PUBLIC HEALTH REPORTS.

VOL. XXVII. FEBRUARY 2, 1912. No. 5.

THE RELATION OF SO-CALLED BRILL'S DISEASE TO TYPHUS FEVER.

AN EXPERIMENTAL DEMONSTRATION OF THEIR IDENTITY.

By John F. Anderson, Director Hygienic Laboratory, and Joseph Goldberger, Passed Assistant Surgeon.

Typhus fever has not appeared in epidemic form in the United States since the comparatively small outbreaks in New York in 1891–92 and in Philadelphia in 1883. Sporadic cases have been reported, as the 4 cases in Baltimore in 1901 and occasional cases among recently arrived immigrants. It has been a subject of speculation among health authorities why, in spite of the arrival of occasional cases in this country and of many persons from endemic foci of the disease, typhus fever apparently does not gain a foothold in the United States. It will be shown later that such a possibility is not without reason, and that the disease is actually present at all times in certain cities of the United States.

In 1898 Dr. Nathan E. Brill,[1] of New York, reported 17 cases of a disease clinically resembling typhoid fever but without the Widal reaction, and clearly set forth the differences between this group and the usual types of typhoid fever cases.

In April, 1910, he reported in a most interesting paper[2] a study of 221 cases of the same disease observed at Mount Sinai Hospital, New York City, from late in 1896 to December 1, 1909.

Since the important features of the disease as observed by him are well summed up in his definition, it is given:

> An acute infectious disease of unknown origin and unknown pathology, characterized by a short incubation period (four to five days), a period of continuous fever, accompanied by intense headache, apathy, and prostration, a profuse and extensive erythematous maculo-papular eruption, all of about two weeks' duration, whereupon the fever abruptly ceases either by crisis within a few hours or by rapid lysis within three days, when all symptoms disappear.

In a third paper Brill[3] reports on the study of 34 additional cases observed since the 221 previously reported. It may be noted that

[1] Brill, Nathan E.: A study of 17 cases of a disease clinically resembling typhoid fever, but without the Widal reaction; together with a short review of the present status of the serodiagnosis of typhoid fever. N. Y. med. journ., vol 67, Jan. 8 and 15, 1898, pp. 48 and 77.

[2] Brill, Nathan E.: An acute infectious disease of unknown origin. A clinical study based on 221 cases. Am. journ. med. sci., April, 1910.

[3] Brill, Nathan E.: Pathological and experimental data derived from a further study of an acute infectious disease of unknown origin. Am. journ. med. sci., August, 1911.

these 34 cases all occurred in the year ended December 1, 1910, and in the same hospital, indicating an increasing prevalence of the infection or greater skill in diagnosis. This paper of Brill's is of especial interest and value because it includes, in addition to clinical data, the report of an autopsy on a fatal case and the results of the inoculation of monkeys with blood from two cases in the acute stage, and with the blood and emulsion of the liver and the spleen from the fatal case. Dr. Brill states that from the report of the autopsy "the conclusion may be drawn that the organs showed congestion and general parenchymatous degeneration such as would obtain in any intense infectious disease."

From material obtained at the autopsy, made about 18 hours after death, Brill inoculated three monkeys; one intravenously with 5 c. c. of heart's blood, one intraperitoneally with an emulsion of the liver, and one intraperitoneally with an emulsion of spleen. The animals were kept under observation for three months and showed no signs of illness.

Brill also reports inoculations with blood obtained during life. In one case 5 c. c. of blood was drawn from a patient in the seventh day of the disease and was inoculated subcutaneously and intraperitoneally into a *Macacus rhesus;* in a second instance 5 c. c. was drawn from a patient in the sixth day of the disease, diluted with 10 c. c. sodium citrate solution, and inoculated intravenously into a *semnopithecus.* The temperature of the first animal was taken for one month and of the second for three weeks. Both animals were kept under observation for two months, during which time they were entirely free from illness.

Brill states that this experimental work in inoculating monkeys has, at least so far, established a fundamental difference between the disease described by him and Mexican typhus fever sufficient, perhaps, to stamp them as separate diseases. He still reserves in his mind the belief that the disease may be due to an attenuated modification of the virus of typhus fever, and awaits the results of the further work of other investigators, although in a letter to the editor of the Journal of the American Medical Association[1] he apparently withdraws this reservation, as he states that he has in vain attempted to prove that it is typus fever and shall regard it as such only when certain evidence set forth in his letter is produced and that until then he believes he is justified in calling this disease "an infectious disease of unknown origin."

Dr. Brill deserves the greatest credit for his careful study of the disease in question, and his ability as a close and careful observer is shown in first distinguishing cases of this disease, instances of which have almost certainly come under the observation of others.

Louria,[2] in a paper read before the Kings County Medical Society, reports the results of the observation of 18 cases in the Jewish Hospital, Brooklyn, N. Y., during the summer and fall of 1910.

Friedman,[3] on clinical grounds, expresses the opinion that Brill's symptom complex is identical with mild and moderately severe cases of typhus fever.

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[1] Journ. A. M. A., vol. 57, Dec. 2, 1911, p. 1854.
[2] Louria, Leon: Brill's disease. Med. rec., Aug. 26, 1911.
[3] Friedman, G. A.: Brill's symptom complex; typhus fever; Manchurian typhus. Arch. internal med., vol. 8, Oct. 15, 1911, p. 427. Abst. Med. rec., vol. 80, Sept. 16, 1911, p. 606.

About the time that Brill's second paper appeared (April, 1910) we were engaged in the study of Mexican typhus fever[1] and, having the picture of that disease clearly in our minds, we were struck by the very marked clinical resemblance between it and the disease described by Brill. Influenced by this resemblance, we endeavored to obtain access to cases of Brill's disease in order to determine if possible the relationship between that infection and typhus fever. This we did not succeed in doing, however, until September, 1911.

Through the courtesy of Dr. Leo Kessel, New York, and of Dr. Olsan, house physician at Mount Sinai Hospital, New York, we had the privilege of seeing a case of Brill's disease in the wards of Mount Sinai Hospital on September 20, 1911. Chart No. 1 shows the temperature of this patient (case No. 1, N.[2]) from the day of his admission to the hospital to the day of his discharge. We shall not, at this time, go into the history of this patient beyond stating that he was in the seventh day of his illness when we first saw him, and that the case was considered by those familiar with Brill's disease to be a typical one of that disease.

Blood was drawn from the arm vein, defibrinated, and used for the inoculation of two rhesus monkeys (Nos. 149 and 150), each animal receiving 3 c. c. of the defibrinated blood intraperitoneally. The next day, in the eighth day of illness, blood was again drawn from an arm vein of this patient, defibrinated, and about three hours later was used for the inoculation of two rhesus monkeys (Nos. 151 and 152), each animal receiving approximately 3.5 c. c. of the blood, diluted with an equal volume of normal salt solution, intraperitoneally. Monkey No. 152 died 10 days later as a result of a purulent peritonitis, and monkey No. 151, which was in poor condition at the time of inoculation, and refusing food, continued progressively to fail. Six days later, being moribund, the animal was chloroformed.

Monkey No. 149, during a period of observation lasting 31 days, showed no evidence of illness, by rise of temperature or otherwise.

Ten days after inoculation the temperature of monkey No. 150 began to rise, reaching its maximum (41.2° C.) six days later. The temperature of the animal remained high until the eleventh day of fever, when it fell by rapid lysis, reaching normal 14 days after the rise began. On the sixth day of fever, when the temperature was at its maximum, 10 c. c. of blood were drawn from the animal's heart, defibrinated, and used for the inoculation of two rhesus monkeys. Rhesus No. 157 was given 3.5 c. c. of the defibrinated blood and rhesus No. 158 was given 3 c. c., both intraperitoneally.

Five-tenths cubic centimeter of the defibrinated blood were planted in a tube of standard bouillon, and during a period of observation of 12 days gave no evidence of growth.

The temperature of both animals (Nos. 157 and 158) began to rise on the ninth day after inoculation. As monkey No. 158 gave promise of a more severe reaction than monkey No. 157, the former was selected for passage.

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[1] Anderson, John F., and Goldberger, Joseph: On the relation of Rocky Mountain spotted fever to the typhus fever of Mexico. A preliminary note. Public Health Reports, xxiv, Dec. 10, 1909, p. 1861.
Same. A note on the etiology of "tabardillo." the typhus fever of Mexico. Public Health Reports, xxiv, Dec. 24, 1909, p. 1941.
Same. On the infectivity of tabardillo or Mexican typhus for monkeys and studies on its mode of transmission. Public Health Reports, xxv, Feb. 4, 1910, p. 177.
Same. On the etiology of tabardillo or Mexican typhus. An experimental investigation, Journ. med. research, xxii, June, 1910, pp. 469–481.

[2] N.—New York series.

On the afternoon of the ninth day after inoculation, and the first day of fever, when the temperature of the animal was 41° C., monkey No. 158 was bled from the carotid artery for 50 c. c. This blood was defibrinated and a portion used for passage. Since then this infection has been carried through 11 monkey generations by inoculation of blood.

Since our case No. 1 we have seen two more cases of Brill's disease. With blood obtained from a case in the Jewish Hospital, Brooklyn, we have succeeded in infecting a rhesus monkey and effecting passage with the blood of that animal.

After intraperitoneal or intravenous inoculation there is an incubation period of 5 to 14 days. At the end of this time there is usually a rapid rise of the animal's temperature, which frequently reaches a maximum in 36 or 48 hours of 41° to 41.5° C.; the temperature remains between 40° and 41° C. until toward the end of the febrile period, when it may show a gradual decline, but almost invariably declines by crisis or rapid lysis, frequently to subnormal. After about the second day of fever the animal may show other evidences of illness, such as loss of appetite, ruffled fur, crouching posture in cage, loss of weight, and weakness. Convalescence is usually rapid. We have never noticed the presence of an eruption, although we have not searched very carefully for it. Occasionally one of a pair of animals may fail to develop the infection when inoculated with virulent blood, but on subsequent inoculation has invariably been found to be susceptible.

One attack of the infection has proved in every instance tested to have conferred immunity to infection by subsequent inoculation with virulent blood.

Having established the susceptibility of the rhesus monkey to infection by the inoculation with blood from a case of Brill's disease, it became important to determine the relationship of Brill's symptom complex to typhus fever. In order to clear up this question one of us (J. G.) proceeded to Mexico City, carrying a number of rhesus monkeys, some of which had recovered from infection with the virus obtained originally from our case No. 1 of Brill's disease, and others—fresh animals—to be used as controls.

On November 23, 1911, monkeys Nos. 95 and 133, which had recovered from an infection with the virus of Brill's disease, and control (normal) monkey No. 314, were each inoculated intravenously with 3 c. c. of defibrinated blood from rhesus No. 306. The latter animal was at this time in the third day of what appeared to have been a mild typhus reaction. During the succeeding 29 days rhesus No. 314 gave no evidence of a reaction.

On December 8, 15 days after the first inoculation, none of the three animals (Nos. 95, 133, and 314) having given any indication of a reaction, monkeys Nos. 95 and 133 were reinoculated with defibrinated blood from case No. 19–M,[1] a severe case of typhus in the sixth day of the disease (see chart No. 2). Two normal monkeys, Nos. 317 and 318, were similarly inoculated as controls. Each of these four animals was given 3.5 c. c. of the blood diluted with an equal volume of saline solution intraperitoneally.

Result.—Both control monkeys, Nos. 317 and 318, have given clear evidence of infection (see charts Nos. 3 and 4), whereas neither

[1] M=Mexican series.

Nos. 95 nor 133 has given any indication of a reaction (see charts Nos. 5 and 6).

It might be suggested that the failure of monkeys Nos. 95 and 133 to react to the second typhus inoculation was due rather to a resistance conferred by the inoculation of November 23 with the blood of rhesus No. 306 than to an immunity following the attack of Brill's disease. That this is not the case, however, is evidenced by the fact that rhesus No. 314, originally inoculated as the control for Nos. 95 and 133 in their first test, made on November 23, has since reacted promptly and sharply following a second inoculation with blood from a human case of typhus.

In order to leave no room for doubt on this point we inoculated two other monkeys (Nos. 161 and 162) that had previously reacted to an inoculation with the virus of Brill's disease. On December 29, 1911, these two animals were inoculated intraperitoneally with 6 c. c. each of defibrinated blood from a well-marked case (case 35–M) in the ninth or tenth day diluted with an equal volume of saline solution. January 1, 1912, both these animals were reinoculated with defibrinated blood from another patient (case 39–M) in the ninth day of disease, each animal receiving 4 c. c. diluted with an equal volume of saline solution intraperitoneally. Neither animal has given evidence of a reaction, although two other monkeys (Nos. 304 and 324), inoculated in precisely the same way and on the same dates, have reacted promptly and sharply.

We believe, therefore, that the conclusion is justified that an attack of Brill's disease in the monkey confers an immunity to subsequent infection with Mexican typhus (tabardillo).

Monkeys Nos. 317 and 318, which had passed through an attack of Mexican typhus fever and which had served as controls in the immunity test above described, were tested for their immunity to infection derived originally from a case of Brill's disease. These two monkeys, as well as control, were given 3 c. c. of defibrinated blood from rhesus No. 187, then in the second day of an attack of Brill's disease.

