	1908	33,110	7	211.4
1903	34,511	10	289.8	1909	32,830	4	121.8
1904	34,230	5	146.1	1910	32,550	3	92.2
1905	33,950	9	265.1	1906–1910	165,550	20	120.8
1901–1905	172,556	34	197.0	1911	32,269	4	124.0
1906	33,670	2	59.4				

TABLE No. 16.—*Mortality from leprosy in Trinidad and Tobago, 1901–1913.*

[Source: Annual reports of the registrar general on the vital statistics, Trinidad.]

Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.	Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.
1901	275,261	59	214.3	1908	317,513	49	154.3
1902	282,125	43	152.4	1909	323,828	52	160.6
1903	287,737	38	132.1	1910	330,270	45	136.3
1904	293,460	41	139.7	1906–1910	1,588,181	261	164.3
1905	299,296	66	220.5	1911	336,839	41	121.7
1901–1905	1,437,879	247	171.8	1912	343,408	42	122.3
1906	305,249	49	160.5	1913	348,958	41	117.5
1907	311,321	66	212.0				

TABLE No. 17.—*Statistics of the Cocorite Leper Asylum, Port of Spain, Trinidad, 1909–1915.*

[Source: Annual reports of the surgeon general of Trinidad]

Years ending Mar. 31—	Population of colony.	Lepers admitted.	Deaths.	Remaining at end of year.	Rate per 1,000,000.
1909	317,513	60	38	251	790.5
1910	323,828	.....	.....	273	843.0
1911	330,270	65	34	273	826.6
1912	336,839	90	38	285	846.1
1913	343,408	96	39	283	824.1
1914	348,958	98	25	300	859.7
1915	355,627	110	47	318	894.2

TABLE No. 18.—*Admissions to the Cocorite Leper Asylum, Port of Spain, Trinidad, according to nativity, Apr., 1909–Mar. 31, 1915.*

[Source: Annual reports of the surgeon general of Trinidad and Tobago.]

Where born.	Tubercular.	Anesthetic.	Mixed.	Doubtful and not stated.	Total.
Trinidad	86	98	8	20	212
Tobago	7	5	.....	2	14
Grenada	1	3	.....	2	6
Barbados	9	4	1	2	16
St. Vincent	18	6	.....	2	26
Martinique	4	.....	.....	1	5
Dominica	.....	1	.....	.....	1
Guadaloupe	1	.....	.....	.....	1
Antigua	.....	.....	.....	1	1
Nevis	1	.....	.....	.....	1
St. Kitts	.....	1	.....	1	2
St. Bartholomew	1	.....	.....	.....	1
British Guiana	3	.....	.....	.....	3
Venezuela	2	.....	1	.....	3
Madeira	.....	1	.....	.....	1
Portugal	.....	.....	.....	1	1
China	1	2	.....	.....	3
India	37	156	10	19	222
Total	171	277	20	51	519

TABLE No. 19.—*Inmates of the public leper asylum at Mahaica, British Guiana, according to race, Apr. 1, 1913.*

[Source. Report of the surgeon general of British Guiana for the year 1912-13.]

Race.	Population of British Guiana.	Number of lepers.	Rate per 1,000,000.
Black and colored	155,624	222	1,426.5
East Indians	128,993	150	1,162.9
Chinese	2,684	1	372.6
Portuguese	10,284	13	1,264.1
White	4,011	1	249.3
Total	301,596	387	1,283.2

TABLE No. 20.—*Deaths of lepers, by form and duration of disease, in Mahaica Leper Asylum, British Guiana, 1902–1913.*

Duration of disease (years).	Tubercular.		Anesthetic.		Mixed.		Total.		Average duration of treatment.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
									Yr. Mo.	*Yr. Mo.*
Under 2	1	.....	9	.....	3	.....	13	.....	11	.....
2 to 4	25	12	63	20	9	2	97	34	2 6	1 8
5 to 9	66	24	111	40	28	3	205	67	4 4	3 9
10 to 14	48	17	90	21	20	5	158	43	6 8	6 1
15 and over	13	6	69	32	13	5	95	43	11 5	13 4
Unknown	13	13	74	29	10	3	97	45	2 1	2 2
Total	166	72	416	142	83	18	665	232	5 3	5 4

[1] Average duration of disease: Tubercular—Male, 8 years 10 months; female, 8 years 10 months. Anesthetic—Male, 10 years 6 months; female, 11 years 2 months. Mixed—Male, 9 years 4 months; female, 12 years 11 months. All forms—Male, 9 years 11 months; female, 10 years 7 months.

Male and female: Tubercular, 8 years 10 months; anesthetic, 10 years 8 months; mixed, 9 years 11 months; all forms, 10 years 1 month; average duration of treatment, 5 years 3 months.

TABLE No. 21.—*Deaths from leprosy, by sex and age, in Mahaica Leper Asylum, British Guiana, 1902–1913.*

Years.	Under 15 years.		15 to 44 years.		45 years and over.		Age not stated.		All ages.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
1902	1	.....	18	7	24	4	.....	.....	43	11
1903	.....	.....	32	8	31	8	.....	.....	63	16
1904	1	.....	23	7	20	3	.....	.....	44	10
1905	1	1	17	13	19	6	.....	.....	37	20
1906	.....	.....	36	13	27	5	.....	1	63	19
1907	1	.....	42	6	26	8	14	1	83	15
1908	1	.....	13	4	12	2	15	2	41	8
1909	.....	.....	12	5	9	.....	39	27	60	32
1910	.....	.....	1	1	1	.....	51	26	53	27
1911	.....	.....	.....	.....	.....	.....	58	30	58	30
1912	2	.....	35	15	35	13	11	8	83	36
1913	.....	1	24	3	13	4	.....	.....	37	8
Total	7	2	253	82	217	53	188	95	665	232

TABLE No. 22.—*Deaths of lepers, by cause, in Mahaica Leper Asylum, British Guiana, 1902–1913.*

Cause of death.	Tubercular.		Anæsthetic.		Mixed.		Total.	
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
Leprosy	113	47.5	174	31.2	41	40.6	328	36.6
Dysentery	9	3.8	37	6.6	6	5.9	52	5.8
Tuberculosis	12	5.0	25	4.5	2	2.0	39	4.4
Cancer	1	.4	.....	.....	.....	.....	1	.1
Nervous diseases	.....	.....	19	3.4	.....	.....	19	2.1
Heart disease	7	2.9	23	4.1	1	1.0	31	3.5
Pneumonia	3	1.3	15	2.7	2	2.0	20	2.2
Other respiratory diseases	.....	.....	9	1.6	2	2.0	11	1.2
Diarrhea and enteritis	51	21.4	134	24.0	24	23.7	209	23.3
Liver diseases	2	.9	13	2.3	3	3.0	18	2.0
Bright's disease	36	15.1	74	13.3	16	15.8	126	14.0
Accident	.....	.....	5	.9	2	2.0	7	.8
Suicide	.....	.....	.....	.....	1	1.0	1	.1
All other causes	4	1.7	30	5.4	1	1.0	35	3.9
Total	238	100.0	558	100.0	101	100.0	897	100.0

TABLE No. 23.—*Deaths from leprosy and number of inmates in the leper asylums of Venezuela, 1905–1912.*

[Source: Anuario Estadistico de Venezuela.]

Year.	Population.	Deaths from leprosy in Venezuela.	Rate per 1,000,000.	Inmates in leper asylums Dec. 31.	Rate per 1,000,000.
1905	2,608,033	81	31.1	.....	.....
1906	2,627,434	74	28.2	.....	.....
1907	2,646,835	51	19.3	666	251.6
1908	2,666,236	37	13.9	632	237.0
1909	2,685,637	48	17.9	621	231.2
1910	2,705,038	22	8.1	612	226.2
1911	2,724,439	24	8.8	611	224.3
1912	2,743,840	62	22.6	582	212.1

TABLE No. 24.—*Mortality from leprosy in the city of Rio de Janeiro, 1891–1912.*

[Source: Annuario de Estatistica Demographo-Sanitaria, 1912.]

Year.	Population.	Deaths.	Rate per 1,000,000.	Year.	Population.	Deaths.	Rate per 1,000,000.
1891	440,118	13	29.5	1902	571,728	19	33.2
1892	450,636	14	31.1	1903	585,695	20	34.1
1893	461,411	20	43.3	1904	600,067	23	38.3
1894	472,454	18	38.1	1905	614,831	25	40.7
1895	483,773	18	37.2				
1891-1895	2,308,392	83	36.0	1901-1905	2,930,451	103	35.1
1896	495,380	19	38.4	1906	625,756	22	35.2
1897	507,286	18	35.5	1907	636,018	34	53.5
1898	519,503	13	25.0	1908	637,089	20	31.4
1899	532,042	22	41.4	1909	649,362	14	21.6
1900	544,917	10	18.4	1910	669,781	11	16.4
1896-1900	2,599,128	82	31.5	1906-1910	3,218,006	101	31.4
1901	558,140	16	28.7	1911	708,669	29	40.9
				1912	749,376	25	33.4

TABLE No. 25.—*Mortality from leprosy in the Federal District of Rio de Janeiro, by age and sex, 1910–1912.*

[Source: Annuario de Estatistica Demographo Sanitaria, 1912.]

Age.	Males.			Females.		
	Population.	Number of deaths.	Rate per 1,000,000.	Population.	Number of deaths.	Rate per 1,000,000.
Under 15	471,503	1	2.1	406,394	.....	.....
15–19	145,960	3	20.6	127,310	2	15.7
20–29	363,953	9	24.7	231,580	6	25.9
30–39	258,332	7	27.1	166,750	1	6.0
40–49	172,627	13	75.3	114,175	3	26.3
50–59	85,621	8	93.4	66,410	6	90.3
60–69	35,305	4	113.3	34,618	3	86.7
70 and over	13,755	.....	.....	18,800	1	53.2
Unknown	33,631	.....	.....	21,555	.....	.....
All ages	1,580,688	45	28.5	1,187,592	22	18.5

TABLE No. 26.—*Mortality from leprosy in the city of Pernambuco, Brazil, 1907–1912.*

[Source: Annuario de Estatistica Demographo Sanitaria, Rio de Janeiro, 1912.]

Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.	Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.
1907	159,480	18	112.9	1911	186,000	3	16.1
1908	166,110	19	114.4	1912	210,000	10	47.6
1909	172,740	12	69.5				
1910	179,370	12	66.9	1907–1912	1,073,700	74	68.9

TABLE No. 27.—*Mortality from leprosy in the city of Sao Paulo, Brazil, 1904–1912.*

[Source: Annuario Estatistica Demographo-Sanitaria, Rio de Janeiro, 1912.]

Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.	Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.
1904	307,600	6	19.5	1908	336,400	11	32.7
1905	314,800	7	22.2	1909	343,600	6	17.5
1906	322,000	17	52.8	1910	350,800	23	65.6
1907	329,200	11	33.4	1911	358,000	21	58.7
1904–1907	1,273,600	41	32.2	1908–1911	1,388,800	61	43.9
				1912	400,000	24	60.0

TABLE No. 28.—*Number of lepers in Iceland, by age and sex, 1901.*

[Source: Sammendrag af statistiske Oplysninger om Island, Koebenhavn, 1907.]

Age.	Males.			Females.		
	Population.	Number of lepers.	Rate per 1,000,000.	Population.	Number of lepers.	Rate per 1,000,000.
Under 20	17,326	4	230.9	16,805	.....	.....
20–39	10,561	30	2,840.6	11,653	8	686.5
40–59	6,464	18	2,784.7	7,728	19	2,458.6
60 and over	3,044	8	2,628.1	4,620	7	1,515.2
Not stated	188	.....	.....	81	.....	.....
All ages	37,583	60	1,596.5	40,887	34	831.6

NOTE.—The reports of the district physicians show 133 lepers in 1901.

TABLE No. 29.—*Number of lepers in Iceland, by age and sex, 1910.*

[Source: Manntal a Islandi, 1. December, 1910, gefid ut af Stjornarradi Islands. Reykjavik, 1913.]

Age.	Males.			Females.		
	Population.	Number of lepers.	Rate per 1,000,000.	Population.	Number of lepers.	Rate per 1,000,000.
Under 20	19,141	2	104.5	18,391	.....	.....
20–39	11,060	10	904.2	11,800	7	593.2
40–59	7,542	19	2,519.2	8,870	10	1,127.4
60 and over	3,219	7	2,174.6	4,905	9	1,834.9
Unknown	143	.....	.....	112	.....	.....
All ages	41,105	38	924.5	44,078	26	589.9

NOTE.—The above table is derived from the census report of Iceland of 1910. The reports of the district physicians show that there were 82 lepers in Iceland in 1910, or 963 per 1,000,000 population. Fifty-one of the lepers were segregated in a leper asylum near Reykjavik.

TABLE No. 30.—*Number of lepers in Norway, 1856–1910.*

[Source: Norges officielle Statistik, v. 161, De Spedalske i Norge, Kristiania, 1912.]

Year.	Population.	Number of lepers.	Rate per 1,000,000.	Year.	Population.	Number of lepers.	Rate per 1,000,000.
1856	1,494,000	2,858	1,913.0	1905	2,315,000	474	204.8
1875	1,803,000	1,752	971.7	1906	2,330,000	445	191.0
1885	1,930,000	1,195	619.2	1907	2,345,000	438	186.8
1890	1,982,000	960	484.4	1908	2,360,000	394	166.9
1895	2,063,000	688	333.5	1909	2,375,000	360	151.6
1900	2,240,000	577	257.6	1910	2,390,000	323	135.1

TABLE No. 31.—*Number of lepers in Norway, by domicile, 1910.*

[Source: Norges officielle Statistik, v. 161, De Spedalske i Norge, Kristiania, 1912.]

