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SMALLPOX.

Outbreaks of the virulent type of smallpox have recently occurred in California, Texas, Oklahoma, and Pennsylvania. In California 11 cases, with 5 deaths, were reported at Berkeley from December 17 to February 8, at which time 6 cases were still under treatment. These cases were evidently of a more virulent strain than that prevailing in other communities in the vicinity, for in San Francisco there had been 74 cases, with but 1 death, since July 1, 1912, and in Oakland since December 1, 31 cases without a reported death and with 12 cases remaining under treatment. In Imperial County, Cal., near the Mexican border, there were 18 cases of the disease, with 4 deaths, during the month of January.

In Texas there has been virulent smallpox in Hunt County. In October, 1912, there was a small outbreak of 12 cases, with 3 deaths. In November there was another small outbreak, with 9 cases and 1 death. Beginning with the early part of December there was an outbreak in which there were in all 127 cases, with 34 deaths. On February 5 the disease was apparently under control, with but 3 cases remaining under treatment.

In Oklahoma there has been a considerable outbreak of virulent smallpox in Choctaw and McCurtain Counties. To February 3 there had been in Choctaw County 82 reported cases, with 21 deaths. Fifty-one of these cases and 17 of the deaths occurred in the town of Hugo. In McCurtain County there had been 31 reported cases, with 10 deaths. There were small numbers of cases in adjoining counties.

In Pennsylvania a case of smallpox occurred in the Allegheny Home at Woodville January 23. To February 11 there had been a total of 15 cases, with 3 deaths in the institution.

The mild type of smallpox is present to some extent in practically all sections of the country. At Pensacola, Fla., 30 new cases were reported during the week ended February 8. This makes a total for the outbreak at that place of 193 cases. During the week ended February 1 the cities reporting the largest number of cases were as

follows: Chicago, 10; Detroit, 10; Knoxville, 6; Memphis, 8; Milwaukee, 8; Zanesville, Ohio, 7. For the week ended February 8: Baltimore, 9; Milwaukee, 13.

CONTAMINATION OF FOOD SUPPLIES.

THE VALUE OF PROTOZOA AS AN AID IN DETERMINING FECAL CONTAMINATION OF THE FOOD SUPPLY.

By CH. WARDELL STILES, Professor of Zoology, Hygienic Laboratory, United States Public Health Service.

In an effort to find a method to determine the existence or probable existence of fecal contamination of food, the idea presented itself that a practical test of relatively simple application seemed to be found in the presence of certain protozoa in the stools of persons of any given locality. Three protozoa in particular come into consideration, namely, *Entameba coli*, *Lambliia duodenalis*, and *Trichomonas intestinalis*.

All three of these organisms live in the intestine of man, and all three possess a spore stage that can be recognized by microscopic examination of the stools. As all three are, according to our present knowledge, obligatory parasites, their presence in a given person is presumptive evidence that the person in question received his infection from a preexisting infection in some other person. As these parasites or their spores are discharged from the body in the fecal material, the conclusion seems justified that the dejecta form the source of infection.

That flies breed in and feed upon human feces is a fact so well established that it needs no further argument. That the flies thus breeding and feeding visit houses and carry fecal contamination to the food is a conclusion based in part on circumstantial evidence and supported by observation and experiment. That these flies could easily carry the minute spores of the protozoa under discussion can hardly be questioned, although the possibility does not seem entirely excluded that the spores might also be blown around as dust from dried night soil and thus reach the food through aerial contamination.

Given now the facts (1) that we are dealing with obligatory parasites, (2) that the presence of these parasites in a person presupposes a preexisting intestinal infection in some other individual, (3) that they are discharged from the bowels in the feces, (4) that their spores are small enough to be carried by flies (possibly also as dust in the air), (5) that flies breed in and feed upon fecal material and are known to carry contamination to food, the conclusion seems justified that according to our present knowledge the presence of *Entameba coli*, of *Lambliia duodenalis*, or of *Trichomonas intestinalis* in a person may

be accepted as evidence that the person in question has swallowed material that has come from the bowels of some other person.

In this connection it may be mentioned that it is not rare to find from 10 to 40 or 60 per cent of the samples of feces examined in some localities to contain spores of one or another of the protozoa in question.

The practical application of these facts from a public health point of view is this: If any one of these parasites is found in a person, we are in a position to state to him definitely that we have positive evidence that he has swallowed material that has been contaminated with fecal matter, and if we find poor privy and fly conditions on or near his premises, we can state to him that the conditions in question are favorable to such contamination, and may explain the infection; also that it is a mere matter of chance that he has become infected with a relatively harmless parasite instead of with typhoid fever or dysentery.

It is self-understood that the possibility is not excluded that the infection was contracted in food shipped from some farm or from a distance, but the moral effect of the demonstration of infection and the possibility of its continuance may be expected to induce people to clean up the back yard.

TYPHOID FEVER.

A REPORT OF AN OUTBREAK AT FORT DODGE, IOWA.

By P. M. CARRINGTON, Surgeon, United States Public Health Service.

At the request of the State board of health of Iowa, the writer was directed by the Surgeon General to proceed to Fort Dodge, in that State, for the purpose of investigating an outbreak of typhoid fever, "especially with reference to the origin and prevalence of the disease," and was directed to advise the authorities in regard to its control, and in accordance with said orders arrived at Fort Dodge on October 28, 1912. The investigation was concluded November 8, 1912.

The town of Fort Dodge is situated about 80 miles northwest of Des Moines, on the Des Moines River, from which it in part derives its water supply and into which it discharges its sewage. Its situation is hilly, with good natural drainage in the direction of the river. The population is between 15,000 and 17,000. There are large deposits of gypsum in the vicinity and numerous mills for the manufacture of plaster of Paris and other products of gypsum.

The rock formation underlying the region is extensively fissured. Soldier Creek flows in a southwesterly direction through the northern section of the town, and empties into the Des Moines River just above the waterworks, but below the filter beds.

Squirrel Creek, which drains a suburban and farming community, empties into the Des Moines River about a half mile upstream from the pumping station.

The river bank for a distance of a half mile above the water-pumping station is lined with insanitary privies, many of which almost overhang the river banks, and an extensive public dump, where stable manure and miscellaneous city waste are thrown, is located just above the water-pumping station, and much of the dumping material actually falls into the stream.

The polluted water from Soldier Creek, which receives drainage from many privies and a public slaughter house, reaches the Des Moines River above the water tunnel below referred to, and the water supplied by this tunnel is probably subject to pollution through fissures in the rock. A sample of water taken November 4 from near the bottom of the shaft into which the tunnel leads showed typical red colonies of litmus-lactose-agar, but no gas.

The Des Moines River is a rapidly flowing stream, subject at times to heavy floods, but during the past summer it has been unusually and uniformly low, although frequent light rains have occurred, thus carrying into the river sewage from the numerous privies which line its banks. The watershed is thinly populated for a distance of more than 20 miles above Fort Dodge.

Other insanitary conditions favorable to the spread of typhoid fever were observed during an inspection of the city and suburbs, as follows:

There are many surface wells all over the town, and many insanitary privies in close proximity—some within 20 feet, none farther than 100 feet from one or more wells.

Stable manure is allowed to accumulate and stand for long periods.

Many receptacles for garbage are neither water tight nor fly proof.

A public slaughterhouse is maintained and drains into Soldier Creek.

Many citizens have not as yet connected their residences with the city water supply and city sewers where these conveniences are available, but still use shallow wells and the adjacent insanitary privies.

Ice is harvested below sewer outfalls. This has been permitted on the statement that this ice is used only for cooling purposes.

An inspection of the principal dairies was made, and while there was no indication that any one of them was concerned in the production of this outbreak, certain of the smaller ones leave much to be desired in the way of cleanliness and sanitation. The larger ones are fairly well conducted, and average care and cleanliness prevail.

The Oleson Park tap and drinking fountain, referred to later in this report, are two terminal taps derived from the same main, which

extends to the Plymouth gypsum mill, 1 mile south of the city limits, and supplies the workmen with drinking water. At this mill 8 cases of typhoid fever have developed this year. These cases are included in the total of 101 cases.

On my arrival at Fort Dodge I at once called upon the health officer, Dr. C. H. Mulronev, the mayor being absent.

It appears that the health officer, noticing the frequent allusions in the daily papers to persons being sick with typhoid fever, concluded that this disease must be more prevalent than usual, and inasmuch as there is no law in the State of Iowa requiring notification of typhoid fever and no city ordinance of Fort Dodge to this effect, he prepared blank forms, distributed them to the practicing physicians of the town, and requested that they report all cases of typhoid fever which had come under their care since June 1.

This duty the physicians readily undertook to perform, but inasmuch as it was to some extent a matter of memory, it is doubtful whether every case was reported, and especially is it doubtful whether the dates of onset were accurately stated. There being no public morbidity records from which statistics might be gathered, considerable difficulty was experienced in securing reliable information of the past prevalence of the disease.

At various times during the past year bacteriological examination of the water by the Iowa State Laboratory has demonstrated sewage pollution, but as it seemed desirable to make further examinations, the health officer was requested to and did order the necessary media and apparatus for conducting such examinations.

There was some delay in the filling of this order, and in the meantime Dr. E. E. Richardson, a member of the State board of health residing at Webster City, learned of my presence in Fort Dodge through a newspaper publication, and called me up on the long distance telephone November 1, urging me to come to Webster City for a conference. The distance being only 20 miles, a visit was paid him that afternoon. He furnished such data as he had been able to collect regarding the outbreak, and said that the State board desired to have a representative work with me on this investigation, and that he would, if agreeable to me, secure the detail of the bacteriologist from the State laboratory for this purpose. The proposal was accepted; the more willingly, because the apparatus ordered by Dr. Mulronev had not been received, and to await its arrival would have prolonged unduly my stay in Fort Dodge.

Accordingly, Mr. A. M. Alden, assistant director of the State laboratory, arrived at Fort Dodge the following night, and was thereafter associated with me in the investigation. We worked

together in perfect harmony, mutually assisting one another, and it is a pleasure here to testify to our friendly and mutually helpful association. A copy of Mr. Alden's report to the mayor is hereto appended.

WATER SUPPLY.

The water supply of Fort Dodge is derived from a number of sources:

First. Shallow wells are numerous throughout almost the entire town.

Second. The public city supply is derived from three sources:

The Des Moines River; by means of a filter bed composed of perforated pipes laid in the bed of the river above Duck Island, under three or four feet of coarse gravel;

Three artesian wells; and

A shaft about 6 by 8 feet, and 80 feet deep, near the bottom of which is a 9 foot twin tunnel extending from the pump house, as shown on the accompanying map, directly west under the bed of the river and Park Island.

This tunnel and shaft supplies 80 gallons of water per minute; well No. 1 supplies 400 gallons of water per minute; well No. 2 supplies 150 gallons of water per minute; well No. 3 supplies 500 gallons of water per minute.

Well No. 1 was sunk six years ago, and wells Nos. 2 and 3 are only about a year old.

The water from well No. 1 overflows into the shaft above referred to, whence it flows into the mixing basin, into which also the water from wells Nos. 2 and 3 flows. The river supply also flows by gravity into this receptacle, where the water from all sources is thoroughly mixed before entering the mains. The wells and shaft furnish approximately a million and a half gallons per diem, and the daily usage is about 1,000,000 gallons, but inasmuch as there is no storage except a small pressure tank in the center of town, which serves to maintain the pressure when the pumps are temporarily shut down for an hour or two at night, the current flow is not equal to the greatest current use, therefore it becomes necessary to take water from the river during the hours of greatest use, the surplus from the wells during the night hours going to waste.

SEWAGE.

The city has a good and growing sewage system, extending at present to about two-thirds of the town and discharging into the Des Moines River by six or more outfalls. The most northerly is a few hundred yards below the waterworks. There are many dwellings

for which the public sewers are available, but which are not as yet connected therewith, the sewage from these houses being deposited in privies, which are apparently cleaned only so often as the householder elects. The sewage from these privies is conveyed several miles into the country and dumped.

PREVIOUS PREVALENCE OF THE DISEASE.

Cases of typhoid fever have not been made notifiable in Iowa. Consequently, the only public record from which any idea of the previous prevalence of the disease could be obtained was the record of deaths. Under the Iowa law, deaths are reported to the secretary of state at the close of each month by the undertakers. The undertakers secure death certificates from the physicians, and, while they are supposed to secure a certificate prior to burial, in practice they seem to go around at the close of the month to the various physicians and secure their signatures to the certificates of deaths that have occurred during the month. After the close of the fiscal year on June 30, a transcript of these reports is furnished by the State department to the county clerk.

An examination of these records was made for the five years ended June 30, 1911, the transcript for the fiscal year 1912 not as yet having been received by the county clerk. The record shows the following deaths from typhoid fever in Webster County (population, 35,000), of which Fort Dodge is the county seat:

Fiscal year 1907, 6 deaths; fiscal year 1908, 5 deaths; fiscal year 1909, 4 deaths; fiscal year 1910, no deaths; fiscal year 1911, 3 deaths.