Result.—The control monkey has given a definite reaction, while neither No. 317 nor No. 318 has given any indication of a reaction. It is, therefore, permissible to conclude that Nos. 317 and 318, as a result of their attack of Mexican typhus fever, are immune to infection with Brill's disease.

SUMMARY AND CONCLUSIONS.

1. The rhesus monkey is susceptible to infection by inoculation with the blood from a case of "Brill's disease."

2. One attack of the disease in the monkey induces a definite immunity to a subsequent infection with virulent blood of the same strain.

3. Monkeys recovered from an infection with "Brill's disease" have been found to be immune to a subsequent infection with virulent blood from a case of Mexican typhus fever.

4. Monkeys recovered from an infection with Mexican typhus fever have been found to be immune to a subsequent infection with "Brill's disease."

5. From the above results we conclude that the disease described by Brill is identical with the typhus fever of Mexico, and inasmuch as the New York strain is undoubtedly of European origin, we may also conclude that the typhus of Europe and the tabardillo of Mexico are identical.

6. If this conclusion is correct, typhus fever has been present in New York City for a number of years and, according to verbal reports made to us, has occurred in other large cities of the United States.

7. These results make the clinical recognition and study of typhus fever of increased importance and necessitate the exercise of appropriate prophylactic measures.

8. It is not intended to exaggerate the menace of this disease to the public health. Nevertheless, although the disease in New York City has apparently been mild and has shown little tendency to spread, it is apparently on the increase there, and the possibility should be borne in mind that it may acquire virulence and epidemic prevalence.

We desire to express our indebtedness and to extend our thanks to Dr. Nathan E. Brill and Dr. Leo Kessel, of New York; Dr. Hiram Olsan, house physician at Mount Sinai Hospital, New York; Dr. Leon Louria, Brooklyn; and to Dr. Ellis Campus, house physician at the Jewish Hospital, Brooklyn, for the privilege of seeing cases of "Brill's disease" and obtaining material therefrom, and for many other courtesies.

For the laboratory and clinical facilities freely extended to us in Mexico City we are deeply indebted to Dr. Eduardo Licéaga, president of the superior board of health; to Dr. Octaviano Gonzalez Fabella, director of the bacteriological laboratory; to Dr. Regino Gonzalez, director of the hospital general; and to Dr. German Diaz Lombardo, director of the Hospital Juarez. We are also under many obligations to Dr. A. R. Goodman, chief surgeon of the Mexican Railways, for numerous helpful courtesies. For their kind generosity in permitting us to study their cases our thanks are due to Drs. Miguel Otero and Zenón Luna.

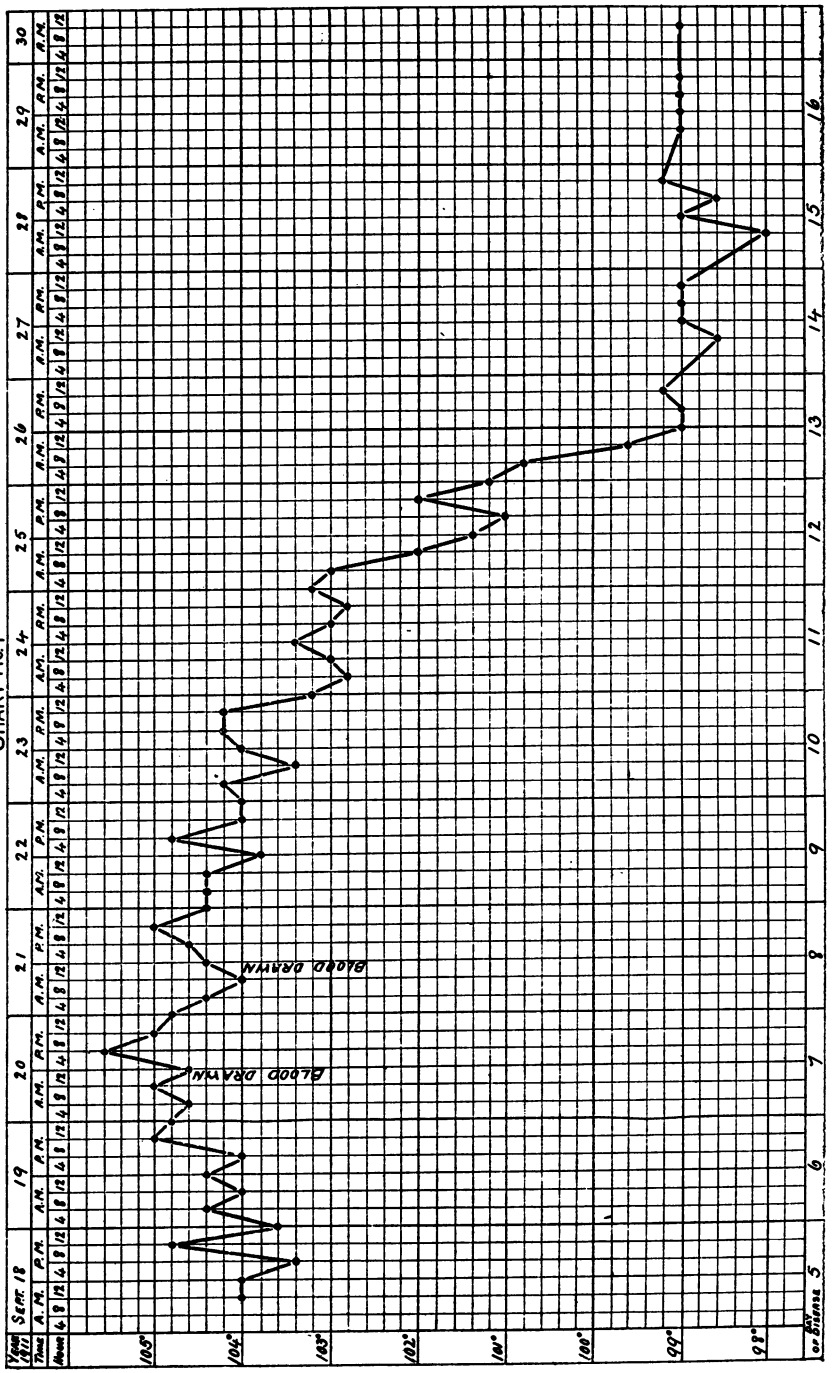

CHART NO. 1, SHOWING TEMPERATURE OF CASE NO. 1 OF "BRILL'S DISEASE."

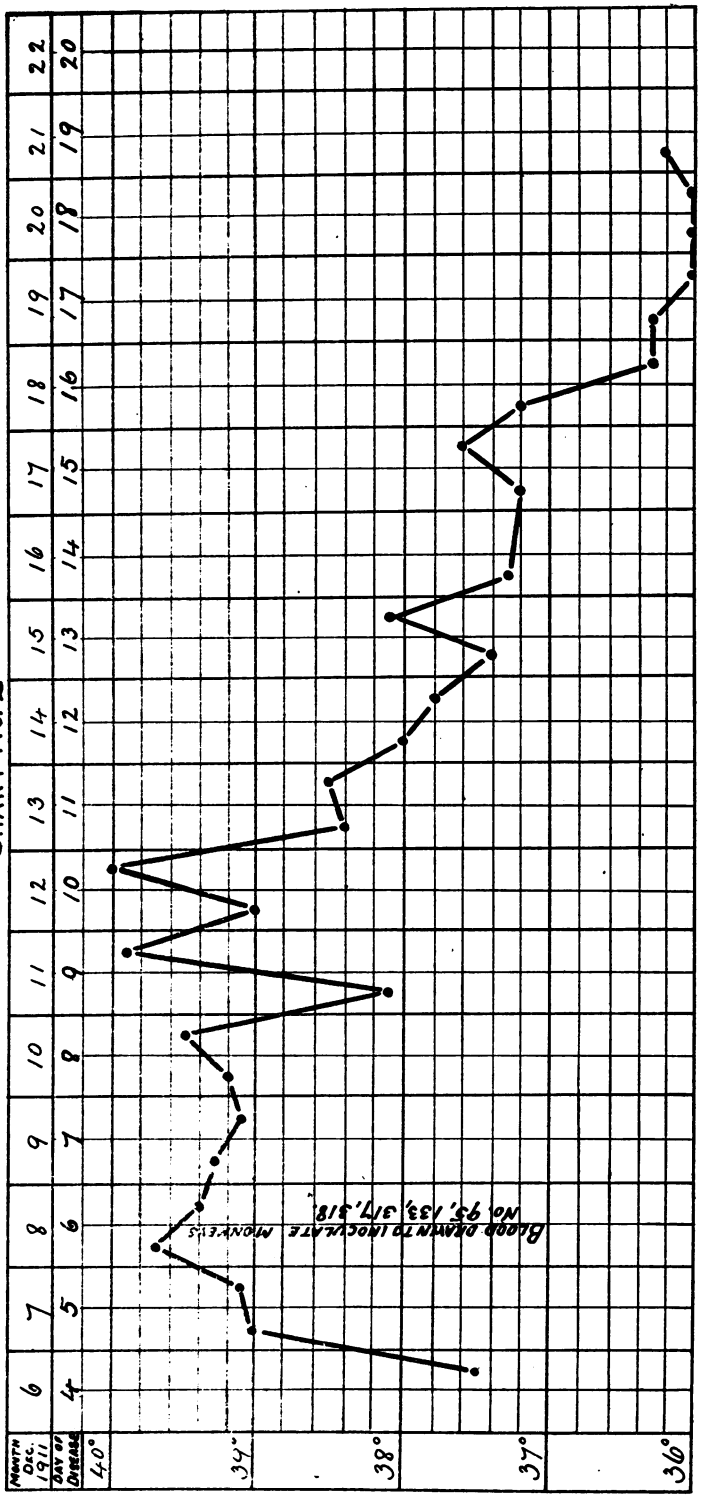

CHART NO. 2, SHOWING TEMPERATURE OF CASE NO. 19 OF TYPHUS FEVER.

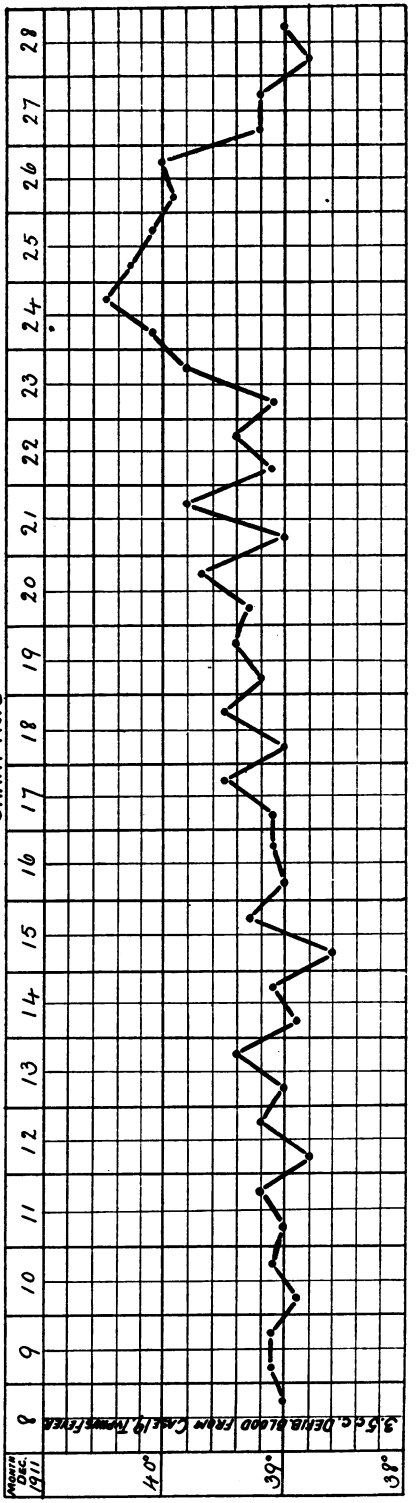

CHART NO. 3, SHOWING COURSE OF TEMPERATURE OF MONKEY NO. 317; SEE ALSO CHARTS NOS. 5 AND 6.

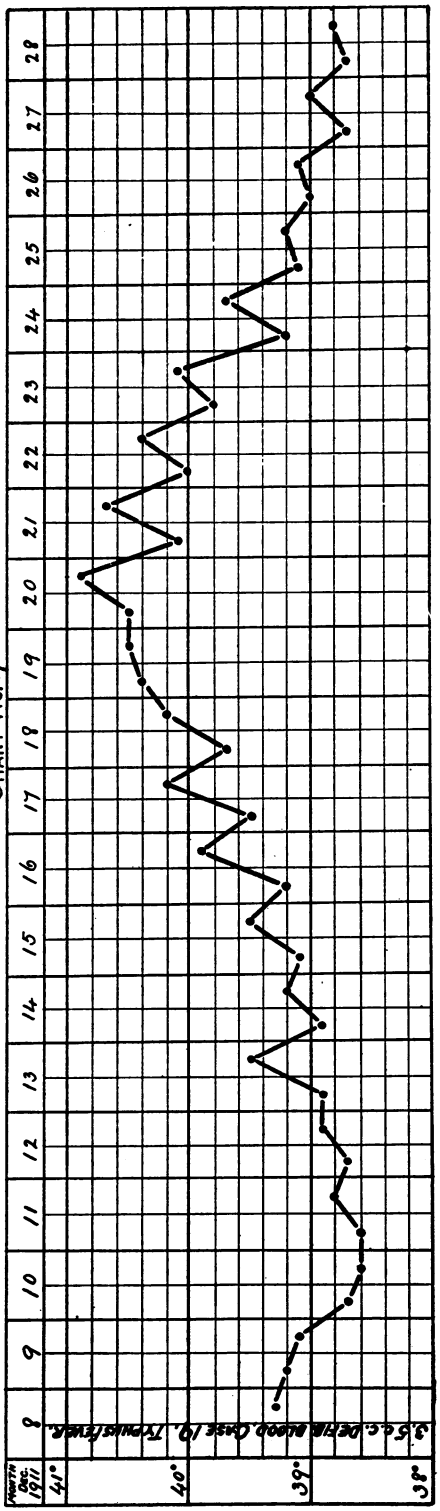

CHART NO. 4, SHOWING COURSE OF TEMPERATURE OF MONKEY NO. 318; SEE ALSO CHARTS NOS. 5 AND 6.

