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LEPROSY IN THE UNITED STATES.

In order to ascertain the number of lepers in the United States in so far as the cases were a matter of record, a letter was written to the health authorities of each of the several States, Hawaii, Porto Rico, and the Philippine Islands asking for a statement of the number of new cases reported during the calendar year 1911 and of the number present January 1, 1912. A tabular statement of the data thus obtained follows on page 942.

There was reported as being present January 1, 1912, a total of 146 cases in the continental United States. Of these, 40 were new cases coming first under official recognition during the year 1911. This number, however, necessarily represents only a part of those present, as in many States the disease is not notifiable and in others the requirement of notification is for various reasons difficult of enforcement.

Leprosy has been specifically made a notifiable disease in the following 18 States and the District of Columbia: Alabama, California, Connecticut, District of Columbia, Florida, Idaho, Illinois, Indiana, Iowa, Massachusetts, Nebraska, New Jersey, New York, Oregon, Pennsylvania, South Carolina, Utah, Washington, Wisconsin. It is also notifiable in Hawaii, Porto Rico, and the Philippine Islands.

In Michigan a regulation of the State board of health specifies that cases of leprosy shall be reported for statistical purposes. In certain other States the law requires that cases of all infectious or contagious diseases shall be reported, and among these leprosy would naturally in most cases be included. However, in the absence of a statement of the diseases that shall be construed to be infectious or contagious, it would appear to be left to the personal opinion of each practicing physician as to which diseases came properly under such a classification, and were, therefore, notifiable. Under these conditions the reports are likely to be incomplete.

In 1901 a commission composed of officers of the Marine-Hospital Service made a careful study of the prevalence of leprosy in the United States. They attempted to locate all cases possible, and to do this carried on an extensive correspondence with State and local health authorities and practicing physicians, and in addition a member of the commission visited certain localities to verify the accuracy of reports. A total of 278 cases was found at that time, although the commission believed that the number present was greater and that there were undoubtedly cases which they had been unable to locate.

Of the 278 cases reported by the commission, 145 were born in the United States, 120 in foreign countries, and the place of birth of 13 was unknown. Of the total number, 186 were reported as having probably contracted the disease in the United States. Of the 278 cases, only 72 were isolated and provided for by the States or cities in which they were domiciled.

Although the number of cases of leprosy reported by the State authorities as present January 1, 1912, was only 146, whereas the commission above referred to found 278 in 1901, it can not properly be inferred that there is a lessened prevalence of the disease. The 146 cases reported as present the first of this year are, with one or two exceptions, isolated and under the control of State or local authorities. These 146 cases are therefore probably comparable with the 72 reported in 1901 as isolated and provided for by States or cities.

During the year 1911 cases of leprosy were diagnosed in 18 States, and January 1, 1912, cases were officially known to be present in 17 States. Three States, namely, California, Louisiana, and Massachusetts, have leprosaria where lepers are isolated and cared for. In the other States cases of leprosy are provided for in various ways and with varying degrees of isolation.

In Porto Rico there were 28 known lepers January 1, 1912. In Hawaii and the Philippines the disease is present to such an extent that its control constitutes one of the important functions of the health authorities.

LEPROSY IN THE UNITED STATES AND INSULAR POSSESSIONS.

Cases Reported During the Calendar Year 1911 and Cases Present Jan. 1, 1912.

	New cases reported during calendar year 1911.	Cases present Jan. 1, 1912.	Remarks.
STATES.			
Alabama	0	0	
Arizona	0	1	Case isolated at Globe 2 or 3 years.
Arkansas	.....	.....	No report.
California	12	23	
Colorado	0	0	
Connecticut	1	1	
Delaware	0	0	
District of Columbia	1	0	
Florida	2	2	
Georgia	0	0	
Idaho	1	0	Case left State.
Illinois	0	0	
Indiana	1	1	Patient died Mar. 3, 1912.
Iowa	0	0	
Kansas	2	1	1 case Mexican laborer; other resident Ellis County.
Kentucky	0	0	
Louisiana	(?)	71	
Maine	0	0	
Maryland	0	0	
Massachusetts	2	13	Of 13 cases mentioned, 9 are men and 4 women.
Michigan	1	1	
Minnesota	3	18	
Mississippi	0	0	
Missouri	.....	.....	No report.
Montana	0	0	
Nebraska	0	0	
Nevada	0	0	
New Hampshire	0	0	
New Jersey	0	0	

LEPROSY IN THE UNITED STATES AND INSULAR POSSESSIONS—Con.

Cases Reported During the Calendar Year 1911 and Cases Present Jan. 1, 1912.

	New cases reported during calendar year 1911.	Cases present Jan. 1, 1912.	Remarks.
STATES—continued.			
New Mexico	0	0	
New York	5	5	These cases were reported in New York City.
North Carolina	0	0	
North Dakota	1	1	
Ohio	0	0	
Oklahoma	0	0	
Oregon	0	0	
Pennsylvania	3	3	
Rhode Island	2	1	
South Carolina	0	0	
South Dakota	0	0	
Tennessee	0	0	
Texas	0	0	
Utah	1	1	
Vermont	0	0	
Virginia	0	0	
Washington	1	2	
West Virginia	0	0	
Wisconsin	1	1	Norwegian woman; origin unknown.
Wyoming	0	0	
Total	40	146	
HAWAII AND THE INSULAR POSSESSIONS.			
Hawaii	65	696	
Philippine Islands	1,142	2,754	
Porto Rico	10	28	1 case died Jan. 16, 1912.
Total	1,217	3,478	

CONNECTICUT.

Dr. Joseph H. Townsend, secretary of the State board of health, reports February 13, 1912, as follows regarding the case occurring in Connecticut: The one case reported during the calendar year 1911 is, so far as I know, the only case that has ever been reported in the State. This case is in a man, a Lithuanian Jew, who has been in this country about 20 years. Fifteen years ago he had frostbites on both feet which did not heal readily, and for the past 10 years he has been an invalid confined to his home, his case having previously been diagnosed as syphilis.

DISTRICT OF COLUMBIA.

Dr. William C. Woodward, health officer of the District of Columbia, reported February 13, 1912, regarding the case occurring in the District as follows: The case reported January 24, 1911, was in a Filipino, age 20 years, who had been brought to the United States by a naval officer as a domestic. He was returned by the health department September 9, 1911, to the Philippine Islands, on board a transport.

INDIANA.

Dr. J. N. Hurty, State health commissioner, reported February 12, 1912, regarding the case of leprosy in Indiana as follows:

One case of leprosy was reported in Indianapolis December 27, 1911. The patient, female, colored, was born in Hawkins County, Tenn. After her thirteenth year she lived in Knoxville until 1908, when she removed to Indianapolis. She never had been farther south than Knoxville. She is the mother of six children, two are living, both grown to adult life. Previous to being attacked she had always been well. In November, 1910, she noticed some blotches on face, arms, and legs, and in March, 1911, consulted a physician, who diagnosed her trouble as lichen planus. Nodules first appeared on face, arms, and ears in October, 1911.[1] (The patient died in March, 1912.) One other case of leprosy was reported in this State about eight years ago. The case we now have we presume would be called sporadic, for we can not in the least degree trace the time and place of infection.

MICHIGAN.

T. B. McClintic, passed assistant surgeon, Public Health and Marine-Hospital Service, reported in June, 1910, regarding the case of leprosy noted in the table as present in Michigan as follows:

The case was located at Calumet, Mich. Name, M. J.; born in Alten, Norway, 38 years ago; father, two sisters, and two brothers all living and apparently in good health; one brother was recently killed in a railroad accident; his mother died of leprosy in Norway on May 13 of this year after an illness of approximately four years. M. J. came to this country from Norway on July 20, 1900, and settled in Calumet. Since his arrival in this country he has not returned to Norway, nor has he seen his mother. He worked in the copper mines in Calumet and while so engaged during the spring of 1904 the first symptoms of the disease made their appearance.

It first appeared in his nose, for the relief of which he had an operation performed. His nasal passages had become occluded and the operation temporarily relieved this. During the summer of the same year (1904) he went to Alaska under contract with the United States Government to herd reindeer, and while there, during the following fall, the trouble with his nose returned and the disease began to manifest itself on his face and hands.

He stated that his face and hands felt as though they had been slightly sunburned.

At the expiration of his one year's contract with the Government in Alaska he returned to Calumet and engaged in mining and carpentering. Since his return he has had exacerbations and remissions of the disease until now he presents a typical picture of a well-advanced case of tubercular leprosy. His hands, face, and feet are simply one mass of tubercles. Scrapings from these tubercles and from the nasal mucous membrane obtained showed microscopically enormous numbers of lepræ bacilli.

The patient and his family are to be isolated. No other cases were found.[2]

[1] See also Public Health Reports Jan. 26, 1912, p. 128.
[2] Two other cases have been reported in Michigan since Jan. 1, 1912.

MINNESOTA.

Dr. H. M. Bracken, secretary State board of health, reports, February 14, 1912, as follows:

Two of the three cases reported to us last year were in persons American born. One, a woman, had a father and a brother die of leprosy in this country, the brother also American born. The other, a boy, had a leprous mother who died in this country.

Of the 18 cases of leprosy in this State now, 6 are in persons American born. Of these six 1 is a Canadian, the other 5 were born in Minnesota.

The source of origin in the Canadian case is not known, but the origin of all of the other 17 cases was in the immediate family of the leper.

We have no record of leprosy occurring outside of the family of a leper in Minnesota, and we know of many cases where, with a leper in the family, no other cases of leprosy appear. These have been cases where the lepers have been carefully isolated in their own homes.

PHILIPPINE ISLANDS.

Victor G. Heiser, passed assistant surgeon, Public Health and Marine-Hospital Service, and director of health of the Philippine Islands, reports March 23, 1912, as follows:

1. The number of cases of leprosy reported in the Philippines during the calendar year 1911 was 3,339. This includes 2,172 remaining at the Culion leper colony January 1, 1911, and 25 in the Moro Province, not taken to Culion.

2. The number of cases of leprosy present in the Philippines January 1, 1912, was 2,754.

3. The number of cases of leprosy reported from January 1 to March 23, 1912, was 135.

4. In round numbers, there have been collected in the Philippine Islands and transferred to the Culion leper colony 6,000 lepers. Of this number, in round numbers, 3,000 came from the island of Cebu. This island has a population of approximately 700,000, and as the total population of the Philippine Islands is approximately 7,000,000, it will be noted that although it has only one-tenth of the population of the entire islands, it has furnished approximately 50 per cent of the lepers up to date. On this island many instances have come to light which indicate that leprosy is a so-called "house disease." The bureau of health is now collecting statistics, and already has a number of instances on hand in which cases of leprosy have developed year after year after the first leper was taken from a house.

UTAH.

Dr. T. B. Beatty, secretary of the State board of health, reported March 11, 1912, regarding the case of leprosy occurring in Utah as follows: The State board of health received a report of one case of leprosy during the year 1911. The case in question was reported from Uintah County, where the patient still resides. He is described as a man aged 25 years and a native of the Samoan Islands; has resided in Utah five years, and is a homesteader on land which was

formerly a part of the Uintah Reservation. The local health officer is under instructions to enforce strict isolation, not permitting him to leave his farm.

The only additional case of leprosy that has been discovered in Utah in recent years was in the person of a native of Greece, who had the macular form of the disease, and was reported in 1910. This patient escaped from the authorities and returned to Greece after having been under observation for a short period.

TRANSPORTATION OF LEPERS IN INTERSTATE TRAFFIC.

AMENDMENT TO INTERSTATE QUARANTINE REGULATIONS.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, May 15, 1912.

To medical officers of the Public Health and Marine-Hospital Service, State and local health authorities, and others concerned:

The following amendment is hereby made to the Interstate Quarantine Regulations promulgated by this department September 27, 1894, and amended August 17, 1905, and June 24, 1909, said amendment and regulations being in accordance with section 3, act of Congress approved February 15, 1893.

Article 3, General Regulations, is hereby amended by the addition of the following paragraphs:

Paragraph 9. Common carriers shall not, under authority of paragraph 8, accept for transportation nor transport in interstate traffic any person suffering from or afflicted with leprosy unless there has been obtained from the Surgeon General of the Public Health and Marine-Hospital Service or his accredited representative a permit stating that said person may be received under such restrictions as will prevent the spread of the disease, and said restrictions shall be specified in each instance: *Provided*, That, in addition to the above, permits shall also be obtained from the health authorities of the States, Territories, or districts to and from which the patient intends to travel.

Paragraph 10. No person knowing or having reason to believe that he is a leper shall accept transportation nor engage in travel in interstate traffic unless permits have been obtained, as set forth in the preceding section, and unless said person shall have agreed in writing to comply with the restrictions as specified in the permits mentioned above.

Paragraph 11. Any person who presents symptoms of leprosy and who is traveling or who has left the State where he resides, in violation of the above regulations, shall be detained, and if proven to be a leper shall be returned to such State or removed to such Federal quarantine station as the Secretary of the Treasury may designate and the proper health authorities notified.

Paragraph 12. Compartments or places in cars, vessels, or conveyances operated in interstate traffic and that have been occupied by persons afflicted with leprosy shall be immediately closed after being vacated by the patient and so kept until after proper disinfection.

J. F. CURTIS, *Acting Secretary.*

METHODS AND STANDARDS FOR THE PRODUCTION AND DISTRIBUTION OF "CERTIFIED MILK."[1]

Certified milk is the product of dairies operated in accordance with accepted rules and regulations formulated by authorized medical milk commissions to insure its purity and adaptability for infants and invalids.

The need for such a milk was experienced primarily by those engaged in the conservation of the life and health of infants. As a result there was formulated in 1892 a plan whereby certified milk would be produced by a dairyman under the control of a medical milk commission designated by a representative medical society.

The first rules designed for this purpose were those contained in an agreement entered into by a medical milk commission and the dairyman concerned.[2]

The rules contained in the original agreement mentioned represented the essential requirements for the production of certified milk. Following this precedent, other commissions were organized, which, in 1906, became federated into a national association known as the American Association of Medical Milk Commissions.

A fundamental object of this association was to bring about the uniformity of standards and their perfection. This result has been reached by the adoption from time to time of definite standards relating to the veterinary inspection of herds and farms, the medical inspection of employees handling the milk, and the bacteriological and chemical examinations as to quality and purity. The requirements with respect to these four topics have been previously reported upon by committees and adopted by the association, and at its last annual meeting provision was made for their further revision and amplification.

ORGANIZATION OF MEDICAL MILK COMMISSIONS.

The medical milk commission is appointed by a representative medical society, and acts under its auspices and for it, to encourage the production of milk of the highest possible standards of purity. No commission should be considered as certifying milk that does not conform to the standards adopted from time to time by the Association of Medical Milk Commissions. The commission should include at least five members or a number sufficient to become responsible for and to carry on the following divisions of work: (*a*) The hygiene of

[1] At the fifth annual meeting of the American Association of Medical Milk Commissions, held in Philadelphia May 25, 1911, a committee was appointed to revise the manual of working methods and standards for the guidance of medical milk commissions in the supervision of the production and distribution of certified milk. The committee consisted of Dr. J. W. Kerr (chairman), Dr. S. McC. Hamill, and Dr. Henry L. Coit. This their report was adopted at the sixth annual meeting, held at Louisville, Ky., May 1, 1912, as the working methods and standards of the association. The association recommends them to component commissions as ideal and to be as closely approximated as possible. The report includes a statement concerning the certified-milk movement, as well as the revised methods and standards, and is published for the information of those interested in the improvement of public milk supplies.

[2] Bul. 56, Hygienic Laboratory, Public Health and Marine-Hospital Service, p. 615.

the dairy, as it relates to the production and distribution of the milk; (*b*) the veterinary supervision of the herd; (*c*) the medical supervision of the employees; (*d*) the chemical and bacteriological examinations of the milk.

DUTIES OF THE COMMISSION.

After its organization the commission should designate a veterinarian, a physician, a chemist, and a bacteriologist to enforce its methods and standards which shall be the prevailing methods and standards of the American Association of Medical Milk Commissions, and these officers should be required to render regular reports of their inspections and examinations. A uniform written agreement should then be entered into with any dairyman who is desirous of undertaking the production of certified milk and the investigation of whose plant shows it to be properly equipped for such purpose. Such agreement shall require the observance of the methods and standards hereinafter mentioned.

Upon receipt of favorable reports from the several experts and committees which have made the investigations, the dairyman should be authorized, in accordance with the terms of the agreement, to employ the term "certified milk," and he shall be required to attach to all containers of any character used in distributing the milk produced under the agreement a certificate or seal bearing the term "certified milk," the name of the medical milk commission certifying it, and the day or date of production of the milk contained therein.

HYGIENE OF THE DAIRY.

UNDER THE SUPERVISION AND CONTROL OF THE VETERINARIAN.

1. *Pastures or paddocks.*—Pastures or paddocks to which the cows have access shall be free from marshes or stagnant pools, crossed by no stream which might become dangerously contaminated, at sufficient distances from offensive conditions to suffer no bad effects from them, and shall be free from plants which affect the milk deleteriously.

2. *Surroundings of buildings.*—The surroundings of all buildings shall be kept clean and free from accumulations of dirt, rubbish, decayed vegetable or animal matter or animal waste, and the stable yard shall be well drained.

3. *Location of buildings.*—Buildings in which certified milk is produced and handled shall be so located as to insure proper shelter and good drainage, and at sufficient distance from other buildings, dusty roads, cultivated and dusty fields, and all other possible sources of contamination; provided, in the case of unavoidable proximity to dusty roads or fields, the exposed side shall be screened with cheese cloth.

4. *Construction of stables.*—The stables shall be constructed so as to facilitate the prompt and easy removal of waste products. The floors and platforms shall be made of cement or other nonabsorbent material, and the gutters of cement only. The floors shall be properly graded and drained, and the manure gutters shall be from 6 to 8 inches deep and so placed in relation to the platform that all manure will drop into them.

5. The inside surface of the walls and all interior construction shall be smooth, with tight joints, and shall be capable of shedding water. The ceiling shall be of smooth material and dust-tight. All horizontal and slanting surfaces which might harbor dust shall be avoided.

6. *Drinking and feed troughs.*—Drinking troughs or basins shall be drained and cleaned each day, and feed troughs and mixing floors shall be kept in a clean and sanitary condition.

7. *Stanchions.*—Stanchions when used shall be constructed of iron pipes or hardwood, and throat latches shall be provided to prevent the cows from lying down between the time of cleaning and the time of milking.

8. *Ventilation.*—The cow stables shall be provided with adequate ventilation either by means of some approved artificial device, or by the substitution of cheesecloth for glass in the windows, each cow to be provided with a minimum of 600 cubic feet of air space.

9. *Windows.*—A sufficient number of windows shall be installed and so distributed as to provide satisfactory light and a maximum of sunshine; 2 feet square of window area to each 600 cubic feet of air space to represent the minimum. The coverings of such windows shall be kept free from dust and dirt.

10. *Exclusion of flies, etc.*—All necessary measures should be taken to prevent the entrance of flies and other insects, and rats and other vermin into all the buildings.

11. *Exclusion of animals from the herd.*—No horses, hogs, dogs, or other animals or fowls shall be allowed to come in contact with the certified herd either in the stables or elsewhere.

12. *Bedding.*—No dusty or moldy hay or straw, bedding from horse stalls, or other unclean materials shall be used for bedding the cows. Only bedding which is clean, dry, and absorbent may be used, preferably shavings or straw.

13. *Cleaning stable and disposal of manure.*—Soiled bedding and manure shall be removed at least twice daily, and the floors shall be swept and kept free from refuse. Such cleaning shall be done at least one hour before the milking time. Manure, when removed, shall be drawn to the field or temporarily stored in containers so screened as to exclude flies. Manure shall not be even temporarily stored within 300 feet of the barn or dairy building.