From other sources it was learned that there had been four deaths from typhoid fever in the city of Fort Dodge during the present calendar year.

From the records of the only hospital in Fort Dodge it was learned that 19 cases of typhoid fever had been treated during the calendar year 1911, and 12 cases during the current calendar year. Some of these 12 are included in the record of cases given later in this report, but I am not certain that all are included.

PREVALENCE OF TYPHOID FEVER IN 1912.

	Cases.
January 1 to May 31.....	28
June.....	4
July.....	6
August.....	7
September.....	31
October.....	25
Total.....	101

The following is a table showing the dates of onset, as nearly as could be ascertained, of the cases occurring in September and October:

Day.	Sept.	Oct.	Day.	Sept.	Oct.
1.....	2	5	17.....	1	1
2.....		1	18.....	2	1
3.....		1	19.....		1
4.....	2		20.....	1	1
5.....		1	21.....	1	2
6.....			22.....		
7.....	1	2	23.....	2	
8.....			24.....		
9.....	1	1	25.....	1	2
10.....	4	1	26.....	2	1
11.....	1		27.....	3	
12.....		2	28.....	1	
13.....	1		29.....	1	
14.....		1	30.....		
15.....	2		31.....		
16.....	2	1			

Taking the total number of cases occurring since June 1, on some of which only partial data could be obtained, it is found that 49 used the city water exclusively, 21 used both well and city water, while only 4 used well or spring water exclusively. Of the total of 73 cases, 11 gave a clear history of contact. Thirty-nine, or more than one-half, denied the use of milk altogether. Forty-four were males and 29 females.

Age distribution.

	Cases.
Under 10 years.....	15
10 to 20 years.....	21
20 to 30 years.....	23
30 to 40 years.....	8
40 to 50 years.....	6
Total.....	73

A careful epidemiological study was made of 30 cases, sick or convalescent at the time of my visit. The physicians very willingly took me to see their cases, all of which were, clinically, typical typhoid, a number being very serious cases, such complications as hemorrhage and double parotitis being noted. Widal's were made in several cases; all were positive. Of these 30 cases studied 8 were under 10 years of age; 9 between 10 and 20 years; 9 between 20 and 30 years; 2 between 30 and 40 years; and 2 between 40 and 50 years; 20 were males and 10 females; 5 were clearly contact cases.

One case was almost surely a milk infection, having drunk milk supplied by a neighbor who nursed her own daughter and milked the cow from which this case was supplied with milk, this being the only person to whom she supplied milk.

Eleven patients denied the use of fresh milk in any form, and 19 used milk as a beverage or in tea and coffee, but their milk supply was derived from various sources.

An attempt was made to ascertain the use of ice cream and raw vegetables and fruits, but while a majority had been in the habit of eating ice cream and raw vegetables and fruits, the source of supply could not be located with sufficient accuracy to be of any value.

In only 11 cases was there modern plumbing in the houses, and while at the time of my visit there were but few flies, the usual testimony was that they had been numerous during the summer.

The general sanitary condition of the houses visited was fair to good in 19 and poor to very poor in 11.

All of these cases derived their drinking water from the city mains, either wholly or in part.

From the foregoing it appears that the only common cause to which any considerable majority of these cases was exposed was the known polluted water. Eleven contact cases and one milk case seem to be fairly well established.

It is probable also that some cases may have been caused by flies, which were numerous during the month of September, but which were not numerous after the first week in October. There is a possibility also that some cases may have been caused by infected well water, but it is believed that the epidemic is traceable to the city water.

The distribution of the disease in the town was very largely in the southern portion, only 8 cases out of 73 having occurred in that portion of the town north of Central Avenue, and at least 2 of these were traced to the use of city water in the southern part of the town at Oleson Park. One of these cases is particularly instructive:

R. W., age 9, the daughter of intelligent and well-informed parents, who, fearing the city water, had carefully prevented her drinking any but boiled water. August 18 to 25 a Chautauqua meeting was held in Oleson Park, many citizens, including the W. family, camping on the grounds; R., with other children, drank from the newly erected drinking fountain in the camp grounds. She returned to her home and became sick with definite symptoms of typhoid fever September 5, the probable date of onset being given as September 1.

On October 14 the city authorities, on the advice of Prof. Kinney, State chemist, instituted hypochlorite treatment of their water supply.

The last but one case reported had its onset not later than October 26. The one exception was a clear contact case, having onset November 1, and is not included in the total of 101 cases, my record closing with October. Six cases among workmen of the Illinois Central Railroad roundhouse, where they drank from a neighboring well, elicited considerable local comment as to the probability that the well was the source of infection, but these men all drank city water at their homes, and no member of the family using the same well as an exclusive water-supply source contracted the disease.

The epidemic is charged to the city water for the following reasons:

First. Known sewage contamination of the water.

Second. Sixty-nine out of 73 cases had derived their drinking water, in whole or in part, from the city mains.

Third. There was no other known factor common to a majority of the cases.

Fourth. Continuation of cases more than two weeks after most of the flies had been killed by cold weather.

Fifth. The sudden cessation of cases 12 days after the institution of hypochlorite treatment.

GENERAL CHARACTER OF THE EPIDEMIC.

The doctors of Fort Dodge state that during August of this year an extensive epidemic of diarrhœa prevailed. The cases were severe but of short duration, usually not over two or three days.

The cases of typhoid which I saw were of rather more than average severity, but a number of cases were reported to have recovered within three weeks. The occurrence of 100 cases in 10 months in a population of 15,000 is equivalent to a case rate per annum of 800 per 100,000.

The case fatality rate was low—about 4 per cent—but several cases contracted in Fort Dodge went elsewhere for treatment, and at least one of these is known to have resulted fatally.

The occurrence of 11 cases, probably by contact, indicates that the physicians' orders regarding bedside precautions against infection were not carefully carried out, and the importance of reiterating instructions to persons nursing typhoid cases was urged upon them. Some of the physicians were using protective inoculations, and were advised to continue and extend these inoculations as far as possible.

It having been decided that the water was responsible for this outbreak, the question arises as to why the disease should have been so much more prevalent in the southern than in the northern side of town. The possibility of some physical or mechanical reason why a greater percentage of river water should have reached the pipes in the southern part of town was considered and carefully gone over by Mr. Alden and myself. This included a careful inspection of the pump house and the method of mixing the water from the various sources prior to its entry into the mains. Previous examinations of the water had shown a higher degree of contamination in the Oleson Park tap and drinking fountain than at the intake.

The entire water system has an unusually large number of dead ends. These are really more numerous in the northern than in the southern section, but on the other hand, feeling that the natural circulation in the southern section was better than in the northern, there was more frequent flushing of the pipes in the northern section. Citizens

reported that certain mains in the southern section—and the mains particularly referred to are those supplying the districts where the fever was most prevalent—had not been flushed in 15 and 24 months, respectively. The water superintendent denies so long an interval, but admits that these pipes were flushed less frequently than in the northern part of town.

There is an added reason for the probable slower movement in these pipes in the fact that the mains in this section were laid with a view to supplying certain gypsum mills, and are therefore much larger than is necessary, since the expectation of supplying the mills was not realized.

The pressure tank referred to is emptied and cleaned only twice annually. Owing to the greater use of water in the southern part of town more of the flow from this tank, when the pumps are stopped, would flow to the southern section than to the northern section of town.

RECOMMENDATIONS SUBMITTED TO THE MAYOR AND COUNCIL.

(1) Secure a supply of pure water immediately. This may be accomplished by one of two methods:

(a) The plan at present in contemplation and in course of accomplishment, that is to say, the completion of the 2,000,000-gallon reservoir on Park Island, and the piping off of well No. 1 so as to exclude the water from the shaft, as no sewage contamination has ever been found in any one of the three artesian wells. This method, which will conserve the entire flow, will quickly give a safe supply of a sufficient quantity of water for present needs.

The growth of the town, however, and the extension of the water mains to portions of the town not at present supplied will soon require more water than the present wells will supply. Further, the artesian water has a high degree of permanent hardness, and is not a good water for commercial and industrial purposes.

Therefore, the second plan may of necessity come up for consideration in the near future.

(b) An entirely new plant located well above the town and local sources of pollution, the water to be taken from the Des Moines River and settling basins and filter beds provided. This plan would require the services of a sanitary engineer. In the meantime, and pending the completion of the reservoir, and so long as the water from the shaft is used, it is recommended (1) that the hypochlorite treatment be continued.

(2) It is recommended that all householders be required to connect with the city water and sewer systems where these are available, and that the water and sewer systems be extended as rapidly as funds are available for the purpose.

(3) Condemn and discontinue all surface wells and privies in such localities.

(4) Substitute sanitary closets for privies where sewers are not available.

(5) More frequent flushing of mains and terminal taps and more frequent cleansing of pressure tank.

(6) Connect all dead ends.

(7) Rigidly enforce city ordinances and State laws relating to the disposal of garbage and stable manure.

(8) Discontinue the use of the public slaughterhouse on Soldier Creek.

(9) Prohibit harvesting of ice below sewer outfalls. While this ice may be used only for cooling, this includes the freezing of ice cream, and it is a practical impossibility to avoid contaminating the ice cream with the melting ice.

(10) Establish a modern health department, paying the health officer sufficient compensation to enable him to give his entire time to the duties of the department.

CONCLUDING REMARKS.

During my stay at Fort Dodge I spoke by request before the local medical association on the Public Health Service, Its History and Functions, and on the Method of Conducting an Epidemiological Investigation.

I also spoke before a meeting of the mayor and council—to which citizens were invited—on the Causes of the Outbreak, and the Remedies Proposed.

Upon invitation of the president, I addressed the woman's club of Fort Dodge, the mayor and council and a number of citizens also being present.

Acknowledgment is made of many courtesies and valuable assistance rendered by the health officer, Dr. C. H. Mulronev.

Mayor Ford and Water Superintendent Pray showed many courtesies; and they and the physicians of Fort Dodge rendered every possible assistance.

It should be mentioned that on or about November 1 the hypochlorite plant was shut down for 24 hours for repairs, and because the stock of hypochlorite had become exhausted. It would not be surprising, therefore, if additional cases should develop about November 12 to 15.

PREVALENCE OF DISEASE.

IN CERTAIN STATES AND CITIES.

SMALLPOX.

California—San Francisco and Vicinity.

Passed Asst. Surg. Long, of the Public Health Service, reported by telegraph February 8, 1913, that during the week ended February 8 no new cases of smallpox were notified in San Francisco and that no cases remained under treatment in that city; at Oakland 6 new cases were reported, 12 cases remaining under treatment; at Berkeley 2 new cases were reported, with 6 cases still under treatment. At Alameda 1 case, previously reported, was still under treatment.

Florida—Pensacola.

Acting Asst. Surg. Mallory, of the Public Health Service, reported by telegraph from Pensacola, February 8, 1913, that during the preceding week 13 cases of smallpox had been notified in Pensacola, and that a total of 193 cases had been notified to the date of report.

Kentucky—Ohio, Grayson, and Davis Counties.

Surg. Clark, of the Public Health Service, reported by telegraph from Beaver Dam, February 8, 1913, that 61 cases of smallpox had been notified in Ohio County since the outbreak in November; February 9, that 39 cases of smallpox had been notified in Grayson County, from 5 infected points since the outbreak of the disease in December; and February 11, that in Davis County, since April, 1912, 50 cases had been reported in Owensboro, the last case having been notified February 5, 1913, and that since November, 1912, 72 cases had been reported in the county outside of Owensboro.

New York—Niagara Falls.

Acting Asst. Surg. Bingham, of the Public Health Service, reported by telegraph from Niagara Falls, February 8, 1913, that 4 new cases of smallpox had been notified in Niagara Falls during the week ended February 8, 1913.

Oklahoma—Choctaw, McCurtain, and Pushmataha Counties.

Information was received through the United States Commissioner of Indian Affairs concerning smallpox in Oklahoma as follows: A report dated at Hugo, February 3, 1913, stated that up to the time of the report 82 cases of smallpox, with 21 deaths, had been reported in Choctaw County, that 51 of the cases and 17 of the deaths reported occurred in the town of Hugo, and that 4 mild cases of the disease had occurred among Indians at the Old Goodland Mission, 3 miles from Hugo. In all only 7 cases were known to have occurred among the Indians and of these 2 terminated fatally. Thirty-one cases, with 10 deaths, had been notified in McCurtain County and about 18 cases in other near-by counties.

Pennsylvania—Allegheny Home, Woodville.

Surg. Stoner, of the Public Health Service, reported February 11, 1913, that 5 new cases of smallpox had been notified in the Allegheny Home at Woodville, making a total of 15 cases with 3 deaths reported for that institution since January 23, 1913.

Texas—Virulent Form in Hunt County.

