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SMALLPOX IN THE UNITED STATES.

PREVALENCE DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912.

Information regarding the reported prevalence of smallpox during the fourth quarter of the calendar year 1912 is available for the District of Columbia and the 32 States enumerated in the tables on pages 1276 to 1284. Cases of smallpox were notified in the District of Columbia and in all the States reporting to the Surgeon General.

A summary of cases and of deaths reported in each State will be found given by States and by months on page 1276. A table giving cases and deaths by counties and by months will be found beginning on page 1276.

During the fourth quarter of the year, 5,422 cases of smallpox, with 43 deaths, were reported in the District of Columbia and the 32 States reporting. The 43 deaths reported occurred as follows: In Texas 26 deaths were reported from 176 notified cases; in Pennsylvania 5 deaths were reported from 106 notified cases; in California 2 deaths from 126 notified cases; in Indiana 2 deaths from 348 notified cases; in Massachusetts 1 death from 37 notified cases; in Kansas 1 death from 55 notified cases; in Iowa 1 death from 81 notified cases; in Alabama 1 death from 111 notified cases; in Maine 1 death from 150 notified cases; in Oregon 1 death from 213 notified cases; in New York 1 death from 372 notified cases; and in Washington 1 death from 481 notified cases.

A virulent outbreak of smallpox occurred in Hunt County, Tex., where 20 deaths were reported from 70 notified cases during the months of November and December. The outbreak of the virulent type of the disease which occurred in Pittsburgh, Pa., during the third quarter of 1912 extended into the first month of the fourth quarter, when 4 deaths were reported in 32 cases notified.

With the exception of the outbreaks of virulent smallpox noted in Texas and Pennsylvania, the disease as reported was of the mild type. In Washington 481 cases were notified, with but 1 death; in New

York 372 cases, with 1 death; in Oregon 213 cases, with 1 death; in Maine 150 cases, with 1 death. In 21 States a total of 3,166 cases were reported without a death.

The largest numbers of cases were reported in the following States: Utah 707, Minnesota 703, Washington 481, New York 372, Indiana 348, Wisconsin 284, Illinois 267, Michigan 250, Oregon 213, Ohio 178, Texas 176, Maine 150, California 126, Virginia 115, Oklahoma 113, Alabama and North Dakota 111 each, Vermont 110, Pennsylvania 106. The smallest numbers were reported as follows: Wyoming 2, Connecticut and New Jersey 3 each, District of Columbia 7, Colorado 15, Florida 17, Maryland 20, Massachusetts 37, Arizona 45, Kansas 55, North Carolina 57, Montana 69, Iowa 81, and South Dakota 90.

Smallpox was also present in States not enumerated in the table, but information regarding the number of cases occurring in them has not been available.

During the first quarter of 1912 there were reported 8,850 cases of smallpox, with 81 deaths; during the second quarter 5,734 cases, with 53 deaths; during the third quarter 2,070 cases, with 58 deaths.

The reports from Massachusetts, Minnesota, and New York for the fourth quarter of 1912 gave the vaccination histories of the patients in detail as follows: In Massachusetts, of 37 cases notified 1 of the patients had been vaccinated within 7 years preceding the attack, 1 had been last vaccinated more than 7 years preceding the attack, 25 had never been successfully vaccinated, and in 10 cases the vaccination history had not been obtained. In Minnesota, of 703 cases notified 12 of the patients had been vaccinated within 7 years preceding the attack, 44 had been last vaccinated more than 7 years preceding the attack, 550 had never been successfully vaccinated, and in 97 cases the vaccination history had not been obtained. In New York, of 372 cases notified none had been vaccinated within 7 years preceding the attack, 29 had been last vaccinated more than 7 years preceding the attack, 204 had never been successfully vaccinated, and in 139 cases the vaccination history had not been obtained.

FUMIGATION OF VESSELS FOR THE DESTRUCTION OF RATS.

By S. B. GRUBBS, Surgeon, and B. E. HOLSENDORF, Pharmacist, United States Public Health Service.

The fumes of burning sulphur, which have for so many years been used empirically by practical sanitarians to arrest the advance of epidemic diseases, remain to-day the most convenient and efficient fumigant. The efficiency of sulphur fumigation rests on its well demonstrated germicidal qualities, its safety, and the ease with which it may be applied.

For the destruction of rats on board of vessels, as an antiplague measure, the burning of roll sulphur in iron pots, has not been dis-

placed by any of the more recently proposed methods. Hydrocyanic acid gas is rarely used on account of the danger to human life, while funnel gases require an expensive apparatus and are practical only for large spaces, such as the holds of vessels. The technique of sulphur fumigation, however, varies much at different ports, from the most careful treatment of every part of a vessel to the routine burning of a few sulphur pots in a vessel's hold, a procedure of little value and giving a false sense of security.

We believe that if fumigation is necessary all parts of the vessel should be sulphured at the same time, including all compartments above deck from which the presence of rats can not be absolutely excluded, as well as the holds; that the most careful preparation of a vessel is necessary; and that fumigation of the holds alone, especially if containing freight, is of little value, if not actually harmful, as it may drive rats to the decks whence they may more easily go ashore.

The Report of the Board of Health on Plague in New South Wales, 1907, gives the following instance, showing the danger from vessels and the difficulty in ridding them of rats:

The Adelaide Steamship Co.'s *Innaminka* runs from Melbourne, Victoria; in the south to Cairns, Queensland; in the north carrying general cargo and passengers; going south her cargo consists chiefly of sugar and bananas. She calls at Sydney, New South Wales, and at Brisbane, Makay, Townsville, Bowen, and Cairns, Queensland. She is empty only at Melbourne and at Cairns, and at these ports is fumigated for destruction of rats. On the voyage now spoken of the *Innaminka* reached Sydney May 21 from Cairns, where she had been fumigated as usual, and sailed again for Melbourne on the 22d. During the night of May 21 a rat catcher of the intelligence staff set many traps on board and found the next morning that 18 live rats had been caught; in addition he found one dead rat lying beside the cages. The live rats were kept for some time and remained healthy, but the dead rat was found to be infected with plague. The vessel having sailed in the meantime, Melbourne was warned by telegraph. On arrival there on the afternoon of May 24 the vessel was arrested, anchored in the stream, and fumigated with her cargo on board; the next morning hatches were opened, she was taken alongside, and discharge of cargo was begun. In the course of discharging 160 carcasses were found.

Having been emptied, she was placed under sulphur a second time on the afternoon of May 25, and when hatches were again opened, on May 26, 164 more carcasses were turned out. After examination a number of these carcasses were declared to be plague infected. The ship was then thought to be rid of rats. She took on eight to nine hundred tons of cargo and sailed for Sydney as usual on her return voyage to the north. On arrival at Sydney, May 29, she was searched by the intelligence staff, under supervision of the chief sanitary inspector, and 41 live rats and 22 carcasses were collected. Consequently all of the cargo aboard was ordered out, and during the unloading 35 rats were killed and 34 more carcasses were found. The ship was then placed under sulphur for 12 hours, with the result of finding 509 carcasses of rats, 12 of mice, and 2 rats alive, though dying. Nevertheless live rats were still heard; the reason was afterwards found to be existence of a hole of communication between a forward hold and a cross bunker in which some rats had found protection from the fumes among the coals. It was thought necessary, therefore, to empty all the bunkers; this took 36 hours of continuous work. Then the after part of the vessel with the engine rooms and stokeholds were first filled with sulphur fumes, after which a second fumigation

of the forward holds commenced. After this 70 carcasses were found, but no live rats, and it was at length possible to say that no rats, alive or dead, remained on board. On June 3 she was released, and, after loading, pursued her voyage. Altogether 734 rats were delivered at the board's laboratories on or after May 29, of which about 160 were putrid; 70 of them were examined bacteriologically, being selected from the batches successively brought in, and including some of the putrid carcasses; 44 of these yielded positive films, and from 4 of them positive cultures of *B. pestis* were recovered.¹

The above citation, with its bewildering refumigations, each yielding more rats, warrants a review. Note that in all, five fumigations were done before the rats were exterminated, that 1,077 rats were found and that out of a small proportion examined, 5 were positively and many more probably plague infected.