14. *Cleaning of cows.*—Each cow in the herd shall be groomed daily, and no manure, mud, or filth shall be allowed to remain upon her during milking; for cleaning, a vacuum apparatus is recommended.

15. *Clipping.*—Long hairs shall be clipped from the udder and flanks of the cow, and from the tail above the brush. The hair on the tail shall be cut so that the brush may be well above the ground.

16. *Cleaning of udders.*—The udders and teats of the cow shall be cleaned before milking; they shall be washed with a cloth and water, and dry wiped with another clean sterilized cloth—a separate cloth for drying each cow.

17. *Feeding.*—All foodstuffs shall be kept in an apartment separate from and not directly communicating with the cow barn. They shall be brought into the barn only immediately before the feeding hour, which shall follow the milking.

18. Only those foods shall be used which consist of fresh, palatable, or nutritious materials, such as will not injure the health of the cows

or unfavorably affect the taste or character of the milk. Any dirty or moldy food or food in a state of decomposition or putrefaction shall not be given.

19. A well-balanced ration shall be used, and all changes of food shall be made slowly. The first few feedings of grass, alfalfa, ensilage, green corn, or other green feeds shall be given in small rations and increased gradually to full ration.

20. *Exercise.*—All dairy cows shall be turned out for exercise at least 2 hours in each 24 in suitable weather. Exercise yards shall be kept free from manure and other filth.

21. *Washing of hands.*—Conveniently located facilities shall be provided for the milkers to wash in before and during milking.

22. The hands of the milkers shall be thoroughly washed with soap, water, and brush and carefully dried on a clean towel immediately before milking. The hands of the milkers shall be rinsed with clean water and carefully dried before milking each cow. The practice of moistening the hands with milk is forbidden.

23. *Milking clothes.*—Clean overalls, jumper, and cap shall be worn during milking. They shall be washed or sterilized each day and used for no other purpose, and when not in use they shall be kept in a clean place, protected from dust and dirt.

24. *Things to be avoided by milkers.*—While engaged about the dairy or in handling the milk employees shall not use tobacco nor intoxicating liquors. They shall keep their fingers away from their nose and mouth, and no milker shall permit his hands, fingers, lips, or tongue to come in contact with milk intended for sale.

25. During milking the milkers shall be careful not to touch anything but the clean top of the milking stool, the milk pail, and the cow's teats.

26. Milkers are forbidden to spit upon the walls or floors of stables, or upon the walls or floors of milk houses, or into the water used for cooling the milk or washing the utensils.

27. *Fore milk.*—The first streams from each teat shall be rejected, as this fore milk contains large numbers of bacteria. Such milk shall be collected into a separate vessel and not milked onto the floors or into the gutters. The milking shall be done rapidly and quietly, and the cows shall be treated kindly.

28. *Milk and calving period.*—Milk from all cows shall be excluded for a period of 45 days before and 7 days after parturition.

29. *Bloody and stringy milk.*—If milk from any cow is bloody and stringy or of unnatural appearance, the milk from that cow shall be rejected and the cow isolated from the herd until the cause of such abnormal appearance has been determined and removed, special attention being given in the meantime to the feeding or to possible injuries. If dirt gets into the pail, the milk shall be discarded and the pail washed before it is used.

30. *Make-up of herd.*—No cows except those receiving the same supervision and care as the certified herd shall be kept in the same barn or brought in contact with them.

31. *Employees other than milkers.*—The requirements for milkers, relative to garments and cleaning of hands, shall apply to all other persons handling the milk, and children unattended by adults shall not be allowed in the dairy nor in the stable during milking.

32. *Straining and strainers.*—Promptly after the milk is drawn it shall be removed from the stable to a clean room and then emptied from the milk pail to the can, being strained through strainers made of a double layer of finely meshed cheese cloth or absorbent cotton thoroughly sterilized. Several strainers shall be provided for each milking in order that they may be frequently changed.

33. *Dairy building.*—A dairy building shall be provided which shall be located at a distance from the stable and dwelling prescribed by the local commission, and there shall be no hogpen, privy, or manure pile at a higher level or within 300 feet of it.

34. The dairy building shall be kept clean and shall not be used for purposes other than the handling and storing of milk and milk utensils. It shall be provided with light and ventilation, and the floors shall be graded and water-tight.

35. The dairy building shall be well lighted and screened and drained through well-trapped pipes. No animals shall be allowed therein. No part of the dairy building shall be used for dwelling or lodging purposes, and the bottling room shall be used for no other purpose than to provide a place for clean milk utensils and for handling the milk. During bottling this room shall be entered only by persons employed therein. The bottling room shall be kept scrupulously clean and free from odors.

36. *Temperature of milk.*—Proper cooling to reduce the temperature to 45° F. shall be used, and aerators shall be so situated that they can be protected from flies, dust, and odors. The milk shall be cooled immediately after being milked, and maintained at a temperature between 35° and 45° F. until delivered to the consumer.

37. *Sealing of bottles.*—Milk, after being cooled and bottled, shall be immediately sealed in a manner satisfactory to the commission, but such seal shall include a sterile hood which completely covers the lip of the bottle.

38. *Cleaning and sterilizing of bottles.*—The dairy building shall be provided with approved apparatus for the cleansing and sterilizing of all bottles and utensils used in milk production. All bottles and utensils shall be thoroughly cleaned by hot water and sal soda, or equally pure agent, rinsed until the cleaning water is thoroughly removed, then exposed to live steam or boiling water at least 20 minutes, and then kept inverted until used, in a place free from dust and other contaminating materials.

39. *Utensils.*—All utensils shall be so constructed as to be easily cleaned. The milk pail should preferably have an elliptical opening 5 by 7 inches in diameter. The cover of this pail should be so convex as to make the entire interior of the pail visible and accessible for cleaning. The pail shall be made of heavy seamless tin, and with seams which are flushed and made smooth by solder. Wooden pails, galvanized-iron pails, or pails made of rough, porous materials, are forbidden. All utensils used in milking shall be kept in good repair.

40. *Water supply.*—The entire water supply shall be absolutely free from contamination, and shall be sufficient for all dairy purposes. It shall be protected against flood or surface drainage, and shall be conveniently situated in relation to the milk house.

41. *Privies, etc., in relation to water supply.*—Privies, pigpens, manure piles, and all other possible sources of contamination shall be so situated on the farm as to render impossible the contamination of the

water supply, and shall be so protected by use of screens and other measures as to prevent their becoming breeding grounds for flies.

42. *Toilet rooms.*—Toilet facilities for the milkers shall be provided and located outside of the stable or milk house. These toilets shall be properly screened, shall be kept clean, and shall be accessible to wash basins, water, nail brush, soap and towels, and the milkers shall be required to wash and dry their hands immediately after leaving the toilet room.

TRANSPORTATION.

43. In transit the milk packages shall be kept free from dust and dirt. The wagon, trays, and crates shall be kept scrupulously clean. No bottles shall be collected from houses in which communicable diseases prevail, unless a separate wagon is used and under conditions prescribed by the department of health and the medical milk commission.

44. All certified milk shall reach the consumer within 36 hours after milking.

VETERINARY SUPERVISION OF THE HERD.

45. *Tuberculin test.*—The herd shall be free from tuberculosis, as shown by the proper application of the tuberculin test. The test shall be applied in accordance with the rules and regulations of the United States Government, and all reactors shall be removed immediately from the farm.

46. No new animals shall be admitted to the herd without first having passed a satisfactory tuberculin test, made in accordance with the rules and regulations mentioned; the tuberculin to be obtained and applied only by the official veterinarian of the commission.

47. Immediately following the application of the tuberculin test to a herd for the purpose of eliminating tuberculous cattle, the cow stable and exercising yards shall be disinfected by the veterinary inspector in accordance with the rules and regulations of the United States Government.

48. A second tuberculin test shall follow each primary test after an interval of six months, and shall be applied in accordance with the rules and regulations mentioned. Thereafter, tuberculin tests shall be reapplied annually, but it is recommended that the retests be applied semiannually.

49. *Identification of cows.*—Each dairy cow in each of the certified herds shall be labeled or tagged with a number or mark which will permanently identify her.

50. *Herd-book record.*—Each cow in the herd shall be registered in a herd book, which register shall be accurately kept so that her entrance and departure from the herd and her tuberculin testing can be identified.

51. A copy of this herd-book record shall be kept in the hands of the veterinarian of the medical milk commission under which the dairy farm is operating, and the veterinarian shall be made responsible for the accuracy of this record.

52. *Dates of tuberculin tests.*—The dates of the annual tuberculin tests shall be definitely arranged by the medical milk commission, and all of the results of such tests shall be recorded by the veterinarian

and regularly reported to the secretary of the medical milk commission issuing the certificate.

53. The results of all tuberculin tests shall be kept on file by each medical milk commission, and a copy of all such tests shall be made available to the American Association of Medical Milk Commissions for statistical purposes.

54. The proper designated officers of the American Association of Medical Milk Commissions should receive copies of reports of all of the annual, semiannual, and other official tuberculin tests which are made and keep copies of the same on file and compile them annually for the use of the association.

55. *Disposition of cows sick with diseases other than tuberculosis.*—Cows having rheumatism, leukorrhea, inflammation of the uterus, severe diarrhea, or disease of the udder, or cows that from any other cause may be a menace to the herd, shall be removed from the herd, placed in a building separate from that which may be used for the isolation of cows with tuberculosis, unless such building has been properly disinfected since it was last used for this purpose. The milk from such cows shall not be used, nor shall the cows be restored to the herd until permission has been given by the veterinary inspector after a careful physical examination.

56. *Notification of veterinary inspector.*—In the event of the occurrence of any of the diseases just described between the visits of the veterinary inspector, or if at any time a number of cows become sick at one time in such a way as to suggest the outbreak of a contagious disease or poisoning, it shall be the duty of the dairyman to withdraw such sickened cattle from the herd, to destroy their milk, and to notify the veterinary inspector by telegraph or telephone immediately.

57. *Emaciated cows.*—Cows that are emaciated from chronic diseases or from any cause that in the opinion of the veterinary inspector may endanger the quality of the milk, shall be removed from the herd.

BACTERIOLOGICAL STANDARDS.

58. *Bacterial counts.*—Certified milk shall contain less than 10,000 bacteria per cubic centimeter when delivered. In case a count exceeding 10,000 bacteria per cubic centimeter is found, daily counts shall be made, and if normal counts are not restored within 10 days the certificate shall be suspended.

59. Bacterial counts shall be made at least once a week.

60. *Collection of samples.*—The samples to be examined shall be obtained from milk as offered for sale and shall be taken by a representative of the milk commission. The samples shall be received in the original packages, in properly iced containers, and they shall be so kept until examined, so as to limit as far as possible changes in their bacterial content.

61. For the purpose of ascertaining the temperature, a separate original package shall be used, and the temperature taken at the time of collecting the sample, using for the purpose a standardized thermometer graduated in the centigrade scale.

62. *Interval between milking and plating.*—The examinations shall be made as soon after collection of the samples as possible, and in no case shall the interval between milking and plating the samples be longer than 40 hours.

63. *Plating.*—The packages shall be opened with aseptic precautions after the milk has been thoroughly mixed by vigorously reversing and shaking the container 25 times.

64. Two plates at least shall be made for each sample of milk, and there shall also be made a control of each lot of medium and apparatus used at each testing. The plates shall be grown at 37° C. for 48 hours.

65. In making the plates there shall be used agaragar media containing 1.5 per cent agar and giving a reaction of 1.0 to phenolphthalein.

The following is the method recommended by a committee of the American Public Health Association for the making of the media, modified, however, as to the agar content and reaction to conform to the requirements specified in section 65:

1. Boil 15 grams of thread agar in 500 c. c. of water for half an hour and make up weight to 500 g. or digest for 10 minutes in the autoclave at 110° C. Let this cool to about 60° C.
2. Infuse 500 g. finely chopped lean beef for 24 hours with its own weight of distilled water in the refrigerator.
3. Make up any loss by evaporation.
4. Strain infusion through cotton flannel, using pressure.
5. Weigh filtered infusion.
6. Add Witte's peptone, 2 per cent.
7. Warm on water bath, stirring until peptone is dissolved and not allowing temperature to rise above 60° C.
8. To the 500 grams of meat infusion (with peptone) add 500 g. of the 2 per cent agar, keeping the temperature below 60° C.
9. Heat over boiling water (or steam) bath 30 minutes.
10. Restore weight lost by evaporation.
11. Titrate after boiling one minute to expel carbonic acid.
12. Adjust reaction to final point desired +1 by adding normal sodium hydrate.
13. Boil two minutes over free flame, constantly stirring.
14. Restore weight lost by evaporation.
15. Filter through absorbent cotton or coarse filter paper, passing the filtrate through the filter repeatedly until clear.
16. Titrate and record the final reaction.
17. Tube (10 c. c. to a tube) and sterilize in autoclave one hour at 15 pounds pressure or in the streaming steam for 20 minutes on three successive days.

66. Samples of milk for plating shall be diluted in the proportion of 1 part of milk to 99 parts of sterile water; shake 25 times and plate 1 c. c. of the dilution.

The committee on bacterial milk analyses of the American Public Health Association in Part IV of its report presented details with respect to plating apparatus and technique in part as follows:

Plating apparatus.—For plating it is best to have a water bath in which to melt the media and a water-jacketed water bath for keeping it at the required temperature; a wire rack which should fit both the water baths for holding the media tubes; a thermometer for recording the temperature of the water in the water-jacketed bath, sterile 1 c. c. pipettes, sterile Petri dishes, and sterile dilution water in measured quantities.

Dilutions.—Ordinary potable water, sterilized, may be used for dilutions. Occasionally spore forms are found in such water which resist ordinary autoclave sterilization; in such cases distilled water may be used or the autoclave pressure increased. With dilution water in 8-ounce bottles calibrated for 99 cubic centimeters * * * all the necessary dilutions may be made.

Short, wide-mouthed "blakes" or wide-mouthed French square bottles are more easily handled and more economical of space than other forms of bottles or flasks.

Eight-ounce bottles are the best, as the required amount of dilution water only about half fills them, leaving room for shaking. Long-fiber nonabsorbent cotton should be used for plugs. It is well to use care in selecting cotton for this purpose to avoid short-fiber or dusty cotton, which give a cloud of lint-like particles on shaking. Bottles * * * should be filled a little over the 99 c. c. * * * to allow for loss during sterilization.

Pipettes.—Straight sides 1 c. c. pipettes are more easily handled than those with bulbs; they may be made from ordinary three-sixteenths inch glass tubing and should be about 10 inches in length.

Plating technique.—The agar after melting should be kept in the water-jacketed water bath between 40° C. and 45° C. for at least 15 minutes before using to make sure that the agar itself has reached the temperature of the surrounding water. If used too warm, the heat may destroy some of the bacteria or retard their growth.

Shake the milk sample 25 times, then with a sterile pipette transfer 1 c. c. to the first dilution water and rinse the pipette by drawing dilution water to the mark and expelling; this gives a dilution 1 to 100.

* * * Then with a sterile pipette transfer 1 c. c. to the Petri dish, using care to raise the cover only as far as necessary to insert the end of the pipette.

Take the tube of agar from the water bath, wipe the water from outside the tube with a piece of cloth, remove the plug, pass the mouth of the tube through a flame, and pour the agar into the plate, using the same care as before to avoid exposure of the plate contents to the air.

Carefully and thoroughly mix the agar and diluted milk in the Petri dish by a rotary motion, avoiding the formation of air bubbles or slopping the agar, and after allowing the agar to harden for at least 15 minutes at room temperature, place the dish bottom down in the incubator.

Plating should always be done in a place free from dust or currents of air.

In order that colonies may have sufficient food for proper development 10 c. c. of agar shall be used for each plate.

67. *Determination of taste and odor of milk.*—After the plates have been prepared and placed in the incubator, the taste and odor of the milk shall be determined after warming the milk to 100° F.[1]

68. *Counts.*—The total number of colonies on each plate should be counted, and the results expressed in multiples of the dilution factor. Colonies too small to be seen with the naked eye or with slight magnification shall not be considered in the count.

69. *Records of bacteriologic tests.*—The results of all bacterial tests shall be kept on file by the secretary of each commission, copies of which should be made available annually for the use of the American Association of Medical Milk Commissions.

CHEMICAL STANDARDS AND METHODS.

The methods that must be followed in carrying out the chemical investigations essential to the protection of certified milk are so complicated that in order to keep the fees of the chemist at a reasonable figure, there must be eliminated from the examination those procedures which, whilst they might be helpful and interesting, are in no sense necessary.

For this reason the determination of the water, the total solids and the milk sugar is not required as a part of the routine examination.

70. The chemical anaylses shall be made by a competent chemist designated by the medical milk commission.

71. *Method of obtaining samples.*—The samples to be examined by the chemist shall have been examined previously by the bacteriologist designated by the medical milk commission, as to temperature, odor, taste, and bacterial content.

72. *Fat standards.*—The fat standard for certified milk shall be 4 per cent, with a permissible range of variation of from 3.5 to 4.5 per cent.

73. The fat standard for certified cream shall be not less than 18 per cent.

[1] Should it be deemed desirable and necessary to conduct tests for sediment, the presence of special bacteria, or the number of leucocytes the methods adopted by the committee of the American Public Health Association should be followed.

74. If it is desired to sell higher fat-percentage milks or creams as certified milks or creams, the range of variation for such milks shall be 0.5 per cent on either side of the advertised percentage and the range of variations for such creams shall be 2 per cent on either side of the advertised percentage.

75. The fat content of certified milks and creams shall be determined at least once each month.

76. The methods recommended for this purpose are the Babcock (*a*), the Leffmann-Beam (*b*), and the Gerber (*c*).

(*a*) *Babcock test.*—The Babcock test is based on the fact that strong sulphuric acid will dissolve the nonfatty solid constituents of milk, and thus enable the fat to separate on standing. It can be conducted by any of the Babcock outfits which are purchasable in the market.

"The test is made by placing in the special test bottle 18 grams (17.6 c. c.) of milk. To this is added, from a pipette, burette, or measuring bottle, 17.5 c. c. commercial sulphuric acid of a specific gravity of 1.82 to 1.83. The contents of the bottle are carefully and thoroughly mixed by a rotary motion. The mixture becomes brown and heat is generated. The test bottle is now placed in a properly balanced centrifuge and whirled for 5 minutes at a speed of from 800 to 1,200 revolutions per minute. Hot water is then added to fill the bottle to the lower part of the neck, after which it is again whirled for two minutes. Now, enough hot water is added to float the column of fat into the graduated portion of the neck of the bottle, and the whirling is repeated for a minute. The amount of fat is read while the neck of the bottle is still hot. The reading is from the upper limits of the meniscus. A pair of calipers is of assistance in measuring the column of fat." (Jensen's Milk Hygiene, Leonard Pearson's translation.)

(*b*) *Leffmann-Beam test.*—The distinctive feature is the use of fusel oil, the effect of which is to produce a greater difference in surface tension between the fat and the liquid in which it is suspended, and thus promote its readier separation. This effect has been found to be heightened by the presence of a small amount of hydrochloric acid.

The test bottles have a capacity of about 30 c. c. and are provided with a graduated neck, each division of which represents 9.1 per cent by weight of butter fat.

Fifteen centimeters of the milk are measured into the bottle, 3 c. c. of a mixture of equal parts of amylalcohol and strong hydrochloric acid added and mixed. Then 9 c. c. of concentrated sulphuric acid is added in portions of about 1 c. c.; after each addition the liquids are mixed by giving the bottle a gyratory motion. If the fluid has not lost all of its milky color by this treatment, a little more concentrated acid must be added. The neck of the bottle is now immediately filled at about the zero point with one part sulphuric acid and two parts water, well mixed just before using. Both the liquid in the bottle and the diluted acid must be hot. The bottle is then placed at once in the centrifugal machine; after rotation from one to two minutes. the fat will collect in the neck of the bottle and the percentage may be read off.