Dr. T. J. Milner, health officer of Hunt County, Tex., on February 5, 1913, reported regarding smallpox in that county as follows: There was a case of smallpox in Hunt County at Lone Oak in the latter part of October. From this focus there arose 11 secondary cases, with 3 deaths. On November 12 a case developed in the southeast part of the county. There were in all 9 cases, with 1 death, from this focus. On November 14, 2 cases developed in Greenville. One of these died. A widely advertised lot sale was held in Greenville on November 20, which drew a great many people from the surrounding section. About 15 days afterwards the disease broke out in many families. The epidemic was of the virulent form, 127 cases, with 34 deaths, having been reported. At present the disease is apparently under control, there being but 3 cases remaining under treatment.

Texas—Hidalgo County.

Acting Asst. Surg. Fairbanks, of the Public Health Service, reported February 3, 1913, that a new outbreak of smallpox had been reported in Hidalgo County, Tex., and that the infection had existed there for two or three weeks.

Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Alabama (Jan. 1-31):			Michigan (Jan. 1-31)—Contd.		
Counties—			Counties—Continued.		
Bibb.....	8		Shiawassee.....	1	
Butler.....	1		Tuscola.....	1	
Hale.....	5		Wayne.....	94	
Montgomery.....	2		Total.....	164	
Pickens.....	24				
Tuscaloosa.....	22		New Jersey (Jan. 1-31):		
Total.....	62		Counties—		
Arizona (Jan. 1-31):			Middlesex.....	2	
Counties—			Monmouth.....	24	
Maricopa.....	24		Passaic.....	1	
Phoenix.....	1		Total.....	27	
Total.....	25		Washington (Dec. 1-31):		
Michigan (Jan. 1-31):			Counties—		
Counties—			Benton.....	1	
Allegan.....	1		Chelan.....	2	
Berrien.....	1		Clallam.....	3	
Cheboygan.....	1		Clarke.....	20	
Eaton.....	1		Kitsap.....	1	
Emmet.....	2		Kittitas.....	2	
Genesee.....	1		Klickitat.....	8	
Gratiot.....	7		Lewis.....	20	
Ingham.....	23		Mason.....	9	
Kent.....	1		Pierce.....	2	1
Lapeer.....	4		Skagit.....	15	
Lenawee.....	1		Skamania.....	1	
Menominee.....	1		Spokane.....	8	
Monroe.....	10		Whitman.....	13	
Newaygo.....	3		Yakima.....	93	
Oakland.....	1		Total.....	198	1
Otsego.....	6				
St. Clair.....	1		Grand total.....	476	1
Sanilac.....	3				

City Reports for Week Ended Jan. 25, 1913.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Alameda, Cal.....	1		Milwaukee, Wis.....	5	
Altoona, Pa.....	1		Montgomery, Ala.....	3	
Baltimore, Md.....	3		New Castle, Pa.....	2	
Berkeley, Cal.....		1	Niagara Falls, N. Y.....	1	
Cambridge, Ohio.....	12		Oakland, Cal.....	2	
Chattanooga, Tenn.....	4		Omaha, Neb.....	7	
Chicago, Ill.....	20		Peoria, Ill.....	1	
Cumberland, Md.....	1		Providence, R. I.....	1	
Detroit, Mich.....	16		San Diego, Cal.....	1	
Evansville, Ind.....	35		San Francisco, Cal.....	4	
Hartford, Conn.....	1		Spokane, Wash.....	7	
Johnstown, Pa.....	2		Superior, Wis.....	1	
Knoxville, Tenn.....	7		Toledo, Ohio.....	6	
La Crosse, Wis.....	2		Washington, D. C.....	2	
Lowell, Mass.....	1		Wilmington, N. C.....	1	
Manchester, N. H.....	5		Zanesville, Ohio.....	7	

TYPHOID FEVER.

State Reports for December, 1912.

Place.	Number of new cases reported during month.	Place.	Number of new cases reported during month.
Alabama:		Washington:	
Butler County	1	Benton County	2
Colbert County.....	1	Chehalis County.....	4
Etowah County.....	1	Chelan County.....	1
Jefferson County.....	20	Douglas County.....	5
Lamar County.....	1	Island County.....	5
Lauderdale County.....	1	Lewis County.....	13
Lee County.....	4	Pierce County.....	1
Limestone County.....	2	San Juan County.....	1
Montgomery County.....	2	Snohomish County.....	2
Randolph County.....	2	Everett.....	3
St. Clair County.....	1	Spokane County.....	1
		Spokane.....	18
Total.....	36	Total.....	56

CEREBROSPINAL MENINGITIS.

Alabama Report for December, 1912.

The State Board of Health of Alabama reported that 2 cases of cerebrospinal meningitis had been notified in Jefferson County, Ala., during the month of December, 1912.

Washington Report for December, 1912.

The State Board of Health of Washington reported that during the month of December, 1912, cerebrospinal meningitis was notified as follows: 1 case in Adams County and 1 case in Spokane, Spokane County.

Cases and Deaths Reported by Cities for Week Ended Jan. 25, 1913.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Baltimore, Md.....		2	New Orleans, La.....	3	
Boston, Mass.....		1	New York, N. Y.....	6	7
Cincinnati, Ohio.....	2		Oklahoma, Okla.....	1	1
Cleveland, Ohio.....	1	1	Omaha, Nebr.....	1	1
El Paso, Tex.....	1		Peoria, Ill.....		1
Jersey City, N. J.....		1	Pittsburgh, Pa.....	1	
Kansas City, Kans.....	1		Providence, R. I.....		1
Los Angeles, Cal.....	1	1	Saginaw, Mich.....		1
Manchester, N. H.....	1	1	St. Joseph, Mo.....	1	
Montgomery, Ala.....	3	1	St. Louis, Mo.....	1	1
Newark, N. J.....	1		Superior, Wis.....		1

POLIOMYELITIS (INFANTILE PARALYSIS).**Alabama Report for December, 1912.**

The State Board of Health of Alabama reported that 1 case of poliomyelitis had been notified in Jefferson County, Ala., during the month of December, 1912.

Washington Report for December, 1912.

The State Board of Health of Washington reported that 1 case of poliomyelitis was notified in Whitman County during the month of December, 1912.

Cases and Deaths Reported by Cities for Week Ended January 25, 1913.

During the week ended January 25, 1913, poliomyelitis was reported by cities as follows: Cincinnati, Ohio, 2 deaths; Los Angeles, Cal., 1 case; New York, N. Y., 3 deaths.

ERYSIPELAS.**Cases and Deaths Reported by Cities for Week Ended Jan. 25, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Altoona, Pa.....	1		Newark, N. J.....		1
Bayonne, N. J.....		1	Pasadena, Cal.....	1	
Binghamton, N. Y.....	1		Peoria, Ill.....	1	
Boston, Mass.....		1	Pittsburgh, Pa.....	10	1
Cincinnati, Ohio.....	6		Providence, R. I.....		1
Cleveland, Ohio.....	14	2	Reading, Pa.....	1	
Lancaster, Pa.....	1		Sacramento, Cal.....	1	
Lexington, Ky.....	1		St. Louis, Mo.....	17	
Los Angeles, Cal.....	6		San Francisco, Cal.....	10	
Milwaukee, Wis.....	1		Springfield, Ill.....		1
New York, N. Y.....	31	6	Superior, Wis.....		1

PLAGUE.**Rats Collected and Examined for Plague.**

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Berkeley.....	Jan. 25, 1913	3	182	126	
Oakland.....	do	13	603	486	
San Francisco.....	do	6	1,769	1,343	
Washington:					
City—					
Seattle.....	do		968	923	

California—Squirrels Collected and Examined for Plague Infection.

During the week ended January 25, 1913, there were examined for plague infection 145 ground squirrels from San Joaquin County, 39 from San Benito County, and 15 from Stanislaus County. No plague-infected squirrel was found.

PNEUMONIA.

Cases and Deaths Reported by Cities for Week Ended Jan. 25, 1913.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Alameda, Cal.		1	Melrose, Mass.		2
Altoona, Pa.		1	Moline, Ill.		2
Auburn, N. Y.	3	2	Nashville, Tenn.		5
Aurora, Ill.		1	New Bedford, Mass.		5
Baltimore, Md.		27	Newark, N. J.		10
Bayonne, N. J.		1	New Castle, Pa.	2	
Berkeley, Cal.	1	2	New Orleans, La.		9
Binghamton, N. Y.	11	6	Newton, Mass.		1
Boston, Mass.		39	New York, N. Y.		126
Braddock, Pa.	3	1	Niagara Falls, N. Y.		6
Bridgeport, Conn.		6	Oklahoma, Okla.		1
Brockton, Mass.		4	Oakland, Cal.		11
Brookline, Mass.		2	Omaha, Nebr.		3
Cambridge, Mass.		10	Passaic, N. J.		5
Chelsea, Mass.		1	Pawtucket, R. I.		5
Chicago, Ill.	46	127	Peoria, Ill.		5
Chicopee, Mass.		4	Pittsburgh, Pa.	31	27
Cleveland, Ohio.	33	23	Pittsfield, Mass.		3
Clinton, Mass.	1		Plainfield, N. J.		2
Coffeyville, Kans.	1		Providence, R. I.		12
Concord, N. H.		1	Portsmouth, N. H.		1
Cumberland, Md.		2	Reading, Pa.	3	2
Dayton, Ohio.		5	Richmond, Va.		3
Dunkirk, N. Y.		1	Sacramento, Cal.	9	10
Elizabeth, N. J.		1	Salem, Mass.		1
Elmira, N. Y.	1	4	Schenectady, N. Y.	12	3
El Paso, Tex.	10	10	St. Joseph, Mo.		7
Erie, Pa.		4	San Diego, Cal.	5	5
Evansville, Ind.		3	San Francisco, Cal.	17	
Fall River, Mass.		7	South Bend, Ind.		1
Galesburg, Ill.		2	South Bethlehem, Pa.	1	
Grand Rapids, Mich.	2	2	South Omaha, Nebr.	3	
Harrisburg, Pa.		2	Spokane, Wash.		2
Hartford, Conn.		8	Springfield, Ill.		5
Haverhill, Mass.	3	3	Springfield, Mass.		4
Jersey City, N. J.		14	Steeltown, Pa.		1
Kalamazoo, Mich.	2	3	Superior, Wis.		1
La Crosse, Wis.		1	Toledo, Ohio.		6
La Payette, Ind.		1	Waltham, Mass.		2
Lancaster, Pa.	1		Washington, D. C.		10
Lexington, Ky.		1	Wheeling, W. Va.		3
Los Angeles, Cal.	5	18	Wilkes-Barre, Pa.		4
Lowell, Mass.		9	Wilkinsburg, Pa.		1
Lynchburg, Va.		3	Williamsport, Pa.		1
Lynn, Mass.		3	Yonkers, N. Y.		5
Manchester, N. H.	7	7			

SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS.

Alabama Report for December, 1912.

The Alabama State Board of Health reported that 20 cases of scarlet fever and 41 cases of diphtheria had been notified in the State during the month of December, 1912.

Alaska—Diphtheria at Sitka and Hoonah.

Hon. Walter E. Clark, governor of Alaska, reported by telegraph to the Department of the Interior January 29, 1913, that diphtheria was present at Sitka and Hoonah.

Alaska—Measles.

Acting Asst. Surg. Story, of the Public Health Service, reported by telegraph from Ketchikan, Alaska, February 7, 1913, that 48 cases of measles had been reported at Saxman, an Indian village 3 miles south of Ketchikan, during the 3 weeks preceding the date of his report.

Pittsburgh—Measles.

Surg. Stoner, of the Public Health Service, reported by telegraph from Pittsburgh, February 8, 1913, that during the week ended February 1, 1913, there had been reported in Pittsburgh 376 cases of measles, with 5 deaths, making totals of 4,031 cases and 62 deaths since the beginning of the outbreak, November 1, 1913.

Washington Report for December, 1912.

The Washington State Board of Health reported that during the month of December, 1912, there were notified in the State 42 cases of scarlet fever, 17 cases of measles, and 41 cases of diphtheria.