Hobdy, of the United States Public Health Service, reports finding 310 rats in a vessel of 260 tons, 525 in another small vessel, and 1,700 in a larger but comparatively new steamer. He also reports that of 30 oil steamers fumigated every one yielded rats from the living quarters.

From our own observations at San Juan, Porto Rico, in 1912, the following instances are instructive:

1. June 20. Steamship *Ponce*, empty. After fumigation all night with 2 per cent SO_2 gas, two live rats were seen, one in a pipe casing in hold No. 3 and the other in a pile of dunnage in hold No. 4. Refumigation of these holds after proper preparation yielded two rats. This demonstrated that a prolonged exposure to 2 per cent gas in an empty hold will not always kill a rat if he can find any protection, hence all such protection must be done away with. Here it was a question of dunnage, or lumber used to keep bags of sugar away from the sides of the vessel, to avoid "sweating." This was disposed of by piling it on frames along the side of the holds about 3 feet above the floors or decks, and knocking down same after fumigation to be sure that no rat had climbed up to them.

The pipe casings and bilges that often have openings large enough for a rat, but admitting but little gas, were thereafter always opened up by having sections removed. On account of the damage this necessarily caused, as well as the labor involved, the steamship companies were requested to include in the changes recommended the making of certain panels in these places, which could be easily taken out or opened on hinges.

2. June 22. Schooner *Isabela*, empty, 34 tons register, was fumigated by burning 1 pound of sulphur per ton register, or 10 pounds to 1,000 cubic feet. The sheathing or "skin" was left in place. The fumigation yielded 15 rats, but on cleaning up, one live rat was seen escaping behind the sheathing. Enough of this planking was removed to allow a free circulation of gas, the vessel was again

¹ This very instructive report was brought to our attention by Dr. Charles V. Chapin, superintendent of health, Providence, R. I.

fumigated, and five more rats were found. This proved that the sheathing of sailing vessels is able to protect rats from death even when some five times the prescribed amount of sulphur is used, and from that time we either removed an occasional plank or required the owners to permanently close all openings.

3. June 26. Steamship *Coamo*, empty. Eight rats were found in the iron coverings of the steam pipes that lie on the main deck and four in the wooden boxing of the ship's telegraph. One rat was found under a bin on the main deck, and, escaping, ran direct to the iron pipe covering. After fumigation, 2 rats were found in the main dining saloon, 15 rats in the forecabin—which includes third-class quarters—and 2 in the storeroom aft. This shows how many rats may hide in places usually not molested, even when the upper parts of a ship are fumigated, and caused us regularly to take up pipe coverings, open the boxing of ship's telegraph, and empty and move all bins on deck.

4. July 18. Schooner *Henry F. Kruger*, empty, was fumigated all night, over one-half pound of sulphur to gross ton register being used. On shaking down the sails during final cleaning up a rat escaped from the jib. The second fumigation, done at once, yielded two rats.

5. July 28. Steamship *San Juan*. Before fumigation one rat was found under a box containing flags on the upper deck, and another behind a vegetable bin on the main deck; additional proof that rats may and do remain on deck, hiding easily in places usually not disturbed in the ordinary fumigation.

6. August 5. Steamship *Coamo*. The third fumigation in six weeks yielded one rat only, viz, in the first-class toilet room. This shows either that complete deratization of the living quarters may be as difficult as of the holds or that new rats coming on board may remain in the upper parts of the ship.

7. August 7. Steamship *Santurce*, freighter. Fumigation yielded rats as follows: Four from potato bins on deck, forward; 1 from deck, aft; 2 from cabin bathroom; 1 from storeroom, aft; 4 from the holds; 11 from dunnage and rubbish on deck, drowned out by water from the hose.

Observations 6 and 7 prove one of two things: Either the previous fumigations did not kill all the rats and the proportion of those surviving was much greater in the upper parts of the vessel, showing that they not only are present but that it is much more difficult to kill them here than elsewhere, or that new rats coming aboard remain for the most part above deck and go to the holds only later. The hiding of the rats in the loose material on deck emphasizes the necessity of inspections and of excluding rats from every possible cover.

8. August 12. Steamship *Carolina*. The third fumigation yielded 10 rats from the living quarters and only 2 from the holds, which corroborated the conclusions previously drawn.

9. August 9. Steamship *S. V. Luckenback*, second fumigation. The galley aft was fumigated for seven and a half hours with $4\frac{1}{2}$ per cent sulphur gas. On cleaning up, a rat was heard wheezing and running about in a wooden partition. As he could not be caught, some of the tongue and groove siding was removed and the galley refumigated, which yielded five rats.

There are many vessels that have old wooden partitions or other structures that may harbor rats through a long and severe fumigation. Until the necessity of doing away with these—that is, rat proofing vessels—is recognized by shipowners, they must be opened up at each fumigation, if fumigation is to be efficient and insure safety.

10. August 21. Steamship *Julia Luckenback*, second fumigation, rats found as follows:

Seventeen in living quarters and storeroom; 7 between ceiling and deck in staterooms; 1 in forecastle; 1 in deckhouse, aft; 1 in lazaret; 6 in holds.

Here we see again that either one fumigation killed nearly all the rats in the holds but left many elsewhere, or that rats came aboard and remained above decks. If the first is correct, the routine that we recommend, severe and laborious as it is, is none too strict; if the second is correct, the upper structures of a vessel from plague-infected or suspected ports are more dangerous and need more careful fumigation than the holds, because rats getting aboard remain there easily and from above may more easily get ashore at a clean port.

Having concluded from these observations that the greatest care as to details is necessary for the proper fumigation of any vessel, a few simple experiments were made to ascertain what per cent of sulphur dioxide was the best to use.

It is well known that if a rat in a cage is exposed to comparatively weak sulphur fumes, it will die, but if given a chance to protect himself the results are different, and in judging the results of experiments it must always be remembered that the rats are always at a disadvantage, being in a strange place, and confused and debilitated by recent confinement. In this connection it may be well to recall that the United States quarantine regulations prescribe, for the fumigation of empty vessels for the purpose of killing rats, "the simultaneous fumigation with sulphur dioxide gas not less than 2 per cent for six hours' exposure," and states that "an atmosphere containing 4.5 per cent can be obtained by burning 5 pounds of sulphur per 1,000 cubic feet of space."

EXPERIMENTS ON SHIPBOARD.

No. 1. Two rats were placed in a box about 12 feet long by 8 inches square, closed at one end by wire netting only. This was to imitate a pipe casing. After 13 hours' exposure to 4.5 per cent gas in the hold of a steamship, both rats were dead.

No. 2. Three rats in a box 7 by 4 by 1 feet, having many cracks and half full of pieces of board, to imitate a pile of dunnage. After an exposure of 18 hours with 4.5 per cent gas in hold, all rats were dead.

No. 3. One rat was placed in a basket of onions, about 36 by 18 by 18 inches; this was covered with wire gauze, and placed in cargo of onions to be fumigated. Six pounds of sulphur per 1,000 cubic feet were burned, exposure 6 hours, after which the rat was dead.

No. 4. Three rats in large wire trap half full of cotton waste and wrapped in two layers of canvas. After 15 hours' exposure to 2.5 per cent gas all rats were dead.

EXPERIMENTS ON SHORE.

These were made in a small wooden building of one room containing 722 cubic feet. It was pasted up with heavy manila paper in order to make it nearly gas tight.

No. 5. A quantity of loose boards to represent dunnage was piled up at one side of the room. Two rats were liberated in the room and 1.6 pounds of sulphur burned in a manner to give the most efficient fumigation. This is sufficient to generate 2 per cent sulphur dioxide in this room. It was opened after six hours and both rats were found alive and in good condition, but as pasting was not completed at time of experiment and considerable leakage was noted, the leaks were carefully sealed, and the experiment was repeated.

No. 6. Same time, same amount of sulphur and rats as above. One rat was alive and in good condition; the other dead and part of tail eaten.

No. 7. Two pounds of sulphur (2.5 per cent sulphur dioxide). Imitation pipe casing with one rat, as in experiment No. 1, and two fresh rats were liberated in the room with pile of boards, as before. Exposure, six hours. All rats were alive and unaffected, apparently, but as a small amount of the sulphur had not burned the experiment was repeated.

No. 8. Same as above, except that but one rat was loose in room. Result, rat in pipe casing dead, one in room alive.