Province.	Population.	Number of lepers.	Rate per 1,000,000.
Kristiania City	241,884	5	20.7
Akershus	128,042	3	23.4
Smaalenene	152,306	.....	.....
Buskerud	123,643	.....	.....
Jarlsberg and Larvig	109,076	.....	.....
Bratsberg	108,084	.....	.....
Nedenes	76,456	.....	.....
Lister and Mandal	82,067	1	12.2
Total southern Norway	1,021,508	9	8.8
Kristians Amt	119,236	1	8.4
Hedermarken	134,555	5	37.2
Total interior Norway	253,791	6	23.6
Stavanger	141,040	9	63.8
Söndre Bergenshus	146,006	56	383.5
Nordre Bergenshus	90,040	72	799.6
Romsdal	144,622	40	276.6
Söndre Trondhjem	148,306	32	215.8
Bergen City	76,867	12	156.1
Total western Norway	746,881	221	295.9
Nordre Trondhjem	84,948	24	282.5
Nordland	164,687	51	309.7
Tromsö	81,902	8	97.7
Finmarken	38,065	4	105.1
Total northern Norway	369,602	87	235.4

TABLE No. 32.—*Average age of lepers at beginning of disease and duration of the disease in the leper asylums of Norway, 1901–1910.*

[Source: Norges officielle Statistik, v. 161, De Spedalske i Norge, Kristiania, 1912.]

Year.	Average age at the beginning of the disease.		Average duration, in years, of the disease.	
	Tubercular leprosy.	Anesthetic leprosy.	Tubercular leprosy.	Anesthetic leprosy.
1901–1905	31.8	33.1	11.5	30.2
1906–1910	31.3	31.0	16.1	34.9

NOTE.—The tubercular form of leprosy is decreasing more rapidly than the anesthetic form. The number of persons suffering from the two forms is now about equal.

TABLE No. 33.—*Number of lepers in Norway, by sex and age, at the end of 1910.*

[Source: Norges officielle Statistik, v. 161, De Spedalske i Norge, Kristiania, 1912.]

Age.	Males.	Females.	Total.	Age.	Males.	Females.	Total.
5–10	1	.....	1	60–70	20	29	49
10–15	.....	1	1	70–80	14	29	43
15–20	3	3	6	80–90	4	6	10
20–30	6	16	22	90–100	.....	2	2
30–40	16	13	29	Unknown	29	19	48
40–50	20	33	53				
50–60	24	35	59	Total	137	186	323

TABLE No. 34.—*Mortality from leprosy in Norway, by age and sex, 1906–1910.*

[Source: Norges officielle Statistik, v. 161, De Spedalske i Norge, Kristiania, 1912.]

Age.	Males.	Females.	Total.	Age.	Males.	Females.	Total.
15–20	6	2	8	70–80	23	14	37
20–30	6	2	8	80–90	14	14	28
30–40	18	12	30	90–100	.....	2	2
40–50	22	11	33	Unknown	12	8	20
50–60	11	5	16				
60–70	16	13	29	Total	128	83	211

TABLE No. 35.—*Number of inmates in the leprosariums of Norway, 1856–1913.*

[Source: Norges officielle Statistik, Sundhedstilstanden og Medicinalforholdene, 1913.]

Year.	Population of Norway.	Number of inmates.	Rate per 1,000,000.	Year.	Population of Norway.	Number of inmates.	Rate per 1,000,000.
1856	1,494,000	235	157.3	1905	2,315,000	253	109.3
1875	1,803,000	623	345.5	1910	2,390,000	203	84.9
1885	1,930,000	522	270.5	1911	2,405,000	191	79.4
1890	1,982,000	507	255.8	1912	2,420,000	177	73.1
1895	2,063,000	360	174.5	1913	2,435,000	177	72.7
1900	2,240,000	298	133.0				

NOTE.—This table shows that not all the lepers of Norway are segregated in asylums. See table No. 30.

TABLE No. 36.—*Number of lepers in Sweden, 1907–1913.*

[Source: Sveriges officiella Statistik, Allmän Hälso och Sjukvård.]

Year.	Population.	Number of lepers.	Rate per 1,000,000.	Year.	Population.	Number of lepers.	Rate per 1,000,000.
1907	5,406,615	87	16.1	1911	5,561,799	66	11.9
1908	5,445,211	73	13.4	1912	5,601,195	67	12.0
1909	5,483,807	73	13.3	1913	5,640,591	65	11.5
1910	5,522,403	72	13.0				

TABLE No. 37.—*Lepers in Sweden at the end of 1912, according to place of origin.*

[Sources: Sveriges officiella Statistik. Allmän Hälso och Sjukvård År 1912.]

Province.	Population.	Number of lepers.	Rate per 1,000,000.
Stockholm city	346,848	2	5.8
Stockholm County	232,390	1	4.3
Uppsala County	129,965	1	7.7
Kalmar County	231,323	1	4.3
Gottland County	35,990	2	55.7
Göteborg and Bohus Counties	386,608	1	2.6
Älvsborg County	291,720	1	3.4
Kopparberg County	237,147	20	84.3
Gävleborg County	257,345	31	120.5
Västernorrland County	254,019	5	19.7
Jämtland County	163,625	2	12.2
Other Provinces	3,014,215	.....	0.0
Total	5,601,195	67	12.0

NOTE.—The two infected Provinces, Kopparberg and Gävleborg, are situated in the north-central part of the country from the Baltic to the Norwegian frontier.

TABLE No. 38.—*Number of lepers in Finland, 1910.*

[Source: Medicinalstyrelsens Berättelse for År 1910, Helsingfors, 1912.]

	Population.	Number of lepers.	Rate per 1,000,000.
Males	1,546,694	42	27.2
Females	1,568,503	38	24.2
Total	3,115,197	80	25.7

NOTE.—During 1910 there were 7 new cases and 9 deaths from leprosy.

TABLE No. 39.—*Number of lepers in Prussia, 1911.*

[Source: Das Gesundheitswesen des Preussischen Staates im Jahre 1911.]

Province.	Population.	Number of lepers.	Rate per 1,000,000.	Province.	Population.	Number of lepers.	Rate per 1,000,000.
Königsberg	916,533	[1] 85	92.7	Other Provinces	37,170,041	.....	0.0
Gumbinnen	606,950	1	1.6	Total	40,500,283	90	2.2
Arnsberg	544,660	1	1.8				
Cöln	1,262,099	3	2.4				

[1] All in the district of Memel.

TABLE No. 40.—*Number of lepers in Spain, 1904.*

[Source: Dr. Ph. Hauser. La Geografia Medica de la Peninsula Iberica.]

Province.	Population.	Number of lepers.	Rate per 1,000,000.	Province.	Population.	Number of lepers.	Rate per 1,000,000.
Alicante	475,684	117	246.0	Pontevedra	464,552	27	58.1
Cadiz	457,683	1	2.2	Sevilla	568,028	34	59.9
Castellon	314,632	70	222.5	Tarragona	336,978	9	26.7
Cordoba	469,774	21	44.7	Valencia	825,106	122	147.9
Coruna	655,046	21	32.1	All other Provinces	12,740,660	.....	0.0
Granada	497,035	27	54.3				
Huelva	277,489	6	21.6	Total	18,589,016	522	28.1
Malaga	506,349	67	132.3				

NOTE.—The Canary Islands are not included in the above table. During the years 1901–1906 there were 55 deaths from leprosy in the Canary Islands, giving an annual death rate of 32.9 per 1,000,000 population.

TABLE No. 41.—*Mortality from leprosy in Italy, 1896–1912.*

[Source: Statistica delle cause di morte nell 'anno 1912, Roma, 1914.]

Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.	Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.
1896	31,506,302	17	0.5	1906	33,325,098	10	0.3
1897	31,716,318	21	.7	1907	33,514,702	10	.3
1898	31,926,334	27	.8	1908	33,826,688	9	.3
1899	32,136,350	14	.4	1909	34,077,068	14	.4
1900	32,346,366	11	.3	1910	34,376,609	20	.6
1896–1900	159,631,670	90	.6	1906–1910	169,120,165	63	.4
1901	32,533,337	6	.2	1911	34,688,814	19	.5
1902	32,690,510	5	.2	1912	35,026,486	17	.5
1903	32,839,509	11	.3				
1904	33,016,234	12	.4				
1905	33,193,289	12	.4				
1901–1905	164,281,879	46	.3				

TABLE No. 42.—*Number of lepers and mortality from leprosy in Bosnia and Herzegovina, 1906–1912.*

[Source: Jaehrliche Berichte ueber die Verwaltung von Bosnien und Hercegovina.]

Year.	Population.	Number of deaths.	Rate per 1,000,000.	Number of lepers.	Rate per 1,000,000.
1906	1,634,082	.....	.....	150	91.8
1907	1,700,072	24	14.1	135	79.4
1908	1,766,062	15	8.5	135	76.4
1909	1,832,053	27	14.7	129	70.4
1910	1,898,044	10	5.3	130	68.5
1911	.....	.....	.....	.....	.....
1912	1,962,411	.....	.....	116	59.1

TABLE No. 43.—*Statistics of the leper farm at Nicosia, Cyprus, 1906–1914.*

[Source: The Governor's Annual Reports.]

Year.	Population.	Number of deaths.	Rate per 1,000,000.	Inmates on Dec. 31.	Rate per 1,000,000.
1906	256,490	.....	.....	99	386.0
1907	260,199	11	42.3	100	384.3
1908	263,908	5	18.9	102	386.5
1909	267,617	11	41.1	102	381.1
1910	271,326	15	55.3	99	364.9
1911	275,035	9	32.7	99	360.0
1912	278,744	.....	.....	97	348.0
1913	282,453	14	49.6	95	336.3
1914	286,162	10	34.9	97	339.0

TABLE No. 44.—*Number of lepers in Egypt, according to the census of 1907, by sex.*

[Source: The census of Egypt taken in 1907; Cairo, 1909.]

	Population.	Number of lepers.	Rate per 1,000,000.
Males	5,616,640	4,287	763.3
Females	5,573,338	2,226	399.4
Total	11,189,978	6,513	582.0

TABLE No. 45.—*Number of lepers in Egypt, according to the census of 1907, by Provinces.*

	Population.	Number of lepers.	Rate per 1,000,000.
GOVERNORATES.			
Cairo	654,476	54	82.5
Alexandria	332,246	101	304.0
Port Said	49,884	2	40.1
Suez	18,347	.....	0.0
Ismailia	11,448	4	349.4
El Arish	5,897	10	1,696.8
Sinai	1,510	.....	0.0
PROVINCES.			
Behera	798,473	1,022	1,279.9
Gharbia	1,484,814	707	476.2
Daquahlia	912,428	568	622.5
Sharquia	879,646	899	1,022.0
Menufia	970,581	316	325.6
Qualiubia	434,575	302	694.9
Total, lower Egypt	5,480,517	3,814	695.9
Giza	460,080	169	367.3
Beni Suef	372,412	152	408.2
Fayum	441,583	262	593.3
Minia	659,967	308	466.7
Assiut	903,335	445	492.6
Girga	792,971	655	826.0
Quena	772,492	487	630.4
Aswan	232,813	50	214.8
Total, upper Egypt	4,635,653	2,528	545.3

TABLE No. 46.—*Cases of leprosy treated in the hospitals and dispensaries of Sierra Leone, 1908–1913.*

[Source: Annual Reports of the Medical Department of Sierra Leone.]

Year.	Population.	Cases.	Rate per 1,000,000.	Year.	Population.	Cases.	Rate per 1,000,000.
1908	75,896	27	355.7	1911	75,572	48	635.2
1909	75,788	12	158.3	1912	75,464	34	450.5
1910	75,680	26	343.6	1913	75,356	47	623.7

TABLE No. 47.—*Cases of leprosy treated in the hospitals and dispensaries of the Gold Coast Colony, 1910–1913.*

[Source: Annual Medical and Sanitary Reports of the Government of the Gold Coast.]

Year.	Population.	Cases.	Rate per 1,000,000.	Year.	Population.	Cases.	Rate per 1,000,000.
1910	857,922	40	46.6	1913	845,454	64	75.7
1911	853,766	43	50.4				
1912	849,610	34	40.0	1910–1913	3,406,752	181	53.1

Type of disease, 1913:
Tubercular 54
Anesthetic 10

TABLE No. 48.—*Number of lepers in Zanzibar and Pemba, 1909.*

[Source: Report of the Public Health Department, Zanzibar, 1909.]

	Population.	Number of lepers.	Rate per 1,000,000.
Zanzibar	115,477	178	1,541.4
Pemba	83,437	129	1,546.1
Total	198,914	307	1,543.4

TABLE No. 49.—*Number of lepers in the leper asylums in the Union of South Africa, Dec. 31, 1912.*

[Source: Statistical Yearbook of the Union of South Africa, 1913.]

	Cape of Good Hope.		Natal, Amatikulu.	Transvaal, Pretoria.	Total.
	Robben Island.	Emjanyana.			
White males	60	.....	.....	60	120
White females	32	.....	.....	32	64
Colored males	349	329	100	401	1,179
Colored females	171	316	75	299	861
Total	612	645	175	792	2,224

NOTE.—As the population of the Union of South Africa was 6,125,000 on Dec. 31, 1912, there were 363.1 lepers in leper asylums per 1,000,000 population.

TABLE No. 50.—*Mortality from leprosy in Mauritius, 1890–1914.*

[Source: Annual Reports of the Registrar General of Mauritius.]

Year.	Population.	Deaths.	Rate per 1,000,000.	Year.	Population.	Deaths.	Rate per 1,000,000.
1890	370,562	66	178.1	1903	370,522	34	91.8
1891	370,604	35	94.4	1904	370,299	30	81.0
1892	370,646	54	145.7	1905	370,076	27	73.0
1893	370,689	59	159.2	1906	369,853	11	29.7
1894	370,732	59	159.1	1907	369,630	5	13.5
1895	370,775	54	145.6	1908	369,407	20	54.1
1896	370,818	33	89.0	1909	369,183	21	56.9
1897	370,861	41	110.6	1910	368,959	14	37.9
1898	370,904	62	167.2	1911	368,735	23	62.4
1899	370,947	44	118.6	1912	368,512	20	54.3
1900	370,990	32	86.3	1913	368,289	21	57.0
1901	370,968	48	129.4	1914	368,066	1	2.7
1902	370,745	39	105.2				

TABLE No. 51.—*Number of lepers in India at each of the last four censuses, 1881–1911.*

[Source: General Report of the Census of India, 1911.]