(*c*) *Gerber's test.*—This test is applied as follows: The test bottles are put into the stand with the mouths uppermost; then, with the pipette designed for the purpose, or with an automatic measurer, 10 c. c. of sulphuric acid are filled into the test bottle, care being taken not to allow any to come in contact with the neck. The few drops remaining in the tip of the pipette should not be blown out. Then 11 c. c. of milk are measured with the proper pipette and allowed to flow slowly onto the acid, so that the two liquids mix as little as possible. Finally, the amyl alcohol is added. (It is important to use the reagents in the proper order, which is—sulphuric acid, milk, amyl alcohol. If the sulphuric acid is followed by amyl alcohol and the milk last, then the result is sometimes incorrect.) A rubber stopper, which must not be damaged, is then fitted into the mouth of the test bottle, and the contents are well shaken, the thumb being kept on the stopper to prevent it coming out. As a considerable amount of heat is generated by the action of the sulphuric acid on the milk, the test bottle should be wrapped in a cloth.

The shaking of the sample must be done thoroughly and quickly, and the test bottle inverted several times, so that the liquid in the neck becomes thoroughly mixed. By pressing in the rubber stopper the height of the liquid can be brought to about the zero point on the scale.

If only a few samples have to be analyzed and the room is warm, the test bottles can be put into the centrifuge without any preliminary heating, otherwise the test bottles must be warmed for a few minutes (not longer) in the water bath at a temperature of 60° to 65° C. When the temperature rises higher than this, say above 70° C., the

rubber stopper is liable to be blown out of the test bottle. After the test bottles have been heated they are arranged symmetrically in the centrifuge and whirled for 3 to 4 minutes at a speed of about 1,000 revolutions per minute. When the centrifuge has a heating arrangement attached to it, the preliminary warming is not, of course, necessary. When the test bottles are taken out of the centrifuge, they are again placed in the water bath at a temperature of 60° to 65° C., and left there for several minutes before being read; where the centrifuge is heated, the tubes can be read off as taken from the centrifuge.

By carefully screwing in the rubber stopper, or even by pressing it, the lower limit of the fat column is brought onto one of the main divisions of the scale, and then, by holding the test bottle against the light the height of the column of fat can be accurately ascertained. The lowest point of the meniscus is taken as the level when reading the upper surface of the fat in a sample of whole milk, and the middle of the meniscus for separated milk.

If the column of fat is not clear and sharply defined, the sample must be again whirled in the centrifuge.

Each division on the scale is equivalent to 0.1 per cent, so it is very easy to read to 0.05 per cent, or, with a lens, to 0.025 per cent. If the number which is read off is multiplied by 0.1, then the percentage quantity of fat in the milk is obtained; e. g., if the number on the scale was 36.5, then the percentage of fat is 3.65. (Milk and Dairy Products, Barthel; translated by Goodwin, p. 71.)

77. Before condemning samples of milk which have fallen outside the limits allowed, the chemist shall have determined, by control ether extractions, that his apparatus and his technique are reliable.

78. *Protein standard.*—The protein standard for certified milk shall be 3.50 per cent with a permissible range of variation of from 3 to 4 per cent.

79. The protein standard for certified cream shall correspond to the protein standard for certified milk.

80. The protein content shall be determined only when any special consideration seems to the medical milk commission to make it desirable.

81. It shall be determined by the Kjeldahl method, using the Gunning or some other reliable modification, and employing the factor 6.25 in reckoning the protein from the nitrogen.

Kjeldahl method.—Five cubic centimeters of milk are measured carefully into a flat-bottom 800 c. c. Jena flask, 20 c. c. of concentrated sulphuric acid (C. P.; sp. gr., 1.84) are added, and 0.7 gram of mercuric oxid (or its equivalent in metallic mercury); the mixture is then heated over direct flame until it is straw-colored or perfectly white; a few crystals of potassium permanganate are now added till the color of the liquid remains green. All the nitrogen in the milk has then been converted into the form of ammonium sulphate. After cooling, 200 c. c. of ammonia-free distilled water are added, 20 c. c. of a solution of potassium sulphide (containing 40 grams sulphide per liter), and a fraction of a gram of powdered zinc. A quantity of semi-normal HCl solution more than sufficient to neutralize the ammonia obtained in the oxidation of the milk is now carefully measured out from a delicate burette (divided into $\frac{1}{20}$ c. c.) into an Erlenmeyer flask and the flask connected with a distillation apparatus. At the other end the Jena flask containing the watery solution of the ammonium sulphate is connected, after adding 50 c. c. of a concentrated soda solution (1 pound "pure potash" dissolved in 500 c. c. of distilled water and allowed to settle); the contents of the Jena flask are now heated to boiling, and the distillation is continued for 40 minutes to an hour, until all ammonia has been distilled over.

The excess of acid in the Erlenmeyer receiving flask is then accurately titrated back by means of a tenth-normal standard ammonia solution, using a cochineal solution as an indicator. From the amount of acid used the per cent of nitrogen is obtained; and from it the per cent of casein and albumen in the milk by multiplying by 6.25. The amount of nitrogen contained in the chemicals used is determined by blank experiments and deducted from the nitrogen obtained as described. (Farrington and Woll, Testing Milk and Its Products, p. 221.)

82. *Coloring matter and preservatives.*—All certified milks and creams shall be free from adulteration, and coloring matter and preservatives shall not be added thereto.

83. Tests for the detection of added coloring matter shall be applied whenever the color of the milk or cream is such as to arouse suspicion.

Test for coloring matter.—The presence of foreign coloring matter in milk is easily shown by shaking 10 c. c. of the milk with an equal quantity of ether; on standing, a clear ether solution will rise to the surface; if artificial coloring matter has been added to the milk, the solution will be yellow colored, the intensity of the color indicating the quantity added; natural fresh milk will give a colorless ether solution. (Testing Milk and its Products, Farrington and Woll, p. 244.)

84. Tests for the detection of formaldehyde, borax, and boracic acid shall be applied at least once each month. Occasionally application of tests for the detection of salicylic acid, benzoic acid, and the benzoates are also recommended.

Test for the detection of formaldehyde.—Five cubic centimeters of milk is measured into a white porcelain dish, and a similar quantity of water added; 10 c. c. of HCl, containing a trace of Fe_2Cl_6 is added, and the mixture is heated very slowly. If formaldehyde is present, a violet color will be formed. (Testing Milk and Its Products, Farrington and Woll, p. 249.)

Test for boracic acid (borax, borates, preservaline, etc.). One hundred cubic centimenters of milk are made alkaline with a soda or potash solution, and then evaporated to dryness and incinerated. The ash is dissolved in water, to which a little hydrochloric acid has been added, and the solution filtered. A strip of turmeric paper moistened with the filtrate will be colored reddish brown when dried at 100° C. on a watch glass, if boracic acid is present.

If a little alcohol is poured over the ash to which concentrated sulphuric acid has been added, and fire is set to the alcohol, after a little while this will burn with a yellowish-green tint, especially noticeable if the ash is stirred with a glass rod and when the flame is about to go out.—(Testing Milk and Its Products, Farrington and Woll, p. 247.)

Test for salicylic acid (salicylates, etc.)—Twenty cubic centimenters of milk are acidulated with sulphuric acid and shaken with ether; the ether solution is evaporated, and the residue treated with alcohol and a little iron-chlorid solution; a deep violet color will be obtained in the presence of salicylic acid.—(Testing Milk and Its Products, Farrington and Woll, p. 248.)

Test for benzoic acid.—Two hundred and fifty to five hundred cubic centimeters of milk are made alkaline with a few drops of lime or baryta water, and then evaporated to about a quarter of the bulk. Powdered gypsum is stirred into the remaining liquid until a paste is formed, which is then dried on the water bath. The gypsum only serves to hasten the drying, and powdered pumice stone or sand can be used equally well. When the mass is dry, it is finely powdered and moistened with dilute sulphuric acid and shaken out three or four times with about twice the volume of 50 per cent alcohol, in which benzoic acid is easily soluble in the cold, the fat only being dissolved to a very slight extent or not at all. The acid alcoholic liquid from the various extractions, which contains milk sugar and inorganic salts in addition to the benzoic acid, is neutralized with baryta water and evaporated to a small bulk. Dilute sulphuric acid is again added, and the liquid shaken out with small quantities of ether. On evaporation of the ether, the benzoic acid is left behind in almost pure state, the only impurities being small quantities of fat or ash.

The benzoic acid which is obtained is dissolved in a small quantity of warm water, a drop of sodium acetate and neutral ferric chloride added, and the red precipitate of benzoate of iron indicates the presence of the acid. (Milk and Dairy Products, Barthel, translated by Goodwin, p. 121.)

85. *Detection of heated milk.*—Certified milk or cream shall not be subjected to heat unless specially directed by the commission to meet emergencies.

86. Tests to determine whether such milks and creams have been subjected to heat shall be applied at least once each month.

Detection of heated milk—Storch's method.—Five cubic centimeters of milk are poured into a test tube; a drop of weak solution of hydrogen dioxide (about 0.2 per cent) which contains about 0.1 per cent sulphuric acid, is added, and two drops of a 2 per cent solution of paraphenylendiamin (solution should be renewed quite often), then the fluid is shaken. If the milk or the cream becomes, at once, indigo blue, or the

whey violet or reddish brown, then this has not been heated or, at all events, it has not been heated higher than 78° C. (172.5° F.); if the milk becomes a light bluish gray immediately or in the course of half a minute, then it has been heated to 79° to 80° C. (174.2° to 176° F.) If the color remains white, the milk has been heated at least to 80° C. (176° F.). In the examination of sour milk or sour buttermilk, lime water must be added, as the color reaction is not shown in acid solution.

Arnold's guaiac method.—A little milk is poured into a test tube and a little tincture of guaiac is added, drop by drop. If the milk has not been heated to 80° C. (176° F.) a blue zone is formed between the two fluids: heated milk gives no reaction, but remains white. The guaiac tincture should not be used perfectly fresh, but should have stood a few days and its potency have been determined. Thereafter it can be used indefinitely. These tests for heated milk are only active in the case of milks which have been heated to 176° F. or 80° C. (Jensen's Milk Hygiene, Pearson's translation, p. 192.)

Microscopic test for heated (pasteurized) milk—Frost and Ravenel.—About 15 c. c. of milk are centrifuged for five minutes, or long enough to throw down the leucocytes. The cream layer is then completely removed with absorbent cotton and the milk drawn off with a pipette, or a fine-pointed tube attached to a Chapman air pump. Only about 2 mm. of milk are left above the sediment which is in the bottom of the sedimentation tube.

. The stain, which is an aqueous solution of safranin O, soluble in water, is then added very slowly from an opsonizing pipette. The important thing is to mix stain and milk so slowly that clotting does not take place. The stain is added until a deep opaque rose color is obtained. After standing three minutes, by means of the opsonizing pipette, which has been washed out in hot water, the stained sediment is then transferred to slides. A small drop is placed at the end of each of several slides and spread by means of a glass spreader, as in Wright's method for opsonic index determinations.

In an unheated milk the polymorphonuclear leucocytes have their protoplasm slightly tinged or are unstained.

In heated milk the polymorphonuclear leucocytes have their nuclei stained. In milk heated to 63° C. or above, practically all of the leucocytes have their nuclei definitely stained. When milk is heated at a lower temperature the nuclei are not all stained above 60° C. The majority, however, are stained.

87. *Specific gravity.*—The specific gravity of certified milk shall range from 1.029 to 1.034.

88. The specific gravity shall be determined at least each month.

The Quevenne lactodensimeter is recommended for the determination of the specific gravity. It is made like an ordinary aerometer and divided into degrees which correspond to a specific gravity from 1.014 to 1.040, or only from 1.022 to 1.038, since, by the latter division, a greater space is gained between the different degrees without unduly lengthening the instrument. From such a lactodensimeter one can easily read off four decimal places.

The milk the specific gravity of which is to be determined is well shaken and poured into a high glass cylinder of suitable diameter; the aerometer is dropped in slowly, in order to prevent its bobbing up and down. (The bulb should be free from adhering air bubbles.) The figures on the stem are the second and third decimals of the numbers of the specific gravity, so that 34 is to be read 1.034. For this examination, the temperature of the milk must be 15° C. (60° F.); if it is not, the specific gravity of the milk at 15° C. must be calculated from the specific gravity found and from the temperature, for in milk inspection and analysis this is the standard.

METHODS AND REGULATIONS FOR THE MEDICAL EXAMINATION OF EMPLOYEES, THEIR HEALTH AND PERSONAL HYGIENE.

89. A medical officer, known as the attending dairy physician, shall be selected by the commission who should reside near the dairy producing certified milk. He shall be a physician in good standing and authorized by law to practice medicine; he shall be responsible to the commission and subject to its direction. In case more than one dairy is under the control of the commission and they are in different localities, a separate physican should be designated for employment for the supervision of each dairy.

90. Before any person shall come on the premises to live and remain as an employee, such person, before being engaged in milking or the handling of milk, shall be subjected to a complete physical examination by the attending physician. No person shall be employed who has not been vaccinated recently or who upon examination is found to have a sore throat, or to be suffering from any form of tuberculosis, venereal disease, conjunctivitis, diarrhea, dysentery, or who has recently had typhoid fever or is proved to be a typhoid carrier, or who has any inflammatory disease of the respiratory tract, or any suppurative process or infectious skin eruption, or any disease of an infectious or contagious nature, or who has recently been associated with children sick with contagious disease.

91. In addition to ordinary habits of personal cleanliness all milkers shall have well-trimmed hair, wear close-fitting caps, and have clean-shaven faces.

92. When the milkers live upon the premises their dormitories shall be constructed and operated according to plans approved by the commission. A separate bed shall be provided for each milker and each bed shall be kept supplied with clean bedclothes. Proper bathing facilities shall be provided for all employees on the dairy premises, preferably a shower bath, and frequent bathing shall be enjoined.

93. In case the employees live on the dairy premises a suitable building shall be provided to be used for the isolation and quarantine of persons under suspicion of having a contagious disease.

The following plan of construction is recommended:

The quarantine building and hospital should be one story high and contain at least two rooms, each with a capacity of about 6,000 cubic feet and containing not more than three beds each, the rooms to be separated by a closed partition. The doors opening into the rooms should be on opposite sides of the building and provided with locks. The windows should be barred and the sash should be at least 5 feet from the ground and constructed for proper ventilation. The walls should be of a material which will allow proper disinfection. The floor should be of painted or washable wood, preferably of concrete, and so constructed that the floor may be flushed and properly disinfected. Proper heating, lighting, and ventilating facilities should be provided.

94. In the event of any illness of a suspicious nature the attending physician shall immediately quarantine the suspect, notify the health authorities and the secretary of the commission, and examine each member of the dairy force, and in every inflammatory affection of the nose or throat occurring among the employees of the dairy, in addition to carrying out the above-mentioned program, the attending physician shall take a culture and have it examined at once by a competent bacteriologist approved by the commission. Pending such examination, the affected employee or employees shall be quarantined.

95. It shall be the duty of the secretary, on receiving notice of any suspicious or contagious disease at the dairy, at once to notify the committee having in charge the medical supervision of employees of the dairy farm upon which such disease has developed. On receipt of the notice this committee shall assume charge of the matter, and shall have power to act for the commission as its judgment dictates. As soon as possible thereafter, the committee shall notify the commission, through its secretary, that a special meeting may be called for ultimate consideration and action.

96. When a case of contagious disease is found among the employees of a dairy producing certified milk under the control of a medical milk commission, such employee shall be at once quarantined and as soon as possible removed from the plant, and the premises fumigated.

When a case of contagion is found on a certified dairy it is advised that a printed notice of the facts shall be sent to every householder using the milk, giving in detail the precautions taken by the dairyman under the direction of the commission, and it is further advised that all milk produced at such dairy shall be heated at 145° F. for 40 minutes, or 155° F. for 30 minutes, or 167° F. for 20 minutes, and immediately cooled to 50° F. These facts should also be part of the notice, and such heating of the milk should be continued during the accepted period of incubation for such contagious disease.

The following method of fumigation is recommended:

After all windows and doors are closed and the cracks sealed by strips of paper applied with flour paste, and the various articles in the room so hung or placed as to be exposed on all sides, preparations should be made to generate formaldehyde gas by the use of 20 ounces of formaldehyde and 10 ounces of permanganate of potash for every 1,000 cubic feet of space to be disinfected.

For mixing the formaldehyde and potassium permanganate a large galvanized-iron pail or cylinder holding at least 20 quarts and having a flared top should be used for mixing therein 20 ounces of formaldehyde and 10 ounces of permanganate. A cylinder at least 5 feet high is suggested. The containers should be placed about in the rooms and the necessary quantity of permanganate weighed and placed in them. The formaldehyde solution for each pail should then be measured into a widemouthed cup and placed by the pail in which it is to be used.

Although the reaction takes place quickly, by making preparations as advised all of the pails can be "set off" promptly by one person, since there is nothing to do but pour the formaldehyde solution over the permanganate. The rooms should be kept closed for four hours. As there is a slight danger of fire, the reaction should be watched through a window or the pails placed on a noninflammable surface.

97. Following a weekly medical inspection of the employees, a monthly report shall be submitted to the secretary of the medical milk commission, on the same recurring date by the examining visiting physician.

The following schedule, filled out in writing and signed by himself, is recommended as a suitable form for the attending physician's report:

This is to certify that, on the dates below indicated, official visits were made to the ——— dairy, owned and conducted by ——— of ——— (indicating town and State), where careful inspections of the dairy employees were made.

(*a*) Number and dates of visits since last report. ———.

(*g*) Number of men employed on the plant. ———.

(*c*) Has a recent epidemic of contagion occurred near the dairy, and what was its nature and extent? ———.

(*d*) Have any cases of contagious or infectious disease occurred among the men since the last report? ———.

(*e*) Disposition of such cases. ———.

(*f*) What individual sickness has occurred among the men since the last report? ———.

(*g*) Disposition of such cases. ———.

(*h*) Number of employees now quarantined for sickness. ———.

(*i*) Describe the personal hygiene of the men employed for milking when prepared for and during the process of milking. ———.

(*j*) What facilities are provided for sickness in employees? ———.

(*k*) General hygienic condition of the dormitories or houses of the employees. ———.

(*l*) Suggestions for improvement. ———.

(*m*) What is the hygienic condition of the employees and their surroundings? ———.

(*n*) How many employees were examined at each of the foregoing visits? ———.

(*o*) Remarks. ———.

———, ———,

Attending Physician.

Date, ———.

UNITED STATES.

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

[Adopted since July 1, 1911.]

DENVER, COLO.

POISONOUS AND HABIT-FORMING DRUGS—SALE OR DISPOSAL OF.