No. 9. Same per cent gas and time as Nos. 7 and 8. Two rats liberated in room with dunnage. One of these rats had been through

experiments 7 and 8 and was still lively and well, but new rat was dead and badly bitten, possibly killed by the old rat.

No. 10. Same room and dunnage. One rat in imitation pipe casing and one loose; 3 per cent sulphur dioxide; six and a half hours' exposure; both rats dead.

It will be very evident, then, that fumigation of the holds of vessels with cargo by burning sulphur will rarely destroy all the rats in that part of the ship and that if this procedure is resorted to it should be considered as a fumigation of the cargo only and that the vessel must be again fumigated empty if it is desired to make it rat free; furthermore, that it is necessary that fumigation be done simultaneously in all compartments and with liberal quantities of sulphur. We believe it is best to use 4.5 per cent gas—5 pounds of sulphur to 1,000 cubic feet—for 7 hours in the living quarters and engine room, which can not be closed overnight without hardship and delay, and to use 3 per cent sulphur dioxide in the holds and similar spaces with an exposure of at least 12 hours. As the pots are usually all lighted before noon, this arrangement allows the crew to sleep indoors that same night and engineers to be getting up steam ready for departure as soon as the pots are removed from the holds the following morning.

ROUTINE OF FUMIGATION.

The following gives the more important details of the procedure as followed at San Juan, Porto Rico:

A circular is handed to the captain of each vessel that will eventually require fumigation, directing him (1) to give timely notice of the hour when he will be ready for fumigation; (2) where to anchor; (3) to have all compartments clean, as empty as possible, and open, and insisting that this means every inclosed space from the hold to the smallest locker; (4) to have fires drawn or banked; (5) to have canvas ready to batten down, including main funnel, gratings over engine room, and any other opening that can not be tightly closed; and (6) to have sections of pipe casings and floors in the holds and of telegraph and pipe coverings on deck removed, unless these have been fitted with hinges.

At the arranged hour a 10-ton lighter containing the necessary paraphernalia, viz, pots of various sizes with sulphur, washtubs, etc., is towed alongside.

While the fumigating crew (eight men) are hoisting these articles on deck a preliminary inspection of the entire vessel is made by the fumigating officer or foreman to ascertain the structural peculiarities of the vessel and its general condition. The blue prints of the vessel are examined to get the cubic capacities of the holds, engine room, fireroom, bunkers, and other compartments. Where these capacities

are not shown on the charts they are obtained by taking actual measurements.

In the holds the dunnage is piled or slung up entirely free from the floor, so that it affords no hiding place for rats. The limbers (planking boards) over the bilges are removed, so that the fumes may circulate freely under the sheathing. The sounding and bilge-pipe casings are removed in part, so that the fumes may penetrate these parts. In the lazarets and forepeaks, where the mates' and boat-swains' stores are kept, it is necessary to have most of the ropes, canvas, etc., removed. In moving any stores to the deck a careful watch for rats must be kept. In the provision storeroom all open stores and articles likely to be injured by sulphur are inspected and ordered to be removed to the decks. The same is done with similar articles in the living quarters, dining rooms, social hall, etc.

Prior to the lighting of the pots the chief fumigator makes a personal examination of all parts of the vessel to see that everything is in readiness for efficient and safe fumigation, after which the lighting is done by two men, followed in every case by the chief fumigator as a check.

Engine room, bunkers, and shaft alley are given 7 hours' exposure to $4\frac{1}{2}$ per cent gas, which requires banked or drawn fires for a period of at least 10 hours. The living quarters on the main deck, the galleys, forecastle, second cabins, etc., are given the same amount and time.

The staterooms on the promenade and hurricane deck are not fumigated, as a rule. Instead they are minutely inspected to make certain they harbor no rats and that there are no rat holes, and, if satisfactory, are closed during fumigation of other parts.

The holds are given an exposure of 3 per cent gas for 12 hours or more.

During fumigation a careful inspection is made of all deck paraphernalia, including rope lockers, life-preserver lockers, fire-bucket racks, telegraph, pipe, and steering-gear casings, fresh vegetable and potato bins, furled sails, lifeboats and rafts, for the purpose of finding and destroying rodents. Rats have been found in practically all of the places mentioned above.

After the fumigation a minute inspection is again made of the entire vessel and rats are gathered. Everything that was left in the living quarters, galleys, storerooms, etc., is moved, and in the holds the dunnage, that had previously been slung up, is torn down and examined. Finally decks are washed down, if littered.

To many who have had experience in quarantine work, as well as to the layman, the minute care which is here prescribed may well seem impossible of execution. They may remember the delay and confusion that has resulted often, on account of the most ordinary quar-

antine procedure, such as a muster of all hands, and dread to attempt a general clean-up; and it is true that an occasional fumigation, at a station where the men are not trained for this particular work, must result in slack work or a demoralization requiring time and patience to overcome. When fumigation is being done regularly, as at San Juan, P. R., during the summer of 1912, a system may soon be evolved that will work smoothly, efficiently, and with little delay, doing everything that has been given above as necessary.

The essentials of this system are:

First, obtaining the active cooperation of the shipping interests, keeping them posted as to exactly what they must do and when, issuing them frequent general circulars and letters, and through them instructing the captains of vessels and others.

Second, the careful selection of a fumigating crew with a foreman and assistant. These men should be above the average, should be well paid and cared for, and should be given ample time off as a return for working under high pressure, which should be always expected.

Third, a standard having been set and instructions having been given a vessel, no relaxation should be allowed, especially on account of objections made, that all may know that active cooperation will save more time than protests.

Fourth, a record should be kept of the detail of each fumigation—preferably a card system—and each record checked up by the responsible head of the quarantine station before filing.

Of these requisites for rapid and efficient work, the training of a crew for this particular work is perhaps the most important, and it is to be regretted that such crews seldom exist except in times of emergency when they must be trained under the most trying circumstances of confusion and delay, only to be disbanded as soon as the epidemic has subsided.

Not only should the regular and subordinate officers in charge of quarantine work, or liable to be called upon at any time to do this work, be thoroughly familiar with the best methods of fumigation, but some fixed standard should be set and officially recognized so that the certificate stating that a vessel has been "fumigated" will mean a definite thing and not as now anything from burning a few pots of sulphur in a vessel's hold to the most thorough deratization, such as we believe was done in the outgoing quarantine work at San Juan, P. R., during the epidemic of plague, now happily at an end.

PREVALENCE OF DISEASE.

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring.

IN CERTAIN STATES AND CITIES.

SMALLPOX.

Massachusetts Report for May, 1913.

Places.	Number of new cases reported during month.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Massachusetts:						
Bristol County—						
New Bedford.....	1				1	
Hampden County—						
Holyoke.....	3				2	1
Ludlow.....	3				3	
Hampshire County—						
Northampton.....	1				1	
Worcester County—						
Fitchburg.....	1			1		
Leominster.....	2			1		1
Total.....	11			2	7	2

Indiana—Evansville.

Surg. Clark, of the Public Health Service, reported by telegraph that during the week ended June 14, 1913, 9 cases of smallpox had been notified in Evansville, Ind., making a total of 818 cases reported since October 1, 1912.

Oregon—Grand Ronde.

Acting Asst. Surg. Clausius, of the Public Health Service, reported by telegraph that since May 11, 1913, 12 new cases of smallpox had been notified at Grand Ronde Indian Agency, Oreg., making a total of 62 cases reported during the period from April 20 to June 12, 1913.

Compiled State Reports for the Fourth Quarter of 1912.

SMALLPOX—SUMMARY OF CASES AND DEATHS REPORTED DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912, BY STATES AND BY MONTHS.