	Population, 1911.	Rates per 100,000.							
		Males.				Females.			
		1881	1891	1901	1911	1881	1891	1901	1911
I. PROVINCES.									
Burma	12,115,217	101	117	56	79	33	52	25	37
Assam	6,713,635	96	182	125	90	38	60	39	32
Bengal	45,483,077	141	104	69	56	61	36	23	19
Bihar and Orissa	34,490,084	103	82	76	71	29	26	24	23
United Provinces	47,182,044	63	58	36	48	16	13	11	11
Central Provinces and Berar	13,916,308	103	91	78	58	39	39	38	33
Madras	41,405,404	67	53	54	62	25	18	17	20
Coorg	174,976	25	13	6	6	23	14	4	.....
Bombay	19,672,642	75	69	38	52	29	24	15	23
Ajmer Merwara	501,395	9	7	8	3	3	3	3	2
Punjab	19,974,256	65	37	26	17	22	13	11	8
Northwestern Frontier Province	2,196,933	23	16	18	17	11	7	10	8
Baluchistan	414,412	.....	.....	.....	14	.....	.....	.....	5
II. STATES AND AGENCIES.									
Sikkim	87,920	.....	.....	55	16	.....	.....	25	40
Central India Agency	9,356,980	.....	.....	6	19	.....	.....	4	9
Cochin	918,110	27	66	57	73	23	31	25	28
Travancore	3,428,975	.....	53	68	49	.....	22	28	16
Hyderabad	13,374,676	42	39	4	41	18	13	2	15
Mysore	5,806,193	16	22	17	18	9	11	8	8
Baroda	2,032,798	39	2	18	31	17	15	10	12
Rajputana Agencies	10,530,432	.....	21	6	9	.....	7	3	3
Kashmir	3,158,126	.....	.....	72	59	.....	.....	36	26
All India	315,156,396	84	68	48	51	29	23	17	18

NOTE.—The total number of lepers in India, 1911, was 109,000.

TABLE No. 51a.—*Mortality from leprosy in Ceylon, 1910–1914, by race.*

[Source: Administration Reports of Ceylon, Vital Statistics.]

Race.	Population.	Deaths from leprosy.	Rate per 1,000,000.
Europeans	38,605	.....	0.0
Burghers	134,905	4	29.7
Sinhalese	13,763,410	256	18.6
Tamils	5,348,670	53	9.9
Moors	1,352,420	22	16.3
Malays	65,495	2	30.5
Total	20,709,505	337	16.3

TABLE No. 52.—*Lepers treated in the leper asylum at Pulau Jerejak, Straits Settlements, during the year 1914, according to race, compared with the population of Straits Settlements and Perak.*[1]

[Source: Annual Report on the Medical Department, Straits Settlements, for the year 1914.]

Race.	Population.	Cases.	Rate per 1,000,000.	Race.	Population.	Cases.	Rate per 1,000,000.
Hokkien	191,453	7	386.5	Tamils	119,671	47	392.7
Cantonese	158,766	191	1203.0	Other East Indians	35,923	4	111.3
Teochiu	70,438	75	1064.8	Malays	408,042	3	7.4
Kheh	96,992	158	1629.0	Javanese	30,801	.....	.....
Hailam	30,838	28	908.0	Eurasians	8,917	1	112.1
Other Chinese	38,562	.....	.....	Other races	17,723	.....	.....
Total Chinese	587,049	526	896.0	Total	1,208,126	581	480.9

[1] Of the 581 cases 542 were from Perak or Straits Settlements.

TABLE No. 53.—*Lepers treated in the leper asylum at Pulau Jerejak, Straits Settlements, during the year 1914, according to occupation.*

[Source: Annual Report on the Medical Department, Straits Settlements, for the year 1914.]

Occupation.	Cases.	Per cent.	Occupation.	Cases.	Per cent.
General coolie	204	35.1	Cook	6	1.0
Mining coolie	181	31.2	Trader	6	1.0
Gardener	29	5.0	Fisherman	5	0.9
Carpenter	23	4.0	Barber	4	0.7
Woodcutter	15	2.6	Actor	2	0.3
Blacksmith	13	2.2	Other occupations	70	12.1
Tailor	9	1.5			
Cart driver or puller	8	1.4	Total	581	100.0
Rikisha puller	6	1.0			

NOTE.—The occupational census statistics of Straits Settlements are too incomplete to serve for comparison with the above figures.

TABLE No. 54.—*Leprosy treated in the hospitals of the Federated Malay States, 1910–1914.*

[Source: The Annual Medical Reports for the Federated Malay States.]

Year.	Population.	Admissions to hospitals.		Deaths from leprosy.		Remaining at end of year.	
		Number.	Rate per 1,000,000.	Number.	Rate per 1,000,000.	Number.	Rate per 1,000,000.
1909	955,553	.....	.....	.....	.....	468	489.8
1910	1,001,257	486	485.4	162	161.8	523	522.3
1911	1,045,947	404	386.3	136	130.0	512	489.5
1912	1,109,017	374	337.2	139	125.3	547	493.2
1913	1,117,625	.....	.....	.....	.....	544	486.7
1914	1,125,000	443	393.8	119	105.8	564	501.3

TABLE No. 55.—*Mortality from leprosy in Japan, 1907–1911.*

[Source: Mouvement de la population de l'Empire du Japon.]

Year.	Population.	Deaths from leprosy.	Rate per 1,000,000.
1907	48,492,085	1,889	39.0
1908	49,045,240	1,944	39.6
1909	49,591,360	1,935	39.0
1910	50,137,480	1,585	31.6
1911	50,683,600	1,623	32.0
1907–1911	247,949,765	8,976	36.2

Year.	Males.			Females.		
	Population.	Deaths from leprosy.	Rate per 1,000,000.	Population.	Deaths from leprosy.	Rate per 1,000,000.
1907	24,440,011	1,344	55.0	24,052,074	545	22.7
1908	24,708,992	1,412	57.1	24,336,248	532	21.9
1909	24,974,209	1,445	57.9	24,617,151	490	19.9
1910	25,249,235	1,117	44.2	24,888,245	468	18.8
1911	25,524,261	1,210	47.4	25,159,339	413	16.4
1907–1911	124,896,708	6,528	52.3	123,053,057	2,448	19.9

TABLE No. 56.—*New cases of leprosy in the Commonwealth of Australia, 1907–1911.*

[Source: Official Year Book of the Commonwealth of Australia, 1913.]

Year.	Population.	New cases.	Rate per 1,000,000.
1907	4,123,729	26	6.3
1908	4,194,410	28	6.7
1909	4,274,617	14	3.3
1910	4,370,185	14	3.2
1911	4,490,366	11	2.4
1907–1911	21,453,307	93	4.3

Dr. HOFFMAN. In this connection an important question has been raised as regards the probable foreign origin of most of the cases reported for this country. Dr. Parker, of the Penikese colony, has been good enough to furnish me with an extremely interesting statement, in detail, regarding the 11 cases now at the island and 13 cases formerly under treatment. If this table is desired for the record, and I think it should be included, I have to request that the names of the patients be omitted, and with your permission I will now strike out the names so that they will not be printed.

The CHAIRMAN. We will include the table without the names.

(The table referred to, without the names, is here printed in full, as follows:)

List of cases of leprosy at Penikese Hospital Feb. 12, 1916.

No.	Present age.	Sex.	Civil status.	Family.	Nativity.	Apprehended.		Time in United States prior to discovery.
						When.	Where residing.	
								Years.
1	34	Male....	Mother..	1 son in China.....	Chinese...	June 6, 1904	Boston....	2-3
2	35	...do....	...do....	Wife.....	...do.....	Jan. 18, 1905	Newburyport.	3
3	35	Female .	Son.....	Father, mother, 3 sisters in Russia; brother in Concord; uncle in Cambridge.	Russian (Lettish).	July 13, 1907	Brookline.	7
4	70	Male....	Wife....	2 sons.....	Russian (Hebrew).	Mar. 19, 1909	Boston....	7
5	50	Female .	...do....	1 daughter in New Bedford; 1 son, 1 daughter in Brava.	Cape de Verde.	Dec. 16, 1909	New Bedford.	12
6	51	...do....	Mother..	Husband.....	Italy.....	May 10, 1911	Boston....	4
7	27	Male....	Son.....	Father living.....	Cape de Verde.	Nov. 9, 1912	East Norton.	4
8	40	...do....	Mother..	Wife, 2 children.....	Chinese...	Mar. 7, 1913	Boston....	8
9	41	...do....	Son.....	.....	Japanese..	Jan. 17, 1911	...do.....	3
10	28	...do....	...do....	2 brothers, 1 uncle in Boston.	Russian (Hebrew).	Nov. 7, 1913	Malden...	7
11	27	...do....	...do....	.....	Greek.....	Nov. 8, 1915	Boston....	3½

No.	Form or type of disease.	Present stage of disease.	Estimated chances of life (a guess).	Occupation.	History: Admitted to Penikese.
			Years.		
1	Tubercular.....	Far advanced; not in final stage.	3	Laundryman.....	Nov. 18, 1905
2	.....do.....	Far advanced.....	4	.....do.....	Nov. 16, 1905
3	.....do.....	Well advanced.....	4	Domestic.....	July 21, 1907
4	.....do.....	Far advanced.....	1	Teacher of Jewish language.	Mar. 27, 1909
5	Anesthetic.....	Early stage.....	10-15	Housewife.....	Dec. 19, 1909
6	Tubercular.....	Far advanced.....	3	.....do.....	May —, 1911
7	.....do.....	Second stage; medium advanced.	8	Laborer; cranberry picker.	Nov. 10, 1912
8	Tubercular macular	Second stage.....	7	Cook.....	Mar. 13, 1914
9	Tubercular.....	Last stage.....	1	Carpenter and general laborer.	Jan. 23, 1911
10	.....do.....	Second stage.....	7	Brushmaker.....	Nov —, 1913
11	.....do.....	First stage.....	12	Dishwasher.....	Nov. 18, 1915

List of all previous cases of leprosy treated or cared for at Penikese Hospital, 1904–1915.

No.	Age at discovery.	Sex.	Civil status.	Family.	Nativity.	Apprehended.		Time in United States prior to discovery.
						When.	Where residing.	
								Years.
1	38	Male	Mother	Wife, 8 children	Cape de Verde.	Apr. 22, 1904	Harwich	12
2	34	do	Son		do	Aug. 14, 1904	Boston	14
3	26	Female	Wife	4 children; fourth born at Penikese.	do	Feb. 22, 1905	Wareham	3½
4	54	Male	Mother	Wife, 2 children	American, New Orleans.	Oct. 29, 1905	Hyde Park	(1)
5	23	do	Son		Trinidad	Feb. 1, 1907	Somerville	2
6	41	do	Mother	Wife, 5 children	Russian	Aug. 27, 1907	East Boston	4
7	19	Female	Son		do	Sept. 2, 1907	Brookline	2
8	17	Male	do	Mother	Barbados	Mar. 22, 1909	Upton	7
9	25	do	do		Greek	Apr. 24, 1909	State Infirmary.	2
10	55	do	Mother		Russian	May 11, 1912	Boston	20
11	34	do	Son		Azores	June 26, 1912	New Bedford.	1½
12	30	do	Mother	Wife and son in China.	Chinese	June 12, 1912	Boston	10
13	72	do	do	Wife and 1 child	American	Dec. 9, 1915	Bourne	32

No.	Form or type of disease.	Occupation.	History.	
			Admitted to Penikese.	Disposition.
1	Tubercular	Stevedore and laborer	Nov. 18, 1905	Died Nov. 19, 1914.
2	do	Sailor	Nov. 16, 1905	Died 1907.
3	do	Housewife	Nov. 29, 1905	Died Mar. 13, 1915.
4	do	Clerk and accountant	Dec. —, 1906	Died Nov. 7, 1912.
5	Mixed	Clerk	May 31, 1907	Died Aug. 8, 1913.
6	Tubercular	In leather factory	Aug. 19, 1907	Died Oct. 22, 1915.
7	do	Domestic	1907	Deported.
8	do	Student in high school	Mar. 27, 1909	Died Feb. 17, 1915.
9	do	Cook	Apr. 24, 1909	Deported.
10	do	Painter	May 11, 1912	Mar. 21, 1913, discharged for treatment elsewhere.
11	do	Laborer	June 28, 1912	Deported Aug. 13, 1912.
12	Anesthetic and macular	Laundryman	June 15, 1912	Released Jan. 3, 1914.
13	Anesthetic	Mariner and bookkeeper	Dec. 19, 1915	Died Jan. 23, 1916.

[1] Always

Dr. HOFFMAN. It is shown by these tables that most of the cases of leprosy treated at Penikese were either Orientals or Portuguese, chiefly from the Western Islands. You, of course, are familiar with the fact that there is quite a Portuguese population in southeastern Massachusetts. With your permission I will read off the nativity of the patients under treatment, as follows: One Chinese, another Chinese, one Russian, another Russian, one Portuguese, one Italian, one Portuguese, one Chinese, one Japanese, another Russian, and a Greek. In other words, Mr. Chairman, at the present time there is not a single American-born leper in the colony. All of the cases, broadly speaking, are interstate or international cases, the patients having not been born and probably having not contracted the disease in Massachusetts, and, perhaps, not in this country. The facts are practically the same for the earlier cases, except that there was one from New Orleans, another from Trinidad, and another from Barbados, illustrating the

menace of the West Indies as regards the introduction of new cases of leprosy into this country. You may recall that the Jersey City case referred to at the outset of my remarks had originally been exposed to the disease in the West Indies, and the second case had come from Key West. The Senator from California asked a questime some time ago as regards the controlling power of the Federal Government over lepers at large in this country, and I would like to suggest to the committee that Dr. McCoy be requested to explain concisely the operations of the Federal quarantine law as well as the rules and regulations of the Public Health Service regarding the transportation of lepers in interstate traffic. The amendment with reference to the interstate quarantine regulations regarding the transportation of lepers in interstate traffic was promulgated by the Treasury Department under date of May 15, 1912, and published by the Public Health Service in Public Health Report No. 84 of that year.

Senator WORKS. There would be no doubt, Doctor, about the right of the Government to deal with interstate cases, but the important question is whether these cases are not all interstate cases; that is to say, whether there is not a danger at all times of transmitting the disease from one State to another, which, of course, would involve the question of absolute Government jurisdiction over all these cases. Take such cases as have been mentioned here, where the patient goes from one State to another and is shunted back into his own State; that, obviously, is an interstate matter, with which the Government should be able to deal.