SECTION 1. It shall be unlawful for any apothecary, druggist, or pharmacist, or any employee thereof, or any person whatsoever, to sell, furnish, give away, obtain, or procure any cocaine or its salts, alpha or beta eucaine or their salts, or any compound mixture or solution or other product whatsoever of which cocaine or any of its salts, or alpha or beta eucaine or any of their salts is a constituent or ingredient, opium, morphine, or its derivatives, except upon the original written order or prescription of any authorized practitioner of medicine, dentistry, or veterinary surgeon, not to exceed 45 grains of cocaine and its salts, alpha or beta eucaine and their salts, not to exceed 12 ordinary doses of opium, not to exceed 6 ordinary doses of morphine and its salts, and not to exceed 16 ordinary doses of the derivatives of opium or morphine, which order or prescription shall not again be refilled, or copy given of same without the consent of the original prescriber if so specified on the original prescription in writing. But these provisions shall not apply to tablets of heroin or its salts, not to exceed 2 grains; not to tablets of codeine or any of its salts, not to exceed 3 grains; not to paregoric; not to any mixture or compound containing codeine 2 grains, opium 2 grains, morphine one-half of a grain, or heroin one-third of a grain to the fluid or Troy ounce; not to the preparations containing opium and recommended and sold in good faith for diarrhea or cholera, each bottle or package of which is accompanied by specific directions for use and a caution against habitual use; nor to the powder of ipecac and opium, commonly known as Dover's powder, not to exceed 60 grains; not to liniments or ointments when plainly labeled for "External use;" nor to toothache drops, which are plainly labeled "For toothache, for external use;" nor to the sales made by wholesale druggists to retail druggists actively engaged in business, to physicians, dentists, or veterinary surgeons; nor to regularly incorporated hospitals, sanitoria, or dispensaries; nor to the sale of retail druggists to retail druggists actively engaged in business; nor to the sale by retail druggists actively engaged in business to physicians, dentists, veterinary surgeons, regularly incorporated hospitals, sanitoria, or dispensaries, provided that the wholesale and retail druggist shall affix or cause to be affixed to the bottle, box, vessel, or package containing the article sold, and upon the outside wrapper of the package as originally put up, a label distinctly displaying the name and quantity of cocaine or its salts, alpha or beta eucaine or their salts, or any compound mixture or solution or other product whatsoever of which cocaine or any of its salts, or alpha or beta eucaine or any of their salts is a constituent or ingredient, opium, morphine, or any derivative thereof, and the word "Poison," with the name and place of business of the seller printed in red ink, and provided also, that the wholesale and retail dealer shall, before delivering any of the articles, make or cause to be made in a book kept for the purpose an entry of the sale thereof, stating the date of sale, the quantity, name, and form in which sold, the name and address of the purchaser, and the name of the person by whom the entry is made. Said book shall always be open for inspection by the proper authorities of the law and shall be preserved for at least five years after the last entry made therein.

SEC. 2. It shall be unlawful for any duly registered physician, dentist, or veterinary surgeon, or any other person to prescribe, sell, or offer for sale, dispense, or give away any cocaine or its salts, alpha or beta eucaine or their salts, or any compound mixture or solution or other product whatsoever of which cocaine or any of its salts, or alpha or beta eucaine or any of their salts is a constituent or ingredient, opium, morphine, or

any derivative thereof to any person addicted to the habitual use of opium, morphine, or any derivative thereof, cocaine or its salts, alpha or beta eucaine or their salts, or any compound mixture or solution or other product whatsoever of which cocaine or any of its salts, or alpha or beta eucaine or any of their salts, is a constituent or ingredient, except in emergency cases, but at the time administering same, they shall make or cause to be made an entry in a book kept for that purpose, stating the date, quantity, name, and form in which administered, name and address of the patient, and the name of the person by whom the entry is made, such book to be subject to same inspection as those of the wholesale and retail dealer.

SEC. 3. It shall be unlawful for any retail druggist or other person to sell pure carbolic acid, except on a physician's prescription, but a mixture composed of equal parts, by measure, of carbolic acid, alcohol, and glycerin, bearing the label stating the percentage of alcohol may be sold.

SEC. 4. It shall be unlawful for any person to present any false, or forged, or untrue, or fictitious prescription or order for any poisons, or to obtain the same by means of thereof, or to give any false or fictitious name, or to give or make any false statement, or any false representation, to obtain or in obtaining the same.

SEC. 5. Any person violating any of the provisions of this ordinance shall be punished by a fine of not less than $10 nor more than $200 for each offense.

[Ordinance adopted Feb. 21,1912.]

EAST PROVIDENCE (TOWN), R. I.

VACCINATION OF SCHOOL CHILDREN.

SECTION 1. For each case of vaccination at public expense of a child of school age, as required by State law, there shall be paid by the town the sum of 75 cents, which shall include a certificate to the child so vaccinated, this sum, in each instance to be paid only on proper attestation by the health officer that a record of such case has been certified to him by the officiating physician.

SEC. 2. Any practicing physician may, at public expense, vaccinate a child or children of school age, subject to the following rules:

First. Only such pure bovine virus as is approved by the State board of health shall be used in any case.

Second. In no instance shall a scab from a person vaccinated be used and transmitted to a child in vaccination.

Third. A certificate of vaccination shall be issued to the child vaccinated by the officiating physician, who shall also certify each case to the health officer of the town.

SEC. 3. The health officer of the town shall keep a record of all cases certified to him of the vaccinated children provided for herein.

SEC. 4. A family physician, so called, or physician vaccinating a child or children of school age, at private expense, shall comply with the provisions of this ordinance relative to certifying each case of such vaccinated child to the health officer of the town.

SEC. 5. Any physician who shall violate any provision of this ordinance shall, upon conviction, pay a fine of not more than $20, or be imprisoned not more than 10 days for each offense. And further, a physician so offending and convicted of the same shall be denied the privilege of vaccinating school children at public expense.

[Chap. 29 of an ordinance adopted Aug. 2, 1911.]

HOLLAND, MICH.

GARBAGE AND REFUSE—DISPOSAL OF.

RULE 7. All rubbish, such as tin cans, leaves, ashes, cast-off crockery, bottles, glassware, and such other substances as do not properly constitute garbage shall be kept in suitable bins or containers, and shall be removed before the 1st day of June of each year and again before the 1st day of December of each year; nor shall they be deposited upon any street, alley, public space, or vacant lot, except by permission of the board of health.

RULE 8. A garbage district is hereby established, which shall include all of the territory within the city limits and which shall be governed by the following regulations:

First. Each and every householder, or occupant of any dwelling house, boarding house, or restaurant having garbage to dispose of shall provide one or more metal cans sufficient to receive all garbage that may accumulate between the times of collection; each can to have a capacity not to exceed 10 gallons and provided with a handle, bail,

and tight-fitting cover. These cans must be so placed that they shall be at all times readily accessible for removing or emptying the same and no other receptacle shall be used for garbage.

Second. All garbage accumulating between the times of collection shall be placed in such cans: *Provided*, That no tin cans, wire, or metal of any kind, glass, chinaware, crockery, or coarse rubbish shall be placed in such cans.

Third. All garbage deposited in said cans shall be removed once a week by a licensed scavenger or garbage collector, except in cases of hotels, restaurants, and boarding houses, where garbage shall be collected and removed daily. The expense of such collection shall be paid for by the owner, agent, occupant, or tenant of the premises from which the said garbage is collected, but in no instance shall the fee charged for such collection exceed 5 cents per week for each can, whole or part. In case of hotels and restaurants, tight barrels with tight-fitting covers may be used in place of cans.

Fourth. The scavenger or garbage collector shall provide a covered tank wagon, so constructed that it shall not leak or spill, in which all garbage to be removed shall be collected and conveyed to places at least one-fourth of 1 mile outside of the city limits, there to be disposed of.

Fifth. The wagon and conveyors used for collection shall be kept cleansed and as free from offensive odors as possible; nor shall they be kept in any street, alley, or public place, nor upon any private premises longer than is reasonably necessary to collect the garbage, nor within the city limits except by permission of the health officer.

[Regulations, board of health, adopted Oct. 2, 1911.]

LITTLE ROCK, ARK.

GARBAGE AND REFUSE—COLLECTION AND DISPOSAL.

SECTION 1. The various kinds of waste matter, for the purposes of this ordinance, shall be defined as follows: (A) kitchen garbage, which is the animal and vegetable refuse from the kitchen; (B) ashes, cinders, etc., which are the refuse matter from stoves, furnaces, fireplaces, etc.; (C) rubbish, which consists of wornout household articles, rags, paper, broken crockery, tin cans, old metal, etc; (D) yard sweepings, which are composed of paper, dust, stable manure, leaves, weeds, grass, sticks, etc.

SEC. 2. The short name of this ordinance shall be "The Garbage Ordinance," and all items of waste matter mentioned or suggested in section 1 of this ordinance shall, for convenience, be hereinafter covered by the term "garbage."

SEC. 3. No person shall place or throw waste paper, trash, or other garbage on any street, sidewalk, or public alley of the city of Little Rock at any time, day or night: *Provided*, That all such garbage must be placed in a receptacle as hereinafter described on the premises at some point accessible to the garbage collector: *Provided*, That the exact location of all receptacles may be under the further direction and control of the superintendent of the garbage department.

SEC. 4. All proprietors of hotels, restaurants, cafés, boarding or eating houses, housekeepers, and occupants of buildings in the city of Little Rock shall provide all cans at their own expense, and shall deposit daily their accumulations of garbage in a galvanized iron can, with a tin or metal cover, such cans to have a capacity of 20 gallons; said receptacles to be provided with two handles.

Provided, That yard and stable manure, ashes, and cinders shall not be placed in he garbage can, but shall be kept near such can and convenient of access to the garbage collector; ashes and cinders may be kept in any box or vessel that can be handled by one man; yard and stable manure shall be kept in any covered box or bin so arranged that flies can not reach the manure stored therein.

Provided, That where owner or lessee of premises rents a portion thereof to two or more families or occupants, he or she shall provide a garbage can as above set forth, and shall cause such garbage to be removed in accordance with the terms of this ordinance.

SEC. 5. Manufacturers or merchants, where garbage consists of paper, excelsior, or other packing material, shall provide a box or other receptacle so that the contents may not be blown about or scattered. Said receptacle shall be of such size that it may be handled by one man.

SEC. 6. It shall be unlawful for any person, other than the garbage collector, person owning the can or other receptacle, or the servant or employee of such person, to deposit any garbage, article, or substance in any receptacle, or to remove, injure or destroy, uncover, or in any manner disturb such receptacle, or any portion of its contents, except as provided in section 16 of this ordinance.

SEC. 7. For the purpose of carrying out the provisions of this ordinance a garbage department is hereby created and the offices of superintendent and assistant super-

intendents of the garbage department are hereby created. The office of the garbage department shall be in the city hall. Garbage matters and things pertaining thereto shall be within the jurisdiction and in the charge of the committee on public works and grounds.

SEC. 8. The duties of the superintendent of the garbage department shall be to superintend the gathering of all garbage and to look after its proper disposal, to direct the inspection of all premises, to direct the handling of men and teams necessary to do the work of the department, and to superintend the collection of moneys by employees of the department, and to make daily cash reports to the city clerk, and to make daily cash settlements with the city collector.

The duty of the assistant superintendents shall be to assist the superintendent in his duties. The superintendent and the assistant superintendents are hereby empowered to arrest any violators of the law and they shall be sworn in as regular police.

SEC. 9. Each of said officers before entering on the discharge of his duties shall enter into bond in the sum of $1,000, conditioned on the faithful and efficient discharge of his duties as such officer.

SEC. 10. The council shall elect the superintendent of the garbage department, and the superintendent shall appoint the assistant superintendents. The term of office of the superintendent and assistant superintendents shall be one year, provided that the first and present term shall expire April 15, 1912.

SEC. 11. The council shall have the power to remove the superintendent of the garbage department for inefficiency or for other cause, and the superintendent shall have the power to remove tne assistant superintendents for inefficiency or for other cause. The salary of the superintendent shall be $100 per month and that of the assistant superintendents shall be $80 per month, each payable monthly.

SEC. 12. A careful record of all moneys received by the garbage department shall be kept by the city collector, under the account to be called "Garbage fund." All expenses of the garbage department are to be paid out of such fund.

SEC. 13. All garbage shall be gathered and removed from residences at least once a week and from hotels, restaurants, cafés, and livery stables at least once a day, Sundays excepted, unless otherwise ordered by the board of health or the superintendent of the garbage department of the city of Little Rock; provided that the garbage department shall not be required to remove garbage without proper compensation therefor, as hereintafter specified.

SEC. 14. All garbage shall be hauled and dumped in the Arkansas River at what is known as the city dump or to such other place or places to be provided by the committee on public works and grounds and approved by the board of health, and shall be disposed of so as not to produce a nuisance or unsanitary condition; and garbage shall not be dumped or destroyed at any other place except that fixed as aforesaid, except by written permission of the committee on public works and grounds and the board of health.

SEC. 15. The garbage department shall charge for service in removing and disposing of garbage as follows: For each can or other recetacle, 10 cents: *Provided*, That garbage-department coupon books be issued, each coupon representing 10 cents, these books to be bound in denominations of 50 cents, $1, and $5. These coupon books to be sold by the garbage department for cash in advance at a discount of 10 per cent.

All garbage service to be paid for in cash or in garbage-department coupons to the driver at the time the service is rendered. When driver collects cash, he shall give receipt for same out of coupon numbered receipt books, to be provided.

SEC. 16. Nothing in this ordinance shall be construed to mean that the garbage department may collect for service unless garbage is actually removed from the premises by the garbage department, the right being extended to all householders or others to remove their own garbage or to have it removed by others than the garbage department, or to destroy it on their own premises, under the supervision of the board of health and the committee on public works and grounds.

SEC. 17. Any person, firm, or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof in the police court shall be fined not less than $5 nor more than $25, and each day's offense shall be considered a separate offense and fined accordingly.

SEC. 18. This ordinance being necessary for the immediate preservation of the public peace, health, and safety, shall be in force and effect from and after its passage, and all ordinances or parts of ordinances in conflict herewith are hereby repealed in so far as they conflict.

[Ordinance No. 1720, adopted Oct. 2, 1911.]

NEW YORK, N. Y.

HABIT-FORMING DRUGS—SALE OF.

SEC. 182. No cocaine or salts of cocaine, eucain, alpha or beta eucain, either alone or in combination with other substances, or any substance under any other name giving a similar chemical test of cocaine, and no opium or official preparations of opium, and no morphine or salts of morphine, or the derivatives of either or any of them, shall be sold at retail by any person in the city of New York except upon the written prescription of a physician, duly authorized to practice as such, or other person duly authorized by law to practice medicine and administer drugs or perform surgery with the use of instruments.

Nothing hereinbefore mentioned, however, shall apply to compounded mixtures containing opium or morphine or their derivatives, the formulas for which are given in the latest dispensary or national formulary, in which said mixtures the maximum dose, as plainly stated on the label of the package, as dispensed does not contain in excess of one-half a grain of powdered opium or the equivalent of its alkaloids; or to preparations for external use only, in the form of liniments, lotions, ointments, or oleates.

The last-mentioned preparations shall be labeled "For external use only" and marked "Poison."

[Amendment to sanitary code adopted July 18, 1911.]

OIL CITY, PA.

GARBAGE AND REFUSE.

RULE 3. It shall be unlawful for any person, persons, or corporation or their employees or agents to throw or deposit, or cause to be thrown or deposited, into or on any street, alley, lane, byway, lot, yard, or in any manure bin or manure pile within the limits of the city, or to burn or cause to be burned in any of the above places any decayed or decaying fruit, garbage, vegetables, or animal matter, or any other matter or substance which is or may become unhealthy, insanitary, or cause offensive odors; rubbish, tin cans, or filth of any kind.

RULE 4. It shall be unlawful for any person, persons, or corporation or their employees or agents to throw or cause to be thrown or deposited any garbage, filth, tin cans, manure, or waste matter of any kind upon the banks or in the streams or to pollute in any manner the streams of the Allegheny River or Oil Creek or any of their tributaries or any other stream or pond of water within the limits of the city of Oil City.

RULE 5. It shall be the duty of the owner or owners or agents thereof of every lot, yard, or premises, vacant or occupied, to keep said lot, yard, or premises or cause same to be kept free from all accumulations of filth, manure, rubbish, tin cans, garbage, or waste matter of any kind that is insanitary or likely to engender disease or cause foul or offensive odors to arise therefrom.

RULE 6. It shall be the duty of the owner or owners or agents of every house, building, or structure to keep the cellars thereof clean and free from all impure matter, rubbish, or filth of any kind which is likely to engender disease or cause foul odors therefrom, and to keep said cellars free from all accumulations of surface or other water and to provide proper drains for carrying away all such waters and to cause said cellars to be whitewashed with fresh lime at least once in each and every year.

RULE 11. Every resident, householder, boarding-house keeper, retail dealer, hotel, or restaurant shall be provided with a water-tight garbage can, provided with a tight cover, into which all vegetable and animal matter and garbage shall be deposited, and said can shall be kept covered at all times. Garbage cans must be kept clean and sanitary and should be cleansed with boiling water at least twice each month.

RULE 12. Every contractor or collector of garbage must use water-tight wagons or receptacles for the collection of garbage, and said wagons or receptacles shall be provided with good tight covers, and said covers must be kept closed at all times except when garbage is being placed in same. Wagons or receptacles must not be overloaded in such a manner that the covers will not fit tight on them.

RULE 13. Collections of garbage must be made at least twice each and every week between May 1 and October 1 and at least once each and every week between October 1 and May 1 of each and every year.

RULE 14. In the "business district" all garbage must be collected before 7.30 a. m. between May 1 and October 15 and before 8.30 a. m. between October 15 and May 1 in each and every year, and no garbage wagon shall be allowed to stand in the said district after the hours mentioned above, whether said wagon contains garbage or not:

Provided, however, That this rule shall not be enforced in the case of a blockade or other cause beyond the control of the owner or driver of said garbage wagons.

The "business district" referred to above is bounded as follows:

North Side: Bounded on the north by Duncomb Street, on the east by the railroads to Center Street and by Spring Street from Center Street to Graff Street, on the south by the Allegheny River, and on the west by Oil Creek. To include also Bridge and Relief Streets and Main Street from Center Street to the L. S. & M. S. crossing.

South Side: Bounded on the north by the Allegheny River, on the east by Short Street, on the south by Second Street, and on the west by Petroleum Street.

[Regulations board of health adopted October 18, 1911.]

PERU, IND.

GARBAGE.

SEC. 5. All kitchens shall be provided with garbage receptacles and said receptacles shall be some suitable water-tight vessel, to be tightly covered and emptied at least once in three days by the city garbage gatherers from the 1st day of April to the 1st day of November of each year and at such other times as the board of health may direct. Said garbage receptacles shall be placed in a convenient place on the premises out of reach of disturbances of animals or vehicles, within reasonable convenience to garbage gatherers, and in no case shall said receptacles be placed in or upon any alley, street, sidewalk, or other public place. Any person or persons maintaining any nuisance as above set forth is declared to be the maintainer or maintainor of a nuisance: *Provided*, That nothing herein contained shall prevent any person or persons from using and consuming his, her, or their garbage for any purpose not inconsistent with the object of this section. [Part of ordinance No. 18, adopted July 11, 1911.]

POMONA, CAL.

GARBAGE—COLLECTION, REMOVAL, AND DISPOSAL.

SECTION 1. For the purposes of this ordinance the word "garbage" is defined to be all animal and vegetable refuse from kitchens and all household waste that shall have been prepared for or intended to be used as food or shall have resulted from the preparation of food.

SEC. 2. It shall be unlawful for any person, firm, or corporation to remove or convey or to cause or permit to be removed or conveyed, any garbage upon or along any public street, alley, or other public place in the city of Pomona: *Provided, however*, That the provisions of this section shall not apply to any person, firm, or corporation with whom the city of Pomona has entered into or may hereafter enter into a contract for the collection, removal, and disposal of garbage, or to any employee of such contractor, during such time as such contract shall be in force.

SEC. 3. It shall be the duty of every owner, manager, or person in possession, charge, or control of any boarding house, restaurant, hotel, store, apartment, or eating house, and of every person occupying a dwelling or flat within the city of Pomona, to provide, or to cause to be provided, and at all times to keep, or to cause to be kept, as in this ordinance prescribed, portable vessels, tanks, or receptacles for holding garbage. Each such vessel, tank, or receptacle shall be constructed of metal and shall be water tight and shall be so constructed as to contain not less than 3 nor more than 16 gallons, and shall be provided with a handle or handles on the outside thereof and with a tight-fitting metal cover. Such cover shall not be removed except when necessary to place garbage therein or to take garbage therefrom. Each such vessel, tank, or receptacle shall be kept or placed in the manner following:

Where there is an alley other than a blind alley in the rear of the premises, such vessel, tank, or receptacle shall be placed on the premises within 5 feet of the rear property line.