Cases and Deaths Reported by Cities for Week Ended Jan. 25, 1913.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.....	558,485	212	27	4	80	.....	31	1	36	25
Boston, Mass.....	670,585	230	51	3	155	.....	40	2	61	17
Chicago, Ill.....	2,185,283	696	258	28	598	8	437	35	220	58
Cleveland, Ohio.....	560,663	176	61	7	35	.....	31	3	31	13
New York, N. Y.....	4,766,883	1,461	363	25	472	15	333	19	456	180
Pittsburgh, Pa.....	533,905	151	31	7	430	6	38	.....	33	14
St. Louis, Mo.....	687,029	211	68	4	346	4	36	.....	43	18
From 300,000 to 500,000 inhabitants:										
Cincinnati, Ohio.....	364,463	149	17	.....	317	7	13	.....	36	26
Detroit, Mich.....	465,766	193	36	4	.....	.....	39	4	.....	.....
Los Angeles, Cal.....	319,198	138	15	1	5	.....	9	1	40	22
Milwaukee, Wis.....	373,857	136	29	5	27	1	18	.....	24	6
Newark, N. J.....	347,469	122	39	3	23	.....	37	.....	41	16
New Orleans, La.....	339,075	127	28	1	62	.....	2	.....	56	12
San Francisco, Cal.....	416,912	179	12	1	2	.....	2	.....	29	18
Washington, D. C.....	331,069	121	27	.....	180	.....	13	.....	28	12
From 200,000 to 300,000 inhabitants:										
Jersey City, N. J.....	267,779	95	.....	2	.....	.....	.....	.....	.....	6
Providence, R. I.....	224,326	69	19	.....	4	.....	11	.....	.....	6
From 100,000 to 200,000 inhabitants:										
Bridgeport, Conn.....	102,054	36	9	3	1	.....	13	1	8	1
Cambridge, Mass.....	104,839	43	8	1	17	2	3	.....	12	6
Columbus, Ohio.....	181,548	39	8	1	7	.....	7	.....	1	3
Dayton, Ohio.....	116,577	49	5	2	.....	.....	4	.....	2	5
Fall River, Mass.....	119,295	38	4	.....	7	.....	12	.....	7	5
Grand Rapids, Mich.....	112,571	26	.....	1	1	.....	1	.....	2	.....
Lowell, Mass.....	106,294	37	3	1	8	.....	18	1	3	4
Nashville, Tenn.....	110,364	36	4	.....	4	.....	4	.....	2	3
Oakland, Cal.....	150,174	62	1	.....	.....	.....	2	.....	5	7
Omaha, Nebr.....	124,066	45	15	3	4	.....	2	.....	.....	4
Richmond, Va.....	127,628	49	3	.....	438	5	4	.....	7	4
Spokane, Wash.....	104,402	.....	1	.....	6	.....	.....	.....	1	3
Toledo, Ohio.....	168,497	50	9	.....	29	.....	2	.....	1	2
Worcester, Mass.....	145,986	52	11	1	3	.....	11	.....	3	3

SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS—Contd.

Cases and Deaths Reported by Cities for Week Ended Jan. 25, 1913—Contd.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabitants:										
Altoona, Pa.	52,127	11	3				8			
Bayonne, N. J.	55,545	15	4	1	3		9		4	2
Brockton, Mass.	56,878	14			5		1			
Camden, N. J.	94,538		10		21		9		12	
Elizabeth, N. J.	73,409	22	7		7		2		6	5
Erie, Pa.	66,525	24	5		5		5	2	7	2
Evansville, Ind.	69,647	12	12				16	1	2	2
Harrisburg, Pa.	64,186	29	4	1	2			1	6	2
Hartford, Conn.	98,915	28	7		7		22		2	
Johnstown, Pa.	55,482	20	13		54		3			
Kansas City, Kans.	82,331		6		30		6		3	
Lynn, Mass.	89,336	23	7	1	22		7		5	1
Manchester, N. H.	70,063	31	17	1					2	2
New Bedford, Mass.	96,652	29	11	3	15		7		7	4
Oklahoma, Okla.	64,205	13								2
Passaic, N. J.	54,773	20	1		5	1	3		1	4
Pawtucket, R. I.	51,622	1								1
Peoria, Ill.	66,950	20	1		2		3			
Portland, Me.	58,571	20								2
Reading, Pa.	96,071	37	9	2	37		2		1	
Saginaw, Mich.	50,510	26	1		26		2			
St. Joseph, Mo.	77,403	25	7		1		1			
Schenectady, N. Y.	72,826	14	2		8		10	1	2	1
South Bend, Ind.	53,684	16	5	1			1			
Springfield, Ill.	51,678	28		1						2
Springfield, Mass.	88,926	27	1		19	1	4		3	1
Trenton, N. J.	96,815	31	3	1	23		3		12	4
Wilkes-Barre, Pa.	67,105	21	6		3		5		1	1
Yonkers, N. Y.	79,803	21	4		3		2			2
From 25,000 to 50,000 inhabitants:										
Auburn, N. Y.	34,668	17			18		5		3	
Aurora, Ill.	29,807	13								2
Berkeley, Cal.	40,434	15			2					1
Binghamton, N. Y.	48,443	18	1						4	
Brookline, Mass.	27,792	13	3		3		7		2	
Chattanooga, Tenn.	44,604						1	1	1	
Chelsea, Mass.	32,452	8	1		3				1	
Chicopee, Mass.	25,401	10	2	1	9		1			1
Danville, Ill.	27,871	4	1		1		3			1
East Orange, N. J.	34,371		1				2		1	
Elmira, N. Y.	37,176	16	2		20		2			
El Paso, Tex.	39,279	39	1	1			2	2		2
Everett, Mass.	33,484	6	4		5		1		4	
Haverhill, Mass.	44,115		3		51		6			1
Kalamazoo, Mich.	39,437	20	1		1		1			3
Knoxville, Tenn.	36,346	15		1	1		1			2
La Crosse, Wis.	30,417	8					4			
Lancaster, Pa.	47,227		3		12		1		3	
Lexington, Ky.	35,099	17			1		2			1
Lynchburg, Va.	29,494	3			20				2	
Malden, Mass.	44,404		1		9		2			
Montgomery, Ala.	38,136	16								
Newcastle, Pa.	36,280		2		6				1	
Newport, Ky.	30,309	7	1				4		1	1
Newton, Mass.	39,806		1				2		3	1
Niagara Falls, N. Y.	30,445	14			41		1			
Norristown, Pa.	27,875	2	2				1			
Orange, N. J.	29,630	7	3				1		2	
Pasadena, Cal.	30,291	12			1		1		2	2
Racine, Wis.	38,002	14					2			
Roanoke, Va.	34,874	7	2	1	1		1			
Sacramento, Cal.	44,696	28	1		11					2
Salem, Mass.	43,697	12	1				7			4
San Diego, Cal.	39,578	9	2				2		4	4
South Omaha, Nebr.	26,259	10							1	
Superior, Wis.	40,384	11	1				1			2
Taunton, Mass.	34,259	8					3			
Waltham, Mass.	27,834	8	2	1	1		2			2
West Hoboken, N. J.	35,403		2		2		2			
Wheeling, W. Va.	41,641	22	6	1	39		1		3	1
Williamsport, Pa.	31,880	9	4		3		1			
York, Pa.	44,750		2		33		3		2	
Zanesville, Ohio.	28,026	7	1	1			3			

IN INSULAR POSSESSIONS.

HAWAII.

Human and Rodent Plague.

A death from plague occurred January 11 at Kukuihaele in the person of a Filipino girl. A plague-infected rat was found January 13 at Hakalu, Hawaii.

Passed Asst. Surg. Trotter, chief quarantine officer for Hawaii, reports January 23: The number of infected rats being found at present on the island of Hawaii may be due to the heavy rains now prevailing which drive rodents into warehouses and other places of human occupation where they are easily trapped.

PHILIPPINE ISLANDS.

Plague at Manila.

Passed Asst. Surg. Heiser, chief quarantine officer and director of health for the Philippine Islands, reports the occurrence of one case of plague with one death at Manila during the week ended December 28, 1912.

PORTO RICO.

Plague Situation.

Passed Asst. Surg. Creel reports:

RATS EXAMINED JAN. 18 TO 25, 1913.

Places.	Rats examined.	Rats found infected.
All Porto Rico.....	1,360	.....
San Juan municipality:		
San Juan.....	134	.....
Puerta de Tierra.....	28	.....
Santurce.....	120	.....

The last case of plague in man occurred at San Juan September 12, 1912; the last plague-infected rat was found at Caguas December 19, 1912.

FOREIGN REPORTS.

CHINA.

Hoihow Declared an Infected Port.

The government of Hongkong, by notification of January 3, 1913, declared Hoihow to be an infected port on account of smallpox.

Hoihow is the port of Kiung-chow and is situated on the north coast of the island of Hainan.

Hongkong—Plague-Infected Rat Found.

Surg. Brown reports: During the week ended December 21, 1912, there were examined at Hongkong for plague infection 1,755 rats. One plague-infected rat was found.

CUBA.

Habana—Examination of Rats.

During the week ended January 25, 1913, there were examined at Habana for plague infection 775 rats. No plague-infected rat was found.

ECUADOR.

Plague and Yellow Fever.

Passed Asst. Surg. Parker at Guayaquil reports: During the month of December, 1912, plague and yellow fever were reported in Guayaquil and vicinity as follows:

Plague.—Guayaquil, 115 cases with 54 deaths; Duran, 1 case; Milagro, 8 cases with 1 death.

Yellow fever.—Guayaquil, 13 cases with 10 deaths; Agua Piedra, 7 cases with 4 deaths; Duran, 3 cases with 2 deaths; Naranjito, 2 cases with 2 deaths; Bucay, 2 cases with 1 death.

JAPAN.

Cholera.

Surg. Irwin at Yokohama reports: From December 29, 1912, to January 9, 1913, 10 cases of cholera were reported in Japan, occurring as follows: Shidzuoka-ken, 4 cases; Tokyo-fu, 1 case; Kanagawa-ken, 1 case; Yokohama, 4 cases.

Contagious Diseases.

Cases of contagious diseases have been officially reported for all Japan, exclusive of Formosa, as follows:

MONTH OF NOVEMBER, 1912.

Disease.	Cases.	Deaths.	Disease.	Cases.	Deaths.
Cholera.....	623	397	Smallpox (Nagasaki).....	1	.....
Dysentery.....	997	302	Typhus fever (Osaka).....	1	1
Typhoid fever.....	2,802	639	Scarlet fever.....	119	15
Paratyphoid fever.....	296	51	Diphtheria.....	2,154	523

11 MONTHS ENDED NOVEMBER 30, 1912.

Disease.	Cases.	Deaths.	Disease.	Cases.	Deaths.
Cholera.....	2,608	1,584	Smallpox.....	14	1
Dysentery.....	34,410	5,563	Typhus fever.....	1	1
Typhoid fever.....	29,416	5,716	Scarlet fever.....	1,090	134
Paratyphoid fever.....	3,897	441	Diphtheria.....	16,830	4,069

JAVA.**Batavia—Cholera.**

- Consul Rairden reported February 6 the presence of cholera in the consular district of Batavia.

PERU.**Plague.**

During the period from December 2 to 22, 1912, there were reported in Peru 76 cases of plague occurring in six provinces. Of this number, six cases occurred at Callao.

TURKEY IN EUROPE.**Constantinople—Cholera.**

Consul General Ravndal reported January 18: According to the latest official reports the cholera epidemic now prevailing in Constantinople began about November 5, 1912, and has caused 1,241 deaths, the total number of reported cases being 2,508. These figures do not cover the cases among soldiers in barracks or in the field.

ZANZIBAR.**Cholera—Examination of Rats.**

Consul Hays at Zanzibar reports: Cholera has been reported in the interior as follows: District of Chwaka, from December 2 to 15, 1912, 16 cases with 16 deaths, occurring in two localities; from December 22 to 31, 1912, in the same district, in one locality, 3 cases with 3 deaths. In Jambiani and Bweju districts from December 2 to 15, 1912, 54 cases were reported.

During the two weeks ended December 31, 1912, there were examined at Zanzibar for plague infection 4,376 rats. No plague-infected rat was found.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.**Reports Received During Week Ended Feb. 14, 1913.****CHOLERA.**

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Java—				
Batavia	Feb. 6.....			Present.
India:				
Bombay.....	Dec. 29-Jan. 4.....	24	17	
Madras.....	do.....	1	1	
Japan.....				Total July 10-Jan. 14: Cases, 2,736; deaths, July 10-Dec. 31, 1,584. Nov. 1-30: Cases, 623; deaths, 397.
Kanagawa ken, Yokohama..	Jan. 1-14.....	4		
Shidzuoka ken.....	Dec. 21-29.....	4		
Tokyo fu.....	Jan. 1-5.....	1		
Russia:				
Odessa.....	Jan. 5-11.....	3	1	
Turkey in Europe:				
Constantinople.....	Jan. 8-20.....	51	35	Total Nov. 5-Jan. 20: Cases, 2,510; deaths, 1,243. Dec. 16-22 in the Chwaka district, 3 fatal cases.
Zanzibar.....				

YELLOW FEVER.

Brazil:				
Manaos.....	Jan. 5-11.....	2	2	
Ecuador:				
Agua Piedra.....	Dec. 1-31.....	7	4	
Bucay.....	do.....	2	1	
Duran.....	do.....	3	2	
Guayaquil.....	do.....	13	10	
Naranjito.....	do.....	2	2	

PLAGUE.