	October.		November.		December.		To tal.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Alabama.....	27		22	1	62		111	1
Arizona.....	2		8		35		45	
California.....	12		28	1	86	1	126	2
Colorado.....			7		8		15	
Connecticut.....					3		3	
District of Columbia.....	4		1		2		7	
Florida.....					17		17	
Illinois.....	48		96		123		267	
Indiana.....	52	1	107		189	1	348	2
Iowa.....	22		17	1	42		81	1
Kansas.....	8		22	1	25		55	1
Maine.....	54		50		46	1	150	1
Maryland.....			11		9		20	
Massachusetts.....	28	1	6		3		37	1
Michigan.....	26		137		87		250	
Minnesota.....	53		202		388		703	
Montana.....	8		20		41		69	
New Jersey.....			2		1		3	
New York.....	46		192	1	134		372	1
North Carolina.....	57						57	
North Dakota.....	64		16		31		111	
Ohio.....	13		34		131		178	
Oklahoma.....			23		90		113	
Oregon.....	32		72		109	1	213	1
Pennsylvania.....	32	4	21		53	1	106	5
South Dakota.....	14		27		49		90	
Texas.....	8		34	6	134	20	176	26
Utah.....	95		278		334		707	
Vermont.....	38		48		24		110	
Virginia.....	15		30		70		115	
Washington.....	154		128		199	1	481	1
Wisconsin.....	58		85		141		284	
Wyoming.....			2				2	
Total.....	970	6	1,786	11	2,666	26	5,422	43

SMALLPOX CASES AND DEATHS REPORTED DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912, BY COUNTIES AND BY MONTHS.

Alabama:								
Counties—								
Antaugua.....			1				1	
Bibb.....	2				8		10	
Butler.....					1		1	
Chilton.....			1	1			1	1
Hale.....			4		5		9	
Jefferson.....			2				2	
Limestone.....			1				1	
Montgomery.....	1				2		3	
Pickens.....	8		9		24		41	
Tuscaloosa.....	16		4		22		42	
Total.....	27		22	1	62		111	1
Arizona:								
Counties—								
Maricopa.....	2		8		35		45	
California:								
Counties—								
Alameda.....			8		5	1	13	1
Amador.....					18		18	
Butte.....	2				1		3	
Kern.....					1		1	
Los Angeles.....	2				3		5	
Marin.....					3		3	
Nevada.....			1				1	
Riverside.....					1		1	
Sacramento.....	1		1		3		5	
San Bernadino.....	2		2		3		7	
San Diego.....					2		2	
San Francisco.....	1		12	1	6		19	1
San Joaquin.....	2						2	

Compiled State Reports for the Fourth Quarter of 1912—Continued.

SMALLPOX CASES AND DEATHS REPORTED DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912, BY COUNTIES AND BY MONTHS—Continued.

	October.		November.		December.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
California—Continued.								
Counties—Continued.								
Santa Clara.....			2		1		3	
Shasta.....			1		37		38	
Slackyou.....			1		1		2	
Tehama.....	1						1	
Tulare.....					1		1	
Tuolumne.....	1						1	
Total.....	12		26	1	36	1	126	2
Colorado:								
Counties—								
Arapahoe.....			1				1	
Chaffee.....			1				1	
Crowley.....			1				1	
Denver.....			3		1		4	
Larimer.....					1		1	
Moffat.....					5		5	
Pitkin.....			1		1		2	
Total.....			7		8		15	
Connecticut:								
County—								
Windham.....					3		3	
District of Columbia.....	4		1		2		7	
Florida:								
Counties—								
Manatee.....					15		15	
St. John.....					1		1	
Volusia.....					1		1	
Total.....					17		17	
Illinois:								
Counties—								
Bond.....					1		1	
Bureau.....	4		26		35		65	
Clark.....			1				1	
Cook.....	2				7		9	
DeKalb.....	2						2	
Gallatin.....	1						1	
Hamilton.....			1				1	
Hancock.....					3		3	
Kane.....					2		2	
Kankakee.....			1		1		2	
Kendall.....			1		2		3	
LaSalle.....	36		33		38		107	
McLean.....					4		4	
Madison.....			1				1	
Mason.....			1		1		2	
Peoria.....	1				1		2	
Pulaski.....			2				2	
Putnam.....			2		3		5	
Shelby.....			2				2	
Stephenson.....			1		3		1	
Vermillion.....	2		20		3		25	
Whiteside.....			4		21		25	
Will.....					1		1	
Total.....	48		96		123		267	
Indiana:								
Counties—								
Allen.....			8		23		31	
Carroll.....					1		1	
Clay.....					10		10	
Daviess.....					1		1	
Dearborn.....			1				1	
Delaware.....					1		1	
Grant.....	8		1		10		19	
Greene.....	3	1	14		42		59	1
Huntington.....			1		1		2	
Jackson.....					1		1	
Johnson.....	21						21	

Compiled State Reports for the Fourth Quarter of 1912—Continued.

SMALLPOX CASES AND DEATHS REPORTED DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912, BY COUNTIES AND BY MONTHS—Continued.

	October.		November.		December.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Indiana—Continued.								
Counties—Continued.								
Knox.....	2						2	
Lake.....	1						1	
Madison.....			2		1		3	
Miami.....			1				1	
Owen.....			5		5		10	
Perry.....					1		1	
Pike.....	1		11				12	
Posey.....	4						4	
Randolph.....			1				1	
Scott.....					2		2	
Shelby.....					3		3	
Vanderburg.....	11		60		78	1	149	1
Vigo.....	1				6		7	
Wabash.....			1		1		2	
Warrick.....			1		2		3	
Total.....	52	1	107		189	1	348	2
Iowa:								
Counties—								
Butler.....	1						1	
Clarke.....					1		1	
Dallas.....			1		7		8	
Decatur.....					3		3	
Dubuque.....					1		1	
Emmet.....					1		1	
Hancock.....					4		4	
Jasper.....			1				1	
Kossuth.....	1		2				3	
Marshall.....	5						5	
Monona.....					1		1	
Pocahontas.....			2		1		3	
Polk.....	6		2		18		26	
Pottawattamie.....	8				3		11	
Sac.....			2				2	
Scott.....				1			1	1
Webster.....	1		6		2		9	
Total.....	22		17	1	42		81	1
Kansas:								
Counties—								
Atchison.....					1		1	
Chautauqua.....			1		1		2	
Cherokee.....					7		7	
Cheyenne.....			3				3	
Coffey.....	4						4	
Decatur.....			2		1		3	
Geary.....	3		1	1			4	1
Graham.....			1		2		3	
Jewell.....			1				1	
Kiowa.....					3		3	
Labette.....			1				1	
Montgomery.....					1		1	
Osborne.....					4		4	
Rawlins.....			5				5	
Reno.....			1				1	
Shawnee.....	1		2				3	
Wyandotte.....			4		5		9	
Total.....	8		22	1	25		55	1
Maine:								
Counties—								
Cumberland.....			1		3		4	
Franklin.....	15						15	
Lincoln.....			4				4	
Oxford.....	32		39		1		72	
Penobscot.....	6		1		9		16	
Piscataquis.....			1				1	
Sagadahoc.....			4		4		8	
Somerset.....	1						1	
York.....					29	1	29	1
Total.....	54		50		46	1	150	1

Compiled State Reports for the Fourth Quarter of 1912—Continued.

SMALLPOX CASES AND DEATHS REPORTED DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912, BY COUNTIES AND BY MONTHS—Continued.

	October.		November.		December.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Maryland:								
Counties—								
Allegany.....			11		7		18	
Garrett.....					2		2	
Total.....			11		9		20	
Massachusetts:								
Counties—								
Dukes.....			1				1	
Essex.....	10		1		1		12	
Hampshire.....					1		1	
Suffolk.....			2		1		3	
Worcester.....	18	1	2				20	1
Total.....	28	1	6		3		37	1
Michigan:								
Counties—								
Arenac.....			14				14	
Clinton.....			3		3		6	
Ingham.....	1		50		5		56	
Ionia.....	1						1	
Jackson.....					6		6	
Keweenaw.....					1		1	
Lapeer.....					1		1	
Macomb.....			1				1	
Monroe.....			4		3		7	
Oakland.....					1		1	
Osceola.....			1				1	
Saginaw.....					2		2	
St. Clair.....	1				1		2	
Shiawassee.....			1		1		2	
Tuscola.....	1		3				4	
Washtenaw.....	1						1	
Wayne.....	21		60		63		144	
Total.....	26		137		87		250	
Minnesota:								
Counties—								
Aitkin.....	17				2		19	
Anoka.....			1				1	
Becker.....					1		1	
Blue Earth.....			1		3		4	
Brown.....	1						1	
Carlton.....			3		1		4	
Carver.....					1		1	
Clearwater.....			1		1		2	
Crow Wing.....					2		2	
Dakota.....					3		3	
Dodge.....					1		1	
Fillmore.....			1		6		7	
Freeborn.....			1				1	
Hennepin.....	17		13		34		64	
Itaska.....			2				2	
Kandiyohi.....	1		7		6		14	
Lyon.....					21		21	
Meeker.....	4		37		23		64	
Mower.....	2		3		15		20	
Nicollet.....			2				2	
Olmsted.....	1		58		27		86	
Otter Tail.....					3		3	
Pine.....			2		5		7	
Ramsey.....	4		31		57		92	
Rice.....			23		43		66	
Roseau.....					1		1	
St. Louis.....	1		32		64		97	
Scott.....	3		3		8		14	
Steele.....	1				7		8	
Wadena.....					2		2	
Washington.....	1		41		33		75	
Watsonwan.....					3		3	
Winona.....					2		2	
Wright.....					9		9	
Yellow Medicine.....					4		4	
Total.....	53		262		388		703	

Compiled State Reports for the Fourth Quarter of 1912—Continued.