Where there is no alley other than a blind alley in the rear of such premises and there is a side entrance to the rear of such premises, each vessel, tank, or receptacle shall be placed on the premises at an accessible point not less than 50 nor more than 100 feet from the front property line.

Where there is no alley other than a blind alley, nor such side entrance, each such vessel, tank, or receptacle shall be placed on the curb in front of the premises during the hours fixed for the collection of garbage therefrom. Each such vessel, tank, or receptacle shall be accessible to the garbage collector when called for; provided, however, that the provisions of this section shall not apply to any person occupying a dwelling within said city who actually disposes of the garbage from the kitchen and

household on his own premises by feeding the same to fowl or animals where the same is not prohibited by ordinance.

SEC. 4. It shall be unlawful for any person other than the owner or an officer or employee of said city, or an employee of the person, firm, or corporation holding a contract with the city of Pomona for the collection, removal, and disposal of garbage, to interfere in any manner with any such vessel, tank, or receptacle, or the contents thereof, or to remove any such vessel, tank, or receptacle from the location where the same was placed by the owner thereof, or to remove the contents from any such vessel, tank, or receptacle. It shall be unlawful for any person to place, or to cause or permit to be placed, in any such vessel, tank, or receptacle any substance other than garbage.

SEC. 5. It shall be unlawful for any person, firm, or corporation to deposit, or to cause or permit to be deposited, any garbage upon or in any public street, alley, or other public place or upon any premises in the said city.

SEC. 6. The city clerk shall certify to the passage of this ordinance and shall cause the same to be published once in the Pomona Daily Review, and 30 days thereafter it shall take effect and be in force.

[Ordinance No. 352, adopted Sept. 5, 1911.]

PLAGUE-PREVENTION WORK.

PLAGUE-INFECTED SQUIRRELS FOUND.

During the week ended May 4, 1912, positive diagnosis was made of 35 plague-infected ground squirrels found in Alameda County, Cal., as follows: April 16, 2 squirrels; April 17, 3 squirrels; April 20, 10 squirrels; April 22, 15 squirrels; April 24, 3 squirrels; April 26, 1 squirrel; and 1 squirrel received at the laboratory from the vicinity of Livermore on April 16 was proven positive May 3, 1912.

DISTRIBUTION OF POISON.

In connection with the making and maintenance of a squirrel-free zone around the cities of California on San Francisco Bay, 10,000 acres of land in Alameda County were covered with poison during the week ended May 4, 1912.

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.	Apr. 26, 1912	188 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.

PLAGUE-PREVENTION WORK—Continued.

RATS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley	May 4, 1912...	11	[1] 265	164	.....
Oakland	....do.....	17	[2] 784	637	.....
San Francisco	....do.....	5	[3] 1,783	1,452	.....
Washington:					
City—					
Seattle	....do.....	.....	1,028	981	.....

[1] Identified: Mus norvegicus, 173; Mus rattus, 2; Mus musculus, 90.
[2] Identified: Mus norvegicus, 650; Mus rattus, 2; Mus musculus, 130; Mus alexandrinus, 2.
[3] Identified: Mus norvegicus, 999; Mus musculus, 331; Mus rattus, 205; Mus alexandrinus, 248.

SQUIRRELS COLLECTED AND EXAMINED FOR PLAGUE INFECTION.

During the week ended May 4, 1912, 512 ground squirrels collected in Alameda County, and 1 from Berkeley County, Cal., were examined for plague infection. Thirty-five from Alameda County were found to be plague infected.

CEREBROSPINAL MENINGITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 25, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Chicago, Ill	1	.....	New Orleans, La	1	.....
Cincinnati, Ohio	1	1	New York, N. Y	7	7
Dayton, Ohio	.....	1	Oklahoma City, Okla	1	.....
El Paso, Tex	1	.....	Omaha, Nebr	1	.....
Everett, Mass	1	.....	Philadelphia, Pa	2	.....
Haverhill, Mass	1	.....	Richmond, Va	.....	2
Jersey City, N. J	.....	1	St. Louis, Mo	2	.....
Kansas City, Kans	3	.....	San Francisco, Cal	1	1
Kansas City, Mo	5	10	South Bethlehem, Pa	1	.....
Massillon, Ohio	.....	1	Taunton, Mass	.....	1
New Bedford, Mass	1	.....			

ERYSIPELAS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 25, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Binghamton, N. Y	1	.....	Passadena, Cal	1	.....
Buffalo, N. Y	5	.....	Pittsburgh, Pa	4	.....
Camden, N. J	1	.....	Philadelphia, Pa	11	1
Cleveland, Ohio	6	1	Plainfield, N. J	10	.....
Denver, Colo	3	.....	Reading, Pa	1	.....
Duluth, Minn	1	.....	Richmond, Va	.....	1
Harrisburg, Pa	1	.....	St. Louis, Mo	7	2
Homestead, Pa	1	.....	San Francisco, Cal	1	.....
Los Angeles, Cal	1	.....	Saginaw, Mich	.....	1
Milwaukee, Wis	4	1	South Bethlehem, Pa	2	.....
Newark, N. J	.....	1	Wilkes-Barre, Pa	1	.....
New York, N. Y	50	6	Williamsport, Pa	1	.....

PELLAGRA.

During the week ended May 25, 1912, pellagra was reported as follows: Houston, Tex., 1 death; Richmond, Va., 1 death.

During the month of May, 1912, 6 deaths from pellagra were reported at Charleston, S. C.

PNEUMONIA.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 25, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Aurora, Ill.		2	Newark, N. J.		5
Baltimore, Md.		17	New Bedford, Mass.		2
Binghamton, N. Y.	1	5	Newburyport, Mass.		2
Boston, Mass.		22	Newton, Mass.		2
Braddock, Pa.		3	New Orleans, La.		2
Bridgeport, Conn.		4	New York, N. Y.		109
Buffalo, N. Y.		6	Niagara Falls, N. Y.		3
Cambridge, Mass.		2	Norristown, Pa.		1
Chelsea, Mass.		1	North Adams, Mass.		1
Chicago, Ill.	27	90	Northampton, Mass.		2
Chicopee, Mass.		3	Oakland, Cal.		5
Cincinnati, Ohio.		5	Omaha, Nebr.		4
Cleveland, Ohio.	21	7	Pasadena, Cal.		1
Danville, Ill.		2	Passaic, N. J.		4
Dayton, Ohio.		3	Philadelphia, Pa.	22	30
Denver, Colo.		5	Pittsburgh, Pa.	17	19
Dunkirk, N. Y.	2	1	Pittsfield, Mass.		2
El Paso, Tex.		2	Plainfield, N. J.		1
Elizabeth, N. J.		7	Providence, R. I.		4
Evansville, Ind.		1	Reading, Pa.		5
Fall River, Mass.		5	Richmond, Va.		5
Fort Wayne, Ind.		1	Roanoke, Va.		1
Grand Rapids, Mich.	3		Rockford, Ill.		2
Harrisburg, Pa.		3	Saginaw, Mich.		5
Houston, Tex.		2	San Antonio, Tex.		4
Kalamazoo, Mich.	1		San Francisco, Cal.	5	
Kansas City, Mo.	3	2	Saratoga Springs, N. Y.	2	1
Knoxville, Tenn.		2	Schenectady, N. Y.	3	1
La Fayette, Ind.		1	Seattle, Wash.		1
Lancaster, Pa.	2		South Bethlehem, Pa.	3	1
Lawrence, Mass.		3	South Omaha, Nebr.		1
Los Angeles, Cal.	2	7	Spokane, Wash.		2
Lowell, Mass.		5	Springfield, Ill.		1
Lynchburg, Va.		1	Springfield, Mass.		2
Lynn, Mass.		2	Taunton, Mass.		3
Manchester, N. H.	1	1	Toledo, Ohio.		3
Marinette, Wis.		2	Washington, D. C.		2
Marlboro, Mass.		1	Wilkes-Barre, Pa.		3
Medford, Mass.		3	Williamsport, Pa.	1	
Moline, Ill.		1	Wilmington, N. C.	1	2
Montgomery, Ala.		1	Yonkers, N. Y.		4
Nashville, Tenn.		2			

POLIOMYELITIS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 25, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Buffalo, N. Y.	1		Pittsburgh, Pa.	1	
Lancaster, Pa.	1		Seattle, Wash.		1
New York, N. Y.	2		Taunton, Mass.	2	1

RABIES.

During the week ended May 25, 1912, rabies was reported as follows: Chicago, Ill., 1 death.

TETANUS.

CASES AND DEATHS REPORTED BY CITY HEALTH AUTHORITIES FOR THE WEEK ENDED MAY 25, 1912.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
New Bedford, Mass		1	Toledo, Ohio		1
New Orleans, La		1	Woburn, Mass	1	1
Philadelphia, Pa	1	1	Yonkers, N. Y		1

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 State authorities.

REPORTS RECEIVED DURING WEEK ENDED JUNE 14, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
*Alabama:				
Montgomery	May 26-June 1	1		
Colorado:				
Counties—				
Archuleta	May 1-31	3		
Boulder	do	6		
Denver	do	17		
Larimer	do	1		
Lincoln	do	2		
Los Animas	do	1		
Washington	do	17		
Weld	do	4		
Total for State		51		
New Jersey:				
Counties—				
Essex	Apr. 1-30	1	1	This case was erroneously reported on page 711 in March.
Middlesex	May 1-31	1		
Total for State		2	1	
New York:				
Counties—				
Broome	Apr. 1-30	4		
Chattanooga	do	11		
Chautauqua	do	1		
Cortland	do	1		
Erie	do	1		
Monroe	do	1		
New York	do	1		
Niagara	do	9		
Ontario	do	2		
Steuben	do	2		
Total for State		33		

SMALLPOX IN THE UNITED STATES—Continued.

Reports Received during week ended June 14, 1912.

Places.	Date.	Cases.	Deaths.	Remarks.
South Dakota:				
Counties—				
Brown	Apr. 1-30	18		
Charles	do	3		
Clark	do	3		
Clay	do	4		
Corson	do	1		
Day	do	1		
Hand	do	1		
Marshall	do	8		
Moody	do	1		
Roberts	do	1		
Spink	do	3		
Total for State		44		
*Tennessee:				
Counties—				
Knox—				
Knoxville	May 12-June 1	21		
Shelby	May 1-31	1		
Total for State		22		
Vermont:				
Counties—				
Chittenden	May 1-31	4		
Washington	do	2		
Windsor	do	5		
Total for State		11		
Grand total for the United States		164	1	

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

CALIFORNIA.—Month of April, 1912. Population, 2,377,549. Total number of deaths from all causes 2,605, including diphtheria 22, measles 27, scarlet fever 5, tuberculosis 420, typhoid fever 33.

FLORIDA.—Two weeks ended May 26, 1912. Reports received from the State board of health show diphtheria present in 5 localities with 5 cases, malaria in 10 localities with 15 cases, smallpox in 1 locality with 2 cases and 1 death, tuberculosis in 8 localities with 18 cases, typhoid fever in 10 localities with 13 cases.

MARYLAND.—Month of April, 1912. Population, 1,295,346. Total number of deaths from all causes 797, including diphtheria 6, measles 8, scarlet fever 1, tuberculosis 102, typhoid fever 13. Cases reported: Diphtheria 39, measles 332, scarlet fever 25, typhoid fever 54. The typhoid-fever cases were distributed as follows: Potomac River watershed 23 cases, Patapsco River watershed 6 cases, Gunpowder River watershed 1 case.

MASSACHUSETTS.—Week ended April 6, 1912. Population of reporting towns, 2,580,430. Total number of deaths from all causes 785, including diphtheria 4, measles 4, scarlet fever 4, tuberculosis 64, typhoid fever 1. Cases reported: Diphtheria 70, measles 655, scarlet fever 131, smallpox 38, tuberculosis 172, typhoid fever 20.

Week ended April 13, 1912. Total number of deaths from all causes 805, including diphtheria 8, measles 9, scarlet fever 4, tuberculosis 87, typhoid fever 2. Cases reported: Diphtheria 95, measles 833, scarlet fever 152, smallpox 23, tuberculosis 208, typhoid fever 24.

Week ended April 20, 1912. Population of reporting towns, 2,567,482. Total number of deaths from all causes 815, including diphtheria 3, measles 6, scarlet fever 4, tuberculosis 77, typhoid fever 3. Cases reported: Diphtheria 66, measles 711, scarlet fever 95, smallpox 27, tuberculosis 196, typhoid fever 24.

Week ended April 27, 1912. Population of reporting towns, 2,580,430. Total number of deaths from all causes 765, including diphtheria 5, measles 9, tuberculosis 88, typhoid fever 7. Cases reported: Diphtheria 98, measles 942, scarlet fever 100, smallpox 9, tuberculosis 199, typhoid fever 19.

NEW JERSEY.—Month ended May 10, 1912. Population, 2,537,167. Total number of deaths from all causes 3,125, including diphtheria 32, measles 63, scarlet fever 11, tuberculosis 411, typhoid fever 14.

NEW YORK.—Month of March, 1912. Population, 9,113,614. Total number of deaths from all causes 13,329, including diphtheria 169, measles 134, scarlet fever 129, tuberculosis 1,643, typhoid fever 68. Cases reported: Diphtheria 1,883, measles 10,642, scarlet fever 3,117, smallpox 54, tuberculosis 2,672, typhoid fever 332.

NORTH DAKOTA.—Month of April, 1912. Population, 577,056. Total number of deaths from all causes 359, including tuberculosis 3. Cases reported: Diphtheria 11, measles 8, scarlet fever 43, smallpox 15, tuberculosis 8, typhoid fever 13.

PENNSYLVANIA.—Month of March, 1912.

Mortality.—Population, 7,665,111. Total number of deaths 10,472, including typhoid fever 94, scarlet fever 55, diphtheria 147, measles 95, whooping cough 75, influenza 146, malaria 1, tuberculosis of the lungs 873, tuberculosis of other organs 157, cancer 444, diabetes 85, meningitis 53, acute anterior poliomyelitis 7, pneumonia 1,618, diarrhea and enteritis under 2 years 210, diarrhea and enteritis over two years 60, Bright's disease 619, early infancy 617, suicide 78, accidents in mines 109, railway injuries 123, other forms of violence 487, all other diseases 4,319.

Morbidity.—Month of April, 1912. Total number of cases of communicable diseases reported 14,286, including anterior poliomyelitis 6, cerebrospinal meningitis 11, chicken pox 1,321, diphtheria 923, erysipelas 183, German measles 155, malarial fever 8, measles 5,930, mumps 1,123, pneumonia 653, puerperal fever 3, scarlet fever 1,171, smallpox 51, tetanus 8, trichiniasis 1, tuberculosis 1,254, typhoid fever 443, whooping cough 1,042.

MORBIDITY AND MORTALITY.

MORBIDITY AND MORTALITY TABLE, CITIES OF THE UNITED STATES, FOR WEEK ENDED MAY 25, 1912.

Cities.	Population United S ates 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	166	10	....	28	....	9	....	....	....	39	26	4	....
Boston, Mass	670,585	197	32	1	191	1	22	....	....	....	57	20	12	1
Chicago, Ill	2,185,283	600	123	20	288	4	243	16	2	....	130	68	0	3
Cleveland, Ohio	560,663	165	22	5	130	1	27	3	....	....	30	14	3	1
New York, N. Y	4,766,883	1,471	276	29	1,676	22	351	15	....	....	556	183	35	6
Philadelphia, Pa	1,549,008	450	74	9	38	1	70	....	....	....	123	49	44	3
Pittsburgh, Pa	533,905	129	18	1	176	4	45	4	....	....	22	12	8	1
St. Louis, Mo	687,029	215	28	3	21	....	22	1	1	....	50	19	8	....
Cities having from 300,000 to 500,000 inhabitants.														
Buffalo, N. Y	423,715	113	23	....	75	1	18	....	....	....	22	11	11	4
Cincinnati, Ohio	364,463	109	9	2	19	....	20	2	....	....	31	27	1	....
Detroit, Mich	465,766	146	11	....	....	....	34	3	2	....	....	....	....	....
Los Angeles, Cal	319,198	102	8	1	16	....	5	....	1	....	22	20	4	....
Milwaukee, Wis	373,857	123	5	....	139	1	22	....	2	....	17	13	14	3
Newark, N. J	347,469	93	22	1	40	1	16	....	....	....	32	....	1	2
New Orleans, La	339,075	78	2	....	31	....	3	....	5	....	22	2	13	....
San Francisco, Cal	416,912	....	1	....	18	1	1	....	1	....	22	15	2	....
Washington, D. C	331,069	102	4	....	136	....	4	....	....	....	22	17	7	....
Cities having from 200,000 to 300,000 inhabitants.														
Denver, Colo	213,381	51	9	....	8	....	11	1	5	....	....	11	....	....
Jersey City, N. J	267,779	79	....	1	....	....	....	2	....	....	....	5	....	....
Kansas City, Mo	248,381	24	4	....	4	....	3	....	....	....	3	12	....	....
Providence, R. I	224,326	79	18	2	18	2	13	2	....	....	....	8	4	1
Seattle, Wash	237,194	37	1	....	13	....	8	....	....	....	9	7	1	....
Cities having from 100,000 to 200,000 inhabitants.														
Bridgeport, Conn	102,054	25	3	....	2	....	8	1	....	....	4	5	....	1
Cambridge, Mass	104,839	26	5	2	73	....	6	....	....	....	6	1	1	....
Columbus, Ohio	181,548	47	1	....	35	....	8	1	....	....	4	3	4	....
Dayton, Ohio	116,577	37	1	....	71	....	1	....	....	....	....	2	....	....
Fall River, Mass	119,295	....	5	1	1	....	....	....	....	....	5	1	2	1
Grand Rapids, Mich	112,571	36	....	....	5	....	3	....	....	....	8	4	1	1
Lowell, Mass	106,294	48	....	....	70	8	6	....	....	....	7	3	....	1
Nashville, Tenn	110,364	40	....	....	1	....	....	....	1	....	2	1	1	....
Oakland, Cal	150,174	42	2	....	17	....	1	....	....	....	1	5	....	1
Omaha, Nebr	124,096	29	2	....	....	....	1	....	1	....	....	1	....	....
Richmond, Va	127,628	46	3	....	25	....	1	....	....	....	35	3	....	....
Spokane, Wash	104,402	....	1	....	31	....	1	....	4	....	....	1	....	....
Toledo, Ohio	168,497	46	7	1	75	....	1	....	....	....	....	5	4	1
Worcester, Mass	145,986	43	7	3	50	3	6	....	....	....	6	3	3	....
Cities having from 50,000 to 100,000 inhabitants.														
Altoona, Pa	52,127	16	1	....	....	....	....	....	....	....	....	1	....	....
Bayonne, N. J	55,545	25	2	1	16	....	5	....	....	....	3	2	....	....
Brockton, Mass	56,878	9	1	....	30	....	....	....	....	....	3	....	2	....
Camden, N. J	94,538	....	1	....	....	....	3	....	....	....	8	....	....	....
Duluth, Minn	78,466	13	....	....	....	....	2	....	1	....	1	1	....	....
Elizabeth, N. J	73,409	26	....	....	8	....	1	1	....	....	6	1	....	....
Evansville, Ind	69,647	15	....	....	....	....	....	....	....	....	1	2	....	1
Fort Wayne, Ind	63,933	20	....	....	10	....	....	....	....	....	....	3	1	....
Harrisburg, Pa	64,186	18	3	1	12	....	....	....	....	....	3	1	1	1
Hoboken, N. J	70,324	....	1	....	3	....	1	....	....	....	4	1	....	....
Houston, Tex	78,800	30	....	....	....	....	....	....	....	....	....	....	....	1
Johnstown, Pa	55,482	19	2	....	18	....	....	....	....	....	4	2	....	....
Kansas City, Kans	82,331	....	....	....	3	....	3	....	1	....	1	....	1	....
Lawrence, Mass	85,892	20	....	....	2	....	....	....	....	....	3	4	....	....