Brazil:				
Pernambuco.....	Dec. 1-16.....		3	
Rio de Janeiro.....	Dec. 29-Jan. 4.....	1	1	
Chile:				
Iquique.....	Jan. 8.....	3	2	
Ecuador:				
Duran.....	Dec. 1-31.....	1		
Guayaquil.....	do.....	1		
Milagro.....	do.....	8	1	
Egypt.....				Jan. 1-16: Cases, 11; deaths, 8.
Port Said.....	Jan. 1-2.....	2	1	
Provinces—				
Charkieh.....	do.....	2	1	
Galioubeh.....	Jan. 1-7.....	1	1	
Garbieh.....	Jan. 1-16.....	1	1	
Girgeh.....	Jan. 1-3.....	1	1	
Menouf.....	Jan. 1-9.....	5	3	
Hawaii:				
Kukulhaele.....	Jan. 11.....	1	1	
India:				
Bombay.....	Dec. 29-Jan. 4.....	11	9	
Madras.....	do.....	1	1	
Peru:				
Departments—				
Ancachs.....	July 1-31.....	4		
Do.....	Aug. 1-31.....	7	3	
Arequipa.....	July 1-31.....	7	2	Mollendo, Dec. 2-22: Cases, 4; Jan. 10, present.
Do.....	Aug. 1-31.....	5	3	
Callao.....	July 1-31.....	1	1	
Ica.....	do.....	1		Dec. 2-22: Cases, 6.
Lambayeque.....	Dec. 2-22.....	7		
Libertad.....	July 1-31.....	8	2	
Do.....	Aug. 1-31.....	12	7	
San Pedro.....	Dec. 2-22.....	25		
Trujillo.....	do.....	26		
Lima.....	July 1-31.....	3	2	
Do.....	Aug. 1-31.....	4	2	Dec. 2-22: Cases, 2.
Piura.....	Dec. 2-22.....	2		Dec. 2-22: Present in Paíta.
Mauritius.....	Nov. 8-14.....	33	23	
Philippine Islands.....	Dec. 22-28.....	1	1	

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

Reports Received During Week Ended Feb. 14, 1913—Continued.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Pernambuco.....	Dec. 1-16.....		22	
Rio de Janeiro.....	Jan. 5-11.....	3	1	
Canada:				
Montreal.....	Jan. 26-Feb. 1....	14		
China				Jan. 3, present in Hathow.
Hankow.....	Dec. 29-Jan. 4....	1		
Hongkong.....	do.....	2	2	
Shanghai.....	Dec. 23-Jan. 12...	4	39	
Dutch East Indies:				
Java—				
Batavia.....	Dec. 22-28.....	2		
India:				
Bombay.....	Dec. 29-Jan. 4....	3	2	
Karachi.....	do.....	1		
Italy:				
Palermo.....	Jan. 5-18.....	2		
Japan				Jan. 1-Nov. 30, 1911: Cases, 14 death, 1. From s. s. Pera from London via ports.
Yokohama.....	Jan. 1.....	1		
Mexico:				
Guadalajara.....	Jan. 5-11.....	1		
Salina Cruz.....	July 19-25.....	5	2	
Sonora.....				Jan. 30: present in Esperanza, Navojca, and Tarin.
Agua Zarca.....	Jan. 30.....	2		
Nogales.....	do.....	1		
Philippine Islands:				
Manila.....	Dec. 21.....			1 case removed from s. s. Mauban to the San Lazaro hospital.
Portugal:				
Lisbon.....	July 12-18.....	4		
Spain:				
Barcelona.....	Jan. 4-28.....		14	
Malaga.....	Dec. 1-31.....		1	
Valencia.....	Jan. 5-11.....	11		
Switzerland:				
Cantons—				
Basel.....	do.....	3		
Grisons.....	Dec. 29-Jan. 4....	1		
Turkey in Asia:				
Beirut.....	Jan. 15-18.....	37	5	
Turkey in Europe:				
Constantinople.....	Jan. 12-18.....		15	

Reports Received from Dec. 27, 1912, to Feb. 7, 1913.

CHOLERA.

Bulgaria:				
Eski Saghra.....	Dec. 9.....	2		
Sofia.....	Nov. 21-Dec. 16...	6	1	
China:				
Fochow.....	Nov. 20-Dec. 2....			Isolated cases.
Dutch East Indies:				
Borneo—				
Pontrank.....	Oct. 6.....	1		
Samarinda.....	Oct. 9.....	1		
Singkawang.....	Oct. 8-Nov. 1....	1	1	
Java—				One case among Europeans.
Batavia.....	Nov. 9-23.....	32	21	
Madioen.....	Sept. 15-Nov. 2...	189	103	
Megalang.....	Oct. 7-12.....	9	6	
Pasoeroean Residency..	Sept. 20-26.....	2	1	
Samarang.....	July 19-Nov. 7....	515	423	
Surabaya.....	Oct. 16-25.....	2	1	
Sumatra—Jambi.....	Sept. 18-24.....	1		
India:				
Bombay.....	Nov. 17-Dec. 28...	117	81	
Calcutta.....	Nov. 9-Dec. 14....		172	

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

Reports Received from Dec. 27, 1912, to Feb. 7, 1913—Continued.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Cochin.....	Oct. 19–Nov. 9.....	6	6	
Madras.....	Nov. 24–Dec. 28.....	20	22	
Negapatam.....	Nov. 11–16.....	9	9	
Rangoon.....	Nov. 1–30.....	2	2	
Indo-China: Saigon.....	Aug. 20–Oct. 27.....	42	38	
Japan				
Aita Ken.....	Dec. 2.....	1		Total July 10–Dec. 20: Cases, 2,715.
Chiba Ken.....	Nov. 23–Dec. 17.....	25		
Fukushima Ken.....	Dec. 5.....	1		
Hiardo Islands.....	Sept. 15–Dec. 1.....	30		
Hioga Ken.....	Nov. 27–Dec. 19.....	22		
Hiroshima Ken.....	Nov. 23.....	1		
Ibaraki Ken.....	Dec. 6.....	2		
Iwate Ken.....	Dec. 16.....	1		
Kanagawa Ken.....				Total Nov. 23–Dec. 20: Cases, 53.
Yokohama.....	Nov. 24–Dec. 8.....	18		Sept. 25–Dec. 7: 9 cases from vessels.
Kochi Ken.....	Nov. 28–Dec. 4.....	3		
Minami Tokaki gun.....	Sept. 15–Dec. 2.....	40		
Nagasaki Ken.....				Nagasaki Ken and outlying islands Sept. 15–Dec. 2: Cases 188; deaths 134, including previous reports.
Nagasaki city.....	Sept. 15–Dec. 2.....	10	4	
Osaka Fu.....	Nov. 23–Dec. 3.....	14		
Saga Ken.....	do.....	5		
Sasebo.....	Sept. 15–Dec. 2.....	7		
Shidzuoka Ken.....	Dec. 3–20.....	8		
Taiwan (Formosa).....				Total Nov. 3–23: Cases, 48; deaths, 42.
Tokushima Ken.....	Sept. 15–Dec. 1.....	65		Not previously reported.
Tokyo Fu.....	Nov. 23–Dec. 20.....	101		
Tokyo.....				Oct. 2–Dec. 7: Cases, 273, and in vicinity, 342.
Wakumatsu Ken.....	Nov. 26.....	1		
Russia: Odessa.....				Nov. 18–20: 1 case from s. s. Bosnian from Constantinople. Confined in the quarantine barracks.
Siam:				
Bangkok.....	Oct. 13–Dec. 7.....		4	
Straits Settlements—Singapore.....	Nov. 17–23.....	2	2	
Turkey in Asia.				
Adana—				
Adana.....	Nov. 17–Dec. 2.....	2	2	
Aleppo—				
Aleppo.....	Nov. 24–Dec. 2.....	3	3	
Alexandretta.....	do.....	3	2	
Angora—				
Angora.....	Nov. 24–Dec. 11.....	29	23	
Balikesir.....	Nov. 24–Dec. 2.....		1	
Beirut—				
Merdjioun.....	Dec. 3–11.....		15	
Tabariyeh.....	Dec. 13–22.....			Present.
Brusa.....	Nov. 17–Dec. 11.....	26	38	
Castamoni.....	Nov. 17–Dec. 2.....	6	4	
Dierbekir.....	do.....	8	2	
Hedjaz—				
Jedda.....	Nov. 25–Dec. 14.....	395	393	Among returning pilgrims.
Medina.....	Dec. 3–11.....		6	
Mekka.....	Nov. 17–23.....	111	172	Dec. 3–11: Deaths, 3,007.
Ismidt.....	Nov. 17–Dec. 2.....	3	1	
Mosul.....	do.....		2	
Sinope.....	Dec. 3–11.....	1	4	
Smyrna.....	Nov. 17–Dec. 2.....	3	1	
Tarsus.....	Nov. 24–Dec. 2.....	2	1	
Turkey in Europe:				
Constantinople.....	Dec. 3–Jan. 6.....	1,542	750	Total Nov. 5–Jan. 6: Cases, 2,459; deaths, 1,208.
Zanzibar.....	Nov. 8–Dec. 21.....	131	130	From Mwera, Chwaka, and Mokotoni. Chwaka district, Oct. 4–Dec. 28, 329 cases, not included in previous reports.
At sea.....				Nov. 18–20: 1 fatal case on s. s. Bosnian, en route from Constantinople to Odessa.

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

Reports Received from Dec. 27, 1912, to Feb. 7, 1913—Continued.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia.....	Jan. 24-Feb. 3.....	4	1	
Ecuador:				
Bucay.....	Nov. 15-30.....	1	1	
Duran.....	Nov. 1-30.....	2	1	
Guayaquil.....	do.....	12	6	
Milagro.....	do.....	2	2	
Naranjito.....	do.....	1		
Senegal:				
Dakar.....	Dec. 7.....			Present.
Venezuela:				
Caracas.....	Nov. 1-30.....	7	1	In September 2 deaths and in October 1 death not previously reported. In December no case and no death.

PLAGUE.

Afghanistan:					
Tchehel-Bagdareh.....	Sept. 1-30.....				And vicinity 100 deaths daily. Present to Oct. 29.
Brazil:					
Pernambuco.....	Nov. 16-30.....		2		
Rio de Janeiro.....	Nov. 3-Jan. 2.....	9	4		
British East Africa:					
Kiambu.....	Nov. 16-Oct. 21.....	2			
Kisumu.....	do.....	6			
Mombasa.....	Oct. 1-31.....	12	12		Free Nov. 18.
Nairobi.....	Nov. 16-Dec. 8.....	2	1		
Chile:					
Taltal.....	Oct. 22-28.....	3			
China:					
Amoy.....	Jan. 16.....				Present.
Manchuria.....	Dec. 14.....				Present along the railway, between Harbin and Chang-Chun.
Shanghai.....	Nov. 18-Dec. 15.....		2		Dec. 18, present in vicinity of the French settlement.
Dutch East Indies:					
Java—					
Kediri.....	Oct. 6-Dec. 16.....	105	103		
Madicoen.....	do.....	66	64		
Paseroean Residency.....	do.....	244	247		
Surabaya.....	do.....	10	10		
Ecuador:					
Duran.....	Nov. 1-30.....	3	1		
Guayaquil.....	do.....	138	52		
Egypt:					
Cairo.....	Dec. 30.....	1	1		Total Jan. 1-Dec. 31: Cases, 884; deaths, 441. Jan. 1-Dec. 31: Cases, 884; deaths, 441.
Port Said.....	Dec. 29.....	1	1		
Behera.....	Nov. 22-Dec. 19.....	2	1		
Charkieh.....	Nov. 29-Dec. 12.....	3	2		
Garbieh.....	Nov. 23-Dec. 17.....	3			
Girgeh.....	Dec. 21-25.....	1	1		
Menouf.....	Oct. 1-Dec. 31.....	13	7		
Miniéh.....	Nov. 28-Dec. 29.....	7	4		
India:					
Bombay.....	Nov. 17-Dec. 28.....	31	28		
Calcutta.....	Nov. 9-Dec. 14.....		29		
Karachi.....	Nov. 19-23.....	2	2		
Rangoon.....	Oct. 1-Nov. 30.....	68	68		
Provinces.....					Total Oct. 27-Nov. 30: Cases, 12,333; deaths, 9,908.
Delhi.....	Oct. 27-Nov. 30.....	31	14		
Bombay.....	do.....	4,475	3,356		
Madras.....	do.....	733	520		
Bengal.....	do.....	30	30		
Bihar and Orissa.....	do.....	473	367		
United Provinces.....	do.....	2,270	1,857		
Punjab.....	do.....	495	371		
Burma.....	do.....	34	34		
Central Provinces.....	do.....	242	193		
Mysore.....	do.....	975	701		
Hyderabad.....	do.....	613	523		
Central India.....	do.....	57	47		
Rajputana.....	do.....	1,905	1,895		

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

Reports Received from Dec. 27, 1912, to Feb. 7, 1913—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Indo-China: Saigon.....	Aug. 20-Oct. 27....	55	35	Among the military. Sept. 17-Oct. 17, 8 cases, with 5 deaths.
Mauritius.....	Oct. 11-Nov. 7....	96	60	
Morocco: Rabat.....	Nov. 1.....	3		
New Caledonia: Numea.....	Oct. 29.....	2		
Peru:				
Departments—				
Arequipa—				
Mollendo.....	Nov. 17-Dec. 7....	7	4	
Callao—				
Callao.....	Sept. 1-7.....			Present.
Lambayeque.....	do.....			Do.
Philippine Islands:				
Manila.....	Nov. 10-Dec. 24...	12	9	
Russia:				
Transbaikal district—				
Verneudinsk.....	Oct. 18-23.....	3	3	Near Nerchinsk.
Trans-Caspian Ty. Merv...	Dec. 9-21.....	29	29	Pneumonic.