Dr. HOFFMAN. With reference to this question, Senator, I would say that I am willing to commit myself to the point of view that almost all of the cases of which I personally have knowledge have an interstate aspect to them.

The CHAIRMAN. Speaking of the interstate aspect of these cases, Doctor, what provision does the Government make for soldiers who return from the Philippines who had been discharged and who, subsequent to their discharge, have developed leprosy?

Dr. HOFFMAN. As far as I know the Federal Government makes practically no provision for these unfortunates other than such as very special circumstances may require. There was a well-known case of a soldier leper at Savannah who for a number of years was properly taken care of in an isolated situation, as I recall it, near Fort Screven.

The CHAIRMAN. Did the leprosy develop after his discharge?

Dr. HOFFMAN. No; I think not, Senator. As I recall the case the leprosy developed previous to discharge, and he was therefore still in the service.

The CHAIRMAN. I was wondering if there was any provision made by the Federal Government for cases of leprosy in soldiers developing after their discharge.

Dr. HOFFMAN. As far as I know, there is no such provision, although quite a number of cases are on record where soldiers have developed the disease after they returned from the Philippines. There are, I believe, three such cases at the San Francisco settlement at the present time.

The CHAIRMAN. The Early case, as I understand it, belongs to this class?

Dr. HOFFMAN. Yes, Senator; that would seem to be so. There appears to be no question about Early having contracted the disease in the Philippines during military service; but he is now being taken care of by the government of the District of Columbia—at the expense of the District.

Senator WORKS. I suppose the Government would have no further responsibility after his discharge than it would have toward any other American citizen.

The CHAIRMAN. Perhaps not; but the disease was incurred in the performance of the soldier's duty to the Government and to the people, and, since we do not hesitate to pay a substantial pension to the soldiers of the Civil War, there would seem to be no reason why some Government obligation does not exist in the case of these men.

Senator WORKS. Oh, yes; there would seem to be some moral obligation, but I meant legally. I call attention to that interstate or international phase of the Government's obligation, because of the efforts being made—a good many of them—to involve the Government in appropriations for expenses which, I think, properly belong to the States. We are going a long way now in that direction, because of the necessities of the States for financial help from the Government; but this question is on quite a different footing, I conceive.

Dr. HOFFMAN. In reply to the statement made by the Senator from California, I shall, with your permission, put into the record an extract from a letter of mine to the president of the Prudential, Mr. Forrest F. Dryden, written to him during my stay at Molokai, on March 11, 1915:

> I believe no country is doing more for this unfortunate class (lepers) than Hawaii. It is not, however, in my opinion, a local, but a Federal matter. With all possible reluctance to see an extension of the Federal health activities in this direction, I can not but feel that the United States Government should take this entire matter in hand for the mainland and its insular possessions. Leprosy is a more serious menace than is generally assumed. There is more of it on the mainland than appears on the surface on the basis of inadequate statistics. On the mainland the treatment of these unfortunates is often brutal in the extreme, where isolated cases can not be well treated under present conditions. There is need of the taking over of the leper settlements in Louisiana, California, Massachusetts, Hawaii, etc., by the United States Public Health Service—to be controlled by the Federal Government and completely maintained at the expense of the Nation. The burden upon the Territory of Hawaii is very heavy—out of proportion to its means—and the rapid eradication of the disease can not take place under present conditions. I firmly believe that we have an interest in the matter, and that we should cooperate with the United States Public Health Service toward this end.

The foregoing extract, Senator, should make it clear that I am personally opposed to any unnecessary extension in the direction of Government aid in behalf of cases, however worthy, which can be properly taken care of by the several States. My own investigations into this subject of leprosy, however, have made it clear that the problem of control is essentially one of interstate and Federal concern.

With your permission, I would like to include in the record the following statement regarding the 104 lepers who at the present time are being cared for at the Louisiana settlement. The number of new cases admitted during 1914 was 21. Of the 92 native-born lepers in the Louisiana home 48 gave their birthplace as New Orleans, and the remainder came from 25 different parishes. Aside from the 92 born in Louisiana, 11 were born in other States of the United States; that

is, Florida, Kentucky, Missouri, North Carolina, Pennsylvania, and Texas; 12 came from foreign countries, as follows: China, 1; Denmark, 1; France, 2; Germany, 1; Ireland, 2; Italy, 2; Jamaica, West Indies, 1; Mexico, 1; Norway, 1; and for 4 the information could not be obtained.

Senator WORKS. The conditions in Louisiana are quite different from other parts of the country, are they not, Doctor? In other places most of the lepers are foreigners, are they not? Take Massachusetts, for example?

Dr. HOFFMAN. Yes; they are nearly all foreigners.

Senator WORKS. And that is true very largely for California, is it not?

Dr. HOFFMAN. Yes, Senator; all of the details regarding the lepers at the San Francisco Isolation Hospital are contained in the list previously put into the record, according to which only 3 out of 15 lepers were native born.

The CHAIRMAN. How is it in New York?

Dr. HOFFMAN. I regret to say I have no very definite knowledge as regards the lepers apprehended or cared for in New York City; but my recollection is that most of them are foreign born or from other States with a record of exposure in the Philippines or the West Indies.

Senator WORKS. How do you account for that condition? In other words, how do you account for the fact that there are so many native-born people of Louisiana that are afflicted with the disease?

Dr. HOFFMAN. Leprosy has been endemic in Louisiana for more than a hundred years. It may possibly have been brought there by the Acadians after their expulsion from Nova Scotia. It is certainly a curious coincidence that the disease should be endemic among the French Canadians in the Maritime Provinces and also among the French Acadians in Louisiana. They are, as a rule, but not always, of the poorest of the French element, and they usually come from sparsely settled sections in the Gulf parishes. It is not often that a case occurs among the more advanced class of people, but occasionally such cases are met with.

Senator WORKS. Is that accounted for in any way by experts on the subject?

Dr. HOFFMAN. I would not like to commit myself to any medical theories, for as yet there is not, broadly speaking, a concensus of qualified opinion. It would seem, however, that economic well-being, material prosperity, and attention to the requirements of a rational personal hygiene are the safest precautions against leprosy. Absolute bodily cleanliness, a nutritious diet, and a healthy mode of life otherwise seem to afford adequate protection to the white attendants who are in daily, and even hourly, contact with lepers in all stages of the disease.

I have here a very interesting document which you may wish to include in the record. It is the original examination paper used in Hawaii in connection with the examination of lepers for final commitment to the settlement. It is a document which reflects the humanity as well as the high order of intelligence of the Territorial government in thoroughly protecting anyone against possible errors in the medical and bacteriological diagnosis of the disease. The ex-

amination of the suspected person is invariably made by three physicians and these must agree in their findings, and in addition thereto the bacteriological evidence must be conclusive.

The CHAIRMAN. We will include that paper.

(The paper referred to is here printed in full, as follows:)

Original examination record of Board of Health of Hawaii.

1. Name, ———.
2. Nationality, ———. Sex, ———. Age, ———. Civil state, ———.
(Classify according to predominant strain.)
3. Hawaiian blood, ———. Place of birth, ———.
(State as nearly as possible what proportion.)
4. Occupation, ———.
(State nature of present and former occupations and time and place of such occupations.)
9. Present and former residences, ———.
(State particularly places and length of residence in the different localities in the Hawaiian Islands.)
16. Date of arrival in Hawaiian Islands, ———.

FAMILY HISTORY.

17. Father, ———.
18. Name, ——— {Dead. / Living.} Leper {Yes. / No.} Age, ———.
Nationality, ———.
(Predominant strain.)
19. Residence, ———. Occupation, ———.
(If dead, state former occupation.)
20. Additional facts, ———.
(State whether brothers or sisters or father or mother of father were lepers, giving their names and as full information in regard thereto as possible, and association of this patient therewith.)
26. Mother, ———.
27. Name, ——— {Dead. / Living.} Leper {Yes. / No.} Age, ———.
Nationality, ———.
(Predominant strain.)
28. Residence, ———. Maiden name, ———.
29. Additional facts, ———.
(State whether brothers or sisters or father or mother of mother were lepers, giving their names and as full information as possible in regard thereto and association of this patient therewith.)
34. Brothers, ———.
(Mark those not living with a cross thus, X.)
35. Name, ———. Age, ———. Married, ——— (give maiden name of wife). Residence, ———.
43. Additional facts, ———.
(State full particulars such as would be required of this patient as to those of the above who have been or are lepers.)
54. Sisters, ———.
(Mark those not living with a cross thus, X.)
55. Name, ———. Age, ———. Married, ——— (give maiden name of wife). Residence, ———.
63. Additional facts, ———.
(State full particulars such as would be required of this patient as to those of the above who have been or are lepers.)
74. Wife. Maiden name, ——— {Living. / Dead.}
75. Husband. Name, ——— {Living. / Dead.}
76. Residence, ———. Date of marriage, ———.
77. Married more than once, ———.
(If married more than once, give names of husbands, or wives' maiden names and dates of marriages.)

79. Additional facts, ———.
(If any wife is or has been a leper, go fully into the facts and insert them here, stating when first symptoms appeared, etc.)
91. Children, ———.
(Mark those not living with a cross, thus, x.)
92. Name, ———. Age, ———. Sex, ———. Married, ——— (name of husband, or wife's maiden name). Residence, ———.
100. Additional facts, ———.
(State particulars, such as would be required of this patient in regard to those above who have been or are lepers. Also set forth the children of the above and all particulars in regard to them, and if such children have been or are lepers, follow the same course in regard to them as indicated in case of one having leprosy.)
116. Any intimate associates, past or present, leprous? ———.

PERSONAL HISTORY.

124. Date of earliest symptom, ———.
125. Character of earliest symptom, ———.
126. Location of earliest symptom, ———.
127. Subsequent progress, ———.

CLINICAL HISTORY.

132. Face, ———. Back, ———.
133. Eyebrows, ———. Arms, ———.
134. Ears, ———. Hands, ———.
135. Nose, ———. Fingers, ———.
136. Facial paralysis, ———. Thigh, ———.
137. Neck, ———. Leg, ———.
138. Chest, ———. Feet, ———.
139. Abdomen, ———. Toes, ———.

NOTES.

140. ———.

BACTERIOLOGICAL FINDINGS.

143. ———.

——— ———, M. D.,
Bacteriologist, Board of Health.

DIAGNOSIS.

145. Type: Tubercular. Anæsthetic. Mixed.
(Underline type.)
147. Date admitted to Kalihi Hospital, ———.
148. Date transferred to Leper Settlement, Molokai, ———.

——— ———, M. D.,
Medical Superintendent.

Dated: Kalihi Hospital the ——— day of ———, 19—.

LIFE HISTORY.

NOTE.—This should be gone into fully and in detail, tracing every association and incident in the life of the patient which has any bearing on the pathological side of his case. While every effort is expected to be made to secure this as soon as the patient is admitted to the hospital, it is appreciated that there are limitations on the information which may be secured in the inception of the treatment of the patient. It is expected, therefore, that further information will be secured and added hereto as treatment at the hospital progresses and will be added on the other blank sheets furnished for the purpose.

——— ———, M. D.,
Medical Superintendent.

Dated: Kalihi Hospital, the ——— day of ———, 19—.

Dr. HOFFMAN. I would also like to put into the record a statement with regard to the truly remarkable decrease of leprosy in Norway since segregation was introduced and made relatively effective. In

1856 the number of lepers in Norway was 2,858, which by 1910 had progressively decreased to 323. In proportion to population the leprosy rate in 1856 was 191 per 100,000 against only 13.5 in 1910.

The CHAIRMAN. To what do you ascribe that decrease?

Dr. HOFFMAN. Largely, if not entirely, to segregation. In the opinion of all the authorities on leprosy which I have knowledge of, segregation is the only plausible explanation. In Iceland where the disease had been increasing for a number of years it was also ultimately brought under control by segregation and the Government leprosarium at Reykjavik is considered a model institution, which reflects the attained civilization of that remote island possession of Denmark.

The CHAIRMAN. Does the general rule seem to be that where you do not have segregation the disease gradually increases and that where you have segregation it gradually decreases?

Dr. HOFFMAN. Yes, Senator; that, broadly speaking, would appear to be the case.

Senator WORKS. What is the effect of climate upon leprosy?

Dr. HOFFMAN. Climate per se, as far as I know, has no direct relation to leprosy at all. The disease occurs from the tropics to the arctic regions. More than half a thousand years ago it prevailed extensively over the entire European continent. Under tropical conditions, where life is so much easier and where the people are more apt to ignore hygienic precautions it can readily be understood why leprosy should be more common and less easily eradicated than in temperate zones. The food among primitive people is also, as a rule, often wanting in variety and nutritious qualities. It is claimed by some that a fish diet predisposes to leprosy, but this would seem to be extremely doubtful. Leprosy is not met with in Newfoundland or Labrador, although the people there live almost exclusively on a fish diet. A few sporadic cases have occurred in Alaska, possibly introduced from the Orient.

The CHAIRMAN. How about race?

Dr. HOFFMAN. Race would seem to have an important bearing upon the relative frequency of leprosy among the different types of mankind. I have here a statement of the mortality from leprosy in Hawaii by race, based upon the statistics for 1911–1914. According to this information the leprosy mortality rate was 15.2 per 10,000 of population for pure Hawaiians, 1 for Part Hawaiians, 0.8 for Portuguese, 1.5 for the Chinese, 0.1 for Japanese, and 0.2 for all others, which, of course, includes all Caucasians other than Portuguese. For all races combined the leprosy mortality rate was 2.5 per 10,000. In the aggregate during this period there were 157 deaths from leprosy, and of this number 131 were pure Hawaiians, 4 Part Hawaiians, 6 Portuguese, 11 Chinese, 3 Japanese, and only 2 were of some other Caucasian race than Portuguese.

Senator WORKS. I think it is generally believed, however, that the disease is more prevalent in tropical climates.

Dr. HOFFMAN. Yes, Senator; that is unquestionably true, but the reason is not, in all probability, the climate, but the fact that the type of people chiefly predisposed to leprosy on account of their habits or mode of life are so much more numerous in tropical regions than among our more active, industrious, and robust population. As

I have just pointed out, in Hawaii leprosy is almost exclusively limited to Hawaiians, part Hawaiians, and Chinese.