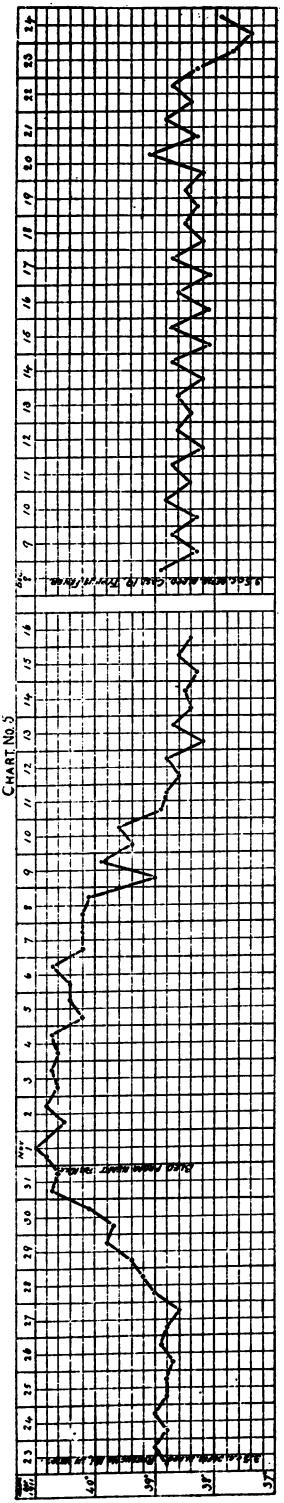

CHART NO. 5, SHOWING COURSE OF TEMPERATURE OF MONKEY NO. 95. THE CHART SHOWS THE TEMPERATURE CURVE DURING THE ATTACK OF "BRILL'S" DISEASE AND THE NEGATIVE REACTION FOLLOWING TEST OF IMMUNITY BY INJECTION OF BLOOD FROM TYPHUS FEVER CASE NO. 19; SEE ALSO CHARTS NOS. 3 AND 4.

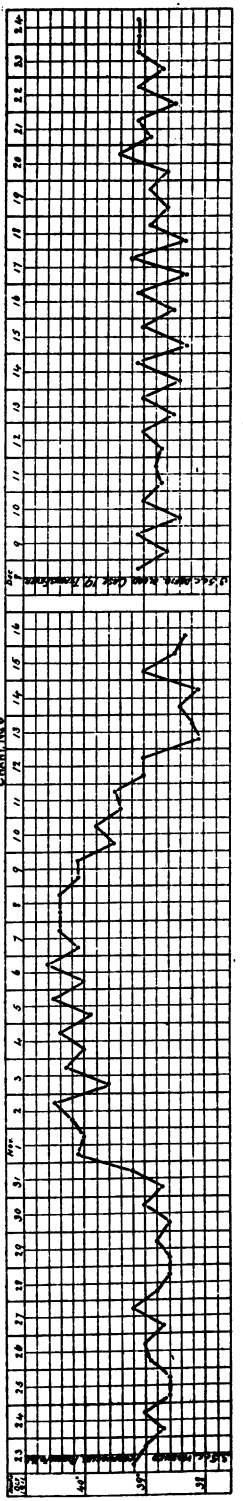

CHART NO. 6, SHOWING COURSE OF TEMPERATURE OF MONKEY NO. 133. THE CHART SHOWS THE TEMPERATURE CURVE DURING THE ATTACK OF "BRILL'S" DISEASE AND THE NEGATIVE REACTION FOLLOWING TEST OF IMMUNITY BY INJECTION OF BLOOD FROM TYPHUS FEVER CASE NO. 19; SEE ALSO CHARTS NOS. 3 AND 4.

AN ACID-FAST ORGANISM RESEMBLING THE BACILLUS OF HUMAN LEPROSY CULTIVATED FROM THE TISSUES OF A LEPROUS RAT.

By C. W. Chapin, Assistant Surgeon, Public Health and Marine-Hospital Service.

The writer has succeeded in isolating an acid-fast bacillus corresponding in general to the published characteristics of the bacillus of human leprosy from a contaminated culture from the tissues of a leprous rat.

The medium employed had the following composition:

	Per cent.
Egg yolk	1.0
Normal soda solution	.1
Glycerin	.5
Agar	2.0
Salt	.3

The ingredients, with the exception of the egg yolk, were dissolved and sterilized; the yolk was then incorporated, the medium was tubed and slanted, and after hardening was heated to 70° C. for one hour in the Arnold sterilizer for sterilization.

The culture was kept most of the time in the incubator at 37° C. for part of the time at room temperature, and transplanted about once a week. Upon making the original culture and at each transplantation the surface was moistened daily for two or three days with a 1 per cent solution of trypsin, previously sterilized by passing through a Berkefeld filter.

Under these conditions the acid-fast bacilli originally present in the tissue were replaced by morphological variants, sometimes long-curved forms, oftener short, oval, almost coccoid organisms. The acid-fast organism was isolated by plating upon the medium described above.

The growth is macroscopically dull, gray, brownish, or yellowish, depending upon the medium and length of incubation. It overgrows the surface of the condensation water and does not readily emulsify well. It grows fairly upon various modifications of the above medium without trypsin, better with it; less well upon peptone media. Upon bouillon it grows slowly as a scum overspreading the surface from which flocculent fragments separate and settle upon agitation.

Microscopically the organism is very polymorphous, depending upon the conditions of cultivation; some forms resembling the *Bacillus lepræ* as found in the tissues, some long and curved, some short or coccoid.

In the contaminated cultures of several other strains acid-fast morphological variants, presumably indicative of beginning reproductive activity, have appeared, and attempts are being made to isolate them in pure culture; also to obtain a strain uncontaminated at any time. Until this last has been accomplished, the observation must remain open to obvious criticism.

The acid-fast morphological variants have never been observed in a long series of attempts to grow the bacillus of rat leprosy in symbiosis with other bacteria without trypsin. Controls for sterility of the trypsin have usually remained sterile, and in no case have acid-fast organisms been found therein.

UNITED STATES.

MUNICIPAL ORDINANCES, RULES, AND REGULATIONS PERTAINING TO PUBLIC HYGIENE.

[Adopted since July 1, 1911.]

SAGINAW, MICH.

ABATTOIRS—INSPECTION, PREPARATION, AND CARE OF MEAT AND MEAT PRODUCTS.

SEC. 1. Every abattoir or slaughterhouse or other place for the slaughter of animals, in operation, at which animals are slaughtered for purposes of being used for food, exhibited for sale as food or sold for use as food within the limits of the city of Saginaw, shall be constructed in accordance with the following provisions:

The same shall consist of a substantial and suitable building well lighted, containing a killing room, a chill room, a cold storage and refrigerating room, a reduction plant, and suitable pens, chutes, etc., commensurate therewith, together with all knives, tools, cleavers, etc.

The killing room shall be adequate in size, and floor of said killing room shall be of concrete not less than 3 inches thick connected with sewer by means of bell traps and duly equipped with water seals and constructed in such a manner as to secure perfect drainage; it shall be provided with hot and cold water, also tank for scalding animals, together with an ample supply of hose; it shall be provided with runways, windlasses, overhead trackage, and system of trolleys running from the killing rooms into and connecting with chill and cold-storage rooms, by which and upon which animals slaughtered can be raised, lowered, and carried from killing room to chill room and cold-storage rooms without handling same with hands; it shall be amply equipped with buckets, tubs, and other utensils and devices into which the blood, offal, and refuse shall be placed, and immediately removed to the reduction plant, without the necessity of handling with hands; the walls, ceiling, and partitions in said building and the floor of the same shall be constructed of material susceptible of a high degree of sanitation and easily kept so; and all apparatus, tools, knives, and cleavers, etc., used in or about said building shall be kept perfectly clean; said room shall be provided with cuspidors, toilets, towels, and soap for the use of employees working therein. The chill room shall be of adequate size; the walls, partitions, and ceiling of said room shall be thoroughly insulated with approved material and equipped in such a manner that all condensation shall take place above carcasses and be promptly trapped out of the building, thereby securing as far as practical dry refrigeration; said construction and equipment shall be such that the approximate temperature maintained shall be 40° F. It shall also be equipped with overhead trolleys and trackage, connected with the killing rooms and also with the cold storage or refrigerating rooms, and same shall be sufficient in height and capacity to permit all animals slaughtered to be hung from the trolleys, and no animal or portion of same shall be placed on the floor or permitted to rest thereon, and all animals or food products placed therein shall be handled with the hands as little as possible.

Cold-storage and refrigerating rooms shall be of adequate size, and shall be equipped with an adequate system of artificial lights; the walls, partitions, and ceiling of said room shall be thoroughly insulated with approved insulating material and constructed in such a manner as to produce dry refrigeration, and said construction and equipment shall be such that the approximate temperature to be maintained shall be 34° F. It shall also be connected with the killing room and chill room by overhead trackage and trolleys, which shall be sufficient in height, size, and capacity to permit all animals killed and stored thereon to be hung from trolley, and all animals slaughtered shall be suspended from said trolley and no portion of same placed on the floor; the walls, partitions, and floor shall be kept perfectly clean.

The reduction plant shall be of adequate size and equipped with vacuum pumps, engines, machinery, and reduction plant of sufficient size and capacity to dispose of

all offal, blood, and residue resulting from the slaughtering of animals without odor, and the products taken from said plant shall be finished products; the rooms in which tankage and tallow are removed from the reduction plant shall be of adequate size, and floors shall be constructed of concrete not less than 3 inches thick and connected with sewer by means of bell traps and water seals, and shall be supplied with water services in such manner as to secure perfect drainage. The floors of the room in which refuse is handled and placed in reduction plant shall be constructed so as to be water tight, and shall be thoroughly treated with oil prior to its use, and shall be kept clean and in good sanitary condition, all offal and refuse from slaughtered animals to be reduced as soon as practical after same are slaughtered: *Provided,* That the construction of buildings according to this section shall not apply to abattoirs or slaughterhouses now doing business in the city of Saginaw until such abattoirs or slaughterhouses are in need of repairs, when they shall be repaired or rebuilt in accordance with this section: *Provided further,* That the inspector of foods and measures may order such minor changes in existing abattoirs or slaughterhouses under this section as he shall deem to be necessary and reasonable to insure cleanliness in the handling of meat or food products.

SEC. 2. Every abattoir or slaughterhouse where animals are slaughtered to be used as food, offered for sale, or sold for food within the limits of the city of Saginaw shall be located at such places as permitted by the ordinance of the city of Saginaw and as shall be easily accessible to the city inspector and shall be so located as to permit connection with the sewer system and water service.

SEC. 3. All abattoirs or slaughterhouses in which animals are slaughtered to be used as food, exhibited for sale, or sold for food in the city of Saginaw shall be operated in accordance with the following provisions:

(*a*) No animal intended for slaughter shall remain on the premises or premises immediately adjoining or adjacent thereto to exceed 24 hours, nor shall they be slaughtered while overheated.

(*b*) All animals intended to be slaughtered within the limits of the city of Saginaw shall be inspected while alive and on foot by the city inspector of foods and measures in pens specially constructed for that purpose which shall be well lighted, and all animals so inspected shall be slaughtered within a reasonable time thereafter, and no animal shall be slaughtered that is not "passed" by the said city inspector of foods and measures.

(*c*) Every animal slaughtered shall be inspected during the process of slaughtering by the said city inspector of foods and measures, who shall use such methods of inspection as may be approved of or adopted by the common council.

(*d*) Every portion of any animal slaughtered or intended for food or a food product shall be inspected by the city inspector of foods and measures and tagged, marked, or stamped by him, and a record of said inspection with the name of owner, kind of animal, and condition shall be made by said city inspector of foods and measures, which record of each inspection shall be entered upon his daily report which shall be filed with the city clerk.

(*e*) The offal, blood, and refuse from slaughtered animals and animals or portions thereof condemned upon dead inspection by the inspector of foods and measures shall be immediately placed in the reduction plant and destroyed under the direction of said inspector.

(*f*) All trucks, traps, and other receptacles, all chutes, platforms, racks, tables, etc., and all knives, saws, cleavers, and other tools, and all utensils, machinery, and articles used in moving, handling, cutting, chopping, or other process shall be thoroughly cleaned before using.

(*g*) All employees shall be examined by the city physician of the city of Saginaw at the expense of the employer at a price not to exceed $1 per examination; and no person affected with tuberculosis or any other communicable disease shall be employed in any of the departments where carcasses are dressed, meat is handled, or meat food products are prepared, and all employees shall be examined when directed by the city inspector of foods and measures by the city physician, who shall report their condition to the inspector and manager of abattoir or slaughterhouse.