SMALLPOX.

Abyssinia: Adis Ababa.....	Nov. 24-Dec. 21....			Present.
Algeria:				
Departments—				
Algiers.....	Oct. 1-31.....	11		
Constantine.....	do.....	11		
Oran.....	do.....	118		
Austria-Hungary:				
Galicia.....	Nov. 10-Dec. 7....	3		
Trieste.....	Dec. 8-21.....	4		
Brazil:				
Para.....	do.....	2		
Pernambuco.....	Nov. 1-30.....		65	
Rio de Janeiro.....	Nov. 3-Jan. 2.....	17	5	
British East Africa: Mombasa.	Dec. 1-21.....	5		
Canada:				
Ontario—				
Ottawa.....	Jan. 4-23.....	14		
Toronto.....	Dec. 1-21.....	5		
Quebec—				
Montreal.....	Dec. 15-Jan. 25....	42		
Quebec.....	do.....	21		
St. Johns.....	Jan. 12-25.....	9		
Chile: Punta Arenas.....	Oct. 31-Nov. 30....	3		Oct. 31, 1 case in vicinity.
China:				
Amoy.....	Jan. 16.....			Present.
Chungking.....	Nov. 3-16.....			Do.
Hongkong.....	Nov. 24-Dec. 14....	4	2	
Nanking.....	Dec. 7.....			Do.
Shanghai.....	Nov. 18-Dec. 22....	13	53	Deaths among natives.
Tientsin.....	Nov. 17-Dec. 14....		2	
Dutch East Indies:				
Java—				
Batavia.....	Nov. 9-Dec. 7....	14	1	
Samarang.....	Oct. 4-24.....	57	23	
Egypt:				
Alexandria.....	Dec. 9-31.....	2		
Cairo.....	Nov. 12-Dec. 31....	7	3	
Port Said.....	Dec. 3-31.....	1	1	
France:				
Marseille.....	Nov. 1-Dec. 31....		2	
Nantes.....	Jan. 5-18.....	2		
Paris.....	Dec. 1-Jan. 18....	17		
Germany:				
Hamburg.....	Jan. 10-16.....	1		
Gibraltar.....	Dec. 9-15.....	1		
Great Britain: Liverpool.....	Jan. 1-4.....	1		
India:				
Bombay.....	Nov. 17-Dec. 28....	11	4	
Calcutta.....	Dec. 1-14.....		11	
Karachi.....	Dec. 1-21.....	2		
Madras.....	Dec. 1-28.....	4	3	
Rangoon.....	Oct. 1-Nov. 30....	11	3	
				Total: Nov. 24-30, 5 cases not included in report, page 2231, vol. xxvii; Dec. 1-Jan. 11, 15 cases.

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

Reports Received from Dec. 27, 1912, to Feb. 7, 1913—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Indo-China: Saigon	Aug. 20-Oct. 20...	2	2	
Italy: Palermo.....	Dec. 15-21.....	2		
Japan.....				Total Jan. 1-Oct. 31: Cases 13 with 1 death.
Mexico:				
Aguascalientes	Dec. 9-Jan. 12.....		4	
Chihuahua.....	Dec. 9-Jan. 5.....		2	
Durango.....	Dec. 1-31.....		15	
Masatlan.....	Jan. 1-7.....	2		
Mexico.....	Nov. 17-Jan. 4.....	36	15	
Salina Cruz.....	Nov. 17-23.....	1		
San Luis Potosi.....	Sept. 15-21.....	1		
Netherlands: Rotterdam	Dec. 22-28.....		1	
Peru:				
Callao.....	Sept. 1-14.....			Present.
Lima.....	.....do.....			Do.
Mollendo.....	Nov. 24-Dec. 7.....	5	1	
Salaverry.....	Dec. 4-11.....	1		
Portugal: Lisbon.....	Dec. 1-Jan. 11.....	25		
Roumania.....				Total Oct. 1-31: Cases 6.
Russia:				
Libau.....	Dec. 16-Jan. 4.....	2		
Moscow.....	Dec. 8-28.....	3	2	
Odessa.....	Nov. 17-Dec. 14.....	3		
St. Petersburg.....	Nov. 24-Dec. 28.....	96	10	
Warsaw.....	Sept. 22-Oct. 5.....	5		
Servia: Belgrade.....	Dec. 22-28.....	2		
Siam: Bangkok.....	Nov. 10-Dec. 7.....		3	
Siberia: Vladivostok.....	Oct. 28-Dec. 28.....	4	3	
Spain:				
Almeria.....	Dec. 1-31.....		40	
Barcelona.....	Dec. 1-28.....		64	
Cadiz.....	Nov. 1-Dec. 31.....		7	
Madrid.....	.....do.....		34	
Seville.....	Dec. 1-31.....		27	
Valencia.....	Nov. 14-Jan. 4.....	28		
Straits Settlements: Singapore.....	Nov. 24-30.....	1	1	
Sweden: Stockholm.....	Oct. 8-21.....	3		
Switzerland:				
Cantons—				
Aargau.....	Dec. 15-21.....	1		
Basel.....	Nov. 14-Dec. 21.....	8		
Grisons.....	Dec. 1-28.....	9		
Turkey in Asia: Beirut.....	Dec. 8-Jan. 4.....	16	2	
Turkey in Europe: Constantinople.....	Dec. 1-Jan. 11.....		69	
Zanzibar.....	Nov. 8-14.....		1	

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

IOWA.

Communicable Diseases—Disinfection, supervision of action of local boards of health, notification of cases. (Regulations State Board of Health, adopted July 21, 1911.)

CHAPTER III.

RULES FOR DISINFECTION.

RULE I. *Disinfection of individuals.*—Before being released from quarantine, all persons shall be subject to the following requirements:

SECTION 1. They shall be removed to a room that has been properly disinfected.

SEC. 2. The entire body, including the hair, shall be washed with a solution of bichloride of mercury (1 part to 3,000 parts of water) or a 2½ per cent solution of carbolic acid.

SEC. 3. They shall then be subjected to a full bath with soap and hot water, after which they shall be provided with clothing that has been disinfected or that has not been on the premises.

RULE II. *Disinfection of premises.*—For every 1,000 cubic feet of space to be disinfected the following materials and quantities shall be used:

	Ounces.
Formalin (40 per cent solution of formaldehyde).....	11
Water.....	11
Potassium permanganate (fine crystals).....	9

RULE III. *Preliminary preparations.*—Before beginning disinfection, the requirements as prescribed in the following sections shall be complied with:

SECTION 1. The person employed to do the disinfecting shall wear a cap and gown so constructed as to completely cover his clothing and shall cover his face with a piece of gauze. After all the arrangements have been completed, these garments shall be left on the premises to be disinfected in the same manner as other disinfected articles. The shoes worn by the operator should be covered with a pair of rubbers, otherwise they should also be disinfected with the other garments. This may be done by the use of standard disinfecting solutions 1 or 2, given in this chapter.

SEC. 2. All holes, cracks, and other external apertures shall be sealed by pasting over them pieces of paper, or filling them with clean, damp, cotton rags.

SEC. 3. All bedding and other clothing, carpets, and rugs should be hung on chairs, or upon lines stretched across the room for that purpose. Books should be placed on edge or hung upon a line in such a manner as to spread the pages. Drawers, cupboards, and trunks should be opened, and while their contents need not be unnecessarily disarranged they should be loosened in such a manner as to give free access to the disinfecting gas. Windows should be securely closed, but left unlocked in order to admit of their being opened from the outside after the disinfection is complete.

SEC. 4. When using formaldehyde, no open vessel containing water should be left in the room.

SEC. 5. The temperature of the room shall in no case be below 60° F. (preferably 70° F. or above). If the atmosphere is unusually dry, the amount of moisture should be increased by boiling a kettle of water in the room, or by pouring boiling water from one vessel to another for 5 or 10 minutes before beginning the disinfection.

SEC. 6. A large washtub should be placed near the center of the room, conveniently situated so as to be seen through one of the windows. In this should be placed a tin or galvanized iron pail about 12 to 16 inches deep. It is advisable to cover the outside of the pail with asbestos paper, leaving the top open.

RULE IV. *Mode of operation.*—SECTION 1. When the room or house to be disinfected has been properly prepared in accordance with the above requirements, the proper quantity of potassium permanganate should be placed in the pail. The solution of 40 per cent formaldehyde mixed with the water should be placed in a tin dipper or other vessel convenient for pouring rapidly, and when everything is in readiness should be poured upon the crystals of permanganate of potash contained in the pail. The operator should immediately leave the room, closing the door and stopping all cracks in the manner indicated. This operation should be performed quickly, as the gas is generated very rapidly. The door should be locked in order to prevent accidents, and the room or building, as the case may be, kept closed for at least 8 hours. At the expiration of this time the windows should be opened from the outside, and in the space of 15 or 20 minutes the door may be opened, allowing the air to blow through the room. If the odor remaining is very strong, a little ammonia water sprinkled upon the floor will soon neutralize the formaldehyde and hasten the disappearance of the odor.

SEC. 2. After the fumigation as prescribed in this rule has been completed, all bedding, clothing, etc., that will not be harmed by boiling should be boiled for at least half an hour. When possible, mattresses, rugs and heavy curtains should be sterilized by steam under pressure at 120° C. for 30 minutes. When this is not possible, these articles should be taken out of doors and thoroughly aired and exposed to the rays of the sun for an hour or so.

SEC. 3. Papers, cheap books, rags, and other articles of little or no value should be burned.

In addition to the above requirements all woodwork and, if possible, the walls should be washed with a liquid disinfectant, such as a solution of bichloride of mercury, 1 part of bichloride of mercury to 1,000 parts of water. Where the wall paper is loose or dilapidated it should be removed and burned.

RULE V. *Disinfection of vehicles.*—SECTION 1. All cabs, boats, hearses, and other vehicles used in the removal of a patient or the body of a person affected with, or who has died from any contagious or infectious disease, shall be disinfected in the manner defined in section 2 of this rule.

SEC. 2. Remove all cushions, curtains, and other accessories and place them in a small room or tight cupboard, and disinfect them in accordance with the requirements prescribed in rule 4 of this chapter. If the vehicle can be closed up, it should be fumigated in the same manner as prescribed in rule 4 of this chapter. If this is impracticable, it should be washed inside and out with a solution of bichloride of mercury, 1 part to 1,000 parts of water.

RULE VI. *Pet animals.*—All cats and dogs and other pet animals kept upon the premises infected with any contagious or infectious diseases, shall be thoroughly washed with soap in a tub of hot water containing 5 per cent solution of carbolic acid.

RULE VII. *Additional requirements.*—When it is necessary to disinfect any premises and the presence of bedbugs or other vermin is suspected, sulphur must be used in addition to formaldehyde. The following is the most convenient and effective manner of using the same:

Place in the room a wash boiler containing about 6 to 8 inches of boiling water. Place a brick in the center of the water and upon this a sulphur candle. Light the candle and be sure that it is burning well before starting the formaldehyde fumigation. If possible the water in the wash boiler should be kept boiling by means of a stove or gas lamp.

RULE VIII. Disinfection should always be done under the direction of the local board of health, and under the personal supervision of the attending physician or the health officer. The person employed to do the disinfecting should be one specially trained to understand the various methods to be used and the precautions to be observed, and should be held personally responsible to the local board of health.

Rule IX.—Standard disinfectants (all should be plainly labeled "Poison").—**Solution No. 1.**—Carbolic acid. Take 95 per cent carbolic acid, one-half pint; water, 5 quarts. May be used for sputum cups, washing furniture, metal surfaces, various secretions and exudates.

Caution.—This should not be used for the face or delicate skins.

Solution No. 2 (carbolic acid, 2½ per cent solution): Mix 1 part of solution No. 1 with 1 part of water. May be used for washing hands, face, or hair.

Solution No. 3 (bichloride of mercury solution, 1 to 1,000): Prepare by dissolving 1 drachm (60 grains) of corrosive sublimate in 1 gallon of boiled soft water. The ordinary solution of bichloride of mercury deteriorates in a very short time. A convenient way of using bichloride is by use of specially prepared tablets, which may be purchased at any drug store, or to have on hand a stock solution which will not deteriorate. This may be prepared as follows: Bichloride of mercury, 330½ grams; citric acid, 156 grams; water, 20 liters, or 5 gallons; a little coloring material.

M. Sig.: One ounce of this solution mixed with 1 pint of water makes a solution of 1 to 1,000.

Prepare in glass, earthen, or wooden vessels (not in metal vessel); it must not be used for disinfecting metal surfaces. Use for disinfecting hands, clothing, wood-work, discharges, etc. Good for sprinkling floors of offices and public buildings before sweeping.