SMALLPOX CASES AND DEATHS REPORTED DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912, BY COUNTIES AND BY MONTHS—Continued.

	October.		November.		December.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Montana:								
Counties—								
Beaverhead.....			1		4		5	
Cascade.....			1				1	
Custer.....	2		12		8		22	
Fergus.....			1		5		6	
Flathead.....					9		9	
Meagher.....					2		2	
Missoula.....			1		1		2	
Musselshell.....			1				1	
Powell.....	2		2		1		5	
Rosebud.....					9		9	
Silverbow.....	4		1		2		7	
Total.....	8		20		41		69	
New Jersey:								
Counties—								
Camden.....			2				2	
Passaic.....					1		1	
Total.....			2		1		3	
New York:								
Counties—								
Albany.....					1		1	
Breome.....					1		1	
Chenango.....					8		8	
Clinton.....			5		20		25	
Cortland.....					1		1	
Delaware.....			133	1	26		159	1
Dutchess.....			1		1		2	
Erie.....			1		1		2	
Essex.....	4		35		50		89	
Franklin.....	32		6				38	
Lewis.....					1		1	
Monroe.....			1		2		3	
Montgomery.....					5		5	
New York.....			2				2	
Niagara.....	4		2		9		15	
Orange.....					3		3	
Oswego.....					1		1	
Rensselaer.....					1		1	
St. Lawrence.....	2		3		1		6	
Saratoga.....	1		2				3	
Steuben.....	1						1	
Sullivan.....			1		2		3	
Washington.....	2						2	
Total.....	46		192	1	134		372	1
North Carolina: ¹								
Counties—								
Beaufort.....	1							
Buncombe.....	8							
Burke.....	3							
Caldwell.....	2							
Edgecombe.....	4							
Granville.....	1							
Guilford.....	1							
Hoke.....	1							
Lee.....	1							
Macon.....	1							
Madison.....	18							
Mecklenburg.....	4							
New Hanover.....	4							
Robeson.....	4							
Rowan.....	3							
Wayne.....	1							
Total.....	57							

¹ Report discontinued because of incompleteness of notification.

Compiled State Reports for the Fourth Quarter of 1912—Continued.

SMALLPOX CASES AND DEATHS REPORTED DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912, BY COUNTIES AND BY MONTHS—Continued.

	October.		November.		December.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
North Dakota:								
Counties—								
Barnes.....					4		4	
Bottineau.....	3		2				5	
Burke.....					14		14	
Burleigh.....	4		2				6	
Cavalier.....	2		2				4	
Lamoure.....	6				1		7	
Ramsey.....					10		10	
Stark.....			2				2	
Trail.....					1		1	
Ward.....	49		8		1		58	
Total.....	64		16		31		111	
Ohio:								
Counties—								
Allen.....					1		1	
Butler.....					9		9	
Clark.....					1		1	
Coshocton.....			1				1	
Cuyahoga.....					12		12	
Franklin.....					3		3	
Hamilton.....			3		1		4	
Hardin.....					4		4	
Lucas.....	1		4		30		35	
Miami.....	5						5	
Muskingum.....			13		32		45	
Seneca.....	7		13		38		58	
Total.....	13		34		131		178	
Oklahoma:								
Counties—								
Caddo.....			4		4		8	
Comanche.....					1		1	
Cotton.....					1		1	
Creek.....			5		10		15	
Grady.....					1		1	
Grant.....					8		8	
Greer.....					5		5	
Harmon.....					4		4	
Jackson.....			12		16		28	
Lincoln.....					11		11	
Love.....					3		3	
McFurtain.....			1		6		6	
Oklahoma.....					1		1	
Osage.....					8		8	
Ottawa.....					2		2	
Pawnee.....					7		7	
Wagoner.....			1		1		2	
Washington.....					1		1	
Washita.....					1		1	
Total.....			23		90		113	
Oregon:								
Counties—								
Baker.....	2		2		5		9	
Clackamas.....					1		1	
Columbia.....			4		5		9	
Crook.....					1		1	
Gilliam.....					1		1	
Grant.....			1		29		30	
Harney.....			1				1	
Hood River.....	11		6				17	
Jackson.....	1		2				3	
Lane.....			1				1	
Linn.....	1						1	
Malheur.....					3		3	
Marion.....	5		2		4		11	
Multnomah.....	9		33		19	1	61	1
Polk.....			2		14		16	
Sherman.....			14		3		17	
Union.....			2		9		11	

Compiled State Reports for the Fourth Quarter of 1912—Continued.

SMALLPOX CASES AND DEATHS REPORTED DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912, BY COUNTIES AND BY MONTHS—Continued.

	October.		November.		December.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Oregon—Continued.								
Counties—Continued.								
Wasco.....	3		1		6		10	
Washington.....			1				1	
Yamhill.....					9		9	
Total.....	32		72		109	1	213	1
Pennsylvania.....	132	4				1	32	5
Counties—								
Allegheny.....			2				2	
Blair.....					1		1	
Cambria.....					5		5	
Delaware.....					13		13	
Dauphin.....			1				1	
Lackawanna.....			2		5		7	
Venango.....			1		2		3	
Wayne.....			15		27		42	
Total.....	32	4	21		53	1	106	5
South Dakota:								
Counties—								
Aurora.....	3		2				5	
Beadle.....					1		1	
Brown.....	7		6		2		15	
Brule.....					5		5	
Clark.....	1						1	
Clay.....					10		10	
Coddington.....					3		3	
Douglas.....			1				1	
Faulk.....	2						2	
Grant.....			2		3		5	
Hand.....	1		1				2	
Hutchinson.....			1				1	
Jerauld.....			1		5		6	
Lyman.....					6		6	
Marshall.....			8				8	
Pennington.....			1		12		13	
Sanborn.....			1				1	
Spink.....			1				1	
Stanley.....			1				1	
Walworth.....			1		2		3	
Total.....	14		27		49		* 90	
Texas:								
Counties—								
Cameron.....			1					
Collin.....					15		15	
Cooke.....	1						1	
Dallas.....			13	2	23	1	36	3
Denton.....	2		7	2			9	2
Ford.....					2		2	
Grayson.....					1		1	
Hunt.....			10	2	60	18	70	20
Lavaca.....	4						4	
Navarro.....			1				1	
Orange.....	1						1	
Parker.....					1		1	
Rockwell.....					1		1	
Tarrant.....			1		6		7	
Valverde.....			1		2	1	3	1
Wichita.....					20		20	
Total.....	8		34	6	134	20	176	26
Utah:								
Counties—								
Box Elder.....	1		5		6		12	
Cache.....	2		18		14		34	
Carbon.....			3		5		8	
Davis.....			4		15		19	
Emery.....	1				2		3	
Juab.....	1		1		30		32	
Millard.....			7		54		61	

* Distribution of cases not given by counties.

Compiled State Reports for the Fourth Quarter of 1912—Continued.

SMALLPOX CASES AND DEATHS REPORTED DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912, BY COUNTIES AND BY MONTHS—Continued.