(*h*) All employees must be cleanly. The said inspector shall see that the clothing and hands of such employees are clean and sanitary, and they shall be required to change or clean same at any time he may so request.

(*i*) No employees or other person shall be permitted to expectorate on the floor, and proper cuspidors which will not readily upset shall be provided for employees in each room and shall be kept thoroughly clean and sanitary.

(*j*) Water-closets and toilet rooms shall be required for employees, and such rooms shall be entirely separated from compartments in which carcasses are dressed or meat food products are stored, placed, handled, or prepared. Such closets, etc., shall be

conveniently located, sufficient in number, and shall be kept in sanitary condition. Convenient and sanitary urinals and washstands shall be provided.

(*k*) The rooms in which meat or meat food products are prepared, stored, packed, or otherwise handled shall be free of odors from toilet rooms, catch basins, tank rooms, etc., and shall be kept free from flies and other vermin by screening or other methods.

(*l*) Butchers who dress or handle diseased carcasses or parts shall cleanse their hands of all grease and then immerse them in a prescribed disinfectant and rinse them in clear water before dressing or handling carcasses. All butcher's implements used in dressing diseased carcasses shall be sterilized either in boiling water or by immersion in a prescribed disinfectant followed by rinsing in clear water, and facilities for same shall be provided.

(*m*) Meat and food products must not be permitted to fall on floors and, in event of their having fallen, they must be condemned or soiled portion removed or condemned.

(*n*) Carcasses shall not be inflated with air from the mouth, and no inflation except by mechanical means shall be allowed. Carcasses shall not be dressed with skewers, knives, etc., that have been held in the mouth. Spitting on whetstones or steels when sharpening knives is prohibited.

(*o*) Only good, clean water shall be used in the preparation of carcasses, parts of meat or meat food products, etc.

(*p*) Where an animal is condemned by the inspector after being slaughtered, the same shall be immediately rendered in the reduction plant, and notice to that effect given to owner, who shall be paid by the abattoir or those conducting same the value of the tankage and tallow less expenses for rendering same.

(*q*) Each animal that is slaughtered shall be required to remain in the chill and refrigerating room at least 12 hours before same is delivered to owner or used for food or offered for sale as food.

(*r*) Wagons in which meat or meat food products are delivered shall be constructed and covered so that the contents shall be kept clean.

(*s*) The manager of all abattoirs and slaughterhouses shall notify the said city inspector of foods and measures in ample time to enable him to prepare for and make an inspection.

(*t*) It shall be the duty of the city inspector to see that all the provisions of this section are duly observed.

SEC. 4. From and after 90 days from the time this ordinance shall become operative, no meat or meat product used for food which has been slaughtered or manufactured by any person or at any packing house, abattoir, or slaughterhouse shall be sold or offered for sale for food in the city of Saginaw, unless the same shall have been passed by the United States Government inspection, or slaughtered or manufactured under the regulations and conditions prescribed in this ordinance.

SEC. 5. The provisions of this ordinance with reference to the equipment, management, and operation of abattoirs and slaughterhouses shall apply to all abattoirs or slaughterhouses now in construction or in operation, or that may hereafter be constructed or operated, and from and after 90 days from the time this ordinance shall become operative it shall be unlawful for any person, firm, corporation, association, butcher, vendor of meat, or any other person to have any animal slaughtered to be used as food or exhibited for sale as food or sold for food within the limits of the city of Saginaw at any abattoir or slaughterhouse not equipped, managed, and operated in accordance with the provisions of this ordinance.

SEC. 6. From and after 90 days from the time this ordinance shall become operative, it shall be unlawful for any person, firm, corporation, association, butcher, or any other person to erect, establish, maintain, or operate any abattoir or slaughterhouse where animals are slaughtered to be used as food or offered for sale or sold for food within the limits of the city of Saginaw, which abattoir or slaughterhouse is not constructed, maintained, and operated in accordance with all of the provisions of this ordinance.

SEC. 7. From and after 90 days from the time this ordinance shall become operative, is shall be unlawful for any person, firm, or corporation, association, vendor of meats, or any other persons to offer for sale or sell for use as food within the limits of the city of Saginaw any animal or any portion of same which has not been slaughtered at an abattoir or slaughterhouse maintained and operated under the provisions of this ordinance, except that which has been inspected by the United States Government.

SEC. 8. From and after 90 days from the time this ordinance shall become operative, it shall be unlawful for any hotel keeper, reatarant keeper, boarding-house keeper, to use as food or offer or sell to others as food any animal or portion of same not inspected by said inspector of foods and measures, slaughtered at any abattoir or slaughterhouse maintained and operated under the provisions of this ordinance, except that which has been inspected by the United States Government.

SEC. 9. The said city inspector of foods and measures shall be paid and receive from the owner of any abattoir or slaughterhouse operating under and by virtue of the provisions of this ordinance as fees for inspection of animals slaughtered, the sum of 5 cents for each animal by him inspected. Said inspector of foods and measures shall keep an accurate account of all animals by him inspected, and shall file weekly reports in the office of the clerk of the city of Saginaw, showing the number and kind of animals by him inspected and the number and kind by him accepted and rejected. He shall turn over weekly to the city treasurer all fees by him collected for such inspection, which said fees shall belong to the city of Saginaw.

SEC. 10. Any violation of the provisions of this ordinance shall be punished by a fine to be imposed upon the offender when duly convicted thereof, not exceeding $100, and in the imposition of such fine and cost the court may make a further sentence that in default of the payment of such fine and cost the offender be imprisoned in the city prison of said city or the county jail of the county of Saginaw for any period of time not exceeding 90 days. And each day any person or persons shall violate any provisions of this ordinance shall be deemed a separate offense.

SEC. 11. All ordinances or parts of ordinances of the city of Saginaw inconsistent with this ordinance are hereby repealed: *Provided*, That nothing in this ordinance shall be construed to prevent any farmer from killing, dressing, or selling in the open market, unless diseased, any animal or fowl intended for food that he has raised, fed, or slaughtered. [Ordinance adopted July 17, 1911.]

SAN DIEGO, CAL.

ABATTOIRS—INSPECTION, PREPARATION, AND CARE OF MEAT AND MEAT PRODUCTS.

SEC. 1. There is hereby created the office of meat inspector of the city of San Diego This inspector shall be a competent, regular veterinary.

He shall be appointed by the board of health of said city, subject to the approval and confirmation of the common council, and his salary shall be $125 per month. His duties shall be:

First, to inspect all cattle, hogs, sheep, goats, and other animals intended for slaughter for human consumption within this city, and at such other places as are designated by the said board of health, both before, during, and after slaughter, and all animals, poultry, game, fish, and their products kept or exposed for sale for human consumption in said city of San Diego.

Second, to stamp carcasses of all slaughtered animals according to regulations laid down by the United States Government, order 137, Bureau of Animal Industry.

Third, he shall make such disposition of diseased meats and animals as is required by the United States Government, order 137, Bureau of Animal Industry.

Fourth, to inspect all buildings erected, converted, or used as slaughterhouses, to determine that they are adequately ventilated and in all other ways conform to the provisions of this ordinance.

Fifth, to inspect all stores, shops, markets, and other premises where such meats and products are kept for sale and see that such meats and products are in sanitary condition.

Sixth, to see that no carcasses are offered for sale for human consumption within said city of San Diego without carrying a United States Government inspector's stamp or that of the inspector of the city of San Diego or other duly authorized inspector.

Seventh, whenever any meat, game, fish, poultry, or the products thereof upon inspection and examination be found to be unwholesome or corrupted from any cause or infected with any form of disease, said inspector shall condemn the same as unfit for human food, and shall mark, mutilate, or make the fact of such condemnation and unfitness apparent, and shall treat it in accordance with regulation 18, governing meat inspection, of the United States Department of Agriculture.

Eighth, to inspect dairies and dairy cattle whose products are offered for sale in the said city and to determine and exclude such cattle as are diseased or dangerous in such a way as to render their products unfit for human consumption; to inspect all stores, dairies, and depots where milk and dairy products are kept for sale and to see that such premises and dairy products are in a sanitary condition.

SEC. 2. It shall be unlawful for any person, either as owner, agent, or employee, to sell, have, keep, or expose for sale for human food, or to have in his possession, the flesh of any cow, ox, calf, sheep, swine, or goat, for the purpose of sale, unless the same shall have been slaughtered under the supervision of a United States Government inspector, in accordance with the regulations relating to the inspection of meat, as prescribed by the Department of Agriculture of the United States, or a meat inspector of the city of San Diego, or any other authorized agent, in accordance with the provisions of this ordinance, and unless there has been placed on each primal part thereof,

by and under the personal supervision of an inspector of the United States or of the city of San Diego, a mark, stamp, or brand, showing that the same has been inspected and passed for food purposes by such United States inspector or such meat inspector of the city of San Diego, or other authorized inspector, and having the words, "San Diego City, Inspected and Passed," together with the number of the slaughterhouse, as hereinafter provided, in which the same was inspected.

SEC. 3. Any person, firm, or corporation desiring to slaughter in the city of San Diego any of the animals mentioned in section 1 hereof, for use for food purposes in the city of San Diego, shall before engaging in such business make application in writing to the board of health of the city of San Diego for a permit to do so, which application shall be signed by the person, firm, or corporation making the same, and shall specify the location of the house or place where it is proposed to slaughter such animals. Upon the filing of such application with the said board of health, the said inspector shall inspect said slaughterhouse, and if the same shall be found to comply with the provisions of this ordinance relative to construction and equipment of slaughterhouses, he shall issue a temporary permit and make a written report thereof to the board of health at its next meeting, whereupon said board shall issue the permit applied for and cause a record thereof to be kept in the health office. But if said place shall not be in strict accordance with the requirements of this ordinance, then such permit shall be withheld.

SEC. 4. No permit shall be issued to any person, firm, or corporation to engage in the business of slaughtering animals within or without the city limits of the city of San Diego for use for food purposes in the city of San Diego unless the house or place in which the same are to be slaughtered shall conform strictly to the following regulations:

The floor or floors of the slaughter rooms shall be constructed of cement, tile, or stone, and made water tight, and all such floors shall be constructed on an incline to provide adequate drainage toward a gutter, which shall be so constructed with the same as to drain the same to a tub or reservoir, which said tub or reservoir shall be placed to receive blood or offal. Said tub or reservoir shall be emptied or cleaned at the end of each day upon which killing has been done in such a manner that no offensive odor shall emanate from the same. The walls of the killing, meat dressing, and cooling rooms shall be covered to the height of 6 feet with some nonabsorbent material and made water tight.

The blood and offal shall be handled and disposed of in such a manner as not to permit decay or offensive effluvia to emanate therefrom while in or near the slaughterhouse.

All waste water or other fluids from the building or slaughterhouse shall be conducted by means of good and efficient pipes or cement gutters to a cooling or settling tank, where the same shall be cooled and all grease removed therefrom before the said waste water or fluids shall be permitted to enter a city sewer.

Each slaughterhouse shall be provided with a cooling room apart from the killing room, which shall be placed not less than 20 feet from the place where the slaughtering is done, and separated from the killing room by a tight partition in the side or sides next or nearest to the killing room.

The cooling room shall be thoroughly ventilated and well screened so as to exclude flies and other insects therefrom.

SEC. 5. In order to obtain inspection by the city of San Diego the person, firm, or corporation operating any slaughterhouse where cattle, calves, sheep, swine, or goats are to be slaughtered, and the flesh thereof is to be supplied for the use of the inhabitants of the city of San Diego for food, shall make written application therefor to the board of health of said city, and said inspection shall be granted upon the following conditions:

That the said slaughterhouse has been constructed in accordance with the provisions of this ordinance.

That all slaughtering shall take place between the hours of 7 o'clock a. m. and 7 o'clock p. m. of any one day, unless a special permit in writing authorizing slaughtering at another time is granted by the board of health.

SEC. 6. Any person, firm, or corporation desiring to slaughter any animal mentioned in this ordinance, the flesh or meat of which is to be disposed of for food in the city of San Diego, shall give notice to the inspector of said city at least 12 hours before such slaughtering is to take place, that the services of the inspector thereof will be required: *Provided*, The person in charge of the slaughtering may notify the inspector at the close of each day at what time on the following day the work of slaughtering will be commenced, and if no slaughtering is to be done on the day following, then he shall notify the inspector at what time, and on what succeeding day the work of slaughtering will be next commenced.

SEC. 7. If inspection is granted by the board of health as provided in this ordinance, the said board of health shall designate each slaughterhouse so inspected by a number,

which number shall be used on the mark, stamp, or brand of all meats inspected therein.

SEC. 8. The carcasses of calves, over 4 weeks of age, which have had no inspection previous to being brought into the city, will be admitted, provided such carcasses have the head and all the viscera, except the stomach, urinary bladder, and intestines, held by their natural attachments. On being brought to the place of sale, application shall be made to the city inspector for their inspection, and if found to be free from disease and otherwise sound, healthful, and wholesome, and fit for human food, they shall be marked by the said city inspector in the manner as previously provided, and admitted for sale. If found to be diseased, unsound, unhealthful, unwholesome, or otherwise unfit for human food, they shall be condemned as previously provided by this ordinance.