The CHAIRMAN. Have you any statistics as regards the white and negro races in Louisiana?

Dr. HOFFMAN. Yes, Senator; in proportion to population there is less leprosy in Louisiana among the negroes than among the whites.

The CHAIRMAN. There is less among the negroes?

Dr. HOFFMAN. Yes, Senator; there is less among the negroes in proportion to population than among the whites.

The CHAIRMAN. How do you account for that?

Dr. HOFFMAN. I can not account for it, except on the ground that the foci of the disease has for many years been chiefly among the natives of French extraction, who have very little, if any, direct contact with the negro population in those particular parishes in which the disease is most common, and in which, in fact, the proportion of negroes to the total population is relatively small.

According to the official statistics for the Leper Home the number of inmates as of April 16, 1914, has been 70.2 per million of white population and 20.3 per million of colored population.

The CHAIRMAN. You might give us the actual numbers if you can do so.

Dr. HOFFMAN. During the period 1912–1914—that is, the last biennial period for which the information has been published—there were 60 white male lepers admitted and 34 white female lepers, or a total of 94 white persons, against 14 colored male lepers and 9 colored female lepers, or a total of 23 admissions of persons of color.

Senator WORKS. What is the proportion of population as between colored and white races in Louisiana?

Dr. HOFFMAN. The proportion of white population is 56.8 per cent and the proportion of white lepers admitted during 1912–1914 is 80.3 per cent. The proportion of colored population is 43.2 per cent and the proportion of colored lepers admitted during 1912–1914 is 19.7 per cent. It is therefore quite clear that the leprosy rate among the negroes is less than it is among the whites.

In this connection, Mr. Chairman, your committee may be interested in the following statement with reference to the comparative leper rate for this and other countries. On the basis of the official returns for the year 1914 the leper rate per 100,000 of population was 4.9 for Louisiana, 48.6 for the Philippine Islands, 122.3 for British Guiana, and 301.2 for the Territory of Hawaii.

The CHAIRMAN. What relation is there between leprosy and insanity, if any, Doctor?

Dr. HOFFMAN. Apparently there is no such relation, although there are a few demented persons at all the leper settlements of which I have knowledge. Naturally, as the terminal stage of the disease is approached, the mind gives way with the body. Suicide seems to be very rare among lepers, for in the experience at Molokai, during a long period of years, there have been very few cases of self-murder.

The CHAIRMAN (interposing). Practically, then, there is no definite relation between leprosy and insanity, as far as you know?

Dr. HOFFMAN. Not as far as I know of; but as I have just said, naturally, as the lepers attain old age, they become more helpless and occasionally reach the stage of senile dementia.

The CHAIRMAN. Being a statistician, Doctor, I suppose you have found considerable trouble about getting statistics of leprosy in the United States, have you not?

Dr. HOFFMAN. We, of course, have difficulty in obtaining all the required information for a thorough and conclusive study of the subject. As far as I know, a complete analysis of the data either for Hawaii or Louisiana has not thus far been attempted. For the United States our information is quite inconclusive, because of the fact that in many of the States the disease is not reportable. As I may have said before, according to official reports made to me, there are about 150 lepers known to the health authorities of this country, and about two-thirds of this number are at the Leper Home in Louisiana.

The CHAIRMAN. Will you make your statement a little more explicit as regards the difficulties in the way of securing a complete statement of the number of lepers in the United States, excluding our noncontiguous possessions?

Dr. HOFFMAN. In the first place, Senator, I am of the opinion that the diagnosis of the disease is frequently erroneous. Leprosy is so rare that many physicians never see a case during their entire experience. When met with in isolated cases a final diagnosis is necessarily made with much reluctance. A physician this morning testified that cases frequently come to a hospital where they are disagnosed superficially as skin diseases of one kind or another. Even more frequently the disease is confused with syphilis, and in some cases with erysipelas. As the disease approaches a terminal stage and the patient grows worse the disagnosis is, of course, made with less difficulty.

In this connection I desire to refer back to my previous statement as regards 80 cases of leprosy reported by skin specialists for the city of Chicago. I am informed by Dr. John Dell Robertson, commissioner of health, as follows [reading]:

> I feel safe in saying that nearly all skin specialists have seen cases of leprosy, and that it is their common experience that these cases come for treatment until the patients are told the true nature of their disease. Upon receiving this information they usually stop coming to the specialist or disappear, and probably in time show up at some other place. When this habit of lepers is taken into consideration the large number of supposed cases reported from time to time in large cities may dwindle considerably on account of the duplication resulting from one patient being treated from time to time in a number of dispensaries. During the last two or three years we have had from one to two lepers in our isolation hospital. Cases have also been discovered in our suburbs, and attempts have been made to isolate the same.

In view of the foregoing explanation I add the concluding sentence of the letter by Commissioner Robertson [reading]:

> We therefore welcome the establishment of a national leprosarium in accordance with the terms of Senate bill 4086.

The CHAIRMAN. Have we any means or special statutory methods with regard to the collection of statistics of leprosy in the United States?

Dr. HOFFMAN. No, Senator; the only method available to us as regards a reasonably complete census of leprosy for the mainland of the United States is for the United States Public Health Service to enlist the cooperation of the entire medical profession and request

reports of leprosy cases under treatment, with such qualifications, of course, as may be necessary in very doubtful or merely suspected cases.

Senator WORKS. Is not an effort made by the United States Census Bureau?

Dr. HOFFMAN. The Division of Vital Statistics of the United States Census Bureau collects vital statistics only for the so-called registration area, which includes about two-thirds of the total population, and less than one-half of the entire area of the country. It so happens that the States for which no vital statistics are at present being published are also the States in which leprosy is most common. That, of course, is chiefly true for Louisiana. The mortality returns for the registration area, for illustration, do not include the returns for the Louisiana Leper Home.

The CHAIRMAN. You spoke earlier in your evidence of the occasional inhumanity to lepers apprehended while in interstate transit, and you have heard what Dr. Engman has said about this important matter. Do you believe that for similar reasons there are a good many cases of leprosy in the United States with regard to which the facts are withheld on account of the possibility of inhuman or otherwise improper treatment?

Dr. HOFFMAN. I should think so, Senator, because the individual cases which I have taken note of during the last 20 years prove conclusively that there is a most unreasonable attitude on the part of the public, needlessly apprehensive as to the possibility of infection. In quite a number of cases lepers have been hounded from one part of the country to the other and doctors have time and again been afraid to make a positive diagnosis for fear of getting themselves and their patients into trouble. In other words, a positive diagnosis of leprosy is only made when there is obviously no alternative; but where there is the least suspicion of doubt there is naturally reluctance to subject or expose the patient to the certainty of more or less inhuman and otherwise wrongful treatment in the absence of adequate provision for segregation and institutional care.

The CHAIRMAN. I wish, Doctor, you would give us some actual illustrations.

Dr. HOFFMAN. May I read to you a statement in reply to your question, Senator?

The CHAIRMAN. Certainly.

Dr. HOFFMAN. The following is from an address which I delivered last year before the American Academy of Medicine on the leprosy problem in San Francisco [reading]:

> The present hazardous and more or less superficial and inhuman treatment has been a matter of public record for more than 20 years. Cases after cases have temporarily attracted public attention, but being few in number and often far between they have not resulted in the development of a sound national sentiment favorable to the national control of the disease under suitable conditions of segregation. For illustration: There was a case of leprosy in Columbus, Ohio, in 1898, which subsequently resulted in another case, the origin of the disease being traced to the father, who, it was claimed, had contracted leprosy during the Civil War.
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> In 1899 Dr. Herbert C. Moffatt exhibited a leper in the city of New York who had probably contracted the disease in Cuba or among the Aleutian Indians of Alaska. The patient in this case was himself a physician.
>
> In 1906 a case occurred in West Virginia which attracted much attention on account of the wanderings or interstate movements of the leper, which

should early and promptly have required Federal interference. The case was found in a remote section of the State, and it was reported at the time that "the public of the district where the leper is now sojourning was panic-stricken, and he has been much neglected, but the county has now taken him in charge and will, it is said, build him a house and will otherwise provide for him." It would be difficult to conceive of a less satisfactory method regarding both the leper and the public at large. The treatment of leprosy requires special attention and a thorough understanding of the symptoms and the course of the disease, which are not likely to be met with in the case of the ordinary practitioner, least of all in a remote section of a State like West Virginia. Even in Washington, D. C., when the Early case first came under observation the method of providing for his care was crude, but the public alarm was not unjustified. It was reported at the time that the street cars in which he was thought to have traveled were thoroughly disinfected and every house in which he was known to have been was fumigated.

It may be said in this connection that such precautions merely indicate how the disease may be spread in the course of time through entirely unsuspected channels of infection. Even after the positive diagnosis has been made the average duration of the disease is from 8 to 10 years. In some cases lepers have lived for 20 and even 30 years under proper treatment. How long a period intervenes between the first infection and the first positive diagnosis is at present unknown.

In continuation I quote from the address referred to [reading]:

Some six years ago the United States Army had an isolated leper, who was taken care of at Fort Screven, near Savannah, Ga. The leper was a first sergeant, and a cottage was built for him, where, as far as practicable, he had every necessary medical attention. The sergeant submitted with patience to every treatment, but under such conditions of isolation it is readily conceivable that the suffering must have been needlessly greater and the chance of a cure much less than if adequate provision had been made for this patient in a modern leprosarium.

In 1910 a woman leper was found in the city of New York who had come from Baltimore two weeks previous, where the board of health had been making strenuous efforts for her apprehension and isolation. As reported in the New York newspapers at the time, sequestration or isolation would not be required in her case in the city of New York under the assumption that "the chances of communicating the disease are so slight as to make isolation unnecessary."

In other words, because of easy-going methods not in conformity to modern scientific theories regarding leprosy contagion New York City attracts apparently lepers from other parts of the country, and there can be no serious doubt about this being the case. [Reading:]

Perhaps the most interesting recent case occurred in Pawtucket, R. I., where a 15-year-old schoolboy was first discovered to be a leper in one of the isolation wards of the Massachusetts General Hospital—where he had gone for treatment. As reported in the newspapers at the time, "when the news of the case became known in Pawtucket, it caused tremendous alarm, especially in families whose children were attending the same school." The home of the boy was surrounded by policemen, and complaint was made by the school-teacher that she was being shunned on account of her possible contact with the boy, who was subsequently being taken care of by the Rhode Island authorities.

In the same year (1911) a case of leprosy was discovered in Pittsburgh. The man, who was found afflicted with leprosy, was a Chinese bookkeeper in a Chinese store. He was taken to the municipal hospital and placed temporarily in a tent until a separate house could be erected for him.

Also in 1911 a case was discovered in Minneapolis, where a leper was found to have suffered from the disease for 12 years. The case was not diagnosed as leprosy until the man died—when an autopsy was performed. At about the same time a case of leprosy was discovered in Jersey City, N. J., which terminated in death, following isolation or segregation of only a few weeks preceding.

In Paterson, N. J., there was discovered a Chinaman leper, ill in a laundry, who died a few days later at the Isolation Hospital. It was reported at the time that he was supposed to be one of two lepers who had escaped from the city quarantine station at North Brother Island.

Recalling that the Grable case had its apparent beginning in Idaho, the following case is of special interest [reading]:

A family of lepers was found on a ranch in Idaho, consising of the father, the mother, and the two children. The father had been in Honolulu some years before, and, no doubt, contracted the disease in the islands.

At about the same time a case of leprosy was discovered in Fort Wayne, Ind.—a Syrian woman who had but three weeks before come from Hawaii, where she had contracted the disease.

There is also on record the case of a young man, 18 years of age, who for four years was afflicted with the tubercular form of leprosy, and who was taken care of in Brooklyn Hospital for Contagious Diseases. The boy was the son of a tobacco merchant living at Key West, Fla., where he no doubt contracted the disease, possibly through West Indian sources.

A noted case from an interstate point of view was that of a Greek leper found in Chicago, who had escaped from quarantine in Salt Lake City, but who ultimately succeeded in passing through to New York.

Finally, mention may be made of the case of a widow of a general in the United States Army, who died from leprosy at the county hospital at Los Angeles. She had formerly been living in Arizona and other sections of the United States.

As regards any and all of these cases I have had to rely upon general newspaper information, but I have no reasons for questioning that, in the main, the statements are in accordance with the facts.

Other cases could be mentioned to further emphasize the early conclusion that isolated instances of leprosy suggest the inadequacy and danger of any and all methods of treatment other than complete segregation in a leprosarium under either Federal or State control. The time has passed for academic discussion, and the time for definite action has come. The evidence is overwhelming that leprosy exists in this country to a much larger extent than is generally assumed to be the case, and that the risk of the introduction of the disease from South America, the West Indies, the Philippines, and the Orient must be considered as much more of a menace at the present time than in former years. A carefully considered plan for national segregation, treatment, and control has been for several years before Congress, and a new measure likely to be brought forward in support of this proposition is entitled to public confidence and active support. The early enactment of such a measure is called for by the highest considerations of public policy.

All of the cases which have been cited and many others which are a matter of record have a more or less obvious interstate and international aspect, and precisely illustrate the point that adequate treatment was not, as a rule, furnished, or feasible, and that, aside therefrom, lepers have frequently been treated in an inhuman and inconsiderate manner because of the unjustified apprehension on the part of the public.

The CHAIRMAN. Have you known of cases where the treatment was really inhuman? I do not mean where there was intentional unkindness, but where the leper was treated with neglect or needless exposure on account of fright and danger to the public.

Dr. HOFFMAN. In many of the cases quoted, but especially the one in West Virginia and the one in Rhode Island, the patients were certainly subjected to much indignity and needless terror. In the notorious Grable case the man was certainly subjected to more or less mental stress and physical strain, because he was not wanted anywhere, and to provide for him at a Federal quarantine was found impracticable, even though the Federal authorities were quite willing to do what was necessary. I have time and again been told in

confidence of very trying cases, of forcible attempts at deportation, or of interstate transportation in the case of lepers apprehended in one section of the country but properly chargeable as regards their care and treatment to another section.