	October.		November.		December.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Utah—Continued.								
Counties—Continued.								
Morgan.....			1				1	
Salt Lake.....	67		174		164		405	
Sanpete.....	2		11		2		15	
Sevier.....	2		3				5	
Summit.....	4				4		8	
Tooele.....	2				1		3	
Uintah.....					25		25	
Utah.....	10		38				48	
Wasatch.....			1		1		2	
Washington.....					1		1	
Weber.....	3		12		9		24	
Wayne.....					1		1	
Total.....	95		278		334		707	
Vermont:								
Counties—								
Caledonia.....			9				9	
Orange.....	2				8		10	
Rutland.....	2		1		5		8	
Washington.....	34		38		11		83	
Total.....	38		48		24		110	
Virginia:								
Counties—								
Dinwiddie.....			3				3	
Frederick.....			4				4	
Halifax.....	14		22		40		76	
Henrico.....			1		10		11	
Mecklenburg.....					1		1	
Pittsylvania.....					14		14	
Prince William.....	1						1	
Washington.....					5		5	
Total.....	15		30		70		115	
Washington:								
Counties—								
Asotin.....	100							
Benton.....					1		1	
Chelan.....	5		8		2		15	
Clallam.....					3		3	
Clark.....			10		20		30	
Cowlitz.....			1				1	
Douglas.....	2						2	
King.....			3		1		4	
Kitsap.....					1		1	
Kittitas.....			1		2		3	
Klickitat.....	8		16		8		32	
Lewis.....			1		20		21	
Mason.....					9		9	
Pierce.....					2	1	2	1
Skagit.....			1		15		16	
Skamania.....	3				1		4	
Spokane.....	8		23		8		39	
Whitman.....	4		12		13		29	
Yakima.....	24		52		93		169	
Total.....	154		128		199	1	481	1
Wisconsin—								
Counties—								
Barron.....					1		1	
Brown.....	39		9		24		72	
Buffalo.....					1		1	
Chippewa.....			2				2	
Clark.....	10		11		13		34	
Columbia.....			1		1		1	
Dane.....	1						1	
Douglas.....			1				1	
Dunn.....					8		8	
Fau Claire.....			24				24	
Forest.....					1		1	
Grant.....					1		1	
Jefferson.....					1		1	

Compiled State Reports for the Fourth Quarter of 1912—Continued.

SMALLPOX CASES AND DEATHS REPORTED DURING OCTOBER, NOVEMBER, AND DECEMBER, 1912, BY COUNTIES AND BY MONTHS—Continued.

	October.		November.		December.		Total.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Wisconsin—Continued.								
Counties—Continued.								
Juneau.....	1		1				2	
La Crosse.....	2		30		36		68	
Marathon.....					25		25	
Milwaukee.....	1		6		14		21	
Oconto.....					2		2	
Outagamie.....			1				1	
Rusk.....					2		2	
St. Croix.....					6		6	
Vernon.....					3		3	
Waushara.....			1		1		1	
Winnebago.....	4				1		5	
Total.....	58		35		141		284	
Wyoming:								
Counties—								
Carbon.....			1				1	
Sweetwater.....			1				1	
Total.....			2				2	
Grand total.....							5,422	43

Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Arizona (May 1-31):			Indiana (Feb. 1-28):		
County—			County—		
Maricopa.....	16		Adams.....	1	
Connecticut (May 1-31):			Maine (May 1-30)		
Florida (Apr. 1-30):			Counties—		
Counties—			Androscoggin.....	9	
Alachua..... ²	2		Cumberland.....	7	
Bradford.....	9		Kennebec.....	4	
Citrus.....	1		Oxford.....	2	
Dade.....	4		Waldo.....	5	
Duval.....	19		Total.....	27	
Escambia.....	59		New Jersey (May 1-31):		
Jefferson.....	2		County—		
Leon.....	3		Monmouth.....	1	
Levy.....	3				
Manatee.....	3				
Marion.....	2				
Santa Rosa.....	1				
St. Johns.....	5				
Total.....	113				

¹ No case.² Jan. 1-Apr. 30: Cases, 787.

City Reports for Week Ended May 31, 1913.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Altoona, Pa.....	1		Knoxville, Tenn.....	14	
Ann Arbor, Mich.....	3		Lexington, Ky.....	1	
Austin, Tex.....	1		Manchester, N. H.....	1	
Berkeley, Cal.....	1		New Orleans, La.....	1	
Chicago, Ill.....	2		New York, N. Y.....	1	
Cincinnati, Ohio.....	1		Niagara Falls, N. Y.....	5	
Columbus, Ohio.....	1		Portsmouth, Va.....	2	
Danville, Ill.....	1		San Francisco, Cal.....	3	
Dayton, Ohio.....	1		Seattle, Wash.....	3	
Duluth, Minn.....	1		South Bethlehem, Pa.....	1	
Evansville, Ind.....	8		Springfield, Ill.....	1	
Houston, Tex.....	5		Toledo, Ohio.....	6	
Johnstown, Pa.....	1		Washington, D. C.....	5	
Kansas City, Kans.....	2		Zanesville, Ohio.....	2	

TYPHOID FEVER.**State Reports for May, 1913.**

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
Massachusetts:		Massachusetts—Continued.	
Berkshire County—		Suffolk County—	
Adams.....	1	Boston.....	9
Pittsfield.....	5	Revere.....	1
Bristol County—		Winthrop.....	1
Fall River.....	19	Worcester County—	
New Bedford.....	2	Athol.....	1
Taunton.....	1	Clinton.....	1
Dukes County—		Northbridge.....	1
Tisbury.....	2	Spencer.....	1
Essex County—		Worcester.....	4
Andover.....	1		
Haverhill.....	4	Total.....	93
Lawrence.....	6		
Lynn.....	5	New Jersey:	
Manchester.....	1	Bergen County.....	5
Marblehead.....	1	Burlington County.....	5
Newburyport.....	2	Camden County.....	22
Swamscott.....	1	Cape May County.....	2
Hampden County—		Cumberland County.....	7
Chicopee.....	2	Essex County.....	19
Holyoke.....	1	Gloucester County.....	1
Ludlow.....	1	Hudson County.....	10
Springfield.....	1	Hunterdon County.....	1
Westfield.....	1	Mercer County.....	10
Hampshire County—		Middlesex County.....	1
South Hadley.....	1	Monmouth County.....	6
Middlesex County—		Morris County.....	2
Cambridge.....	3	Ocean County.....	1
Dracut.....	1	Passaic County.....	5
Lowell.....	4	Salem County.....	2
Maynard.....	2	Sussex County.....	1
Medford.....	1	Union County.....	4
Newton.....	1	Warren County.....	3
Somerville.....	1		
Waltham.....	1	Total.....	107
Norfolk County—			
Needham.....	1		
Quincy.....	1		

CEREBROSPINAL MENINGITIS.**Massachusetts Report for May, 1913.**

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
Massachusetts:		Massachusetts—Continued.	
Berkshire County—		Middlesex County—	
Pittsfield.....	1	Arlington.....	1
Bristol County—		Lowell.....	2
Fall River.....	1	Suffolk County—	
Essex County—		Boston.....	3
Haverhill.....	3	Worcester County—	
Methuen.....	1	Gardner.....	1
Salem.....	1	Milford.....	1
Hampden County—			
Springfield.....	3	Total.....	18

CEREBROSPINAL MENINGITIS—Continued.**Cases and Deaths Reported by Cities for Week Ended May 31, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Boston, Mass.....	1	1	New Orleans, La.....	1	1
Chicago, Ill.....	1	1	New York, N. Y.....	5	4
Cincinnati, Ohio.....	3	3	Pittsfield, Mass.....	.....	1
Cleveland, Ohio.....	2	.....	Roanoke, Va.....	1	1
Columbus, Ohio.....	1	.....	St. Louis, Mo.....	3	.....
Manchester, N. H.....	1	1			

POLIOMYELITIS (INFANTILE PARALYSIS).**State Reports for May, 1913.**

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
Massachusetts:		New Jersey:	
Bristol County—		Essex County.....	2
Fairhaven.....	1	Union County.....	1
New Bedford.....	1		
Hampden County—		Total.....	3
Springfield.....	1		
Middlesex County—			
Wakefield.....	1		
Suffolk County—			
Boston.....	2		
Total.....	6		

Cases and Deaths Reported by Cities for Week Ended May 31, 1913.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Boston, Mass.....	.....	1	Springfield, Mass.....	1	.....
New York, N. Y.....	1	1	Trenton, N. J.....	1	.....
Saratoga Springs, N. Y.....	.....	1			

ERYSIPELAS.**Cases and Deaths Reported by Cities for Week Ended May 31, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Alameda, Cal.....	1	1	Muscatine, Iowa.....	1	.....
Baltimore, Md.....	.....	1	New Bedford, Mass.....	.....	1
Binghamton, N. Y.....	1	.....	Newport, Ky.....	1	1
Boston, Mass.....	.....	2	New York, N. Y.....	.....	3
Braddock, Pa.....	1	.....	Philadelphia, Pa.....	10	3
Bridgeport, Conn.....	1	.....	Pittsburgh, Pa.....	6	3
Buffalo, N. Y.....	5	.....	Reading, Pa.....	1	.....
Chicago, Ill.....	6	.....	San Diego, Cal.....	1	1
Cincinnati, Ohio.....	3	.....	St. Louis, Mo.....	10	.....
Cleveland, Ohio.....	7	1	San Francisco, Cal.....	3	.....
Erie, Pa.....	3	.....	Seattle, Wash.....	1	.....
Fall River, Mass.....	.....	1	South Bethlehem, Pa.....	1	.....
Hartford, Conn.....	1	.....	Toledo, Ohio.....	.....	1
Milwaukee, Wis.....	3	1	Wilkes-Barre, Pa.....	1	.....