SEC. 9. No hog or other animal intended for human consumption in the city of San Diego shall be fed on garbage. Such hogs or other animals may, however, be fed on swill. Swill is defined as kitchen or table waste, edible products, not more than 12 hours old, and which has not undergone fermentation. Garbage is kitchen or table waste, edible products, more than 12 hours old.

SEC. 10. It shall be unlawful for any person, firm, or corporation, except the meat inspectors herein provided for, and the health officer, to have in possession, keep, or use any mark, stamp, or brand provided or used for stamping, marking, or branding any article herein required to be stamped, marked, or branded, or to keep, make, or use any mark, stamp, or brand having thereon a device or words similar in character or import to the marks, stamps, or brands provided or used for marking, stamping, or branding such articles.

SEC. 11. Regulation 20. Carcasses of animals not inspected ante mortem.

Carcasses of animals which have had no ante mortem inspection by inspectors of the Bureau of Animal Industry, the city inspector, or other authorized inspector, will not, except as herein provided, be admitted into an official establishment. The exception to this rule applies only to carcasses to which the head and all viscera, except the stomach, bladder, and intestines, are held by the natural attachments. Such carcasses, if offered for admission into official establishments, shall be inspected, and if found to be free from disease, and otherwise sound, healthful, wholesome, and fit for human food, they shall be marked "Inspected and passed" and admitted. If found to be diseased, unsound, unhealthful, unwholesome, or otherwise unfit for human food, they shall be marked "Inspected and condemned," and they shall be disposed of as required by the United States Government Order 137, Bureau of Animal Industry.

SEC. 12. That every slaughterhouse shall keep in a conspicuous position a copy of the regulations governing slaughterhouses.

SEC. 13. Every person, firm, or corporation violating any provision of this ordinance shall be guilty of a misdemeanor, and upon conviction thereof, shall be punishable by a fine of not less than $10, nor more than $200, or by imprisonment in the city jail for a period of not less than 10 nor more than 100 days, or by both such fine and imprisonment.

SEC. 14. This is an ordinance for the immediate preservation of the public peace, health, and safety, and one of urgency, and shall take effect from and after its passage and approval.—[Ordinance adopted Aug. 18, 1911.]

PLAGUE-PREVENTION WORK.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 2,633 acres of land in Alameda County were covered with poison during the week ended January 13, 1912.

During the same period 4,700 acres of land in San Joaquin County and 5,300 acres in Stanislaus County were covered with poison for the purpose of eradicating plague foci.

RECORD OF PLAGUE INFECTION.

Places.	Date of last case of human plague.	Date of last case of rat plague.	Date of last case of squirrel plague.	Total number of rodents found infected since May, 1907.
California:				
Cities—				
San Francisco	Jan 30, 1908	Oct. 23, 1908	None	398 rats.
Oakland	Aug. 9, 1911	Dec. 1, 1908	do	126 rats.
Berkeley	Aug. 27, 1907	None	do	None.
Los Angeles	Aug. 11, 1908	do	Aug. 21, 1908	1 squirrel.
Counties—				
Alameda (exclusive of Oakland and Berkeley).	Sept. 26, 1909	Wood rat, Oct. 17, 1909.	Oct. 9, 1911	114 squirrels and 1 wood rat.
Contra Costa	July 21, 1911	None	Sept. 23, 1911	364 squirrels.
Fresno	None	do	Oct. 27, 1911	1 squirrel.
Merced	do	do	July 13, 1911	5 squirrels.
Monterey	do	do	Aug. 6, 1911	Do.
San Benito	June 5, 1910	do	June 8, 1911	22 squirrels.
San Joaquin	Sept. 18, 1911	do	Aug. 26, 1911	18 squirrels.
San Luis Obispo	None	do	Jan. 29, 1910	1 squirrel.
Santa Clara	Aug. 23, 1910	do	Oct. 5, 1910	23 squirrels.
Santa Cruz	None	do	May 17, 1910	3 squirrels.
Stanislaus	do	do	June 2, 1911	13 squirrels.
Washington:				
City—				
Seattle	Oct. 30, 1907	Sept. 21, 1911	None	25 rats.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	Jan. 13, 1912	6	[1] 138	75	.....
Fresno	do	.....	[2] 92	92	.....
Oakland	do	9	[3] 590	486	.....
San Francisco	do	14	[4] 1,484	1,121	.....
Counties—					
San Joaquin	do	.....	[5] 154	154	.....
Santa Clara	do	.....	[6] 61	61	.....
Washington:					
City—					
Seattle	do	.....	1,315	1,264	.....

[1] Identified: Mus norvegicus, 86; Mus musculus, 52.
[2] Identified: Mus norvegicus, 0; Mus alexandrinus, 57; Mus musculus, 18; unidentified, 15; Mus rattus, 2.
[3] Identified: Mus novegicus, 504; Mus musculus, 86.
[4] Identified: Mus norvegicus, 674; Mus rattus, 189; Mus musculus, 350; Mus alexandrinus 271.
[5] Identified: Mus norvegicus, 141; Mus alexandrinus, 7; Mus musculus, 6.
[6] Identified: Mus norvegicus, 61.

SQUIRRELS COLLECTED.

During the week under report 3 squirrels were found dead in Alameda County, Cal.

SMALLPOX IN THE UNITED STATES.

In the following table the States indicated by an asterisk are those from which reports of smallpox are received only from certain city, and in some cases county, boards of health. In these States, therefore, the recorded cases and deaths should not be taken as showing the general prevalence of the disease. In the States not marked by an asterisk the reports are received monthly from the State boards of health, and include all cases reported to the States authorities.

REPORTS RECEIVED DURING WEEK ENDED FEB. 2, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
California:				
County—				
Riverside	Dec. 1-30	2		In addition to cases for December reported on p. 130.
Florida:				
Counties—				
Columbia	Jan. 7-20	19		
Duval	do	45		
Levy	Jan. 7-13	2		
Orange	Jan. 14-20	1		
Volusia	do	1		
Total for State		68		
Indiana:				
Counties—				
Adams	Dec. 1-31	75		
Bartholomew	do	3		
Cass	do	1		
Dearborn	do	13		
Delaware	do	1		
Howard	do	5		
Ohio	do	7		
Randolph	do	1		
Scott	do	4		
Vanderburg	do	1		
Vigo	do	2		
Total for State		113		
Minnesota:				
Counties—				
Becker	Nov. 28-Jan. 1	5		
Clay	Dec. 19-25	1		
Dodge	Nov. 28-Dec. 25	8		
Faribault	Dec. 19-25	1		
Fillmore	Dec. 12-25	2		
Hennepin	Dec. 12-Jan. 1	19		
Houston	Dec. 19-25	1		
Lac qui Parle	Dec. 12-25	11		
Martin	do	2		
Norman	Dec. 12-18	1		
Pipestone	Dec. 26-Jan. 1	1		
Ramsey	Nov. 27-Jan. 1	96		
Rice	do	7		
St. Louis	Dec. 12-18	31		
Scott	Dec. 12-Jan. 1	4		
Swift	Dec. 5-Jan. 1	5		
Watonwan	do	21		
Wright	Dec. 12-18	7		
Total for State		223		
Montana:				
Counties—				
Cascade	Dec. 1-31	10		
Chouteau	do	1		
Custer	do	4		
Missoula	do	9		
Sanders	do	5		
Silverbow	do	1		
Total for State		30		
*Nebraska:				
Omaha	Jan. 14-20	4		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during Week ended Feb. 2, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
New York:				
Counties—				
Broome	Dec. 1-31	2		
Cattaragus	do	38		
Cortland	do	30		
Erie	do	3		
Genesee	do	6		
Monroe	do	3		
New York	do	8		
Tioga	do	48		
Tompkins	do	18		
Wyoming	do	10		
Total for State		166		
Oregon:				
Counties—				
Baker	Nov. 1-30	4		
Benton	do	3		
Douglas	do	5		
Lane	do	2		
Lincoln	do	12		
Linn	do	1		
Total for State		27		
Benton	Dec. 1-31	24		
Lane	do	8		
Lincoln	do	13		
Linn	do	1		
Marion	do	26		
Umatilla	do	6		
		1		
Total for State		79		
*Tennessee:				
Knoxville	Jan. 14-20	1		
Texas	Nov. 1-30		24	Report of cases in the State incomplete.
Counties—				
El Paso	Dec. 1-31		1	
Guadalupe	do	4	1	
Hale	do	1		
Hidalgo	do	22		
Uvalde	do	4	2	
Wichita	do	13		
Total for State		44	28	
Grand total for the United States.		757	28	

For reports received from July 1 to December 29, see Public Health Reports for December 29, 1911. The cumulative table of reported cases of smallpox, heretofore published each week, has been discontinued, and in its place summaries will be published periodically.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED JAN. 13, 1912.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having over 500,000 inhabitants.														
Baltimore, Md.	558,485	225	18	2	12	....	23	1	....	....	38	36	10	4
Boston, Mass.	670,585	229	39	3	68	1	24	....	....	....	61	25	6	3
Chicago, Ill.	2,185,283	769	153	19	84	4	119	7	....	....	170	73	19	2
Cleveland, Ohio.	560,663	146	25	3	43	1	28	4	....	....	38	17	5	2
New York, N. Y.	4,766,883	1,455	266	27	560	11	207	12	1	....	420	165	72	6
Philadelphia, Pa.	1,549,008	573	91	14	6	....	28	1	....	....	99	67	103	11
Pittsburgh, Pa.	533,905	190	32	4	9	1	28	1	....	....	32	1	13	4
St. Louis, Mo.	687,029	261	22	2	8	....	9	2	....	....	44	25	8	....
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y.	423,715	163	24	5	5	....	20	....	....	....	12	11	7	3
Cincinnati, Ohio.	364,463	135	15	4	1	....	20	2	....	....	36	17	4	....
Detroit, Mich.	465,766	170	25	2	....	....	40	2	7	....	....	....	....	....
Los Angeles, Cal.	319,198	105	14	....	1	....	13	....	12	....	24	14	2	2
Milwaukee, Wis.	373,857	121	9	1	56	2	18	2	....	....	42	8	53	3
Newark, N. J.	347,469	108	19	3	....	1	20	....	....	....	25	16	1	....
New Orleans, La.	339,075	141	3	....	1	....	15	1	3	....	17	18	3	1
San Francisco, Cal.	416,912	157	9	2	192	4	13	....	....	....	37	18	4	3
Washington, D. C.	331,069	113	9	1	2	....	10	....	....	....	20	10	5	4
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo.	213,381	70	14	1	3	....	7	....	4	....	....	12	....	....
Kansas City, Mo.	248,381	23	10	....	1	....	2	....	....	....	2	4	2	....
Providence, R. I.	224,326	77	16	....	16	1	11	....	....	....	....	9	2	....
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn.	102,054	27	2	....	....	....	2	....	....	....	1	1	....	....
Cambridge, Mass.	104,839	21	10	....	1	....	3	....	....	....	4	2	....	....
Columbus, Ohio.	181,548	61	4	....	21	....	25	....	1	....	1	6	....	....
Dayton, Ohio.	116,577	28	5	1	2	....	1	....	....	....	1	1	1	....
Fall River, Mass.	119,295	41	2	2	....	....	1	....	....	....	4	4	....	....
Grand Rapids, Mich.	112,571	37	1	....	....	....	4	....	....	....	1	2	4	....
Lowell, Mass.	106,294	45	2	1	16	....	7	....	....	....	5	5	2	....
Nashville, Tenn.	110,364	44	2	....	2	....	4	....	....	....	4	5	....	1
Oakland, Cal.	150,174	37	2	....	1	....	7	....	....	....	....	....	6	1
Omaha, Nebr.	124,096	39	....	2	....	....	2	....	....	....	1	5	....	....
Spokane, Wash.	104,402	....	3	....	18	1	3	....	12	....	....	....	....	....
Toledo, Ohio.	168,497	60	14	3	7	....	6	....	1	....	....	9	1	2
Worcester, Mass.	145,986	49	4	....	3	....	13	....	....	....	2	5	2	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa.	52,127	5	3	....	....	....	4	....	....	....	1	....	....	....
Bayonne, N. J.	55,545	....	3	....	10	....	7	....	....	....	1	....	....	....
Brockton, Mass.	56,878	20	1	....	26	....	4	....	....	....	3	1	....	....
Camden, N. J.	94,538	....	5	1	....	....	6	....	....	....	3	....	....	....
Duluth, Minn.	78,466	23	1	....	....	....	1	....	1	....	2	2	....	1
Elizabeth, N. J.	73,409	24	1	....	5	....	5	1	....	....	2	2	....	....
Erie, Pa.	66,525	22	5	....	2	....	2	....	....	....	5	2	3	....
Evansville, Ind.	69,647	17	....	....	....	....	....	....	....	....	....	2	....	....
Harrisburg, Pa.	64,186	17	2	....	....	....	....	....	....	....	5	1	1	....
Hoboken, N. J.	70,324	....	6	2	....	....	1	....	....	....	3	....	1	....
Houston, Tex.	78,800	28	2	1	....	....	3	....	....	....	....	1	....	1
Johnstown, Pa.	55,482	21	1	....	3	....	5	....	....	....	....	2	....	....
Kansas City, Kans.	82,331	....	....	....	....	....	1	....	2	....	2	....	....	....
Lawrence, Mass.	85,892	24	3	....	1	1	1	....	....	....	....	1	2	....
Lynn, Mass.	89,336	21	2	....	3	....	6	....	....	....	4	....	....	....
Manchester, N. H.	70,063	19	....	....	15	1	2	....	....	....	1	1	....	....
New Bedford, Mass.	96,652	37	4	....	2	1	3	....	....	....	2	2	1	1
Oklahoma City, Okla.	64,205	13	3	1	1	....	....	....	1	....	....	3	....	....
Passaic, N. J.	54,773	24	....	....	1	....	3	....	....	....	2	1	....	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Jan. 15, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having from 50,000 to 100,000 inhabitants—Continued.														
Pawtucket, R. I.	51,622			1										1
Peoria, Ill.	66,950	28	3									3	1	1
Reading, Pa.	96,071	25	14	3			3		8					
St. Joseph, Mo.	77,403	14					1						2	1
San Antonio, Tex.	96,614	47	1		8		5					8	1	
Schenectady, N. Y.	72,826	30	3		1		3				4	4		
South Bend, Ind.	53,684	22	2								1	1	10	
Springfield, Ill.	51,678	18	2	1			2					1		
Springfield, Mass.	88,926	35			45		6				1	2		
Terre Haute, Ind	58,157		3				5					1		
Trenton, N. J.	96,815	32									6	2	2	1
Wichita, Kans.	52,450		1				1				7	1		
Wilkes-Barre, Pa.	67,105	24	8		292	1					2	1		
Wilmington, Del.	87,411	35										1		
Yonkers, N. Y.	79,803	16	4	1	5		12				5			1
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J.	46,150	16	4	1										
Auburn, N. Y.	34,668	10			1						2			1
Aurora, Ill.	29,807	12	3	1					1			2		
Berkeley, Cal.	40,434	12											1	
Binghamton, N. Y.	48,443	12			1						2	2		
Brookline, Mass.	27,792	10	8		1		1						1	
Butte, Mont.	39,165	20	2		1		3					3		
Chattanooga, Tenn.	44,604		1				1				1		1	
Chelsea, Mass.	32,452	18	1	1	5		1					1		1
Chicopee, Mass.	25,401	9	2		1							2		
Danville, Ill.	27,871	13	3									1		1
Dubuque, Iowa	38,494	12	2									1		
East Orange, N. J.	34,371	9	1				3							
Elmira, N. Y.	37,176	8	2				1						1	
El Paso, Tex.	39,279	30					5	1	1		3	6	1	1
Everett, Mass.	33,484	4	2				5							
Haverhill, Mass.	44,115	15	1	1	8						4	1		
Kalamazoo, Mich.	39,437	17	1								2	1		
Knoxville, Tenn.	36,346	15	1			1			1					
La Crosse, Wis.	30,417		1									2		
Lancaster, Pa.	47,227		4	1		1	3				3			
Lexington, Ky.	35,099	13	4		23							3		
Lynchburg, Va.	29,494	7			3		3				2		2	
Montgomery, Ala.	38,136	16	2				2				2			
Mount Vernon, N. Y.	30,919		4		25								2	
Newcastle, Pa.	36,280		1		1		1						1	
Newport, Ky.	30,309	5	3	1			1							
Newton, Mass.	39,806	10			1		2				2			
Niagara Falls, N. Y.	30,445	17	10		1		1						2	1
Norristown, Pa.	27,875	11	2		10									
Orange, N. J.	29,630	13	2				4				3	1		
Pasadena, Cal.	30,291	16										3		
Pittsfield, Mass.	32,121	12					1				1	2		
Portsmouth, Va.	33,190	11	5				1							
Racine, Wis.	38,002	7	3				2	1					2	1
Roakoke, Va.	34,874	13	3		23							2	2	
Rocnford, Ill.	45,401	12	1				1							
Salem, Mass.	43,697	10												
San Diego, Cal.	39,578	4	2					1					4	1
Superior, Wis.	40,384	12	1						3			1		1
Taunton, Mass.	34,259	17										2		
Waltham, Mass.	27,834	11			6		1					1		
West Hoboken, N. J.	35,403	12	5	1			1				2	2		
Wheeling, W. Va.	41,641	11	4								4		3	
Wilmington, N. C.	25,748	11					1		2			2		
York, Pa.	44,750		6	1							2			
Zanesville, Ohio	28,026	8	4				1						5	