The CHAIRMAN. Such unfortunate occurrences would, of course, be impossible if there were a national leprosarium to which these people could be sent. There would then be no inducement to do these inhuman things.

Dr. HOFFMAN. I strongly share your views, Senator, because it would seem only reasonable that this conclusion would follow. In Hawaii there are no more harrowing scenes; and in many cases the lepers of their own accord go to the receiving station just outside of Honolulu for preliminary examination and detention. I saw a boy there who came of his own free will to request an examination. In the earlier years, when the accommodations at Molokai were very poor and when much needless force was used in separating husbands from wives and parents from children, the lepers were naturally reluctant to go to Molokai; but that condition is absolutely of the past. Under the humane and rational rules which govern the settlement, married lepers at Molokai are permitted to continue living together, even though one of the parties may be, and often is, a "clean" person. When a child is born of such marriages the child is at once taken from the mother and removed to a children's home (in the settlement), where it is cared for from one to two years, until removed to an institution in Honolulu. The leprous mother can see the child as often as desired while at the settlement, but she can not come in contact with the same, and afterwards the child can visit the mother and see the same at the visitors house, but the two can not touch each other or come in personal contact in any way. By means of this precaution children of lepers have been practically protected in nearly all cases against the risk of leprosy. At the Louisiana settlement the male lepers live apart from the female lepers, which the experience at Molokai has shown is neither desirable nor necessary. I am of the opinion that the less done to make the settlement resemble a prison or an institution the better. At Molokai the general appearance of the settlement is that of a pleasant country village, with churches, stores, schools, etc., and the lepers therefore feel as near at home as it is possible for them to do.

What we are most urgently in need of in this country is a national sentiment on the subject of leprosy, which is a disease essentially different from practically every other affliction of mankind. We have to make the leper realize that when he finds himself afflicted with this disease the only adequate treatment and proper care can be had in a National or State leprosarium; in fact, there is no difficulty in this respect when such an institution is available, as is the case in Louisiana, at San Francisco, and at Penikese Island, Mass. Lepers voluntarily go to these institutions because they know full well that they can not receive the skillful treatment and humane nursing and care at their homes or in some isolated room of a county hospital or poorhouse.

During my stay at Molokai the conviction was forced upon me that much harm had been done to the cause of leper care by the exaggerated stories of Father Damien and the alleged horrors of the disease. Every now and then the newspapers announce the reso-

lution of some priest or nun or lay brother or sister to go to Molokai as "a living grave." All this is a wrongful perversion of the public understanding of the facts. Any one of the attendants at Molokai can go to Honolulu if he cares to, or to the mainland, of his own free will and accord. Dr. McCoy, who is in this room, spent many months at Molokai, going forward and backward between the settlement and Honolulu. During his whole stay at the Kalihi Hospital he was never interfered with on his return to the city. There is no particular amount of extreme self-sacrifice or personal heroism involved in the nursing of lepers, other than the very remote but, of course, frightful risk of infection which is necessarily incurred. Of the three white men who have contracted the disease at the Molokai settlement in the care of lepers, one was Father Damien, the second a Brother of the Order of St. Francis, who possibly may have been a leper on admission, and the third was a Belgian, still living, but probably certain to die of the disease. There are at the present time some 51 well persons living at the settlement, including 13 persons connected with the United States lighthouse, including wives and children; 5 Sisters of the Order of St. Francis, 2 priests, 2 lay brothers, and other nurses and servants, as well as the superintendent, the resident physician, and his wife and children.

At the Bishop Home, under the care of the sisters, are 58 leper women, yet none of the sisters in the entire experience of the settlement has contracted the disease. The same conclusion applies to the Louisiana Leper Home, and to the Lazaretto at Tracadie. The plain truth about the matter is that these sisters, as well as all the other white attendants in charge, live clean, active, and truly Christian lives. Nowhere have I seen more of the genuine spirit of Christianity, of self-sacrificing charity, and true goodness of heart than among the Catholic sisters at the leper settlement in Louisiana and among the physicians, sisters, and attendants at Molokai. The same conclusion applies to Dr. A. A. O'Neill, in charge of the Isolation Hospital of San Francisco, who has only 1 helper to care for 15 lepers, some of whom are in the terminal and absolutely helpless stage of the disease. All of these, personally known to me, and countless others connected with leper settlements throughout the world perform a truly Christian service in behalf of a most afflicted portion of mankind.

The CHAIRMAN. You think, then, Doctor, that a great deal of the public horror and fright regarding leprosy is illfounded?

Dr. HOFFMAN. In a large measure, Senator, this is true. Personally I have never had any fear of the disease; nor, for that matter, of contagion in any other disease. I certainly have decidedly less fear of leprosy than of smallpox, scarlet fever, tuberculosis, or typhoid fever. No very special precautions are being taken at Molokai, and yet, as I have said before, there have been no cases of leprosy directly traceable among the attendants, other than the three cases referred to, which, in their nature, were quite exceptional. At the Louisiana Leper Home they take more precautions, and I can not but feel that this is advisable. No very special precautions are employed at San Francisco; but at all of these institutions everything reasonable is done to protect the attendants and the public. No leper, for illustration, at Molokai ever enters the house of a well person; no leper ever touches a well person; no article of food, either

used by lepers or by well persons, is ever handled or manipulated by a leper. At the San Francisco Isolation Hospital an almost ideal arrangement has been evolved by Dr. O'Neill, which is well worthy of study on the part of those who have to maintain leper settlements in connection with other institutions. Each and every one of the attendants, of course, incurs a risk, and the same applies to those who make a scientific study of the disease. The risk, however, is simply a part of life, for without it there would be no progress in either science or humanity.

The CHAIRMAN. Do you mean to say, then, that it is extremely rare for an attendant at a leprosarium to contract the disease?

Dr. HOFFMAN. Yes, Senator; and I may say that I have thoroughly gone into this matter at different times. The superintendent of the settlement at Molokai, Mr. J. D. McVeigh, has been at the settlement between 15 and 20 years, and Dr. William J. Goodhue, the attendant physician, has been there about the same time. Sister Mary Ann, who is the sister superior, has been there, I believe, 23 years; Brother Dutton, in charge of the Baldwin Home, has been there 20 years or more. At the Louisiana settlement, Sister Benedictine has been in charge for quite a number of years, while Dr. Ralph Hopkins and Dr. Isadore Dyer have had the institution under their immediate supervision, including weekly visits, for a long time.

The CHAIRMAN. All of these, you say, are in constant contact with the lepers?

Dr. HOFFMAN. Yes; constantly, in, of course, a limited sense of the term. The Sisters, however, perform, if necessary, the most menial service for the lepers, and they are most exposed. In the terminal stage the lepers are absolutely helpless, and the patient reaches a point where the use of the limbs is entirely lost; where the sight is gone, etc. Such a condition may last for months, and no words of mine can do justice to the sublime service rendered by the Sisters and others to these unfortunates during the last and most trying stage of the disease.

The CHAIRMAN. In writing to the various State health authorities, as testified by you a while ago, did you send a copy of the bill along with your letter, or give the substance of the bill?

Dr. HOFFMAN. No, Senator; my letters of inquiry were sent out in July last year, or long before this bill had been introduced.

The CHAIRMAN. But did you not refer to the urgency of a national leprosarium?

Dr. HOFFMAN. Yes, Senator; the title of my San Francisco address, in fact, was "Leprosy as a national problem." If the committee desires, I will insert it in the record.

(The matter referred to is here printed, in full, as follows:)

LEPROSY AS A NATIONAL PROBLEM.

At the Second International Conference on Leprosy, held in Bergen, Norway, August 16–19, 1909, the following-named countries were represented by official delegates: Argentine Republic, Belgium, Bulgaria, China, Cuba, Denmark, England, France, Holland, Italy, Japan, Portugal, Russia, Spain, Sweden, Germany, Egypt, Austria-Hungary, and the United States of America. The enumeration of these countries is sufficient to emphasize the world-wide aspects of the leprosy problem and its significance to the United States. There are, unfortunately, no trustworthy and complete statistics regarding the extent of leprosy throughout the world, and not even for the United States are the data complete and sufficient to

warrant definite conclusions. On the occasion of the congress referred to the number of lepers on the mainland of the United States was estimated at 146; for the Hawaiian Islands, 764; for Porto Rico, 17; for the Island of Guam, 19; for the Philippine Islands, 2,330; and for the Panama Canal Zone, 7; a total of 3,283 for the United States and its noncontiguous possessions. There are strong reasons for believing that the number of lepers on the mainland is much larger than the number returned by the leper census for the year referred to. No thorough inquiry has ever been made to ascertain all of the lepers even in the State of Louisiana, and it is a safe assumption that not half the true number are actually being taken care of at the leper home of that State.

Outside of the mainland of North America leprosy in the Western Hemisphere in 1909 was distributed, in part, as follows: In Cuba there were 1,297 cases; United States of Colombia, 4,152; Argentine Republic, 12,000; and the Island of Jamaica, 115. For all other islands of the West Indies and the countries of South and Central America the information was not obtainable.

In 1912 a further effort was made to determine the number of lepers in the United States and its noncontiguous possessions. The total number of new cases reported during the calendar year 1911 was 1,217, and the number of cases reported as present on January 1, 1912, was 3,478. Of this number 146 were reported for the mainland, 696 for Hawaii, 2,754 for the Philippine Islands, and 28 for Porto Rico. Cases were reported for the several States as follows: Arizona, 1; California, 23; Connecticut, 1; Florida, 2; Indiana, 1; Kansas, 1; Louisiana, 71; Massachusetts, 13; Michigan, 1; Minnesota, 18; New York, 5; North Dakota, 1; Pennsylvania, 3; Rhode Island, 1; Utah, 1; Washington, 2; and Wisconsin, 1.

The ascertainment of the extent of leprosy throughout the United States had been by means of a circular letter of inquiry, sent out by the Surgeon General of the United States Public Health Service, to the health authorities of the several States. There are no means at the present time, however, by which the true extent of leprosy can be determined with absolute accuracy. It may properly be questioned whether more than a very small fraction of the physicians throughout the country are qualified to diagnose a case of leprosy in the initial stages. It is often difficult to even diagnose a case after the disease has made considerable progress. The disease is reportable in only 19 States, as follows: Alabama, California, Connecticut, District of Columbia, Florida, Idaho, Illinois, Indiana, Iowa, Massachusetts, Nebraska, New Jersey, New York, Oregon, Pennsylvania, South Carolina, Utah, Washington, and Wisconsin. The disease is possibly reportable also in Michigan. It is apparently not reportable in the most important State, and that is Louisiana. Since only the city of New Orleans is within the registration area, deaths from leprosy throughout the remainder of Louisiana are not at present a matter of record with the Division of Vital Statistics of the Census Bureau.

The number of deaths from leprosy in the United States registration area in 1912 was 11, and in 1913 only 6. The mortality rate per 1,000,000 of population was 0.18 for 1912 and 0.09 for 1913. The largest number of known lepers on the mainland is in the State of Louisiana, where for a number of years segregation has been practiced and where the known lepers are taken care of at the leper home at Indian Camp plantation. For the last fiscal year the number of patients of record was 87 and the number of new patients received during the previous year was 25.

There has been no comprehensive statistical investigation of the frequency of leprosy throughout the world, but some exceedingly suggestive data are available for the countries with which the United States are most concerned.

In the registration area, which comprehends about 65 per cent of the total population, there were 95 deaths from leprosy during the period 1900–1913, equivalent to a mortality rate of 0.15 per 1,000,000 of population. Considering that each and every death represents a case more or less a menace as a foci of the disease, and furthermore that the statement is exclusive of the deaths at the Louisiana Leper Home, it needs no further argument to sustain the conviction that the disease requires to be given more serious public consideration.

It is true, of course, that at present the disease is of very limited extent in the United States. Even in Louisiana, where leprosy has been endemic for more than 100 years, the comparative leprosy frequency is only 4.9 per 100,000 of population, compared with 48.6 for the Philippine Islands, 122.3 for British Guiana, and 301.2 for the Territory of Hawaii. According to the last official report there were 87 lepers at the Louisiana Leper Home, equivalent to a rate of 4.9 per 100,000 of population. It is a conservative estimate that there are

probably twice that number, if not more, lepers at large, chiefly, however, in the remote and sparsely populated extreme southern parishes of the State. Of the Louisiana leper patients 51 per cent are white males, 25.9 per cent white females, 14 per cent colored males, and 9.1 per cent colored females. The average age on admission is about 38 years. The type of the disease in Louisiana is the anesthetic in 36.5 per cent of the cases for the white patients and 30.3 for the others. The remainder, or 66.8 per cent, is the mixed and nodular types combined.

In Hawaii, at the settlement of Molokai, the present number of lepers is about 660. Largely as the result of effective segregation the number of lepers in the Territory is gradually declining. The number of new cases during the decade ending with 1913 was 719, compared with 1,033 new cases during the decade ending with 1903. Of 1,060 lepers admitted during 1901–1913, 867, or 81.8 per cent, were Hawaiians or Part-Hawaiians; 98, or 9.2 per cent, were Chinese, Japanese, and Koreans; 52, or 4.9 per cent, were Portuguese; and only 27, or 2.5 per cent, were Caucasians other than Portuguese, excluding United States soldiers and sailors. In 1910 the proportion of Portuguese population of the total was 11.6 per cent, which contrasts with only 4.9 per cent of Portuguese lepers at the settlement. In the same year the proportion of other Caucasians in the population of the Territory was 11.4 per cent, which contrasts with only 2.5 per cent of lepers at the settlement. It is shown, therefore, that the disease is largely confined to the native and oriental populations of Hawaii, and that the proportion of cases among them is excessive. Out of 1,060 cases of leprosy during the period 1901–1913, 327, or 30.8 per cent, were of the anesthetic type.