Solution No. 4 (bichloride of mercury, 1 to 3,000): Mix 1 part of solution No. 3 with 2 parts of water. May be used for bathing entire body.

Solution No. 5 (chloride of lime): Dissolve 6 ounces of fresh chloride of lime (best quality) in 1 gallon of water. Especially useful for feces, urine, and sputum.

NOTES.—Sunshine is nature's best disinfectant and should be utilized as much as possible. Let it enter the sick room freely.

Many of the so-called disinfectants that have been placed upon the market are absolutely worthless and should be avoided.

CHAPTER IV.

SECRETARY OF THE STATE BOARD OF HEALTH SHALL SUPERVISE LOCAL BOARDS.

RULE I, SECTION 1.—The secretary of the State board of health is the executive officer of the board. He shall have general supervision over all local boards in the enforcement of quarantine and the prevention of infectious diseases. When he has reason to believe that the regulations of this board are not properly enforced by the local board of any city, town, or township, and that the public health is endangered by reason of such neglect upon the part of any such local board, he shall instruct the officials of said board regarding their duties, and in the event of their failure to conform to such instructions, shall notify the president of the State board of health, who may convene the State board in special session, whereupon the said board shall, if it deem necessary, immediately assume control within the territorial jurisdiction of such local board, and shall continue in control until such time as there is no

further danger to the public. All expenses thus incurred by the State board or its representatives shall be paid as provided for in section 2572 of the code, as amended by chapter 107, acts of the twenty-ninth general assembly.

SEC. 2.—The secretary of the State board of health or any member thereof is hereby authorized to enter and leave any and all quarantined premises within the State, when necessary to make an investigation or to enforce the regulations of the State board of health.

LOCAL BOARDS TO KEEP RECORD.

RULE II.—All mayors of incorporated cities or towns, and all township clerks, shall keep a complete record of all cases of communicable diseases reported within their jurisdictions; said record shall include the name of the disease, patient's name, age, sex, address, social condition, attending physician and nurse, together with the date quarantined, date released, date disinfected, person who disinfected the premises, and such other information as may seem necessary. A copy of said record shall be forwarded to the secretary of the State board of health by the 1st day of February in each year for the year ending January 1 preceding, and shall include all data up to and including December 31 preceding.

REPORT OF CONTAGIOUS DISEASES.

To mayors and township clerks:

On page 2 of these rules and regulations will be found two postal card forms to be used in reporting quarantinable diseases to the secretary of the State board of health. These postal card forms are very convenient and should be obtained at the expense of the city or township and kept on hand ready for use when a quarantinable disease makes its appearance in the community. It is hoped that mayors and township clerks will obtain all of the forms given in these rules and regulations and use them according to the directions given by the State board of health. It is earnestly hoped that all health officials will put forth their best efforts to carry out all of the requirements as set forth in these pages.

A blank on page 14 is recommended to mayors and township clerks, for the purpose of keeping a proper and complete record of all cases reported to them. These blanks should be printed and bound in book form. The leaves should be of two alternating colors, one for the original and the other for the duplicate. The duplicate is made by placing a piece of carbon paper between the leaves. The original should be on white, while the duplicate can be on a light yellow, or any color that will make a good carbon copy.

Report of contagious diseases.

— Iowa, — 19—.

Disease, —. Patient, —. Age, —. Sex, —. Address, —.
 Social condition, —. Attending physician, —. Nurse, —. Date
 quarantined, —. Date released, —. Date disinfection, —. Person
 who disinfected, —. Remarks, —.

(Signed) ————,
 (Mayor or township clerk.)

HEALTH OFFICER, ELECTION, QUALIFICATIONS, AND COMPENSATION.

RULE III. Every local board of health shall, at its first meeting in April of each year, elect a competent physician as health officer, whose term of office shall be one year, unless sooner removed by said board or the acts of a body having superior jurisdiction. In the event of such removal, or if a vacancy occur from other causes, the board shall immediately proceed to fill such vacancy. To be qualified for election

as health officer, the person selected must be the legal holder of a certificate regularly issued by the State board of medical examiners of this State, authorizing him to practice medicine in the State of Iowa, and said certificate must be recorded in the office of the county recorder of the county wherein he resides. The physician selected as health officer should be the most competent person available for this position. The salary of the health officer shall be determined by the local board of health, and should be an amount sufficient to compensate him for the time and ability required to properly discharge the duties of his office.

DUTIES OF THE HEALTH OFFICER.

RULE IV. The health officer shall be the sanitary adviser of the local board of health, and in addition thereto shall personally inspect the schools and all public buildings and public utilities within the jurisdiction of the local board. He shall require the owners, managers, or superintendents of all such institutions to conduct and maintain the same in a proper sanitary condition, and order persons affected with any communicable disease or ailment excluded from the schools and other places used by the general public. All orders for the release of quarantine in incorporated cities or towns must have the approval of the health officer before such orders are valid. In cases of sickness where no physician is in attendance, the health officer shall investigate as to the character of such sickness, and report to the mayor or township clerk, and in like circumstances, when the sickness is caused by a quarantinable disease, determine the fact of its termination. He shall also attend and represent his local board at the sanitary conferences called by the State board of health, his actual expenses therefor being allowed and paid by the local board of health so represented.

REVOCATION OF PHYSICIAN'S CERTIFICATE.

RULE V. If any physician or osteopath fail or neglect to conform to quarantine regulations, or to report promptly to the mayor or township clerk all cases of quarantinable disease to which he has been called professionally, that official shall make affidavit setting forth the facts and the names of witnesses thereto, and file same with the secretary of the State board of health, whereupon the offender shall be cited to appear before the State board of medical examiners and show cause why his certificate should not be suspended or revoked.

MINNESOTA.

School Buildings—Construction and Equipment (Regulations State Board of Health, Adopted Jan. 9, 1912).

CONSTRUCTION OF SCHOOLS, HOSPITALS, ETC.

126. Whenever it is proposed to build any school, hospital, almshouse, prison, or other public institution, the plans and specifications for the same in respect to sanitary conditions shall be submitted to and filed with the Minnesota State Board of Health, and no such building shall be constructed until the sanitary arrangements of the same have been approved by the said board.

* * * * *

146. *Location of buildings.*—School buildings should be placed on high ground at as great a distance as possible from low, marshy ground, and from railroads, manufacturing plants, and other sources of noise, smoke, and dust.

Light from the east is most desirable for class and study rooms; from the north for rooms used for laboratory, manual training, drawing, and similar work. Light from the west holds second place only to light from the east. South light should never be used for any of the above-indicated rooms.

147. *Plans and specifications.*—All plans for buildings of four rooms or more must include plans and specifications for plumbing, heating, ventilation, and sewage disposal; and for all other buildings where any such equipments are to be installed.

148. *Capacity of school room.*—(a) No school room or class room, except when used as assembly room, shall provide less than 18 square feet of floor space and 216 cubic feet of air space per pupil; and no ceiling in buildings hereafter to be erected shall be less than 12 feet from the floor.

(b) The floor space for rooms used for manual training or home economics shall have at least 35 square feet for each pupil.

149. *Heating and ventilating.*—(a) A system of ventilation shall be capable of furnishing not less than 30 cubic feet of air per minute for each person that the rooms will accommodate when the difference of the temperature between the outside air and the air in the school room shall be 30° F. or more.

(b) In a gravity system of ventilation in connection with a furnace or steam plant, the flues for admitting fresh air to the room shall have a horizontal area of not less than 1 square foot for every 160 square feet of floor area in the school room. There shall be in a steam gravity system the equivalent of at least 50 square feet of indirect radiation for each square foot of horizontal area of fresh air flues. An accelerating coil, the equivalent of not less than 20 square feet, shall be provided for each vent flue.

(c) The flues for a "plenum fan" system of ventilation shall have a horizontal area of not less than 1 square foot for every 270 square feet of floor area of the schoolroom. The ventilation of school buildings by this system shall be so designated that the air pressure in any classroom shall be in excess of that of the outside air

(d) Warm-air registers shall be placed about 8 feet above the floor and shall have an open area of at least 125 per cent of the cross-sectional area of the flue. Vent openings shall be placed at the floor level on the same side of the room as the warm air flues and should have no registers.

(e) In buildings of four rooms or less, equipped with jacketed stoves or furnaces, the fresh-air intake and the chimney or vent flue shall have a cross-section area equivalent to one-fourth of 1 per cent of the floor area of the room, but in no case shall the intake pipe be less than 14 inches in diameter, nor the chimney or vent flue less than 16 inches by 16 inches inside measurement.

(f) Flues from hoods in chemical laboratories, from domestic science rooms, and from toilet rooms shall extend independently to the roof of the building.

(g) The direct-indirect system of ventilation shall not be used. By "direct-indirect" is meant the introduction of cold air from the outside of the building at the base of a "direct" radiator.

150. *Lighting.*—(a) The glass area of windows shall equal one-fifth of the floor area of the schoolroom. The top of the windows shall be as near the ceiling as the mechanical construction of the building will allow.

(b) In all rooms not exceeding 25 feet in width all the light shall be admitted at the left of the pupils when seated. High windows may, however, be permitted on the right side of the pupils seated, but the sills of such windows must be at least 7 feet above the floor.

151. *Shades.*—Translucent, instead of opaque shades, shall be used in the windows for controlling the light.

152. *Cloakrooms and furniture.*—(a) A cloakroom shall not be less than 6 feet wide and shall have at least one outside window.

(b) Each room should be seated with single desks of suitable size.

153. *Water supply, etc.*—(a) Sanitary drinking fountains or individual drinking cups shall be used exclusively in the public schools. Where it is necessary to use a water receptacle, a tank with a faucet shall be provided. The common drinking water pail will not be permitted.

(b) In communities where there is no public water supply, tubular or driven wells must be provided to furnish water for drinking purposes. Water from a dug well shall not be used for drinking purposes in public schools.

(c) Water for washing the hands must be provided. Towels for common use are prohibited.

154. *Toilets.*—Toilet rooms shall be so located as to receive direct light and air from the outside. Local vents for water closets, as well as general ventilation for the room, shall be provided. The room vent opening shall be at or near the ceiling.

155. *Outdoor toilets.*—Outdoor toilets shall be of such construction as to allow of their being easily kept in a sanitary condition. Doors must swing out, and must be provided with springs or weights to insure closing. Each outdoor toilet must be provided with at least one window. All windows and openings, except doorway, must be screened. Provision should be made for heating outdoor toilets.

156. *Fire alarm.*—All school buildings of four rooms or more must be provided with an efficient fire-alarm system.

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

ALEXANDRIA, VA.

Privies—Cleaning of (Ordinance Adopted July 23, 1912).

SEC. 13. The owner or occupant of every lot upon which there is any privy shall regularly as often as necessary, cause the deposit in such privy to be covered over with dry earth or lime; and the police shall exercise supervision over all such privies, and require the owner or occupant of any lot upon which any such privy is situated, to cause the same to be cleansed and kept clean. Whenever any police officer for any ward may deem it necessary, he shall require the owner or occupant of any lot situated in his ward, on which any such privy is located, to cause the deposit if such privy to be removed in accordance with the provisions of this ordinance. Upon complaint of any citizen or information given by the health officer to the police justice, that a privy is so placed as to be offensive, he may, upon summons returned executed against the owner, order such privy to be removed.

SEC. 14. There shall be annually appointed by the city council of Alexandria, at such time as they may deem proper, a suitable person to act as night scavenger who shall, before entering upon his duties, give bond and security according to law, for the faithful performance thereof, and the regular payment of the sum agreed upon for the privilege of the office. It shall be his duty, whenever called upon by the city engineer, the health officer, or the occupant of any property, who may desire his services, to remove the contents of any privy, depositing them not less than half a mile beyond the corporate limits of the city, such services in no case to commence prior to the hour of 11 o'clock p. m., and to finish prior to that of 5 o'clock a. m., from the first day of October to the 31st day of March, and from 12 o'clock midnight to 4 o'clock a. m., from the first day of April to the 30th day of September. The carts for this purpose shall be specially prepared odorless and water-tight with a suitable cover thereon. He shall receive for his services the following rates and no more: For cleaning out and removing contents of wells whose diameter does not exceed 4½ feet, \$2 per foot; for those whose diameter exceed 4½ feet and not over 6 feet, \$2.50 per foot; for all sinks containing hogsheads, \$1.25 per foot; for all half tubs or boxes not exceeding 3½ feet in length, 12 inches in width, and 14 inches in depth, 50 cents per box, for all over 3½ feet in length and not exceeding 4½ feet, 75 cents each, to be paid in all cases by the occupant of the premises, if the contents of the well have been deposited during his tenancy, otherwise the cost shall be paid by the property owner.