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended Jan. 13, 1912—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Smallpox.		Tuberculosis.		Typhoid fever.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cities having less than 25,000 inhabitants.														
Ann Arbor, Mich	14,817	14			1									
Beaver Falls, Pa	12,191						1				1		4	
Bennington, Vt		3	1										1	
Braddock, Pa	19,957	7	2		1							1		
Butler, Pa	20,782	8		1										
Cambridge, Ohio	11,327	3			4									
Carbondale, Pa	17,040	5					4							
Clinton, Mass	13,075	4	1								1	1		
Coffeyville, Kans	12,687												2	
Columbus, Ind		1							2			1		
Concord, N. H	21,497	12	1		1									
Cumberland, Md	21,839	9	1				1				2	1	3	1
Dunkirk, N. Y		1					1							
Galesburg, Ill	22,089	9												1
Gloucester, Mass	24,398	10												
Harrison, N. J	14,498	3												
Kearny, N. J	18,659	8	2		2		1				1	1		
La Fayette, Ind	20,081	9										2		
Lebanon, Pa	19,240	3												
Logansport, Ind	19,050	7									2		1	
Marinette, Wis	14,610	4			9	1						1		1
Marlboro, Mass	14,579	7					1							
Massillon, Ohio							1		2				1	
Medford, Mass	23,150	6												
Melrose, Mass	15,715	4			1		1							
Moline, Ill	24,199	10											1	
Montclair, N. J	21,150	7			2							2	2	
Morristown, N. J	12,507	5									1		1	
Nanticoke, Pa	18,857	5	1		48							1		
Newburyport, Mass	19,240	4	1											
North Adams, Mass	22,012	6										1		
Northampton, Mass	19,431	8			1							1		
Ottumwa, Iowa	22,012	8											1	
Peekskill, N. Y		9										1		
Plainfield, N. J	22,550	8			1		1				2	1		
Pottstown, Pa		1												
Saratoga Springs, N. Y		9			1							2		
South Bethlehem, Pa	19,973	8	2	2	5						1			1
Steelton, Pa	14,246	3	15	1					6		2			
Warren, Ohio	11,080	2	1											
Wilkinsburg, Pa	18,924	5												
Woburn, Mass	15,308	4			1		1				1	2		

STATISTICAL REPORTS OF MORBIDITY AND MORTALITY, STATES OF THE UNITED STATES (Untabulated).

FLORIDA.—Reports from the State board of health show as follows: Week ended January 13, 1912. Diphtheria present in 3 localities with 3 cases, malaria in 2 localities with 7 cases, smallpox in 3 counties with 27 cases, tuberculosis in 4 localities with 10 cases, typhoid fever in 9 localities with 10 cases.

Week ended January 20, 1912. Diphtheria present in 1 locality with 1 case, malaria in 2 localities with 12 cases, smallpox in 4 counties with 41 cases, tuberculosis in 6 localities with 7 cases, typhoid fever in 5 localities with 10 cases.

INDIANA.—Month of November, 1911. Population, 2,700,876. Total number of deaths from all causes 2,614, including diphtheria 47, scarlet fever 12, tuberculosis 283, typhoid fever 74. Cases reported: Diphtheria, 735 in 57 counties, scarlet fever 334 in 56 counties, typhoid fever 251 in 56 counties.

MICHIGAN.—Month of December, 1911. Population, 2,810,173. Cases of communicable diseases reported: Diphtheria 362, measles 28, scarlet fever 367, smallpox 71, typhoid fever 110, tuberculosis 212.

FOREIGN AND INSULAR.

ARABIA.

Hodeida—Cholera in Vicinity.

Consular Agent Lindemeyer reports, December 27, 1911, that an outbreak of cholera with 2 deaths had occurred at Ras-el-Ketib, a locality in the vicinity of Hodeida. A cordon had been established at Hodeida.

CUBA.

Transmissible Diseases.

The following statement of transmissible diseases in the Island of Cuba was issued by the Cuban sanitary department:

Month of December, 1911.

Diseases.	New cases.	Deaths.	Remaining under treatment.
Tuberculosis	122	198	1,788
Leprosy	6	4	350
Malaria	196	12	164
Typhoid fever	53	13	61
Diphtheria	88	17	30
Measles	59	3	36
Scarlet fever	6	.....	4
Varicella	11	.....	2
Epidemic dysentery	1	.....	.....
Tetanus in newborn	19	17	3

HAWAII.

Record of Plague Infection.

The last case of human plague at Honolulu occurred July 12, 1910.

The last plague-infected rat was found at Aiea, 9 miles from Honolulu, April 12, 1910.

A case of human plague was reported at Kapulena, Hawaii, October 28, 1911.

At Hilo the last case of human plague occurred March 23, 1910. At Honokaa, 60 miles from Hilo, a fatal case occurred April 20, 1911.

The last plague-infected rat was found at Honokaa December 18, 1911. A plague-infected rat was found at Hilo during the week ended June 10, 1911.

Honolulu—Plague-Prevention Work.

Chief Quarantine Officer Ramus reports:

Week ended Jan. 6, 1912.

Total rats and mongoose taken	377
Rats trapped	375
Mongoose trapped	2
Rats examined bacteriologically	349

Classification of rats trapped:

Mus alexandrianus	59
Mus musculus	89
Mus norvegicus	23
Mus rattus	204
Average number of traps set daily	1,720

Mosquito-Eradication Measures at Honolulu.

The following statement of the work of mosquito destruction at Honolulu was received from Passed Asst. Surg. McCoy:

Mosquito-eradication measures conducted at Honolulu from Dec. 26 to 30, 1911, both inclusive.

Inspections of—	Total inspections.	Larvæ found in.	Cleaned.	Oiled.	Drained.	Emptied.	Collected.	Filled up.	Ordered repaired.	Screened.	Stocked with fish that destroy mosquito larvæ.
Gutters:											
House	1,892	72	1,111	1,322					6		
Street	137			85	24						
Standing water	529	17		500	19			1			
Cesspools	884	15		840					4	213	
Privy vaults	850	1		764					4		
Holes and low places	1,201	80		605	6			242	2		
Catch basins	210	5		63		76					
Leaky fixtures	192			19					85		
Swamps	24	7		19							
Ponds	19			5	3						2
Troughs and tanks	268	4		7		171					1
Tubs and other receptacles	576	22				538					
Tin cans, bottles, etc	14,686	65					14,686				
Water barrels	275	20				121					
Vacant houses		9		1							
Holes in trees	141	43		31		31		110			

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports: During the week ended December 2, 1911, 51 deaths from cholera and 5 from plague were reported at Calcutta; in all Bengal, 413 cases of plague with 305 deaths; in all India, 8,802 cases of plague with 6,931 deaths. During the week ended December 9, 1911, 33 deaths from cholera and 2 from plague were reported at Calcutta; in all Bengal, 313 cases of plague with 231 deaths; in all India, 8,540 cases with 6,583 deaths.

INDO-CHINA.

Increase in Cholera.

Reports from Consul Baugh show an increase in the prevalence of cholera at Saigon during the month of December, 1911. From May 15 to November 5, 94 cases with 66 deaths were reported; from November 20 to December 3, 30 cases with 25 deaths, and from December 4 to 17, 173 cases with 144 deaths.

ITALY.

Status of Cholera.

During the week ended December 24, 1911, cholera was reported in Italy as follows: In the Province of Caltanisetta, 1 case; Province of Girgenti, 15 cases with 6 deaths in 3 localities; Province of Syracuse, 14 cases with 8 deaths in 2 localities.

MEXICO.

Smallpox.

Smallpox is reported present in epidemic form at Porfirio Diaz, State of Coahuila, Mexico. From December 16, 1911, to January 22, 1912, 26 deaths from the disease were reported. The county commissioners of Maverick County, Tex., have declared rigid quarantine against Porfirio Diaz, and persons from that town are prohibited from crossing the bridges that connect the town with Eagle Pass, Tex.

At Magdalena, State of Sonora, 78 cases of smallpox with 1 death were reported January 17. The Mexican Government is maintaining strict quarantine against Magdalena.

On January 21 smallpox was reported present at San Antonio, a locality situated opposite the town of Terlingua, Brewster County, Tex., with a total to date of 12 cases with 9 deaths.

Yellow Fever in Merida and Vicinity.

During the week ended January 6 yellow fever was reported in the Mexican Republic as follows: At Temax 1 case, at Espita 1, and at Maxcanu 1, these localities being situated at a distance of 84, 174, and 58 kilometers, respectively, from Merida, and at the city of Merida during the same period 1 death which occurred January 4.

RUSSIA.

Odessa—Typhus Fever.

Consul Grout reports: During the week ended December 23, 1911, an outbreak of typhus fever occurred at Odessa, with a total of about 100 known cases. The outbreak occurred at several night rests and at police stations. The disease appears to be highly contagious in form though not malignant. Measures have been taken to prevent spread.

ZANZIBAR.

Zanzibar—Examination of Rats.

Consul Weddell reports: During the two weeks ended December 14, 1911, 1,539 rats were examined for plague infection. No plague-infected rat was found.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED FEB. 2, 1912.