As said before, leprosy in Hawaii is relatively and actually on the decline. This satisfactory result is primarily to be attributed to the effective plan of segregation at Molokai. The conditions of home life, supervision, and treatment are ideal. The settlement may safely be considered a model of its kind, and in addition thereto the Territory maintains a receiving station just outside of Honolulu for incipient or other early cases under observation. The leper law of Hawaii is both effective and humane. The complete records of each case are an admirable illustration of the scientific point of view governed by sound medical and humanitarian considerations. As yet, however, no comprehensive analysis has been made of the large amount of material in the archives of the Territorial board of health. Such an analysis would constitute a most valuable contribution toward the scientific study of leprosy, with a due regard, of course, to all the essential elements of age, sex, race, and precise place of origin.[1]

The results achieved in Hawaii find their parallel in Norway. Under a policy of effective segregation the leper rate has been gradually reduced from 191.3 per 100,000 of population in 1856 to 61.9 in 1885 and to 13.5 in 1910. A thoroughly digested statistical report is published at quinquennial periods by the Government of Norway, amplified by medical and other observations of a scientific nature.[2] As a concrete illustration of the remarkable diminution of leprosy in Norway, it may be stated that between 1857 and 1875 there were 3,062 new admissions to the leprosariums, diminishing to 1,108 during the first 10 years, to 817 during the decade following, to 327 during the 10 years ending with 1905, and to only 88 cases during the five years ending with 1910. No such comprehensive statistical account has been published regarding leprosy for either Louisiana or Hawaii.

That the lesser numerical extent of the disease on the mainland of the United States is not a justification for the neglect to give full publicity to the facts is best illustrated by reference to the twentieth report on leprosy in New South Wales for the year 1910. On January 1 of that year there were 19 persons remaining under detention at the leprosarium, and regarding these a report with extremely interesting illustrations, of some 30 pages, is published, and amplified by a precise but full account regarding each and every case. The report is a most valuable contribution to the scientific study of leprosy and deserves to be followed in every detail by the authorities responsible for the care of lepers in Louisiana, Hawaii, and elsewhere. Since 1890, when the leprosy law providing for compulsory detention became effective, 121 lepers

[1] Studies upon leprosy, by George W. McCoy, M. D., United States Public Health Bulletins Nos. 61 (July, 1913) and 66 (September, 1914).

[2] Leprosy in Norway (De Spedalske i Norge), 1906–1910. Norway, Official Statistics, vol. 161; Christiana, 1912.

have been admitted, and of this number 55, or 45.5 per cent, have died, 10 have been discharged, and 37 have been repatriated (chiefly to China), leaving 19 remaining on January 1, 1910. The cost of administration for the leprosarium at Little Bay, New South Wales, for 1910 amounted to £1,635 ($7,957), or an average per capita expense of about £90 ($438) per annum.

For the Territory of Hawaii the amount expended on account of leprosy during the year 1912 was $231,778. The number of lepers cared for during that year was 728. The average per capita cost per annum was, therefore, $318. The legislature of 1913 appropriated the sum of $412,130 for the care of lepers, including permanent improvements at the leper settlements for the two years commencing July 1, 1913. It may safely be asserted that no Government in the world carries a proportionately heavier burden on account of the care of lepers than the Territory of Hawaii. It may also be asserted without fear of successful contradiction that nowhere are lepers more effectively and humanely taken care of than at the receiving station at Kalihi, near Honolulu, and at the permanent settlement at Kalaupapa, on the island of Molokai.

These observations suggest the question as to what is being done for lepers on the mainland. As previously stated, the largest number of lepers in the United States at the present time is to be found in the State of Louisiana, but for some 20 years they have been more or less segregated at the leper home located at Indian Camp plantation about 70 miles from New Orleans. During the last decade the conditions at the settlement have been materially improved, and the provision which is now made for lepers under segregation in Louisiana conforms quite fully to those of Molokai. The settlement has not, however, a physician in constant attendance, although the number of lepers, according to the last report, was 87. The settlement is visited once a week by a qualified leprologist from New Orleans, and at other intervals if necessary. It has properly been observed that nothing will draw leper patients at large more quickly to a leprosarium "than the knowledge that the best special treatment for their trouble can be obtained only at the leper home." Some consideration, of course, requires to be given to the class of patients provided for. What is suitable and ideal for native Hawaiians, or orientals, is not necessarily the best method of accommodation or treatment for French creoles, or negroes, in Louisiana. There is no more grotesque public impression, however, than that a leper settlement is a living tomb, or a dreary, hopeless place of residence for what are considered, and properly so, perhaps the most unfortunate human beings on earth. Modern settlements such as those at Molokai and the leper home in Louisiana provide all reasonable comforts and a fair amount of entertainment, with abundant personal freedom, governed, of course, by restraints imperatively called for by broader general considerations. For these reasons it is an inhumane and wrongful State policy to permit lepers to be at large, as contrary to both their own interests and the larger interests of the community. Nor is it advisable to isolate a single leper, for both medical and humane reasons. The mere fact of absolute isolation or exceptional consideration is detrimental to the best possible treatment. It may seem incredible, but it is absolutely true that, in a general way, there is no more cheerful community than a large leper settlement such as the one at Molokai or the one in Louisiana. On the other hand, there is perhaps no more dreary and unfortunate position than that of an isolated leper, ostracized from the rest of the community and dealt with as an exceptional case. For these reasons, which, of course, could be amplified, it is of the greatest practical importance that several Federal leper settlements be established at convenient points throughout the country, for the greater comfort and more humane care of these unfortunates. What has been done in this direction by the State of Massachusetts is deserving of the highest praise, although the number of lepers in that case, according to the last report, is only 15. The station on Penikese Island is conceded to be a model of its kind, and whatever is reasonable and advantageous is being done to make the life of these unfortunates as bearable as possible. The enlightened policy of the State of Massachusetts is in marked contrast to the uncalled for and drastic action in several States where the establishment of leper settlements has been strongly opposed.

A few years ago it was suggested that a number of lepers in the State of Washington be sent to a station near Fort Thompson, on Puget Sound, but it was argued that "Puget Sound it not, and will not become, a leper colony, and there is not a spot anywhere along its shores suitable for that purpose, and any attempt by the Government to develop a leper colony would be sure to arouse the bitterest resentment." The answer to this statement is that the

essential facts of leprosy are generally misunderstood; that the disease, while unquestionably contagious, is only very mildly so, and practically not at all when reasonable sanitary requirements are complied with. On the occasion referred to the argument was advanced that Seattle was one of the most healthful cities in the world and the question was raised as to how the fact of a leper colony on Puget Sound would coincide with a campaign to advertise the healthfulness of the State. It was therefore argued that many a man "who would never know that the Sound was distinctly healthful, would know that it was the seat of a leper home—and the result would be to turn him against the entire section." In reply it may be said that the leper settlement at Penikese Island in Buzzards Bay has not in the least degree detracted from the enormous tourist and vacation traffic of that region during the summer months; that as far as known the public is paying not the slightest attention to the settlement, which is in precise conformity to the intelligence of the Massachusetts people and their humanitarian regard for the most afflicted element of the population, and that there is not the slightest possible chance that the settlement could in any manner affect the health of the near-by region. The same conclusion applies to the settlement in Louisiana, and the one at Molokai.

It is not true, as observed in the newspaper discussion referred to, that leper settlements "are invariably shunned by people." It is in fact quite difficult to keep away visitors from Molokai and the entire legislature visits the settlement once a year, without any apprehension whatever. The superintendent in charge of the settlement and the resident physician, as well as the Government experts, come and go without any let or hindrance and without the slightest apprehension regarding contagion on the part of anyone. Under proper sanitary conditions the risk of contagion is extremely slight. Leaving out of consideration the case of Father Damien, there have been only two cases of infection of white attendants at Molokai; but, much to the contrary, some of the officials in charge, including the superintendent, the resident physician, the sister superior and the Catholic brother in charge of the home for helpless cases, have been at the settlement for many years, and in daily, almost hourly, contact with cases in all stages of the disease, but happily without disastrous results.

The same conclusion applies to the settlement in Louisiana. The attending physicians are well known in New Orleans, and they are not considered in any manner and rightfully so as likely to be sources of infection. The sisters in charge visit the city from time to time without let or hindrance, and it would be absurd to consider them in any way a menace to the community. These facts and observations should be fully sufficient to convince any person of average intelligence that a leper settlement is not, and can not by its nature be, a menace to the health of the community, but, much to the contrary, its existence, granting necessity, reflects the highest humanitarianism and civilization of the community, broadminded enough, and charitable enough, to aid in its establishment and maintenance.

The maintenance appropriations for the Louisiana Leper Home, for the two years ended March 31, 1914, amounted to $46,500, but the total disbursements during the same period for all purposes, including improvement appropriations and cash donations, amounted to more than $76,000 net, or about $38,000 per annum. The total number of cases treated during the two years was 119, and the per capita expense per annum was $475. During the first 10 years after the opening of the institution the average number of new cases admitted was 7.7, which compared with an average of 14.3 cases during the eight years ending with 1913. It is properly observed in the last biennial report that the most important factor in the exceedingly difficult problem of isolation "is an institution recognized by the medical profession and the public as a place to which lepers can be sent with the full confidence that they will receive the best care and be offered the greatest prospect of amelioration or cure." The same reasoning applies to the need of national institutions on a similar scale to provide adequate and humane treatment for the few lepers in sections in which the disease is less common than in Louisiana or Hawaii.

To much the same effect are the words of the Surgeon General of the United States Public Health Service, Dr. Rupert Blue, in an address on "The public-health aspects of leprosy in the United States," read before the American Medical Association in 1913. Dr. Blue remarks that "Every case of leprosy should be promptly reported to the proper health authority, and, wherever necessary, the laws should be so amended and penalties provided for nonobservance. All lepers should be segregated in such manner as to prevent the spread

of the disease, but the necessary segregation should be enforced so as to promote the comfort and happiness of those so afflicted." Reasoning from this fundamental principle of national control, Dr. Blue suggests that "On account of the difficulty of providing these conditions in towns, counties, and States where single cases of leprosy occur, and because of consequent inadequate methods of control, I believe there should be established under the Public Health Service a national leper home for the care and treatment of such cases as may be turned over by State and local health authorities for the purpose."

A bill was accordingly introduced into Congress (H. R. 1751) providing for the establishment of a national leprosarium. In his evidence before the Committee on Interstate and Foreign Commerce (there being no public-health committee of the House of Representatives) Dr. Blue made the statement that at that time (Dec. 15, 1914) leprosy existed in 18 States of the Union, and that while in some States the disease was notifiable, in others it was not; and that while for himself he was convinced of the necessity of segregation, he was sorry to say that some health officers did not believe in drastic methods of control. Dr. Blue presented the following resolution, adopted by the section on dermatology, of the American Medical Association, June 24, 1914:

[Resolutions favoring the passage of a Federal law for the care and control of leprosy in the United States, adopted by the section on dermatology of the American Medical Association, Atlantic City, N. J., June 24, 1914.]

To the honorable house of delegates of the American Medical Association:

"The section on dermatology of the American Medical Association respectfully submits the following resolutions, which have been unanimously adopted by the section on June 24, 1914:

"Whereas leprosy exists in many foci in this country, and has been statistically shown to be on the increase; and

"Whereas those afflicted with leprosy are being subjected to most inhuman treatment; and

"Whereas many lepers are traveling in interstate traffic because of the inhuman treatment to which they are subjected, thereby constantly exposing the general public to the contagion; and

"Whereas it is the duty of the Federal Government to control traffic between the States; and

"Whereas at the present time the care of lepers in the United States is a great economic burden on the individual States and is, moreover, of necessity inadequate from a medical and sanitary standpoint: Therefore be it

"*Resolved*, That the association recommends the passage by Congress of a law for the comprehensive care and control of leprosy by the Federal Government."

This resolution is in conformity to the accepted principles of leprosy control adopted by the Second International Conference on Leprosy, held in Bergen, Norway, August 16–19, 1909. The resolutions adopted by the conference read in part:

"A. (1) The Second International Scientific Conference on Leprosy confirms in every respect the resolutions adopted by the First International Conference of Berlin, 1897. Leprosy is a disease which is contagious from person to person, whatever may be the method by which this contagion is effected. Every country, in whatever latitude it is situated, is within the range of possible infection by leprosy, and may, therefore, usefully undertake measures to protect itself. (2) In view of the success obtained in Germany, Iceland, Norway, and Sweden, it is desirable that other countries should isolate lepers. (3) It is desirable that the children of lepers should be separated from their parents as soon as possible, and that they should remain under observation. (4) An examination should be made from time to time of those having lived with lepers by a doctor having special knowledge. It is desirable that lepers should not engage in certain trades or occupations. All leper vagabonds and beggars should be strictly isolated."

The fundamental principle of segregation underlies every effort at governmental administrative control of leprosy as a menace to the public health. But the principle of segregation goes much further in that it also recognizes the humanitarian considerations, which are practically absent in any other form of treatment or method of control. It is a lamentable fact that in the United States, including some of our larger cities, there is still an attitude of more or less pronounced antipathy toward segregation under humane and otherwise

reasonable conditions. There is, furthermore, a most serious indifference regarding the possibilities of leprosy spread through lepers permitted to go at large or treated privately under conditions which preclude the possibility of an effective protection of the community. The available evidence is absolutely convincing and entirely conclusive that wherever complete segregation has been practiced the disease has gradually diminished. This certainly has been the case in Norway since 1856 and in Hawaii during the last 20 years. The argument frequently advanced that the number of cases in this country is insufficient to warrant drastic measures is but further evidence of the public indifference to the true aspects of the leprosy problem. The disease is so loathsome, so tragic and so hopeless, that the menace of its needless spread to another single case from even the foci of one existing case is a risk which no civilized country can rightfully take. On the other hand the disease is so mildly contagious, and so difficult of transmission under proper hygienic conditions, that the inhuman treatment of exceptional lepers throughout the country is but evidence of our backward condition with regard to one of the most tragic disease problems of modern life.

Effective segregation is an expensive matter and the burden upon a single State may assume prohibitive proportions. An excellent illustration is the Massachusetts leper settlement at Penikese Island, under the medical administration of Dr. Frank H. Parker. The institution is administered by the State board of charities, and the plant is valued at $109,465. The normal capacity of the settlement is 19, or a per unit cost of nearly $6,000. The settlement provides hospital care and treatment exclusively for persons afflicted with leprosy. During the year 1913, 17 patients were under treatment, of an average age on admission of 38 years. Eleven were suffering from the disease in the tubercular form, 2 in the anæsthetic, and 2 in the mixed form. The proportion of females was only 4, or 23.5 per cent, out of the total of 17. A preponderance of male lepers has been observed in all countries for which trustworthy data are available. It is extremely significant that all of the patients on Penikese Island, with one exception, were of foreign birth or parentage, the races referred to being as follows: Chinese, 4; Portuguese, 4; Russians, 3; and 1 each from Japan, British West Indies, and Lettland. The expenditures for the year amounted to $23,390, of which $9,329 was expended for salaries, wages, and labor, and the remainder on account of maintenance, etc. The ratio of the daily average number of persons employed, to the daily average number of inmates, was 1 to 4.7.