It shall be unlawful for any person to fail or refuse to have his privy cleaned and the excrement removed from his premises whenever it shall be required by the health officer or any police officer. It shall be the duty of the night scavenger to report to the health officer all persons who fail or refuse to have their privies cleaned as often as is reasonably necessary, and it shall be unlawful for any scavenger to refuse to clean any privy when requested to do so and when the lawful price is offered.

No person shall haul, carry, or transport, or attempt to haul, carry, or transport through any of the streets or alleys of this city the contents or part of the contents of any privy unless the same be hauled, carried, or transported in some cart or vehicle

authorized to be used for such purpose by the regular appointed night scavenger of the city and approved by the city engineer.

All persons residing upon or owning property upon streets of this city in which sewers have not been laid, and who have not sewer connections, shall be required to build, furnish, or provide upon their lot or lots occupied or which may be hereafter occupied suitable privies or earth closets as required by State law, for the convenience of those occupying or who may occupy such lot and the house or tenants thereon, but no privies or cesspools shall be put in cellars. Any person who shall violate this section or any of the provisions thereof shall be fined not less than \$2 nor more than \$10 for each offense. Chapter XI of the Code of Laws for the City of Alexandria, of 1874, is hereby repealed.

BELLEVUE, OHIO.

Tuberculosis (Regulation, Board of Health, adopted March 21, 1912).

SECTION 1. Tuberculosis is hereby declared to be an infectious, communicable, and preventable disease dangerous to the public health.

SEC. 2. It shall be the duty of every physician in the city to report to the office of the board of health the name, age, sex, occupation, and address of every person having tuberculosis who is now under the care of such physician, and such physician shall likewise hereafter report upon each case of tuberculosis that shall come under the observation of such physician for the first time within one week of such time. The records of such cases shall not be made public.

SEC. 3. It shall be the duty of the commissioners or managers, or the principal, superintendent, or physician in charge of every public or private institution, dispensary, or hospital in the city of Bellevue to report to the board of health of said city the name, age, sex, occupation, and last previous address of every person infected with tuberculosis who is now in their care or who shall hereafter come under their observation for the first time within one week of such time.

SEC. 4. In case of the vacation of any apartments or premises by death from tuberculosis, or by the removal therefrom of a person or persons infected with tuberculosis, it shall be the duty of the person in charge or the physician in charge to notify the board of health aforesaid of such removal within 24 hours thereafter, and such apartments or premises so vacated shall not be again occupied until duly renovated and disinfected as hereinafter provided.

SEC. 5. In case of the vacation of any premises or apartments as set out in section 4 hereof, the health officer shall immediately visit said premises and shall order and direct that such premises or apartments and all infected articles therein be properly and suitably disinfected.

In case there shall be no remaining occupants in such premises or apartments and same shall be vacant, then the health officer shall cause a notice in writing to be served upon the owner, or the agent of the owner of such premises or apartments, ordering the renovation and disinfection of such premises or apartments under his direction.

SEC. 6. In case any orders or directions of the health office requiring the disinfection of any articles, premises, or apartments, as hereinbefore provided, shall not be complied with within 36 hours after such orders or directions shall be given, then it shall be the duty of the health officer to cause a placard in words and form as follows, to be placed upon the door of the infected apartments, or premises to wit:

Placard for tuberculosis, etc.—Notice.—"Tuberculosis is a communicable disease. These apartments have been occupied by a consumptive and may have become infected. They must not be occupied until the order of the health officer directing their renovation and disinfection has been complied with."

This notice must not be removed under penalty of law, except by the order of the health officer; and such placard shall not be removed until such time as the order or directions of the health officer shall have been complied with and the removal of such placard authorized by the health officer.

CHELSEA, MASS.

Offensive Trades—Regulation of (Rule, Board of Health, Adopted Oct. 29, 1912.)

RULE 58a. No person or persons shall exercise any of the following trades or employments, viz, that of manufacturing fertilizers, of mixing or storing refuse animal or vegetable substances, or sorting or picking feathers, of refining oils, of making egg dressing, varnish, glue, gas, water-gas, gasoline or any burning fluid, within the city, except at places where such trades or employments are now lawfully established, or where such trades may hereafter be assigned by the board of health; no person or persons shall exercise any of the following trades or employments, viz, that of slaughtering animals or fowl, of rendering animal matter, of smoking fish or meat, except at places where such trades or employments are now lawfully established and licensed or where such trades or employments may hereafter be assigned and licensed by the board of health, all such licenses expiring June 1, annually; above said trades or employments being either a nuisance, or hurtful to the inhabitants of this city, dangerous to the public health, attended by noisome and injurious odors, or otherwise injurious to health of said inhabitants.

DES MOINES, IOWA.

Board of Health—Organization and Duties (Ordinance Adopted Nov. 11, 1912).

SECTION 1. There is hereby created the health department which shall be a division of the department of public safety.

SEC. 2. *Organization.*—The health department shall consist of the health officer, city physician, secretary, quarantine sergeant, and such other inspectors as may be authorized by statute or ordinance.

SEC. 3. *City Physician—Duties.*—That the city council shall, upon its first organization, elect a city physician who has practiced medicine and resided in the city for at least two years and who shall hold his office for the term of two years and until his successor is elected and qualified.

The city physician shall be the physician to the board of health and shall perform any and all duties as may be ordered by the said board, city council, or superintendent of public safety. He shall attend upon any accidents or injuries of persons within the city, upon the call of the marshal or the chief of the fire department, his assistants, or any member of the police or fire department authorized by the marshal or the chief of the fire department to make such call, and shall accompany or provide a substitute, who shall be a physician, to accompany the ambulance in the transportation of all persons to their residence or hospital as the case may be. He shall attend only such firemen or policemen as may be injured in the discharge of their duties, and shall give the first aid to all injured persons, but he shall not be required to attend or administer to other city employees except as herein provided.

He shall make a physical examination of all persons holding or seeking positions under the city government when so required by the superintendent of any department having charge of such appointment or examination for position and render a written report on the same.

He shall attend any person in the city jail upon call from the city jailer and shall send any person who in his opinion is entitled to such aid to the hospital, and shall keep in communication and attendance upon such cases which have been sent and discharge such patients when in his opinion they should leave the hospital. He

shall maintain an office at police headquarters to be provided by the city council and shall have a sleeping apartment and a surgical dressing room kept in readiness for his emergency work. He shall attend and administer to all indigent persons who have resided in the city less than six months, without compensation therefor.

SEC. 4. *Health officer.*—The health officer shall perform such duties as are now or may be hereafter prescribed by statute or ordinance.

SEC. 5. *Secretary.*—The secretary of the health department shall be responsible for the proper conduct of the affairs of the department, including all clerical work and all matters pertaining to sanitation and health of the community. He shall keep and preserve all records and shall each month, or oftener if required, prepare a report of the work of the department, containing all data and particulars touching the business transacted by the department and the employees of the same. The secretary shall have supervision over all the inspectors and employees of the department except city physician and health officer.

SEC. 6. *Sanitary inspectors.*—The sanitary inspectors shall perform such duties as may be required of them by the health officer, secretary or superintendent of the public safety and shall make such report upon the work assigned to them as they may be directed. They shall further be required to perform such extra work as may be necessary and shall be subject to call at any time under the direction of the health officer, secretary or superintendent of public safety.

SEC. 7. *Quarantine sergeant.*—The quarantine sergeant shall visit all quarantine premises as required by the rules and regulations of the State board of health and shall attend to the disinfection of all premises upon the recovery of patients so quarantined. He shall further perform such duties as may be required by the health officer, secretary and superintendent of public safety.

SEC. 9. *Rules and regulations.*—The officers and employees of the health department shall report for duty at 8 o'clock a. m., at the office of the secretary, and shall remain on duty from 8 a. m. till noon and from 1 p. m. until 5 p. m. daily.

The sanitary inspectors and quarantine sergeant shall alternate in performing Sunday duties.

All officials, inspectors, and employees shall comply with the rules of the civil-service commission, civil-service ordinance and laws, and the orders issued to them by any of their superiors.

All inspectors shall report for duty in, and keep and maintain a neat uniform during all hours of service. All inspectors shall report at least once each hour by phone or otherwise or present a reasonable excuse for not being able to do so, and the secretary shall keep a record thereof daily.

All officers, inspectors, and employees will be subjected to suspension for neglect of duty, misconduct of any kind, or procrastination, and the health officer and secretary shall report to their superiors in writing any failure to comply with any of the rules herein. All employees of the health department shall be polite and courteous to the public at all times and shall exercise their authority and perform their duties in a manner calculated to cause the least alarm or mental disturbance to the citizen with whom they are dealing. All officers and inspectors shall make complete and intelligent returns of all work performed by them, assigned or placed in their charge for distribution or execution, and they shall state that the said work so assigned was actually performed by them and that their returns thereof are full, true, and correct, in so far as the nature of the duties of an officer or inspector of the health department will permit. The rules regulating the police department shall control when they are not inconsistent with any of the rules contained herein. All grievances or complaints arising between members of the health department shall be presented to the superior officer of him who so filed said complaint or presents the aforesaid grievance. Any employee of the health department who feels aggrieved at the disposition of any complaint filed by him in writing may present the same for review to the superintendent of the public safety

department. All complaints or grievances arising in the health department shall be made in writing, and the superior officer hearing the same must take and file with his superior office a full report of the hearing and findings upon said hearing.

SEC. 10. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

SEC. 11. This ordinance shall be in full force and effect from and after its passage and publication as required by law.

FORT SMITH, ARK.

Septic Tanks and Cesspools—Construction, Cleaning, and Inspection of (Ordinance Adopted Nov. 18, 1912).

SECTION 1. That no person or persons shall construct, permit or maintain upon his premises a cesspool (privy vault) or septic tank where a city sewer runs through a street or alley either in front or in the rear of such premises or contiguous thereto.

SEC. 2. No person shall hereafter establish or maintain a cesspool (privy vault) or septic tank without first having a permit from the chief plumbing inspector and approved by the board of health at one of their regular meetings.

SEC. 3. Any person desiring to construct or maintain a cesspool (privy vault) or septic tank shall file with the chief plumbing inspector a written statement, giving the lot, block, and addition where it is desired to conduct or maintain the same, the number of families to use the same, with a diagram showing the abutting property, the nearest adjacent houses, and all public or private ways or places of which the premises abut.

SEC. 4. That all cesspools (privy vaults) shall be cleaned out every 90 days or as much oftener as the Chief of Sanitary Police may think necessary. The price for cleaning out a cesspool (privy vault) shall be \$1.50 for the average size. In large cesspools (privy vaults) if the fee of \$1.50 is not thought to be large enough by the scavenger and he and the owner can not agree on the price, then the chief of sanitary police shall fix the price, subject to appeal by either party to the sanitary committee of the city council, whose decision shall be final.

SEC. 5. That all cesspools (privy vaults) shall be at least 5 feet deep, and shall not be erected within 20 feet of any building used or occupied for residence purposes, nor within 100 feet of any well, cistern, or spring, the water of which is used for domestic purposes. Neither shall a cesspool or privy vault be placed within 10 feet of any street or 5 feet of any alley, and such cesspool or privy vault shall have 9-inch walls and 12-inch bottom constructed of hard burnt brick or stone laid in concrete mortar or of concrete with bottom and sides cemented so as to be water-tight, not to be less than 4 feet in diameter and 5 feet in depth, with closed opening so the scavenger can clean it, and so constructed as to exclude all surface water, and its contents shall never be within 18 inches of the surface of the ground. The manner and method of the contents of the toilet or water closet conveyed therefrom to the cesspool or privy vault shall be subject to the approval of the chief plumbing inspector.

SEC. 7. That no septic tank shall be erected or maintained in the city of Fort Smith, Ark., until the party or parties erecting or maintaining said septic tank shall file with the chief plumbing inspector a written statement giving the lot, block, and addition said septic tank is proposed to be erected or maintained upon, giving the number of families to be accommodated, a diagram of the property as well as the adjacent property, the nearest adjacent houses and all public or private ways or places on which the premises abut. Also giving plans and specifications proposed to be used which shall be approved by the chief plumbing inspector and referred to the board of health for their approval at a regular meeting. But in no event shall any septic tank be erected or maintained that has less than three filtration beds, to be approved by the board of health. All cesspools (privy vaults) or septic tanks when out of use shall be

refilled with dirt or other means at the expense of the owner, subject to the approval of the chief of sanitary police.

SEC. 8. That any person or persons violating this ordinance shall be deemed guilty of a misdemeanor, and upon conviction in the police court shall be fined in any sum not less than \$10 nor more than \$50. That each day shall be regarded as a separate offense.

SEC. 9. That all ordinances or parts of ordinances in conflict with this ordinance be and the same are hereby repealed.

SEC. 10. That this ordinance take effect and be in full force and effect on and after its passage and publication.

LOS ANGELES, CAL.

Ice, Manufacture of (Ordinance Adopted May 1, 1912).

SEC. 43. It shall be unlawful for any person, firm, or corporation to use, or to cause or permit to be used, in the manufacture of ice, any water from any well or irrigating ditch without first having thoroughly filtered or distilled such water.

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