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended May 25, 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.														
Lynn, Mass	89,336	23	4	....	18	....	3	....	....	....	6	3	....	....
Manchester, N. H	70,063	27	2	....	8	....	....	....	....	....	2	2	....	....
New Bedford, Mass	96,652	21	2	....	2	....	1	....	....	....	9	1	....	....
Oklahoma City, Okla	64,205	12	....	....	1	....	....	....	....	....	1	....	2	....
Passaic, N. J	54,773	19	2	1	36	....	....	....	....	....	1	3	....	....
Reading, Pa	96,071	29	2	1	18	....	4	....	....	....	2	....	12	2
Saginaw, Mich	50,510	16	2	....	10	....	4	....	1	....	2	5	3	....
San Antonio, Tex	96,614	55	....	....	....	....	4	....	....	....	....	5	3	....
Schenectady, N. Y	72,826	21	2	....	52	....	5	....	....	....	2	2	....	....
South Bend, Ind	53,684	15	....	....	....	....	2	....	....	....	....	....	....	....
Springfield, Ill	51,678	14	....	....	....	....	....	....	1	....	....	....	....	....
Springfield, Mass	88,926	24	1	....	8	....	2	....	....	....	4	2	1	....
Trenton, N. J	96,815	33	....	....	1	....	2	....	....	....	5	4	2	1
Wilkes-Barre, Pa	67,105	23	....	....	6	....	1	....	....	....	9	2	....	....
Yonkers, N. Y	79,803	....	9	....	6	....	7	....	....	....	4	1	....	....
Cities having from 25,000 to 50,000 inhabitants.														
Atlantic City, N. J	46,150	14	1	....	....	....	3	....	....	....	....	....	....	....
Aurora, Ill	29,807	10	2	1	2	....	....	....	....	....	....	1	....	....
Berkeley, Cal	40,434	9	2	1	9	....	....	....	....	....	1	....	....	....
Binghamton, N. Y	48,443	18	1	....	....	....	....	....	....	....	4	2	1	....
Brookline, Mass	27,792	5	....	....	24	....	....	....	....	....	2	....	....	....
Chelsea, Mass	32,452	14	1	....	40	....	1	....	....	....	3	3	....	....
Chicopee, Mass	25,401	8	....	....	13	....	....	....	....	....	....	....	....	....
Danville, Ill	27,871	8	....	....	....	....	....	....	....	....	....	4	....	1
East Orange, N. J	34,371	....	....	....	17	....	....	....	....	....	2	....	....	....
El Paso, Tex	39,279	28	....	....	....	....	5	....	2	....	....	25	1	....
Everett, Mass	33,484	9	2	....	5	....	....	....	....	....	....	1	....	....
Fitchburg, Mass	37,826	8	....	....	1	....	1	....	....	....	3	....	1	....
Haverhill, Mass	44,115	7	1	....	18	....	5	....	....	....	1	....	2	....
Kalamazoo, Mich	39,437	16	1	....	1	....	2	....	....	....	4	1	1	....
Knoxville, Tenn	36,346	13	....	....	....	....	....	....	7	....	....	5	....	....
La Crosse, Wis	30,417	3	1	....	....	....	1	....	....	....	1	....	1	....
Lancaster, Pa	47,227	....	1	....	28	....	1	....	....	....	3	....	....	....
Lexington, Ky	35,099	13	2	....	1	....	....	....	....	....	3	1	1	....
Lima, Ohio	30,508	8	....	....	1	....	....	....	....	....	....	....	....	....
Lynchburg, Va	29,494	7	1	....	11	....	....	....	....	....	....	1	2	....
Malden, Mass	44,404	6	1	....	7	....	....	....	....	....	3	....	....	....
Montgomery, Ala	38,136	9	....	....	....	....	2	....	....	....	....	1	2	....
Newcastle, Pa	36,280	....	5	....	....	....	....	....	....	....	1	....	1	....
Newport, Ky	30,309	12	....	....	....	....	1	....	....	....	1	1	....	....
Newton, Mass	39,806	8	5	....	34	....	1	....	....	....	....	....	....	....
Niagara Falls, N. Y	30,445	14	2	....	....	....	....	....	3	....	1	1	3	....
Norristown, Pa	27,875	7	....	....	3	....	....	....	....	....	....	1	3	....
Orange, N. J	29,630	12	1	....	23	....	1	....	....	....	....	3	1	....
Pasadena, Cal	30,291	13	1	1	....	....	....	....	....	....	4	3	....	....
Pittsfield, Mass	32,121	9	6	....	1	....	....	....	....	....	....	1	....	....
Portsmouth, Va	33,190	12	....	....	....	....	....	....	2	....	....	1	....	....
Racine, Wis	38,002	15	2	....	....	....	....	....	....	....	....	....	....	....
Roanoke, Va	34,874	11	....	....	18	....	....	....	....	....	....	....	1	....
Rockford, Ill	45,401	9	....	....	....	....	9	....	....	....	....	....	16	....
South Omaha, Nebr	26,259	8	....	....	....	....	....	....	....	....	....	1	....	....
Superior, Wis	40,384	8	2	....	....	....	....	....	....	....	....	3	....	....
Taunton, Mass	34,259	15	....	....	4	....	1	....	....	....	....	1	....	....
Waltham, Mass	27,834	4	....	....	37	....	....	....	....	....	2	2	....	....
West Hoboken, N. J	35,403	5	....	....	4	....	4	1	....	....	....	....	....	....
Williamsport, Pa	31,860	8	1	....	51	....	1	....	....	....	....	1	....	....
Wilmington, N. C	25,748	14	....	....	....	....	1	....	....	....	1	1	....	....
York, Pa	44,750	....	1	....	18	....	....	....	....	....	....	....	....	....
Zanesville, Ohio	28,026	6	1	....	....	....	....	....	....	....	....	....	4	1

MORBIDITY AND MORTALITY—Continued.

Morbidity and mortality table, cities of the United States, for week ended May 25, 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.														
Alameda, Cal.	23,833	13			21									
Ann Arbor, Mich.	14,817	9												
Beaver Falls, Pa.	12,191				1						1			
Biddeford, Me.	17,079	30				1			3			2		
Braddock, Pa.	17,759	9	1	1	2									
Cambridge, Ohio.	11,327	1											1	
Camden, S. C.		1										1		
Carbondale, Pa.	17,040	9			16									
Clinton, Mass.	13,075	2	2		2									
Coffeyville, Kans.	12,687										1			
Columbus, Ga.	20,554	6												
Columbus, Ind.		2			1						1			
Concord, N. H.	21,497	9			17									
Cumberland, Md.	21,839	5			28	1					1		2	
Dunkirk, N. Y.		4									4		2	
Galesburg, Ill.	20,089	4	1				1							
Harrison, N. J.	14,498	3									1	1		
Homestead, Pa.	18,710	4	1				1							
Kearny, N. J.	18,659	4	2		4				1				2	
La Fayette, Ind.	20,081	6			2							1		
Marinette, Wis.	14,610	5												
Marlboro, Mass.	14,579	1									3			
Massillon, Ohio.	13,879	3	2				1							
Medford, Mass.	23,156	7	1		41		1							
Melrose, Mass.	15,715	2			27		1				1			
Moline, Ill.	24,199	5									2	1		
Montclair, N. J.	21,150	4			3		1				1	1		
Morristown, N. J.	12,507	12			5							1		
Nanticoke, Pa.	18,509	5												
Newburyport, Mass.	19,240	4					1					1	1	
North Adams, Mass.	22,012	6			3									
Northampton, Mass.	19,431	9			11						1	1		
Ottumwa, Iowa.	22,012	9					2							
Plainfield, N. J.	22,050	4	1		7		1				1			
Pottstown, Pa.	15,599	4					2							
Saratoga Springs, N. Y.		7												
South Bethlehem, Pa.	19,973	7	6		6	1					1		1	
Steelton, Pa.	14,246	2			30						1			
Wilkinsburg, Pa.	18,294	5					2				2			
Woburn, Mass.	15,308	3			3						3			

FOREIGN AND INSULAR.

AUSTRALIA.

Sydney—Examination of Rats.

The following information was taken from the bulletins issued by the department of health of New South Wales: During the three weeks ended April 27, 1912, 950 rats were examined for plague infection. No plague-infected rat was found.

The last case of human plague was reported May 29, 1909.

The last plague-infected rat was found April 25, 1910.

CHINA.

Amoy—Cholera.

The American consul reported June 3 the presence of cholera at Amoy.

Hongkong—Plague—Smallpox—Plague Rats.

Surg. Brown reports: During the week ended April 27, 129 cases of plague with 113 deaths and 17 cases of smallpox with 12 deaths were reported at Hongkong.

During the same period, 2,446 rats were examined for plague infection. Of this number 24 were found to be plague infected.

CUBA.

Transmissible Diseases.

The following statement was issued by the sanitary department:

Month of April, 1912.

	New cases.	Deaths.	Remaining under treatment.
Tuberculosis	143	221	1,452
Leprosy	2	3	345
Malaria	122	13	154
Typhoid fever	94	18	73
Diphtheria	69	12	18
Scarlet fever	26	.....	10
Measles	146	.....	80
Varicella	52	.....	30
Tetanus in new born	8	7	1
Dengue	3	.....	11
Filariasis	.....	.....	2

ECUADOR.

Yellow Fever.

The following statement was received from Passed Asst. Surg. Parker at Guayaquil:

Yellow fever in Ecuador during the month of April, 1912.

City or town.	Previously existing.	New cases.	Died.	Remaining.
Guayaquil:				
Apr. 1 to 15	19	29	12	14
Apr. 15 to 30	14	26	11	15
Duran:				
Apr. 1 to 15	1	1	.....	1
Apr. 15 to 30	1	.....	.....	1
Yaguachi:				
Apr. 1 to 15	1	.....	.....	.....
Apr. 15 to 30	.....	2	.....	1
Milagro:				
Apr. 1 to 15	1	4	3	1
Apr. 15 to 30	1	3	3	.....
Naranjal:				
Apr. 1 to 15	1	.....	.....	.....
Apr. 15 to 30	.....	.....	.....	.....
Naranjito:				
Apr. 1 to 15	.....	4	2	2
Apr. 15 to 30	2	3	2	2
Huigra:				
Apr. 1 to 15	1	.....	.....	.....
Apr. 15 to 30	.....	.....	.....	.....

EGYPT.

Cairo—Typhus Fever.

Consul Knabenshue reports the occurrence of 14 deaths from typhus fever at Cairo during the two weeks ended April 29, 1912.

GREECE.

Cerebrospinal Meningitis.

Consul General Gale at Athens reports: During the week ended May 18 cerebrospinal meningitis was reported in 26 localities in Greece, with 78 cases. Of these cases 12 were reported in Athens and 3 in Piræus.

INDIA.

Calcutta—Cholera and Plague.

Acting Asst. Surg. Allan reports as follows relative to cholera and plague in Calcutta:

Cholera.—Week ended April 6, 1912, 73 deaths; week ended April 13, 98 deaths; week ended April 20, 95 deaths.

Plague.—Week ended April 6, 1912, 129 deaths; week ended April 13, 148 deaths; week ended April 20, 174 deaths.

In all Bengal plague was reported as follows: Week ended April 6, 2,336 cases with 2,085 deaths; week ended April 13, 2,709 cases with 2,396 deaths; week ended April 20, 1,713 cases with 1,503 deaths.

In all India plague was reported as follows: Week ended April 6, 12,118 cases with 10,562 deaths; week ended April 13, 13,490 cases with 11,305 deaths; week ended April 20, 11,551 cases with 9,914 deaths.

ITALY.

Examination of Emigrants.

Surg. Geddings at Naples reports:

Vessels inspected at Naples, Messina, and Palermo week ended May 18:

NAPLES.

Date.	Name of ship.	Destination.	Steerage passengers inspected and passed.	Pieces of baggage inspected and passed.	Pieces of baggage disinfected.
May 14	Mongibello	New York			
15	Carpathia	do			
16	Calabria	do	347	45	520
18	Luisiana	do	1,103	110	1,250
18	Venezia	do	967	145	1,520
	Total		2,417	300	3,290

MESSINA.

May 13	Carpathia	New York			
16	Mongibello	do			

PALERMO.

May 14	Carpathia	New York			
15	Laura	do			
16	Fratelli Bianchi	do			
17	Luisiana	do	47	80	50
17	Calabria	do	217	160	100
	Total		264	240	150

KOREA.

Smallpox.

During the period from January 1 to April 30, 1912, smallpox was reported in Korea as follows:

Province.	Cases.	Remaining Apr. 30.
Keijo-fu (Seoul)	8	4
Kiung Ki	67	10
South Choong Chung		
North Choong Chung		
South Chunla		
North Chunla	2	
South Kiung Sang	2	
North Kiung Sang	2	
Kang Won	11	3
South Ham Kiung	6	3
North Ham Kiung	25	
South Pyeng An	172	31
North Pyeng An	521	205
Whang Hai	26	16
Total	842	272

MEXICO.

Manzanillo—Prevailing Diseases—Sanitary Conditions.

Acting Asst. Surg. Morgenstern reports: For the year 1910 the death rate at Manzanillo was about 37 per 1,000 inhabitants. The most common causes of death were malarial fever, with 22 deaths, pneumonia with 18, pernicious malarial fever with 12, tetanus with 3, yellow fever with 5. For the year 1911 the death rate was about 33 per 1,000. Malaria caused 22 deaths, pneumonia 16, pernicious malarial fever 13, dysentery 2.

Smallpox is quite prevalent. Malarial fevers are endemic, appearing in all forms. Mosquitoes are numerous. The estimated population of Manzanillo is 1,500.

Yellow Fever at San Juan Bautista, Tabasco.

The American consul at Frontera reports: A new case of yellow fever was reported at San Juan Bautista June 9.

Recent reports show that there have been in all at least 12 cases of yellow fever at San Juan Bautista. The first discovered case was in a boy who had not been out of the town for two years.

TURKEY IN ASIA.

Smyrna—Typhus Fever.

Consul Horton reports the occurrence of 1 death from typhus fever during the week ended April 20, and 1 during the week ended May 4, 1912.

VENEZUELA.

Summary of Yellow Fever.

Acting Asst. Surg. Stewart at La Guaira reports as follows relative to yellow fever in Caracas and vicinity:

During the month of December, 1911, 7 deaths from yellow fever were reported in the city of Caracas, occurring in 3 sections of the city; in January, 1912, 4 deaths from yellow fever occurred in 2 sections of the city; and in February and March, 1912, 4 deaths each were reported, occurring in 3 sections of the city. A fatal case occurred in Caracas during the week ended May 10, 1912, in which the infection was contracted in Macuto, a winter resort in the vicinity of the city. During the two weeks ended May 17, three other cases with 1 death occurred at Macuto. A fatal case was also reported there about April 1. During the months of April and May, 1912, yellow fever was reported in El Valle, a district in the vicinity of Caracas and at Guarenas, a town also situated near the city.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

REPORTS RECEIVED DURING WEEK ENDED JUNE 14, 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.
China:				
Amoy	June 3			Present.
Dutch East Indies:				
Celebes Island	Mar. 10 [1]	5	2	
India:				
Bassein	Apr. 14-20	8	7	
Bombay	Apr. 28-May 4	9	5	
Calcutta	Apr. 7-20		266	
Madras	Apr. 28-May 4	3	1	Presidency, Apr. 1-30: Cases, 2,458; deaths, 1,523.
Moulmine	Apr. 14-20	6	6	
Rangoon	Mar. 1-31	39	38	
Indo-China:				
Saigon	Apr. 23-29	12	12	
Turkey in Asia:				
Adana	Apr. 16-29	53	23	
	Apr. 30-May 7	47	13	
	May 7-13	25	12	
Aleppo	May 12-18	2	1	

YELLOW FEVER.

Ecuador:				
Duran	Apr. 1-15	1		
Guayaquil	Apr. 1-30	55	23	
Milagro	do	7	6	
Naranjito	do	7	4	
Yaguachi	do	2		
Mexico:				
San Juan Bautista	June 9	1		
Venezuela:				
Caracas	May 4-10	1	1	
El Valle	Apr. 1-May 31			Present.
Guarenas	do			Do.
Macuto	May 3-17	3	1	

PLAGUE.

Chile:				
Iquique	Apr. 21-May 4	5	2	
China:				
Hongkong	do	273	235	
Egypt:				
Alexandria	Mar. 23-May 10	2	2	
Cairo	Mar. 26-May 14	2	1	
Provinces—				
Assiout	Apr. 24-May 14	22	14	
Assouan	do	11	12	
Beni Souef	Apr. 20-May 14	10	3	
Charkieh	Apr. 22-27	2	3	
Fayoum	Apr. 25-May 16	23	9	
Girgeh	Mar. 29-May 3	4	2	
Keneh	Apr. 25-May 14	26	15	
Minieh	Apr. 24-May 14	56	11	
India:				
Bombay	Apr. 28-May 4	128	105	
Calcutta	Apr. 7-20		451	
Karachi	Apr. 28-May 4	69	62	
Rangoon	Mar. 1-31	65	63	
Indo-China:				
Saigon	Apr. 23-29	4	8	
Java:				
Pasoeroean Residency	Apr. 14-20	5	5	
Turkey in Asia:				
Jiddah	Apr. 1-21	4	4	
Do	May 1-6	1		

[1] Bulletin Quarantenaire d'Egypte, May 18, 1912.

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

Reports Received during week ended June 14, 1912.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	Apr. 1-30		1	
Austria-Hungary:				
Bohemia	Apr. 28-May 11	3		
Galicia	do	9		
Upper Austria	do	1		
Canada:				
Niagara Falls	May 8-31	2		
Quebec	May 26-June 1	1		
Toronto	May 15-25	3		
China:				
Hongkong	Apr. 21-May 4	23	16	
France:				
Paris	May 5-18	8		
Germany				Total: May 5-11, 2 cases additional; May 12-18, 16 cases.
Hamburg	May 12-18	1		
Kehl	Apr. 1-30	1		
India:				
Bombay	Apr. 28-May 4	74	48	
Calcutta	Apr. 7-20		12	
Rangoon	Mar. 1-31	222	66	
Indo-China:				
Saigon	Apr. 23-29	2		
Italy:				
Naples	May 12-18	3		
Palermo	do	6	6	
Japan:				
Korea	Jan. 1-Apr. 30			Total, exclusive of Seoul, 843 cases.
Seoul	do	8		
Java:				
Batavia	Apr. 14-20	3	2	
Mexico:				
Juarez	May 26-June 1	1		
Mexico	Apr. 21-27	15	10	
Portugal:				
Lisbon	May 12-18	3		
Russia:				
Libau	May 6-12	1		
Moscow	Apr. 21-May 4	9		
Odessa	May 5-11	2		
St. Petersburg	do	8	7	
Spain:				
Barcelona	May 12-18	18	1	
Straits Settlements:				
Singapore	Apr. 14-20	1		
Turkey in Asia:				
Beirut	May 5-11	15		

REPORTS RECEIVED FROM DEC. 30, 1911, TO JUNE 7, 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.
Arabia:				
Hodeida	Jan. 21	2	1	
Ras-el-Ketib	Dec. 27-Jan. 1			Total cases, 22; deaths, 12; mainly in the military hospital.
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. Free Dec. 28.
Backs-Bodog	Dec. 10-16	9	5	
Jasz-Nagykun-Szolnok	Dec. 3-23	11	7	
Torontal	Nov. 19-Dec. 16	17	2	
Bahrein Island	Nov. 27-Dec. 30		260	In the Persian Gulf.