[These tables include cases and deaths recorded in reports received by the Surgeon General, Public Health and Marine-Hospital Service, from American consuls through the Department of State and from other sources.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Ras-el-Ketib	Dec. 27		2	In the military hospital.
India:				
Rangoon	Nov. 1-30	4	4	
Indo-China:				
Saigon	Dec. 4-17	173	144	
Java:				
Batavia	Dec. 12-18	4	2	
Turkey in Asia:				
Jiddah	Dec. 11-24	246	264	Total Dec. 2-24: Cases, 323; deaths, 310.

YELLOW FEVER.

Brazil:				
Manaos	Dec. 24-Jan. 6		3	
Mexico:				
Espita	Dec. 31-Jan. 6	1		
Maxcanu	do	1		
Merida	do	3		
Temax	do	1		

PLAGUE.

Brazil:				
Para	Jan. 1-6	3	2	
Pernambuco	Oct. 16-Jan. 16		4	
Rio de Janeiro	Dec. 10-23	3	2	
India:				
Bombay	do	19	16	
Karachi	Dec. 17-23	1	1	
Rangoon	Nov. 1-30	12	12	
Indo-China:				
Saigon	Dec. 4-17	2	2	
Java:				
Pasoeroean Residency	Dec. 12-18	10	3	
Peru:				
Salaverry	Dec. 25-Jan. 9			Present in vicinity.
Straits Settlements:				
Singapore	Dec. 3-9	5	4	

SMALLPOX.

Argentina:				
Rosario	Nov. 1-30		6	
Austria-Hungary:				
Galicia	Dec. 24-30	1		
Brazil:				
Para	Dec. 31-Jan. 6	1	1	
Pernambuco	Dec. 1-15		74	
Rio de Janeiro	Dec. 10-23	4		
Canada:				
Montreal	Jan. 14-20	1		
Ottawa	Jan. 1-13	9		
China:				
Canton	Dec. 1-16	10	1	
Shanghai	Dec. 11-17		1	
France:				
Paris	Jan. 1-6	10		
Germany	Dec. 31-Jan. 6	1		
India:				
Bombay	Dec. 10-23	15	9	
Rangoon	Nov. 1-30	11	3	
Indo-China:				
Saigon	Dec. 4-10	3		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received during Week ended Feb. 2, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Italy:				
Leghorn	Jan. 1–6	15		
Java:				
Batavia	Dec. 12–18	2		
Malta	Jan. 1–6		1	
Mexico:				
Chihuahua	Dec. 19–Jan. 14	32	13	
Juarez	Jan. 7–20	4	2	
Magdalena	Jan. 9–20			80 cases in quarantine, 11 in city.
Porfirio Diaz	Jan. 7–22	5	6	
Tampico	Dec. 21–31		1	
Portugal:				
Lisbon	Jan. 1–6	4		
Russia:				
Moscow	Dec. 10–23	5	2	
St. Petersburg	Dec. 17–30	54	2	
Spain:				
Madrid	Dec. 1–31		1	
Seville	Dec. 1–31		5	
Valencia	Jan. 1–6	8	2	
Straits Settlements:				
Singapore	Dec. 3–9	2	1	
Teneriffe:				
Santa Cruz	Dec. 15–30		7	
Turkey in Asia:				
Beirut	Dec. 24–30	10	3	
Turkey in Europe:				
Constantinople	Jan. 1–7		5	

REPORTS RECEIVED FROM DEC. 30, 1911, TO JAN. 26, 1912.

[For reports received from July 1, 1911, to Dec. 29, 1911, see PUBLIC HEALTH REPORTS for Dec. 29, 1911. In accordance with custom, the tables of epidemic diseases are terminated semiannually and new tables begun.]

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Coastland—				
Capodistria	Dec. 14–24	2	2	
Croatia and Slavonia				Total Oct. 22–Dec. 16: Cases, 36.
Sriem	Oct. 22–Dec. 16	36		
Hungary				Total Nov. 19–Dec. 23; Cases, 37.
Backs-Bodog	Dec. 10–16	9		
Jasz-Nagykun-Szolnok	Dec. 3–23	11		
Torontal	Nov. 19–Dec. 16	17	2	
Bulgaria:				
Burgas	Nov. 22–23	2	2	
Varna	Nov. 6	1		
Dutch East Indies				Total Sept. 24–Oct. 9: Cases, 322; deaths, 256.
Batavia	Nov. 12–Dec. 2	14	5	
India:				
Calcutta	Nov. 5–Dec. 9		204	
Madras	Nov. 26–Dec. 16	296	231	Madras Presidency, Dec. 1–31: Cases, 3,879; deaths, 2,412.
Rangoon	Oct. 1–31	2	1	
Indo-China:				
Saigon	Nov. 20–Dec. 3	30	25	
Italy				Total June 8–Dec. 24: Cases, 15,979; deaths, 6,021.
Provinces—				
Caltanisetta	Nov. 26–Dec. 23	8	7	
Girgenti	do	100	56	
Messina	Nov. 26–Dec. 2	3	2	
Syracuse	Nov. 26–Dec. 23	15	9	
Malta	Nov. 19–Dec. 10	6	6	Dec. 23 declared free from cholera.
Montenegro	Nov. 4–11	9	5	
Persia:				
Adaban	Nov. 4	1	1	
Philippine Islands:				
Province—				
Union	Oct. 29–Dec. 4	5	5	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 26, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Roumania:				
Districts—				
Braila	Nov. 24–Dec. 13	1		Nov. 6–23: 1 death.
Doliju	Nov. 6–Dec. 13	4	4	
Prahova	Nov. 6–23	1	1	
Talomita	do	2		
Tulcea	Nov. 24–Dec. 13	1	1	
Siam:				
Bangkok	Nov. 5–Dec. 2		149	
Straits Settlements:				
Singapore	Nov. 5–18	3	3	
Tripoli:				
Tripoli	Oct. 25–Nov. 10			150 to 200 among the civil population and 25 to 30 among the military, Dec. 21, 1911.
Tunis Regency				Total Nov. 25–Dec. 21: Cases, 325; deaths, 371.
Beja district	Nov. 25–Dec. 7	30	35	
Bizerta district	Nov. 25–Dec. 5	9	15	
Turkey in Asia:				
Adana	Dec. 2–6	16	5	
Amara	Oct. 15	1	1	
Basra	Oct. 22–28	14	10	
Erzeroum, vilayet	Sept. 11–16	50	28	
Erzeroum	do	11	8	
Kaifa	Dec. 8			Present.
Kerbelah	Oct. 20–28	10	10	
Kharput	Nov. 19–Dec. 9	29	22	
Jiddah	Dec. 2–10	77	46	
Mekka	Dec. 4–24	905	879	Sept. 1–Dec. 24: Cases, 1,648; deaths, 1,565.
Mersina	Dec. 1–7	2	1	
Osmania	Dec. 1–6	2	4	
Sinope	Dec. 7	2	1	
Trebizond and vicinity	Sept. 18–23	64	34	
Turkey in Europe:				
Constantinople	Oct. 24–30	5	1	
Saloniki, vilayet	Nov. 6–19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Manaos	Nov. 19–Dec. 23		5	
Para	Dec. 9–16	1	1	
Ecuador:				
Bucay	Nov. 16–30	2		
Duran	Dec. 1–15	3	2	
Guayaquil	Nov. 16–Dec. 15	20	11	
Milagro	do	8	1	
Mexico:				
Merida	Nov. 12–Dec. 30	5	6	Total Aug. 1–Jan. 6: Cases, 53; deaths, 26.
Venezuela:				
Caracas	Nov. 16–Dec. 7	11		
Sabana Grande	Dec. 12			Epidemic.
At Sea	Dec. 17–23	1	1	On a vessel en route from Manaos to Para.

PLAGUE.

Algeria:				
Philippeville	Oct. 19–Nov. 11	8	2	Including 5 cases, p. 2096. Vol. XXVI.
Brazil:				
Bahia	Sept. 1–30		2	
Para	Dec. 24–30	5	1	
Rio de Janeiro	Nov. 12–Dec. 2	3	1	
British East Africa:				
Kismayu	Oct. 15–25	2		1 case pneumonic.
Chile:				
Iquique	Nov. 12–Dec. 23	9	4	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 26, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Amoy	Jan. 15			Present.
Hongkong	Dec. 9–16	1	1	
Dutch East Indies:				
Java				Total Mar. 1–Dec. 9: Cases, 1,777; deaths, 1,262.
Pasoeroean Residency, Malang District.	Nov. 12–Dec. 9	31	16	
Socrobaya	Oct. 17–27	2		
Ecuador:				
Guayaquil	Nov. 16–Dec. 15	102	42	
Egypt:				
Provinces—				
Assiout	Oct. 14–Dec. 27	38	36	
Behera	Oct. 15–Dec. 26	3	1	
Galioubeh	Oct. 5–Dec. 26	1		
Kena	Nov. 20–Dec. 13	3	3	
Minieh	Dec. 13	1		
India:				
Bombay	Nov. 19–Dec. 9	25	23	
Calcutta	Nov. 11–Dec. 9		30	
Karachi	Nov. 26–Dec. 16	8	7	
Rangoon	Oct. 1–31	26	27	
Bombay Presidency and Sind.	Oct. 29–Dec. 9	27,376	19,684	
Madras Presidency	do	3,589	2,886	
Bengal	do	1,537	1,136	
United Provinces	do	6,139	4,975	
Punjab	do	820	579	
Burma	do	90	84	
Central Provinces	do	3,803	2,838	
Coorg	do	45	22	
Mysore State	do	3,600	2,787	
Hyderabad State	do	6,012	5,651	
Central India	do	3,403	2,825	
Rajputana and Ajmere Merwara.	do	302	246	
North West Province	do	1	1	Total for India, Oct. 29–Dec. 9; Cases, 56,717; deaths, 43,714.
Indo-China:				
Saigon	Nov. 13–Dec. 3	10	3	
Mauritius	Nov. 3–23	13	8	
Natal:				
Durban	Jan. 17		1	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1		On s. s. Montrose from Shanghai.
Russian Empire:				
Astrakhan, government	Nov. 28–Dec. 20	87	84	
Siam:				
Bangkok	Nov. 4–Dec. 2	5	5	
Straits Settlements:				
Singapore	Nov. 5–Dec. 2	5	5	

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Nov. 1–30		1	
Arabia:				
Aden	Nov. 28–Dec. 18	1	1	
Argentina:				
Buenos Aires	Oct. 1–31		6	
Rosario	do		25	
Austria-Hungary:				
Trieste	Dec. 3–9	1		From s. s. Baron Call from Beirut.
Brazil:				
Bahia	July 1–31		1	
Pernambuco	Oct. 16–Nov. 30		246	Report for Oct. 1–15 not received.
Rio de Janeiro	Nov. 26–Dec. 2	1	1	
Canada:				
British Columbia—				
Nelson	Dec. 24–30	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 26, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Ontario—				
Kingston	Dec. 19–23	1		
Ottawa	Dec. 10–23	12		
Sarnia	Oct. 17–Dec. 31	42		
Toronto	Jan. 6–13		1	
Quebec—				
Montreal	Dec. 17–23	2		
Quebec	Dec. 10–Jan. 13	137	1	
Ceylon:				
Colombo	Nov. 12–18	1		
Chile:				
Iquique	Dec. 10–16	2		
Talcahuano	Nov. 26–Dec. 23	14	3	
Valparaiso	Dec. 3–9	43		
China:				
Canton	Nov. 11–25	15	3	
Chungking	Nov. 18–25			Present.
Hongkong	Nov. 12–Dec. 16	43	32	
Nanking	Dec. 10–16			Do.
Cuba:				
Habana	Dec. 19	1		From German s. s. Frankenwald from Spain and Canary Islands.
Egypt:				
Cairo	Dec. 10–16	1		
France:				
Marseille	Nov. 1–30		1	
Paris	Dec. 3–16	26	2	
India:				
Bombay	Nov. 19–Dec. 9	25	13	
Calcutta	do		16	
Madras	Nov. 26–Dec. 9	18	10	
Rangoon	Oct. 1–31	18	6	
Indo-China:				
Saigon	Nov. 13–Dec. 3	15		
Italy:				
Genoa	Dec. 1–15	6	1	
Leghorn	Dec. 16–30	31	1	
Naples	Dec. 3–30	31	1	
Palermo	Nov. 26–Dec. 30	1,263	412	
Japan:				
Arima-Mura	Nov. 12–18	6	1	11 miles east from Kobe.
Kanagawa, ken	Dec. 17–23	1		
Java:				
Batavia	Nov. 12–Dec. 9	10	3	
Malta	Dec. 24–30	2		
Mexico:				
Aguascalientes	Dec. 18–Jan. 7		2	
Chihuahua	Nov. 20–Dec. 26	30	6	
Coahuila, State	Oct. 1–30		16	
Juarez	Dec. 19–23	1		
Magdalena	Dec. 23–Jan. 20		30	Dec. 23–Jan. 8, 99 cases.
Mazatlan	Dec. 11–Jan. 2		4	
Mexico	Nov. 26–Dec. 16	16	10	
Monterey	Dec. 11–24		2	
Porfirio	Dec. 3–Jan. 6	20	20	
Sandoval	Dec. 16			Present.
San Ignacio	Jan. 8	3		
Santa Ana	do	4		
San Luis Potosi	Nov. 12–Dec. 2	3		
Tampico	Dec. 1–20	4	4	
Tapachula	Nov. 1–22		13	
Portugal:				
Lisbon	Dec. 9–30	15		
Russia:				
Libau	Dec. 17–23	1		
Moscow	Nov. 19–Dec. 9	7	2	
Odessa	Nov. 26–Dec. 23	7	1	
Reval	Nov. 1–30	1		
St. Petersburg	Nov. 19–Dec. 16	30	7	
Warsaw	Nov. 5–Dec. 2		185	
Spain:				
Cadiz	Nov. 1–30		5	
Malaga	do		45	
Valencia	Dec. 3–30	37	4	
Straits Settlements:				
Singapore	Nov. 19–Dec. 2	5		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.