PELLAGRA.**Texas—Laredo.**

Acting Asst. Surg. Hamilton, of the Public Health Service, reported that a case of pellagra had been reported at Laredo, Tex., in the person of a man of Spanish origin who had lived for many years on the Mexican border.

PLAGUE.**Rats Collected and Examined.**

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California cities:					
Berkeley.....	May 31, 1913	1	201	128	.....
Oakland.....	do	29	585	397	.....
San Francisco.....	do	14	1,609	1,072	.....

California—Squirrels Collected and Examined.

During the week ended May 31, 1913, there were examined for plague infection 57 ground squirrels from Alameda County, 924 from Contra Costa County, 149 from San Joaquin County, and 178 from Santa Clara County; total, 1,308.

Plague-Infected Squirrels Found.

From May 12 to 29, 1913, 25 plague-infected ground squirrels were found in Contra Costa County, distributed as follows: Brubeck ranch 1, C. Clark ranch 5, Fernandez ranch 1, Freytas ranch 1, Rodriguez ranch 4, Sarah Wilson ranch 1, Tormey ranch 6, and Williams ranch 6.

PNEUMONIA.**Cases and Deaths Reported by Cities for Week Ended May 31, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Auburn, N. Y.....	1	.....	Philadelphia, Pa.....	14	34
Binghamton, N. Y.....	5	1	Pittsburgh, Pa.....	39	33
Braddock, Pa.....	3	.....	Reading, Pa.....	3	7
Chicago, Ill.....	9	.....	San Diego, Cal.....	2	2
Cleveland, Ohio.....	20	9	San Francisco, Cal.....	6	.....
Duluth, Minn.....	1	1	Schenectady, N. Y.....	2	1
Dunkirk, N. Y.....	1	.....	Seattle, Wash.....	1	.....
Galesburg, Ill.....	3	3	South Bethlehem, Pa.....	2	.....
Grand Rapids, Mich.....	3	.....	South Omaha, Nebr.....	1	.....
Lancaster, Pa.....	1	.....	Trenton, N. J.....	5	.....
Muscatine, Iowa.....	1	1	Williamsport, Pa.....	1	1

RABIES.

During the week ended May 31, 1913, rabies was reported in cities as follows: East Orange, N. J., 1 case, with 1 death (in a boy); San Francisco, Cal., 2 cases, with 2 deaths.

ROCKY MOUNTAIN SPOTTED FEVER (TICK FEVER).**Wyoming.**

A report from Cheyenne, Wyo., dated June 17, 1913, states that 3 deaths had occurred from Rocky Mountain spotted fever since June 3, 1913; 1 having occurred at Evanston, 1 at Casper, and 1 at Thermopolis.

TETANUS.**Cases and Deaths Reported by Cities for Week Ended May 31, 1913.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Alameda, Cal.	1	.....	Richmond, Va. ....	.....	1
Philadelphia, Pa.	1	2	Sacramento, Cal. ....	.....	1

SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS.**State Reports for May, 1913.**

	Scarlet fever.	Measles.	Diphtheria.
Massachusetts.	721	4,445	585
New Jersey.	539	.....	576

Evansville, Ind.—Scarlet Fever, Measles, and Diphtheria.

Surg. Clark, of the Public Health Service, reported by telegraph that during the week ended June 14, 1913, 3 cases of scarlet fever, 9 cases of measles, and 1 case of diphtheria had been notified in Evansville, Ind., making totals of 440 cases of scarlet fever reported since October 1, 1912, 120 cases of measles reported since January 1, 1913, and 316 cases of diphtheria reported since August 1, 1912.

Los Angeles, Cal.—Measles.

Senior Surg. Brooks, of the Public Health Service, reported by telegraph that during the week ended June 14, 1913, 322 cases of measles had been notified in Los Angeles, Cal.

Cases and Deaths Reported by Cities for Week Ended May 31, 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	199	13	.....	104	4	31	.....	36	23
Boston, Mass.	670,585	258	53	3	194	4	30	1	77	16
Chicago, Ill.	2,185,283	609	148	27	317	8	252	21	118	76
Cleveland, Ohio.	566,883	173	34	3	181	4	14	2	28	21
New York, N. Y.	4,766,883	1,323	307	29	1,323	32	224	9	374	172
Philadelphia, Pa.	1,549,008	436	52	5	235	4	66	3	91	53
Pittsburgh, Pa.	533,905	171	29	3	141	3	72	2	15	11
St. Louis, Mo.	687,029	211	30	1	80	1	39	3	41	16

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

Cases and Deaths Reported by Cities for Week Ended May 31, 1913—Contd.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tubercu- losis.		
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
From 300,000 to 500,000 inhabit- ants:											
Buffalo, N. Y.	423,715	206	7	1	98	1	15		10	17	
Cincinnati, Ohio.	364,463	117	10		8		9		20	17	
Milwaukee, Wis.	373,857	119	9	3	26		17		15	14	
Newark, N. J.	347,469	103	25		90		25	2	51	12	
New Orleans, La.	339,075	151	4	1	94	2	4		35	21	
San Francisco, Cal.	416,912	105	9		16		9	1	21	12	
Washington, D. C.	331,069	104	5		55	1	14		24	9	
From 200,000 to 300,000 inhabit- ants:											
Jersey City, N. J.	267,779	87								8	
Providence, R. I.	224,326	41	13	1	20	1	12		8	6	
Seattle, Wash.	237,194	60	8		31		1			5	
From 100,000 to 200,000 inhabit- ants:											
Bridgeport, Conn.	102,054	25			3		6		6	1	
Cambridge, Mass.	104,839	32	12	3	43		3		2	6	
Columbus, Ohio.	181,548	66	2		23		8		3	6	
Dayton, Ohio.	116,577	43	6		5				4	4	
Fall River, Mass.	119,295	46	4	3	60	5	7	2	7	2	
Grand Rapids, Mich.	112,571	23	5		29		11		1		
Lowell, Mass.	106,294	39	13	2	11		3		4	2	
Nashville, Tenn.	110,364	28			2	1			11	1	
Oakland, Cal.	150,174	35	4	1			1		1	2	
Richmond, Va.	127,628	46	1		8		1		7	1	
Spokane, Wash.	104,402				23					1	
Toledo, Ohio.	168,497	70	3	2	53	1	5			7	
Worcester, Mass.	145,986	37	4		48		10		8	5	
From 50,000 to 100,000 inhabit- ants:											
Altoona, Pa.	52,127	8	1	1			4				
Bayonne, N. J.	55,545		4				4		2		
Brockton, Mass.	56,878	14	2		11		3		1	2	
Camden, N. J.	94,538		9		10		6		3		
Duluth, Minn.	78,466	16	3		28		2			3	
Elizabeth, N. J.	73,409	29	4	1	11		1		5	7	
Erie, Pa.	66,525	17	3		21		5				
Evansville, Ind.	69,647	25	2		18		15	1	1	2	
Fort Wayne, Ind.	63,933		4		50	1	1			1	
Harrisburg, Pa.	64,186	18	1		36						
Hartford, Conn.	98,915	31	11	1	33	1	8		5		
Hoboken, N. J.	70,324		4	2	9		5		4	1	
Houston, Tex.	78,800	25	1				2			3	
Johnstown, Pa.	55,482	24	14	1	52		3				
Kansas City, Kans.	82,331		1		6		4		6		
Lawrence, Mass.	85,892				8	1				3	
Manchester, N. H.	70,063	26			6				2	2	
New Bedford, Mass.	96,652	28	1		32		7		4	3	
Passaic, N. J.	54,773	15	1		9				1		
Reading, Pa.	96,071	42	11	1	9		6		3	3	
Saginaw, Mich.	50,510	10	2		6		4				
St. Joseph, Mo.	77,403	8	1		50		1				
Schenectady, N. Y.	72,826	31			12		21	10		3	
South Bend, Ind.	53,684	8			7	1				1	
Springfield, Ill.	51,678	15	1	1	4		1			1	
Springfield, Mass.	88,926	30	3		16		5		1	1	
Trenton, N. J.	96,815	32	3	2	4		12	1	1	3	
Wilkes-Barre, Pa.	67,105	18	4		17		5		2	1	
Yonkers, N. Y.	79,803	19	5		21	1	12	1	3		
From 25,000 to 50,000 inhabit- ants:											
Atlantic City, N. J.	46,150		5	1	43		2		3		
Auburn, N. Y.	34,668	4			11		4				
Aurora, Ill.	29,807	7	1		1		3			2	
Austin, Tex.	29,860				2	1	6			1	
Berkeley, Cal.	40,434	10			3		3			1	
Binghamton, N. Y.	48,443	15			3				4	1	
Brookline, Mass.	27,792	6	3		8		1		1		
Chelsea, Mass.	32,452	10			13		1				
Chicopee, Mass.	25,401	8	1		3		8			1	
Danville, Ill.	27,871	14			30		1			4	
East Orange, N. J.	34,371		3	1	14		1		1	2	