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

Reports Received from Dec. 30, 1911, to June 7, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Bulgaria:				
Burgas	Nov. 22-23	2	2	Aug. 30-Sept. 6; 2 fatal cases from s. s. Episticia from Asia Minor, p. 1635, Vol. XXVI.
Varna	Nov. 6	1		
China:				
Hongkong	Jan. 14-20	1	1	July 2-15, 1911: Cases, 5; deaths, 4, p. 1300, Vol. XXVI.
Dutch East Indies				Total year 1911: Cases, 3,624; deaths, 2,919, including report, p. 2092, Vol. I.
Batavia	Nov. 12-Dec. 23	21	8	Free Dec. 31.
India				Year 1911: Deaths, 323,237.
Bassein	Jan. 14-Apr. 13	140	112	
Bombay	Apr. 7-27	22	17	
Calcutta	Nov. 5-Mar. 30		1,090	
Madras	Nov. 26-Apr. 27	556	452	Madras Presidency Nov. 1-Dec. 31: Cases, 10,436; deaths, 6,545. Jan. 1-Feb. 29: Cases, 18,267; deaths, 11,563.
Moulmine	Feb. 18-Apr. 13	27	24	
Negapatam	Jan. 14-Feb. 24		79	
Pondicherry	Feb. 22-28	4	4	
Rangoon	Oct. 1-Mar. 31	143	124	
Indo-China:				
Saigon	Nov. 20-Apr. 22	1,809	1,267	And vicinity.
Italy				Total June 8-Dec. 31: Cases, 15,985; deaths, 6,022.
Caltanisetta	Nov. 26-Dec. 31	9	7	
Girgenti	do	105	57	
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	
Kermanshah	Dec. 18-26		37	
Philippine Islands				Third quarter, 1911: Manila, 1, fatal case; Provinces, 27 cases and 22 deaths. Fourth quarter, 1911: Manila, no case and no death: Provinces, 22 cases, 20 deaths.
Province—				
Union	Oct. 29-Dec. 4	5	5	
Roumania				Total Sept. 9-Dec. 13: Cases, 192; deaths, 42, including report, p. 2094, vol. 1. Free Dec. 19.
Districts—				
Braila	Sept. 11-Dec. 13	84	11	Including cases previously reported.
Convoluri	Oct. 31-Nov. 28	21	1	
Doliju	Nov. 6-Dec. 13	19	4	
Jalonitza	Oct. 31-Nov. 28	4		
Konstanza	Oct. 30-Nov. 28	8		
Prahova	Nov. 6-23	1	1	
Talomita	do	2		
Tulcea	Nov. 24-Dec. 13	15	1	
Servia				Total year 1911: Cases,95;deaths, 51, including report, p. 2095, vol. 1.
Belgrade district	Nov. 26-Dec. 16	6	4	Declared free Dec. 31.
Siam:				
Bangkok	Nov. 5-Apr. 20		1,775	
Straits Settlements:				
Singapore	Nov. 5-Feb. 3	4	4	
Tripoli:				
Tripoli	Oct. 13-Jan. 24			Cases, 2,000; deaths, from 1,000 to 1,200.
Tunis Regency				Total Nov. 25-Jan. 4: Cases, 462; deaths, 323. No cases since Jan. 10.
Beja district	Nov. 25-Dec. 21	71	20	
Bizerta district	Nov. 25-Dec. 5	9	15	

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

Reports Received from Dec. 30, 1911, to June 7, 1912.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia				Provinces in Asia and Europe, Apr. 16–Dec. 30, 1911: Deaths, 6,111, excluding Constantinople. Mainly among troops. Jan. 6–Feb. 27: Cases, 101; deaths, 126.
Acre	Jan. 21		33	In vicinity.
Adana	Dec. 2–Apr. 15	81	35	
Aleppo	Jan. 26–Apr. 20	46	29	
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. 30	47	47	
Jiddah	Dec. 2–24	323	310	
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	
Tor	Dec. 14–26	29		
Trebizond and vicinity	Sept. 18–23	64	34	
Tripoli	Jan. 4			Present.
Turkey in Europe:				
Constantinople	Oct. 24–Feb. 3	8	2	
Durazzo	Dec. 7–13	2		
Janina	Jan. 14–22	17	8	
Loros	Jan. 22	12	7	
Saloniki, vilayet	Nov. 6–19	4	3	In Serres.

YELLOW FEVER.

Brazil:				
Bahia	Mar. 23–25		1	
Ceara	Jan. 1–Feb. 29		5	
Manaos	Nov. 19–May 4		68	
Para	Mar. 3–9	2	2	Dec. 9–16: 1 fatal case.
Pernambuco	Jan. 1–Apr. 15		29	Apr. 2: Epidemic.
Rio de Janeiro	Mar. 17–Apr. 30	4	3	
Canal Zone:				
Culebra Island quarantine				In January 1 case from a vessel from Guayaquil. Mar. 2–4, 1 fatal case from s. s. Chile from Guayaquil.
Chile:				
Tocopilla	Apr. 11	90	25	And vicinity. Apr. 20: Still present.
Ecuador:				
Bucay	Nov. 16–Feb. 29	7	2	
Duran	Dec. 1–Apr. 15	14	6	
Guayaquil	Nov. 16–Apr. 15	147	66	
Huigra	Feb. 1–29	1		
Milagro	Feb 1–Apr. 15	16	7	
Naranjito	do	6	4	
Yaguachi	Feb. 1–29	1		
Great Britain:				
Liverpool	May 14–18	1		Convalescent on s. s. Gladiator from Cabdello, detained at Port Sanitary Hospital.
Mexico:				
Espita	Dec. 31–Jan. 6	1		
Kambul, hacienda	Feb 21–27		7	
Maxcanu	Dec. 31–Jan. 6	1		
Merida				Total Aug. 1, 1911–May 25, 1912: Cases, 67; deaths, 31.
Puerto Mexico (Coatzacoalcos)	Feb. 28–May 25		2	
Salina Cruz	Feb. 4–7			7 cases in the lazaretto from s. s. Ikalis from Guayaquil.
San Juan Bautista	May 11–25	5	1	
Temax	Dec. 31–Jan. 6	1		

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

Reports Received from Dec. 30, 1911, to June 7, 1912.

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Portuguese Guinea:				
Bolama	Dec. 19–25	1	1	In an engineer on a vessel.
Venezuela:				
Caracas	Nov. 16–Mar. 31	30	.....	Dec. 1–30, 10 deaths, and Jan. 15–Mar. 31, 12 deaths, including previous reports.
La Guaira	Mar. 17–Apr. 1	2	2	
Macuto	Mar. 16–19	1	1	
Maiquetia	Feb. 24–Apr. 30	4	4	A suburb of La Guaira.
Sabana Grande	Dec. 12	.....	.....	Epidemic.
West Indies:				
Barbados—				
Bridgetown	Apr. 27	1	1	From steamship Francis, from Para.
St. Vincent	Feb. 19	1	.....	
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.
Arabia:				
Aden	Mar. 5–25	2	1	
Azores:				
Fayal	Jan. 10	.....	.....	Still present.
Teceira	do	.....	.....	Do.
Brazil:				
Bahia	Sept. 1–30	.....	2	
Para	Dec. 24–Apr. 20	24	15	
Pernambuco	Oct. 1–Feb. 29	.....	9	
Rio de Janeiro	Nov. 12–Feb. 10	7	3	
British East Africa:				
Kismayu	Oct. 15–25	2	.....	1 case pneumonic.
Chile:				
Iquique	Nov. 12–Apr. 6	24	11	
Pisagua	Nov. 1–30	8	.....	
China:				
Amoy	Jan. 13	.....	1	
Chaochowfu	Mar. 10–Apr. 13	.....	.....	Present.
Hongkong	Dec. 9–Apr. 20	244	212	
Dutch East Indies:				
Java		.....	.....	Total Mar. 1–Dec. 30: Cases, 1,817; deaths, 1,324. Dec. 31–Mar. 2: Cases, 99; deaths, 95.
Provinces—				
Kediri	Jan. 1–Mar. 2	25	24	
Madiven	do	53	49	
Pasoerocan Residency, Malang District.	Nov. 12–Apr. 13	152	104	
Soerabaya	Oct. 17–27	2	.....	
Ecuador:				
Duran	Feb. 1–29	1	.....	
Guayaquil	Nov. 16–Feb. 29	124	52	Dec. 16–Jan. 31: Reports not available because of revolution.
Egypt		.....	.....	Total Jan. 1–Dec. 31, 1911: Cases, 1,656; deaths, 1,041, including cases previously reported.
Alexandria	Mar. 22	1	1	
Cairo	Apr. 22–25	2	1	
Provinces—				
Assiout	Jan. 1–Apr. 24	62	40	Sept. 11–16: Cases, 50; deaths, 28.
Assouan	do	31	19	
Behera	Jan. 1–Apr. 15	5	3	Sept. 11–16: Cases, 11; deaths, 8.
Beni Souef	Feb. 16–Apr. 20	30	9	
Fayoum	Jan. 1–Apr. 24	3	1	
Galioubeh	Jan. 1–Apr. 23	5	3	Oct. 5–Dec. 26: Case, 1.
Garbieh	Jan. 1–Apr. 24	24	8	
Carchieh	Apr. 21–22	6	4	
Girgeh	Mar. 28	1	1	
Kena	Jan. 1–Apr. 25	96	73	Nov. 20–Dec. 13: Cases, 3; deaths, 3.
Menouf	Feb. 2–Apr. 23	9	2	
Minieh	Jan. 1–Apr. 23	26	6	Dec. 13: Case, 1.

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

Reports Received from Dec. 30, 1911, to June 7, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
German East Africa:				
Dar-es-Salaam	Nov. 13–15	1	1	From the interior via Bergamogo.
Great Britain:				
Liverpool	Apr. 27–30	1	1	In the Royal Southern Hospital, from s. s. Italian Prince, which arrived at Liverpool Apr. 19, laden with fruit and grain from Mediterranean ports.
Hawaii:				
Honakaa	Feb. 9–Mar. 18	4	4	
India:				
Bombay	Nov. 19–Apr. 27	1,061	878	
Calcutta	Nov. 11–Mar. 31	.....	462	
Karachi	Nov. 26–Apr. 27	994	860	Total year 1911: Cases, 3,273; deaths, 3,046.
Madras	Jan. 1–6	1	1	
Rangoon	Oct. 1–Mar. 31	231	221	
Bombay Presidency and Sind.	Oct. 29–Apr. 20	60,836	44,849	
Madras Presidency	do	10,450	8,094	
Bengal	do	41,919	35,690	
Babar and Orissa	Apr. 1–20	6,758	5,984	
United Provinces	Oct. 29–Apr. 20	108,195	97,121	
Punjab	do	21,693	16,416	
Burma	do	1,637	1,499	
Eastern Bengal and Assam	Jan. 1–Feb. 24	2	2	
Central Provinces	Oct. 29–Apr. 20	29,564	23,436	
Coorg	Oct. 29–Mar. 23	88	52	
Mysore State	Oct. 29–Apr. 20	8,809	6,819	
Hyderabad State	do	27,569	24,851	
Central India	do	9,769	7,948	
Rajputana and Ajmere Merwara.	do	2,046	1,641	
Kashmir	Feb. 3–Apr. 20	331	164	
North West Province	Oct. 29–Apr. 20	4	3	Total for India, Oct. 29–Mar. 20: Cases, 329,670; deaths, 274,569. Total year 1911: Cases, 828,535; deaths, 691,849.
Indo-China:				
Saigon	Nov. 13–Apr. 22	69	19	
Japan:				
Formosa	Mar. 7–Apr. 20	92	74	
Kobe	May 8	1	1	From s. s. Panama Maru, from Hongkong.
Nagasaki	Apr. 20	1	.....	On the s. s. Tacoma Maru, from Hongkong and Shanghai.
Mauritius	Nov. 3–Mar. 28	109	66	
Persia:				
Bushire	Feb. 4–Apr. 13	322	219	
Mohammerah	Apr. 3	*1	.....	
Reshire	Feb. 6	2	.....	
Peru:				
Departments—				
Callao	Oct. 1–21	1	.....	City, in November, 1 case; in January, 3 cases with 2 deaths; Mar. 1–26, 12 cases.
Chiclayo	do	12	4	
Chosica	do	1	1	
Lambayeque	do	3	.....	
Libertad	do	8	.....	Apr. 10, 22 cases in the lazarette at Trujillo. Apr. 22 still present.
Lima	do	13	6	
Philippine Islands:				
Cebu quarantine station	Dec. 4	1	.....	On s. s. Montrose from Shanghai.
Manila	.....	.....	.....	Apr. 6, a fatal case of pneumonic form in a member of the crew on s. s. Zafiro, arrived Apr. 4 from Hongkong.
Russian Empire:				
Astrakhan, government	Sept. 21–Jan. 7	201	180	Including 73 cases and 63 deaths reported on p. 2098, Vol. I.
Senegal	May 29	.....	.....	Present.
Siam:				
Bangkok	Nov. 4–Mar. 23	.....	5	
South Africa:				
Durban	.....	.....	.....	Total: Jan. 14–Apr. 19, cases 27, deaths 22.
Straits Settlements:				
Singapore	Nov. 5–Apr. 13	31	27	

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

Reports Received from Dec. 30, 1911, to June 7, 1912.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Asia:				
Basra				Feb. 13, a fatal case in a stoker on s. s. Nicomedia from Bushire.
Jiddah	Jan. 13–Mar. 27	16	9	Apr. 10–12, 3 cases from s.s. Adalia from Newcastle.
Venezuela:				
Caracas	Mar. 12–Apr. 22	6	2	
West Indies:				
Grenada	May 2–7	1	1	
Trinidad	Apr. 2–May 1	6	4	
At sea	Mar. 1–11	1	1	On s. s. Macedonia from Bombay to Aden.
Do	Apr. 1	1	1	Pneumonic on s. s. Loongsang, en route from Hongkong to Manila.

SMALLPOX.

Algeria:				
Algiers	Nov. 1–30		1	
Oran	Jan. 1–31	2	1	
Arabia:				
Aden	Nov. 28–Apr. 22	23	11	And vicinity.
Argentina:				
Buenos Aires	Jan. 1–31		2	Oct. 1–31, 6 deaths, No deaths in November or December, 1911.
Rosario	Oct. 1–Feb. 29		41	
Australia:				
Thursday Island	Jan. 2	1		From s. s. Taiyuan.
Austria-Hungary:				
Bohemia	Jan. 14–20	2		
Budapest	Jan. 4–10	25		
Galicia	Dec. 24–Apr. 13	30	1	
Krain	Jan. 14–20	7		
Trieste	Dec. 3–Apr. 6	2		From s.s. Baron Call from Beirut.
Tyrol	Jan. 14–Mar. 9	3		
Vienna	Mar. 25–30	1		
Brazil:				
Bahia	July 1–31		1	
Para	Mar. 24–May 4	10	5	Case Mar. 30 from Alagoas.
Pernambuco	Oct. 1–Apr. 15		838	
Rio de Janeiro	Nov. 26–Apr. 20	32	1	
Santos	Dec. 12–23		1	
British East Africa:				
Mombasa	Mar. 1–31	5		
Canada:				
British Columbia—				
Fernie	Feb. 26–May 25	6		
Nelson	Dec. 24–30	1		
Vancouver	Apr. 14–20	1		
Victoria	Feb. 4–10	1		
Vinal Haven	May 17	7		5 miles from Eastport, Me.
Manitoba—				
Winnipeg	Jan. 14–Apr. 20	4		
New Brunswick—				
Summerstown	Apr. 12			Epidemic; 10 miles from Cornwall.
Nova Scotia—				
Halifax	Mar. 24–Apr. 6	2		
Ontario—				
Hamilton	Apr. 14–27	16		
Kingston	Dec. 19–23	1		
Ottawa	Dec. 10–May 25	106	1	
Sarnia	Oct. 17–Mar. 23	43		
Toronto	Jan. 6–Apr. 20	5	1	
Windsor	Feb. 4–Mar. 16	8		
Quebec—				
Montreal	Dec. 17–May 25	34		
Quebec	Dec. 10–May 25	299	2	
Yukon—				
Dawson	Apr. 1–6	1		
Ceylon:				
Colombo	Nov. 12–Apr. 13	4		And vicinity.
Chile:				
Iquique	Dec. 10–Mar. 16	4	2	
La Serena	Nov. 21–30	14		
Santiago	Nov. 1–30	685	343	

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

Reports Received from Dec. 30, 1911, to June 7, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Chile—Continued.				
Talcahuano	Nov. 26–Dec. 23	14	3	
Valparaiso	Dec. 3–Apr. 13	70	.....	
China:				
Canton	Nov. 11–Dec. 30	40	6	
Chaochowfu	Mar. 30	.....	.....	Present.
Chenghai	Jan. 29–Apr. 13	.....	.....	Do.
Chungking	Nov. 18–Apr. 20	.....	.....	Do.
Dalny	Mar. 3–Apr. 6	11	2	
Hankow	Jan. 21–Feb. 17	2	1	
Hongkong	Nov. 12–Apr. 20	722	531	
Kityang	Jan. 21–Apr. 13	.....	.....	Do.
Nanking	Dec. 10–May 11	.....	.....	Do.
Shanghai	Dec. 11–Feb. 18	1	6	Deaths among natives.
Swatow	Mar. 2	.....	.....	Present.
Cuba:				
Habana	Dec. 19–Jan. 19	2	.....	Case Dec. 19 from German s. s. Frankenwald, from Spain and Canary Islands; case Jan. 19 from s. s. Mexico.
Dutch East Indies:				
Java—				
Batavia	Nov. 12–Apr. 13	60	17	
Egypt:				
Cairo	Dec. 10–Apr. 29	16	2	
Port Said	Jan. 30–Feb. 4	1	.....	
France:				
Havre	Mar. 10–16	.....	4	
Marseille	Jan. 1–Apr. 30	.....	7	Nov. 1–30, 1 death.
Paris	Dec. 3–May 4	125	2	
Germany		.....	.....	Total, Dec. 31–May 11; cases, 169.
Hamburg	Jan. 21–Apr. 27	7	.....	
Gibraltar	Feb. 27–Mar. 3	1	.....	
Great Britain:				
Bradford	Apr. 28–May 4	1	.....	
Bristol	Jan. 29–May 18	4	.....	
Liverpool	Mar. 17–Apr. 17	2	1	Case Apr. 13, an American from the s. s. Arabic.
London	Jan. 14–Apr. 20	10	1	
Southampton	Mar. 3–9	1	.....	
West Hartlepool	Feb. 18–Mar. 9	2	.....	
India:				
Bombay	Nov. 19–Apr. 27	1,118	532	
Calcutta	Nov. 19–Mar. 30	.....	37	
Karachi	Apr. 1–6	1	1	
Madras	Nov. 26–Apr. 27	211	83	
Rangoon	Oct. 1–Mar. 31	442	121	
Indo-China:				
Saigon	Nov. 13–Apr. 22	55	11	
Italy:				
Genoa	Dec. 1–Apr. 15	47	2	
Leghorn	Dec. 16–May 11	113	1	
Messina	Nov. 19–Jan. 31	.....	6	
Naples	Dec. 3–May 11	106	1	
Palermo	Nov. 26–May 22	2,661	904	
Rome	Jan. 1–Mar. 31	31	3	
Turin	Jan. 15–May 12	3	.....	
Japan:				
Arima-Mura	Nov. 12–18	6	1	11 miles east from Kobe.
Formosa	Mar. 3–Apr. 20	4	.....	
Kanagawa, ken	Dec. 17–23	1	.....	
Kobe	Jan. 22–May 7	3	2	Jan. 20, I case from s. s. Suveric from Hongkong; Jan. 28, 1 case from Shingo Maru. Fatal case May 7 from s. s. Manchuria from Shanghai.
Nagasaki	Feb. 12–18	1	.....	
Nogahama	Mar. 17–23	1	.....	On s. s. Tenyo Maru from Hongkong.
Yokohama	Jan. 22	1	.....	From s. s. Hydra from New York via Suez.
Malta	Dec. 24–Jan. 6	2	1	
Mexico:				
Aguascalientes	Dec. 18–Mar. 3	.....	7	
Chihuahua	Nov. 20–Feb. 11	92	36	
Coahuila, State	Oct. 1–30	.....	16	
Guadalajara	Jan. 14–May 11	9	5	
Juarez	Dec. 19–May 25	21	6	