Reports Received from Dec. 30, 1911, to Jan. 26, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Switzerland:				
Zurich, Canton	Dec. 3–23	6		
Teneriffe:				
Santa Cruz	do		20	
Turkey in Asia:				
Beirut	do	30	10	
Turkey in Europe:				
Constantinople	Dec. 4–31		21	
Uruguay:				
Montevideo	Sept. 1–Oct. 31	19	3	
Venezuela:				
Caracas	Nov. 1–Dec. 31	11		
Zanzibar:				
Zanzibar	Oct. 28–Dec. 15	3	2	

MORTALITY.

WEEKLY MORTALITY TABLE, FOREIGN AND INSULAR CITIES.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from—									
				Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Aberdeen	Jan. 6	163,084	68								1			
Aguascalientes	Jan. 14	40,000	46	2					2					
Amsterdam	Jan. 13	580,365	122	19							1		1	7
Antwerp	Dec. 30	327,668	69	7							7		1	
Assuncion	Dec. 16	75,000	30	2						1				
Athens	Dec. 31	25,010	74	17										
Basel	do	136,000	37	3								1		1
Do	Jan. 6		23	7								1		
Batavia	Dec. 18	217,630				2								
Belgrade	Dec. 30	90,050	32								1			
Beirut	do	80,000	20	2				3	4					
Belfast	Jan. 6	385,492	129	19								3		2
Berlin	Dec. 30	2,083,197	565	67						1	9	19	4	5
Birmingham	Jan. 13	482,512	254								1	2		12
Bombay	Dec. 16	977,822	637	42	5			4					1	
Do	Dec. 23		726	48	11			5					1	
Bradford	do	288,723	75	2						1	2	1		1
Do	Dec. 30		85	3							1	2		
Do	Jan. 6	289,618	97	9						1		1	1	
Bristol	Jan. 13	359,400	104	10								1		1
Brussels	Jan. 6	739,684	187	20								3	1	1
Canton	Dec. 1–16	1,000,000	230	30				1		5		4		
Catania	Jan. 12	207,000	99	6					2		4		2	
Chihuahua	Dec. 24	39,000	20	1				2						
Do	Dec. 31		18	1				2						
Do	Jan. 7		21	3				4						
Do	Jan. 14		30	2				5						
Christiania	Dec. 23	245,000	66	11							1	2	2	
Do	Jan. 6		56	12								2		1
Constantinople	Jan. 7	1,000,000	266	29				5		2	6	2	4	
Edinburgh	Jan. 6	321,000	100	8						1		1	2	
Ghent	do	165,965	36	5						1		1		
Glasgow	Jan. 12	785,600	261								3	7	13	3
Hamburg	Jan. 6	953,079	236	23							1	19	3	
Havre	do	136,159	61	8								1	1	
Hongkong	Dec. 16	336,488			1			12		1		1		
Hull	Jan. 6	282,987	82							1		1		
Juarez	Jan. 13	6,500	10					1						
Do	Jan. 20		16	2				1						
Karachi	Dec. 23	148,000	81		1									
Kingston	Jan. 6	59,584								1				

MORTALITY—Continued.

Weekly mortality table, foreign and insular cities—Continued.

Cities.	Week ended—	Estimated population.	Total deaths from all causes.	Deaths from— Tuberculosis.	Plague.	Cholera.	Yellow fever.	Smallpox.	Typhus fever.	Typhoid fever.	Scarlet fever.	Diphtheria.	Measles.	Whooping cough.
Kobe	Dec. 24	404,851	140	....	....	....	....	....	....	....	....	1	....	....
Do	Dec. 31	.....	159	....	....	....	....	....	....	1	....	1	....	....
Leeds	Jan. 13	445,568	124	11	....	....	....	....	....	1	....	5	1	2
Leghorn	Jan. 6	104,000	31	....	....	....	....	....	....	....	....	....	....	....
Leith	..do....	81,000	28	3	....	....	....	....	....	....	1	....	1	....
Liverpool	Jan. 16	752,055	244	22	....	....	....	....	....	....	....	6	8	2
London	Jan. 6	7,340,125	2,029	....	....	....	....	....	....	6	6	12	21	19
Lyon	Dec. 23	523,796	168	20	....	....	....	....	....	1	....	1	1	....
Do	Dec. 30	.....	146	27	....	....	....	....	....	....	....	1	....	....
Do	Jan. 6	.....	168	31	....	....	....	....	....	....	1	1	1	....
Manaos	Dec. 30	52,000	39	3	....	....	....	....	2	....	....	....	....	....
Do	Jan. 6	.....	45	1	....	....	....	....	1	....	....	....	....	....
Manchester	Jan. 6	631,533	204	....	....	....	....	....	....	....	....	1	8	2
Monterey	Jan. 14	160,000	69	3	....	....	....	....	....	....	1	....	....	....
Montreal	Jan. 20	466,197	184	24	....	....	....	....	....	....	3	1	1	....
Moscow	Dec. 16	1,500,000	717	91	....	....	....	1	2	2	14	10	47	4
Do	Dec. 23	.....	807	85	....	....	....	1	1	5	25	16	27	12
Nagoya	Dec. 16	418,627	130	....	....	....	....	....	....	2	....	1	....	....
Do	Dec. 23	419,434	117	....	....	....	....	....	....	1	....	....	....	....
Nantes	Jan. 7	161,908	54	13	....	....	....	....	....	1	....	....	....	....
Newcastle-on-Tyne	Jan. 6	267,261	85	5	....	....	....	....	....	....	1	2	....	1
Ottawa	Jan. 13	90,000	26	....	....	....	....	....	....	....	....	1	....	....
Para	Jan. 6	185,000	47	5	2	....	....	1	....	....	....	....	....	....
Paris	..do....	2,847,000	914	189	....	....	....	....	....	7	16	4	14	1
Patras	Jan. 7	40,000	12	2	....	....	....	....	....	1	....	....	....	....
Penang	Dec. 16	101,427	39	13	....	....	....	....	....	2	....	....	....	....
Porfirio Diaz	Jan. 13	16,000	9	....	....	....	....	5	....	....	....	....	....	....
Do	Jan. 22	.....	.....	....	....	....	....	1	....	....	....	....	....	....
Port Elizabeth	Dec. 16	30,692	13	1	....	....	....	....	....	1	....	....	....	....
Quebec	Jan. 20	78,200	.....	3	....	....	....	....	....	....	....	....	....	....
Rio de Janeiro	Dec. 16	912,169	360	82	1	....	....	....	....	....	....	2	3	6
Do	Dec. 23	.....	399	79	1	....	....	....	....	....	....	....	4	6
San Luis Potosi	Dec. 9	82,964	64	2	....	....	....	....	1	....	....	....	....	....
Santa Cruz de Teneriffe	Dec. 30	46,000	24	1	....	....	....	7	....	1	....	....	....	....
Shanghai	Dec. 24	492,000	140	13	....	....	....	....	....	....	1	1	....	....
Saigon	Dec. 10	220,000	57	....	1	56	....	....	....	....	....	....	....	....
Do	Dec. 17	.....	89	....	1	88	....	....	....	....	....	....	....	....
St. Petersburg	Dec. 23	1,907,708	738	133	....	....	....	2	1	29	16	12	19	4
Do	Dec. 30	.....	693	130	....	....	....	....	....	12	15	11	24	8
Singapore	Dec. 9	303,328	256	26	4	....	....	1	....	1	....	1	....	....
Stockholm	Dec. 23	343,832	76	9	....	....	....	....	....	....	....	....	....	1
Do	Dec. 30	.....	70	7	....	....	....	....	....	....	1	1	1	2
Stoke on Trent	Jan. 6	327,153	91	10	....	....	....	....	....	1	1	2	1	....
Sydney	Jan. 20	16,000	6	....	....	....	....	....	....	....	....	1	....	....
Tampico	Dec. 31	23,452	50	4	....	....	....	1	....	1	....	....	....	2
Do	Jan. 10	.....	38	5	....	....	....	....	....	....	....	....	1	....
Tarragona	Jan. 6	23,150	8	1	....	....	....	....	....	....	....	....	1	....
Toronto	Jan. 20	392,000	146	12	....	....	....	....	....	2	3	6	1	1
Turin	Jan. 7	401,555	139	21	....	....	....	....	....	....	....	3	1	....
Valencia	Jan. 6	240,000	111	11	....	....	....	2	....	1	1	1	....	....
Vigo	Dec. 23	41,500	16	3	....	....	....	....	....	....	....	1	....	....
Do	Dec. 30	.....	8	1	....	....	....	....	....	....	....	....	....	....
Do	Jan. 6	.....	10	3	....	....	....	....	....	....	....	....	....	....
Vladivostok	Nov. 28	84,578	10	....	....	....	....	....	....	....	1	....	....	1
Do	Dec. 5	.....	9	1	....	....	....	....	....	3	5	1	....	....
Do	Dec. 13	.....	8	1	....	....	....	....	....	....	5	....	....	....
Winnipeg	Jan. 13	151,958	28	....	....	....	....	....	....	....	1	1	....	....
Windsor, Ontario	Jan. 20	17,819	15	2	....	....	....	....	....	1	....	....	....	....

MORTALITY—FOREIGN AND INSULAR—COUNTRIES AND CITIES (Untabulated).

BRAZIL—*Pernambuco.*—Month of December, 1911. Population 225,000. Total number of deaths from all causes 690, including diphtheria 1, measles 1, plague 1, smallpox 141, tuberculosis 113, typhoid fever 8.

FRANCE—*Roubaix.*—Month of December, 1911. Population, 122,-154. Total number of deaths from all causes 156, including diphtheria 1, scarlet fever 1, tuberculosis 22, typhoid fever 1.

St. Etienne.—Two weeks ended December 31, 1911. Population, 150,000. Total number of deaths from all causes 118, including diphtheria 1, scarlet fever 1, tuberculosis 21, typhoid fever 1.

GREAT BRITAIN.—Week ended December 30, 1911.

England and Wales.—The deaths registered in 77 great towns correspond to an annual rate of 15.8 per 1,000 of the population, which is estimated at 16,157,797.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 18 per 1,000 of the population, which is estimated at 1,149,495. The lowest rate was recorded at Waterford, viz, 7.6, and the highest at Newtownards, viz, 22.9, per 1,000.

Scotland.—The deaths registered in 8 principal towns correspond to an annual rate of 17.3 per 1,000 of the population, which is estimated at 1,710,291. The lowest rate was recorded at Leith, viz, 9.1, and the highest at Aberdeen, viz, 24.9, per 1,000. The total number of deaths from all causes was 568, including diphtheria 17, measles 26, scarlet fever 4, typhoid fever 2.

ITALY—*Florence.*—Month of November, 1911. Population, 232,-860. Total number of deaths from all causes 307, including measles 1, tuberculosis 42, typhoid fever 12.

Genoa.—Two weeks ended December 31, 1911. Population, 272,077. Total number of deaths from all causes 273, including tuberculosis 26, typhoid fever 3.

JAMAICA—*Kingston.*—Month of December, 1911. Population, 52,000. Total number of deaths from all causes 154, including tuberculosis 10, typhoid fever 4.

RUSSIA—*Libau.*—Four weeks ended December 13, 1911. Population, 90,000. Total number of deaths from all causes not reported. The deaths include diphtheria 5, scarlet fever 8, typhoid fever 2.

SIAM—*Bangkok.*—Four weeks ended December 2, 1911. Population, 600,000. Total number of deaths from all causes not reported. The deaths include cholera 149, plague 2, smallpox 185.

SPAIN—*Almeria.*—Month of December, 1911. Population, 50,910. Total number of deaths from all causes 110, including diphtheria 1, tuberculosis 11, typhoid fever 2.

Madrid.—Month of December, 1911. Population, 584,117. Total number of deaths from all causes 1,225, including diphtheria 22, measles 10, scarlet fever 1, smallpox 1, tuberculosis 153.

Malaga.—Month of November, 1911. Population, 133,000. Total number of deaths from all causes 345, including diphtheria 4, measles 4, smallpox 45, tuberculosis 21.

Seville.—Month of December, 1911. Population, 158,235. Total number of deaths from all causes 411, including diphtheria 8, smallpox 5, tuberculosis 57.

TAHITI.—Two weeks ended December 22, 1911. Population, 4,000. Total number of deaths from all causes 3. No contagious disease.

VENEZUELA—*La Guaira.*—Two weeks ended December 31, 1911. Population, 10,000. Total number of deaths from all causes 20, including tuberculosis 3.

By authority of the Secretary of the Treasury.

RUPERT BLUE,
Surgeon General,
United States Public Health and Marine-Hospital Service.