The provision which is made for the segregation of lepers in the State of Massachusetts closely approaches the attainable ideal. It is in conformity to the efficient and humane methods of segregation at Molokai and the Louisiana leper home. Several additional institutions are required for other sections of the country. Until a person afflicted with leprosy has the positive assurance of adequate professional and humane care in suitable institutions under State or Federal control, the number of lepers at large is not likely to perceptibly diminish.

It would be extremely difficult, however, to determine with a reasonable approach to accuracy, the existing number of lepers throughout the continental United States. There are no reasons, however, why the fundamental principles of the leper law of Hawaii should not be incorporated at least in the regulations of all the more important State boards of health. Every leper is a serious menace to the community and his effective segregation is not only of great importance to the Nation, but of equal importance to the leper himself. The proper treatment of leprosy requires special facilities which can not be had even in well-equipped hospitals, to say nothing of the crude and often inhuman provisions made for isolated lepers in quarantine stations or pesthouses. There would, therefore, seem to be no alternative but to bring about the establishment of one or more national leprosariums under the direct administration and control of the Federal Public Health Service. The essential provisions of House bill 1751 are as follows:

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the Secretary of the Treasury be, and he is hereby, authorized and directed to establish a national leprosarium in the United States or any of its insular possessions, the location thereof to be decided upon after proper investigation by the Surgeon General of the United States Public Health Service, subject to the approval of the Secretary of the Treasury. The Secretary of the Treasury shall have power to acquire, by condemnation or otherwise, a suitable site for the leprosarium and and shall erect

thereon all necessary buildings and thoroughly equip the same for the proper care and treatment of lepers confined therein and for the investigation and study of the disease of leprosy.

"SEC. 2. That the Surgeon General of the United States Public Health Service shall appoint all medical officers, assistants, surgeons, pharmacists, and other necessary employees, and shall promulgate and adopt, subject to the approval of the Secretary of the Treasury, all necessary rules and regulations to carry this act into effect.

"SEC. 3. That, under authority of this act, and State or Territory of the United States is authorized to transport all persons afflicted with leprosy found therein to the leprosarium, and the Surgeon General is directed to receive the same, such transportation charges to be paid by the United States."

This bill, and others like it, have been before Congress for several years but final action has been deferred. It is sincerely to be hoped that final action will be taken by the next Congress, but additional provision should be made for the gradual acquisition by the Federal Government of existing State leper settlements, so that ultimately all lepers may be segregated in suitable leprosariums under complete Federal administration and control.

If this plan should be ultimately carried through there would be an end to the existing intolerable situation. It would be utterly impossible to even briefly review the considerable number of lamentable cases of isolated lepers, which for the time attracted considerable attention but were soon forgotten, while the lepers themselves remained exposed to needless suffering and a menace to the community at large. Reference requires only to be made to the unwarranted action on the part of the New York City health authorities in releasing a number of lepers from a temporary settlement on North Brother Island, to mingle with the community without let or hindrance, upon the erroneous assumption that leprosy is not contagious or transmissible from person to person in northern latitudes. As a matter of fact, leprosy is endemic and has been endemic in Iceland for many years, and the Louisiana foci probably had its origin in the maritime Provinces, to which it originally may have been brought from Iceland or Norway. The number of lepers in Iceland at the present time is approximately 100. Only about two or three years ago the (then) commissioner of health of the city of New York was quoted in an interview in the Evening World, to the effect that "leprosy can not be contracted in this climate." At the same time a distinguished specialist was quoted to the effect that "In this region the presence of the disease is not a menace to the community"; and a physician attached to the Metropolitan Hospital on Blackwells Island, was quoted as having declared that "In this climate the fear of leprosy is unwarranted." As far as known, climate has absolutely nothing to do with leprosy, and the cases which have been observed in northern latitudes, including Minnesota, completely contradict the assumption that leprosy may not become endemic in this country, unless the known cases are immediately and permanently segregated under suitable conditions.

The case referred to is but a lamentable as well as sinister illustration of many. The disease is frequently given superficial medical consideration, as best shown in the well-known Early case, which was declared by a specialist in skin diseases, and attached to a well-known New York hospital, not to be leprosy, in opposition to the unanimous judgment of a committee of the New York Society for Medical Jurisprudence. At the present time, or about two years later, Early is one of two lepers segregated under far from satisfactory conditions in the District of Columbia. The specialist was fundamentally wrong, and the community was exposed to a most fearful risk because of a lack of serious consideration of a case in its early but cognizable state. In a matter of such enormous importance to the community it would seem that the public at large is entitled to the benefit of a doubt until every reasonable suspicion of leprosy in a suspected case has been removed.

Dr. HOFFMAN. Before I introduced my resolution, subsequently adopted by the American Academy of Medicine, I wanted to be sure that I had the sentiment of the country behind me. I therefore sent out my letter of inquiry, and I subsequently interviewed Dr. Dowling, State health officer of Louisiana; Dr. McLaughlin, State health officer of Massachusetts; Dr. Pratt, president of the Territorial Board of Health of Hawaii, and others, to ascertain their views.

The CHAIRMAN. You have a copy of your letter before you, have you not?

Dr. HOFFMAN. Yes, Senator.

The CHAIRMAN. To avoid any doubt about it, will you be good enough to put the letter into the record?

Dr. HOFFMAN. You mean one of the letters to the several State health authorities?

The CHAIRMAN. Yes, Doctor; just the form of the letter.

Senator WORKS. You mean the letter that the doctor wrote and sent out to the several States asking for information regarding the extent of leprosy in this country and the methods of segregation and care?

The CHAIRMAN. Yes; the letter the doctor wrote to these various health authorities asking, among other questions, whether they were in favor of a National leprosarium.

(The matter referred to is here printed in full as follows:)

JUNE 16, 1915.

SECRETARY STATE BOARD OF HEALTH.

DEAR SIR: I have agreed to read a paper on "Leprosy as a National Problem," before the American Academy of Medicine, at the meeting to be held in San Francisco during the week of June 20. Either in my address, or in a supplement thereto, since the time is rather short, I expect to present in brief outline the provisions at present made for the segregation and care of lepers in the principal States of this country. Will you be good enough to let me have, at your earliest convenience, a reply to the following questions, and return this letter in the inclosed stamped envelope?

1. What are the statutory provisions of your State or city for the segregation and detention of lepers?
2. Is leprosy a reportable disease in your State or city, either according to law or under the rules of your board?
3. What is the number of known lepers in your city or State at the present time?
4. What provision is made for lepers in your city or State, either according to law or under the regulations of your board?
5. If you have lepers under your supervision and control, please state their number and the institutional or other provisions made for their maintenance and care.
6. In your opinion, is segregation of all cases advisable?
7. Are you in favor of a national leprosarium to provide for the adequate treatment and care of at least such lepers as are apprehended by the authorities while in interstate transit, and which are probably the only cases which at the present time can be properly taken care of by the Government?

Should you find it convenient and possible to reply to any or all of the foregoing questions, you will please accept in advance my sincere thanks.

I remain,

Very truly, yours,

FREDERICK L. HOFFMAN, *Statistician.*

Dr. HOFFMAN. As said before, all of the replies to my letter of inquiry except one were emphatically in favor of a national leprosarium.

The CHAIRMAN. Have you any other points, Doctor, that you would like to bring to the attention of the committee?

Dr. HOFFMAN. I think not, Senator; but I desire to conclude with once more urging it upon your committee that you give favorable consideration to this important measure which concerns, it is true, but a relatively small number of people on the mainland of the United States, but at the same time an element peculiarly deserving of national consideration.

I trust that I have made it clear that in most cases adequate State care for lepers is entirely out of the question in isolated cases, and that the best possible results regarding the treatment and possible arrest of the disease are obtainable only at a properly maintained leprosarium. Furthermore, I hope that I have presented all the necessary statistical evidence in support of the conclusion that the only means of the gradual eradication of leprosy is through effective segregation, such as has now been for many years practiced in Hawaii, Norway, and in many other countries with excellent results. I have also tried to make clear to you the obvious interstate character of many of the cases of leprosy in this country, and the inequity of the placing of the financial burden for the care of such cases upon the few States making adequate and humane provision for the treatment of these unfortunates. In Hawaii during 1912, which may be considered a normal year, the sum of $232,000 was spent on account of 728 lepers, or $318 per capita; in other words, Hawaii spent more than $1 per capita per annum on account of leprosy alone. The expenditures at the Louisiana settlement amount to about $40,000 a year. In isolated cases, on account of the irrational and ill-advised methods prevailing at the present time, the expenses of maintenance and care often attain to needlessly considerable proportions. The establishment of a Federal leprosarium in a suitable location would provide the most effective means for the gradual checking of the disease, and last, but not least, for the more humane and proper care of the most afflicted element of the human race. Mr. Chairman, I should like to supplement my testimony by a letter which I shall address to you.

The CHAIRMAN. We will be glad to have you do so. We are certainly very much obliged to you for your testimony.

Senator WORKS. Yes; it has been very interesting.

(The letter referred to was subsequently submitted, and is here printed in full, as follows:)

THE PRUDENTIAL INSURANCE CO. OF AMERICA,
Newark, N. J., February 17, 1916.

HON. JOSEPH E. RANSDELL,
Chairman Senate Committee on
Public Health and National Quarantine,
United States Senate, Washington, D. C.

MY DEAR SENATOR RANSDELL: In addition to my evidence before your committee, I desire to place on record my emphatic indorsement of the principle which underlies the Senate bill providing for a national leprosarium.

As emphasized in my resolution presented to the Thirteenth Annual Conference of State and Territorial Health Officers, I feel that the duty of the Government in this matter is so obvious as not to require elaboration, in view of the facts disclosed by my own investigations and as illustrated by the individual cases brought to the attention of your committee.

Since fairly adequate institutions are available in Massachusetts, Louisiana, and California, it would therefore seem that the proposed leprosarium should be located somewhere in the Central West. It would probably be advisable to appoint a special commission to locate a suitable site, with a due regard to such foci of infection as Chicago, where it is claimed many cases are at large.

My personal investigations at Molokai, at San Francisco, and in Louisiana have profoundly impressed upon me the duty of a persistent effort in behalf of these most unfortunate and absolutely helpless victims of a peculiarly loathsome and practically hopeless disease. No words of mine can give adequate expression to my own sorrow for these people, but in the light of my personal knowledge I can not but feel intensely the additional sorrow and suffering needlessly forced upon the helpless individual who suddenly and by no fault of his own finds himself the victim of leprosy in a State where he may be the only one of his

kind. I believe that the Nation owes it to itself and to the cause of a broader civilization that it shall leave nothing undone to provide liberally and humanely for these unfortunates who, under present conditions, are often most inhumanely treated.

I believe that the Nation should follow the remarkable example of broad-minded philanthropy and true humanitarianism illustrated by the adequate and intelligent care of lepers in Hawaii, in San Francisco, in Louisiana, and in Massachusetts. I desire to direct the attention of your committee to the fact that the Territory of Hawaii is under an annual burden of about $230,000, or a per capita expense of $1, on account of leprosy alone. Since the disease was introduced into Hawaii by Chinese immigrants during the early thirties or forties, it was there as with us an international problem in its inception, which was practically beyond the power of any Territory or State to effectively safeguard against. The most drastic quarantine measures could not possibly succeed in keeping out leprous immigrants in the very initial or noncognizable stage of the disease, when the leper himself would in all probability be entirely unaware of the impending calamity. The average duration of this disease is about eight years between the time of obvious lesions and death. How long there is a preceding period of development has not been determined, but certainly a number of years almost invariably elapses between the original contact infection and the first definite lesions which permit of a precise and conclusive diagnosis. It is therefore hopeless to anticipate the possibility of safeguarding the Nation against the introduction of leprous persons in the very initial stages of the disease from the many foci of infection in countries to the south of us or in the Orient, or even in Europe, with which we have close commercial and other relations.

I omitted to direct the attention of your committee to the fact that Gloucester fishermen frequently visit Iceland during the fishing season, and that Icelandic leper patients have on a number of occasions been admitted to the lazaretto at Tracadie, New Brunswick. Icelandic leper cases have also occurred in the Central Northwest and in Manitoba. Thus the more thoroughly the disease is studied the more complex becomes the problem of control through existing State agencies alone.

In the course of time I am absolutely certain the Nation will realize its complete duty and take over all of the existing leper settlements and care adequately and at national expense for all of these unfortunates whose support can not rightfully be charged against any particular locality as a burden to be provided for out of local revenues alone.

I believe that a public agitation of the question will do much to bring about a more enlightened public opinion, and will emphasize on the one hand the duty and on the other the humanity of adequate care but unconditional segregation. Recalling as I do with genuine sorrow the lamentable condition of the more than 1,000 lepers whom I have personally seen, and many of them more than once, I can not but strongly urge it upon your committee that you report favorably on the bill providing for a national leprosarium, so that our national conscience in this matter may be freed from the charge of inhumanity and indifference, not only toward the leper himself, but toward those unfortunates who are now exposed to the frightful risk of a fate which is but a living death.

I shall be pleased to be of any further service to your committee in connection with this matter, and I make use of this opportunity to express to yourself and to your committee my sincere appreciation of your courtesy and kindness at the hearing on February 15.

I remain,

Very truly, yours,

FREDERICK L. HOFFMAN.

The CHAIRMAN. I would like to have Dr. Fowler take the stand now and tell us about the Early case.

STATEMENT OF DR. WILLIAM C. FOWLER, CHIEF MEDICAL INSPECTOR, HEALTH DEPARTMENT, DISTRICT OF COLUMBIA.

The CHAIRMAN. Doctor, will you tell the committee about the case of John Early?

Dr. FOWLER. John Early first arrived in the District of Columbia in August, 1908. He was found in the Salvation Army headquarters