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

Reports Received from Dec. 30, 1911, to June. 7, 1912.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
Magdalena	Dec. 23–Mar. 12	91	50	Mar 12, 10 cases present.
Manzanillo	Feb. 18–24	1	.....	
Mazatlan	Dec. 11–May 21	.....	17	
Mexico	Nov. 26–Apr. 20	301	144	
Monterey	Dec. 11–24	.....	2	
Porfirio Diaz	Dec. 3–Mar. 23	.....	35	
Salina Cruz	Feb. 11–Mar. 9	4	2	Mar. 23, present in vicinity.
San Antohio	Jan. 1–21	12	9	
San Carlos	....do	.....	.....	Present.
Sandoval	Dec. 16	.....	.....	Do.
San Ignacio	Jan. 8	3	.....	
San Juan Bautista	May 25	2	.....	
Saric	Jan. 21–27	.....	6	
Santa Ana	Jan. 8	4	.....	
San Luis Potosi	Nov. 12–Mar. 23	8	8	
Tampico	Dec. 1–Apr. 10	.....	16	
Tapachula	Nov. 1–May 4	.....	19	
Philippine Islands	.....	.....	.....	Third quarter, 1911: Manila, 9 cases; no deaths. Fourth quarter; 1911: 38 cases.
Manila (on arriving vessel)	.....	.....	.....	Apr. 1 to 6, present on the steamers Serantes and Sotolongo; Apr. 2–9, 8 cases among the crew of the United States Army transport Warren, from ports in China and Japan.
Portugal:				
Lisbon	Dec. 9–May 11	67	.....	
Roumania	Jan 1–31	2,935	143	Total: Jan. 1–Feb. 29, cases, 5,847; deaths, 247.
Russia:				
Batum	Dec. 1–Mar. 31	2	.....	
Libau	Dec. 17–Apr. 28	3	.....	
Moscow	Nov. 19–Apr. 20	75	10	
Odessa	Nov. 26–Apr. 27	37	1	
Reval	Nov. 1–30	1	.....	
Riga	Dec. 24–May 11	71	.....	Oct. 1–Jan. 31: Deaths, 10.
St. Petersburg	Nov. 19–Apr. 27	231	54	
Warsaw	Nov. 5–Mar. 30	437	207	
Siam:				
Bangkok	Nov. 5–Apr. 20	.....	2,281	
Siberia:				
Omsk	Jan. 1–31	7	.....	
South Africa:				
Durban	Jan. 21–Apr. 6	5	.....	
Johannesburg	Jan. 7–Feb. 10	36	.....	
Spain:				
Almeria	Apr. 1–30	.....	1	
Barcelona	Feb. 6–May 13	.....	4	
Cadiz	Nov. 1–Apr. 30	.....	31	
Madrid	Dec. 1–Mar. 31	.....	16	
Malaga	Nov. 1–30	.....	45	
Seville	Dec. 1–Apr. 30	.....	12	
Valencia	Dec. 3–May 11	435	18	
Straits Settlements:				
Penang	Feb. 11–17	1	.....	
Singapore	Nov. 19–Apr. 6	38	15	
Switzerland:				
Cantons—				
Aargau	Apr. 7–13	1	.....	
Oberwalden	Jan. 14–20	1	.....	
St. Gall	Mar. 30–Apr. 6	1	.....	
Zurich	Dec. 3–23	6	.....	
Teneriffe:				
Santa Cruz	Dec. 3–Apr. 13	.....	54	
Turkey in Asia:				
Beirut	Dec. 3–May 4	1,545	107	
Turkey in Europe:				
Constantinople	Dec. 4–May 12	.....	216	
Uruguay:				
Montevideo	Sept. 1–Dec. 31	25	4	
Venezuela:				
Caracas	Nov. 1–Apr. 30	15	2	
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.
Aden	Apr. 29	45,859	19	3	....	....	....	....	....	....	....	....	1	....
Do	May 13	.....	19	4	....	....	....	....	....	....	....	....	1	....
Aguascalientes	May 26	40,000	83	4	....	....	....	....	....	....	1	....	10	....
Aix-la-Chapelle	May 4	157,719	58	6	....	....	....	....	....	....	1	....	....	1
Do	May 11	157,741	54	2	....	....	....	....	....	....	....	2	....	2
Aleppo	May 18	200,000	.....	....	....	1	....	....	....	....	....	....	....	....
Amsterdam	May 11	582,621	120	17	....	....	....	....	....	....	....	....	4	1
Do	May 18	.....	132	22	....	....	....	....	....	....	....	....	4	1
Antwerp	May 11	316,604	65	9	....	....	....	....	....	....	....	1	2	....
Asuncion	Mar. 9	75,000	20	4	....	....	....	....	....	1	....	1	....	....
Do	Mar. 23	.....	19	1	....	....	....	....	....	2	....	....	....	....
Do	Mar. 30	.....	40	2	....	....	....	....	....	1	....	....	....	....
Do	Apr. 6	.....	29	3	....	....	....	....	....	2	....	1	....	....
Do	Apr. 13	.....	24	2	....	....	....	....	....	1	....	....	....	....
Do	Apr. 27	.....	26	1	....	....	....	....	....	2	....	....	....	....
Athens	May 11	250,010	118	24	....	....	....	....	....	....	....	....	1	....
Do	May 18	.....	104	23	....	....	....	....	....	....	....	1	2	....
Barcelona	do	591,272	152	14	....	....	....	1	....	4	....	1	....	....
Barmen	May 4	171,000	46	6	....	....	....	....	....	....	....	2	5	....
Do	May 11	.....	28	5	....	....	....	....	....	....	....	....	2	....
Batavia	Apr. 20	217,630	10	....	....	....	....	2	1	....	....	....	....	....
Belfast	May 18	385,492	138	30	....	....	....	....	....	....	1	2	4	....
Beirut	May 11	80,000	20	2	....	....	....	....	....	2	....	....	....	....
Bergen	May 18	87,749	18	3	....	....	....	....	....	....	....	1	....	....
Berlin	May 11	2,071,414	507	81	....	....	....	....	....	....	2	6	3	5
Birmingham	May 18	842,512	204	....	....	....	....	....	....	1	....	3	3	....
Bombay	May 4	979,445	811	65	105	5	....	....	....	48	....	....	3	....
Bordeaux	May 18	253,000	88	8	....	....	....	....	....	1	....	....	11	....
Bremen	May 11	246,850	77	9	....	....	....	....	....	....	2	3	3	1
Do	May 18	.....	75	8	....	....	....	....	....	....	1	6	1	1
Brunswick	May 11 May 18	145,000	.....	7	....	....	....	....	....	....	14	19	....	....
Brussels	May 18	739,684	205	21	....	....	....	....	....	1	1	3	6	....
Budapest	May 4	1,000,000	.....	....	....	....	....	....	....	....	2	1	....	1
Do	May 11	.....	.....	....	....	....	....	....	....	1	5	3	....	....
Do	May 18	.....	.....	....	....	....	....	....	....	....	2	1	3	....
Calcutta	Apr. 6	890,493	564	48	129	73	....	2	....	....	....	....	1	....
Do	Apr. 13	.....	599	28	148	98	....	4	....	....	....	....	4	....
Do	Apr. 20	.....	615	34	174	95	....	6	....	....	....	....	2	....
Catania	May 24	207,000	78	7	....	....	....	....	4	....	....	4	....	....
Coburg	May 11	24,174	12	2	....	....	....	....	....	....	....	1	....	....
Do	May 18	.....	12	....	....	....	....	....	....	....	1	....	....	1
Chemnitz	May 11	303,500	79	5	....	....	....	....	....	1	....	1	....	1
Christiania	May 18	245,000	60	3	....	....	....	....	....	....	1	1	....	....
Cologne	May 11	528,738	168	23	....	....	....	....	....	....	....	3	....	....
Do	May 17	.....	152	27	....	....	....	....	....	....	1	....	1	....
Colombo	Apr. 27	227,026	120	17	....	....	....	....	....	2	....	....	....	....
Constantinople	May 19	1,300,000	240	26	....	....	....	10	....	5	3	2	6	....
Dalny	Apr. 27	45,693	15	1	....	....	....	....	....	....	1	....	....	....
Do	May 4	.....	15	2	....	....	....	....	....	....	3	....	....	....
Dresden	May 11	557,800	172	23	....	....	....	....	....	....	....	1	3	1
Dundee	May 18	171,006	54	5	....	....	....	....	....	....	....	....	5	2
Do	May 25	.....	45	....	....	....	....	....	....	....	....	2	1	4
Durban	Apr. 20	69,165	14	5	....	....	....	....	....	1	....	....	....	....
Edinburgh	May 18	321,200	94	....	....	....	....	....	....	....	....	....	7	3
Frankfort-on-Main	May 4	425,000	103	....	....	....	....	....	....	....	....	1	1	2
Do	May 11	.....	97	....	....	....	....	....	....	....	....	1	....	1
Genoa	May 15	272,077	138	....	....	....	....	....	....	....	....	....	....	....
Georgetown	May 18	57,577	56	4	....	....	....	....	....	2	....	....	....	....
Ghent	May 11	166,235	48	7	....	....	....	....	....	....	....	1	....	....
Glasgow	May 24	785,600	264	....	....	....	....	....	....	2	....	2	7	....
Gothenberg	May 11	170,100	33	7	....	....	....	....	....	....	....	1	....	2
Hongkong	Apr. 27	336,488	.....	....	113	....	....	12	....	2	....	....	....	....
Hull	May 18	282,987	91	....	....	....	....	....	....	1	....	....	1	1
Kharput	Apr. 20	21,000	.....	....	....	....	....	....	....	1	....	....	1	....
Iquique	Apr. 27	40,000	.....	8	....	....	....	....	....	2	....	....	....	....
Karachi	May 4	157,290	124	....	62	....	....	....	....	....	....	....	7	....
Kingston	May 18	57,379	.....	....	....	....	....	....	....	4	....	....	....	....
Kobe	May 12	418,646	118	....	....	....	....	1	....	....	....	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.
Konigsberg	May 11	252,200	89	10	....	....	....	....	....	....	....	1	....	2
Leeds	May 18	445,568	116	13	....	....	....	....	....	....	....	....	1	1
Leipzig	May 11	605,755	163	17	....	....	....	....	....	....	....	....	....	2
Leith	May 18	81,000	35	4	....	....	....	....	....	....	....	....	3	2
Libau	May 12	84,000	.....	....	....	....	....	....	....	1	1	....	....	....
Do	May 19	.....	.....	....	....	....	....	....	....	....	3	....	....	....
Liege	May 11	166,349	50	7	....	....	....	....	....	1	....	....	2	....
Do	May 18	166,636	51	9	....	....	....	....	....	2	....	....	....	2
Liverpool	May 25	752,055	246	13	....	....	....	....	....	....	....	1	32	4
Lubeck	May 18	100,000	30	5	....	....	....	....	....	....	....	....	....	1
Madras	May 4	518,660	315	....	....	....	....	3	....	....	1	....	4	....
Manchester	May 18	714,427	229	17	....	....	....	....	....	1	1	....	19	8
Mannheim	May 4	201,463	43	11	....	....	....	....	....	....	....	....	1	....
Mexico	Apr. 27	719,052	468	28	....	....	....	10	6	....	....	1	6	5
Monterey	May 26	100,000	72	4	....	....	....	....	....	3	1	....	....	....
Montreal	June 1	466,197	173	30	....	....	....	....	....	1	1	2	....	....
Moscow	Apr. 27	1,617,157	871	110	....	....	....	....	....	1	15	10	15	....
Do	May 4	.....	869	96	....	....	....	2	5	2	12	3	9	9
Munich	May 11	610,000	206	28	....	....	....	....	....	1	....	3	2	....
Nagasaki	May 5	179,257	26	4	....	....	....	....	....	1	....	....	....	....
Nagoya	May 4	426,968	140	....	....	....	....	....	....	....	....	2	....	....
Nantes	May 12	170,535	59	19	....	....	....	....	....	1	....	....	....	....
Newcastle on Tyne	May 18	269,193	78	....	....	....	....	....	....	1	....	2	....	1
Niagara Falls	May 14	4,244	.....	....	....	....	....	....	....	1	....	....	....	....
Nottingham	May 18	260,000	67	4	....	....	....	....	....	1	....	1	1	1
Nuremberg	Apr. 27	344,797	107	22	....	....	....	....	....	....	....	....	1	1
Do	May 4	.....	106	16	....	....	....	....	....	....	....	....	3	....
Palermo	May 18	340,000	128	6	....	....	....	6	....	3	2	....	1	1
Paris	May 11	2,888,110	986	275	....	....	....	....	....	5	5	3	40	....
Do	May 18	.....	1,002	236	....	....	....	....	....	4	6	8	31	....
Penang	Apr. 27	102,167	90	12	....	....	....	....	....	1	....	....	....	....
Port of Spain	May 11	60,000	29	4	....	....	....	....	....	3	....	....	2	....
Prague	...do....	225,817	95	20	....	....	....	....	....	....	....	....	1	1
Rangoon	Apr. 30	293,316	203	....	12	7	....	11	....	....	....	....	....	....
Do	Apr. 27	293,316	203	....	18	6	....	16	....	....	....	....	....	....
Rotterdam	May 18	438,774	83	....	....	....	....	....	....	....	....	1	....	....
Saigon	Apr. 29	220,000	15	....	3	12	....	....	....	....	....	....	....	....
St. Johns, Newfoundland	May 25	33,000	.....	....	....	....	....	....	....	....	1	....	....	....
Do	June 1	.....	.....	....	....	....	....	....	....	....	1	....	....	....
St. Petersburg	May 11	1,907,708	958	130	....	....	....	7	1	8	11	9	29	8
Shanghai	Apr. 28	500,000	153	22	....	....	....	....	....	....	5	....	11	....
Do	May 5	.....	131	20	....	....	....	....	....	....	8	3	9	....
Do	May 12	.....	164	30	....	....	....	....	....	....	2	2	17	....
San Luis Potosi	Mar. 30	82,946	56	5	....	....	....	....	....	3	....	1	....	....
Singapore	Apr. 20	303,328	215	26	....	....	....	....	....	1	....	....	....	....
Southampton	May 25	120,896	33	3	....	....	....	....	....	....	....	....	2	....
Stettin	May 11	240,000	71	11	....	....	....	....	....	....	....	1	....	....
Stockholm	...do....	346,599	110	18	....	....	....	....	....	....	1	....	5	1
Stoke-on-Trent	May 18	237,153	61	5	....	....	....	....	....	....	....	1	1	1
Talcahuana	May 4	28,000	.....	2	....	....	....	....	....	....	....	....	....	2
Tientsin	...do....	465,000	27	9	....	....	....	....	1	....	....	....	....	....
Trieste	May 11	235,999	112	3	....	....	....	....	1	....	1	....	....	....
Tripoli	May 12	50,000	58	3	....	....	....	....	1	3	....	....	....	....
Do	May 19	.....	62	4	....	....	....	....	....	6	....	....	....	....
Toronto	May 18	392,000	118	7	....	....	....	....	....	....	2	3	2	3
Do	May 25	.....	131	18	....	....	....	....	....	1	....	3	1	2
Valencia	May 18	235,000	94	11	....	....	....	1	....	....	1	....	1	....
Vancouver	...do....	110,000	21	2	....	....	....	....	....	....	....	1	....	....
Vera Cruz	May 25	32,000	40	7	....	....	....	....	....	....	....	....	....	....
Vienna	May 4	2,081,335	637	104	....	....	....	....	....	1	5	5	20	2
Winnipeg	May 25	151,958	51	4	....	....	....	....	....	....	2	....	....	....
Yokohama	May 13	444,039	.....	....	....	....	....	....	....	1	....	1	....	....

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

ALGERIA—*Algiers.*—Month of April, 1912. Population, 172,397. Total number of deaths from all causes 335, including diphtheria 3, measles 2, smallpox 1, tuberculosis 46, typhoid fever 5.

AUSTRALIA—*Newcastle.*—Month of March, 1912. Population, 56,200. Total deaths from all causes 47, including tuberculosis 1, typhoid fever 3.

BRITISH BURMA—*Rangoon.*—Month of March, 1912, Population, 293,316. Total number of deaths from all causes 869, including cholera 38, plague 63, smallpox 66, tuberculosis 30, typhoid fever 3.

CHILE—*Punta Arenas.*—Month of March, 1912, Population, 10,103. Total deaths from all causes 37, including tuberculosis 2.

FRANCE—*St. Etienne.*—Two weeks ended April 30, 1912. Population, 148,778. Total number of deaths from all causes 130, including diphtheria 1, tuberculosis 23.

GERMANY—*Strassburg.*—Month of April, 1912. Population, 182,426. Total deaths from all causes 235, including diphtheria 4, measles 2, tuberculosis 39, typhoid fever 2.

GREAT BRITAIN.—Week ended May 11, 1912.

England and Wales.—The deaths registered in 95 great towns correspond to an annual rate of 14.2 per 1,000 of the population, which is estimated at 17,639,816.

Ireland.—The deaths registered in 21 principal town districts correspond to an annual rate of 19.9 per 1,000 of the population, which is estimated at 1,157,014. The lowest rate was recorded at Dundalk, viz, 4, and the highest at Drogheda viz, 42 per 1,000.

Scotland.—The deaths registered in 18 principal towns correspond to an annual rate of 15.9 per 1,000 of the population, which is 2,182,400. The lowest rate was recorded at Partick, viz, 8.4, and the highest at Ayr, viz, 23.3 per 1,000. The total number of deaths from all causes was 665, including diphtheria 3, measles 23, scarlet fever 5, typhoid fever 1.

GUAM.—Month of March, 1912. Population, 9,000. Total number of deaths from all causes 23, including tuberculosis 23. Two hundred and nineteen cases of hookworm disease were reported.

HAWAII—*Hilo.*—Two weeks ended April 27, 1912. Population, 3,500. The deaths include typhoid fever 1.

Honolulu.—Two weeks ended April 27, 1912. Population, 39,306. Total number of deaths from all causes 47, including tuberculosis 6, typhoid fever 2, pneumonia 9, tetanus 1.

JAMAICA—*Kingston.*—Month of April, 1912. Population, 50,000. Total number of deaths from all causes 152, including tuberculosis 14, typhoid fever 4.

MALTA.—Month of April, 1912. Population, 215,395. Total number of deaths from all causes 334, including measles 10, tuberculosis 21.

NEW ZEALAND.—Month of February, 1912.

Auckland.—Population, 104,728. Total number of deaths 54, including diphtheria 1, typhoid fever 1.

Christchurch.—Population, 82,004. Total number of deaths 33, including typhoid fever 1, tuberculosis 3.

Dunedin.—Population, 65,690. Total number of deaths 39, including typhoid fever 1, tuberculosis 7.

Wellington.—Population, 71,427. Total number of deaths 38, including diphtheria 1, tuberculosis 6.

PANAMA—*Panama.*—Month of April, 1912. Population, 30,000. Total number of deaths from all causes not reported. The deaths include tuberculosis 15, malaria 3, pneumonia 6.

SOUTH AFRICA—*Johannesburg.*—Six weeks ended May 4, 1912. Population, 237,220. Total number of deaths from all causes 540, including diphtheria 1, measles 18, scarlet fever 1, tuberculosis 64, typhoid fever 16.

SPAIN—*Huelva.*—Month of April, 1912. Population, 28,982. Total deaths from all causes 94, including measles 16, tuberculosis 13.

TURKS ISLANDS.—Three weeks ended May 11, 1912. Population, 1,681. Total number of deaths from all causes 4. No deaths reported from infectious diseases.

By authority of the Secretary of the Treasury:

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

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