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

Cases and Deaths Reported by Cities for Week Ended May 31, 1913—Contd.

Cities.	Population, United States census, 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tubercu- losis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 25,000 to 50,000 inhabit- ants—Continued.										
Elmira, N. Y.	37,176	11			1				3	1
Everett, Mass.	33,484	12			9		1			1
Fitchburg, Mass.	37,826	9	1		12					
Haverhill, Mass.	44,115	15	2	1	5	1	1		2	3
Knoxville, Tenn.	36,346	10			11					
La Crosse, Wis.	30,417		1		12				1	1
Lancaster, Pa.	47,227		4		5				1	
Lexington, Ky.	35,099	9			11					
Lynchburg, Va.	29,494	22			4				4	4
Malden, Mass.	44,404	9	1		15				2	
Newcastle, Pa.	36,280				7					
Newport, Ky.	30,309	9	1							
Newton, Mass.	39,806	10			15		2		1	
Niagara Falls, N. Y.	30,445	12			13		2			2
Norristown, Pa.	27,875	7	2							
Orange, N. J.	29,630	15	1		4				7	
Pittsfield, Mass.	32,121	14	1		16		1		1	1
Portsmouth, Va.	33,190	15			6					1
Racine, Wis.	38,002	10	2		17		4			
Roanoke, Va.	34,874	11			9				3	1
Sacramento, Cal.	44,696	26			4		1		1	2
San Diego, Cal.	39,578	8			9				5	5
South Omaha, Nebr.	26,259	10								
Superior, Wis.	40,384	9				1				1
Taunton, Mass.	34,259	17	1		3		1		3	1
Waltham, Mass.	27,834	9			7					2
West Hoboken, N. J.	35,403		3		11		4		3	
Wheeling, W. Va.	41,641	10	1		6				1	2
Williamsport, Pa.	31,860	6	1		1				1	
Zanesville, Ohio.	28,026	7	1				1			
Less than 25,000 inhabitants:										
Alameda, Cal.	23,833	12			1				1	2
Ann Arbor, Mich.	14,817	9	2		15		3		6	
Beaver Falls, Pa.	12,191	1			2					
Biddeford, Me.	17,079	6								
Braddock, Pa.	17,759		3		1		1			
Cambridge, Mass.	17,327	2			17					
Clinton, Mass.	13,075	2	1						1	
Columbus, Ind.	6,719	2			56					1
Concord, N. H.	21,477	13			12					
Cumberland, Md.	21,839	10			10				3	
Dunkirk, N. Y.	11,616				4					
Franklin, N. H.	6,132				1					
Galesburg, Ill.	22,089	16					1			
Harrison, N. J.	14,489	5	1						2	
Kokomo, Ind.	10,609	7			15	1				
La Fayette, Ind.	20,081	7								1
Marquette, Wis.	16,195	3								
Massillon, Ohio.	23,830	1								1
Medford, Mass.	23,150	5		1	3		5		1	1
Melrose, Mass.	15,715	1	1		6					1
Moline, Ill.	24,190	12			2					1
Montclair, N. J.	21,450	6			1		1		1	
Muscatine, Iowa	16,000	3			14					
Nanticoke, Pa.	18,857	2			1		5			
Newburyport, Mass.	19,240	6			14					1
North Adams, Mass.	22,019	4								
Northampton, Mass.	23,310	5					6		3	
Plainfield, N. J.	23,550	6					1	2	2	
Rutland, Vt.	13,546	11	1	1	1		2	1		
Saratoga Springs, N. Y.	13,534	5			6				3	1
South Bethlehem, Pa.	13,241	5	2		2				1	1
Steelton, Pa.	14,479		2						1	
Wilkinsburg, Pa.	18,594	7			4		1			
Woburn, Mass.	14,254	8								1

IN INSULAR POSSESSIONS.

PHILIPPINE ISLANDS.

Manila—Plague.

Surg. Heiser, chief quarantine officer and director of health for the Philippine Islands, reports, May 8: During the week ended May 3, 1913, there were notified at Manila 5 cases of plague with 5 deaths.

For the 72 hours prior to April 28, 1913, 4 deaths were reported among Filipinos who resided at widely separated addresses. On further investigation it was found that they all worked at a silversmith's shop at No. 1364 Calle Sande, Tondo. An additional employee suffering with headache, fever, and general malaise was found who also worked in the same shop. This man was isolated at the San Lazaro plague hospital and soon afterwards developed enlarged glands and died on the third day after his admission to the hospital. Autopsies were made of all these cases and the diagnosis of plague was confirmed in each.

The silversmith's shop was found to be a wooden structure with a concrete floor, around the margins of which there were several openings which resembled rat holes. The entire cement floor was removed and several mummified rats were found that had the appearance of having died of plague.

The premises were treated with petroleum and an emulsion of a coal-tar preparation and all contacts kept under observation. To May 8 no further cases occurred.

This instance again affords additional proof of the intimate association of human with rat plague and illustrates that rats may be found in most unexpected places.

PORTO RICO.

Rodents Collected and Examined.

Passed Asst. Surg. Creel reports that during the week ended May 31, 1913, there were examined 1,584 rodents, collected from various points in Porto Rico, and that of these, 520 were collected from various parts of San Juan municipality. None was found infected with plague.

FOREIGN REPORTS.

BRAZIL.

Para—Smallpox.

The American consul general reported by telegraph, June 18, that 7 cases of smallpox had been notified at Para.

CHINA.

Amoy—Plague.

In the international settlement plague was reported present, in the bubonic and pneumonic forms, during the week ended May 10, 1913. Several fatal cases were notified.

Hongkong—Plague.

Consul General Anderson reported by telegraph, June 17, the occurrence of 10 cases of plague.

Shanghai—Plague.

Acting Asst. Surg. Ransom reported by telegraph, June 17, that 7 deaths from plague had been notified at Shanghai.

CUBA.

Habana—Transmissible Diseases.

MAY 21-31, 1913.

Diseases.	New cases.	Deaths.	Remain- ing under treat- ment.
Leprosy.....			244
Malaria.....	¹ 1		1
Typhoid fever.....	13	5	28
Diphtheria.....	7		12
Scarlet fever.....	41		52
Measles.....	47	3	43
Varicella.....	32		11
Paratyphoid fever.....	2	1	11

¹ From Oriente Province.

ERITREA.

Massowa—Plague.

Plague was declared present May 19 at Massowa. An epidemic was also declared among rats.

Massowa is situated on an island in the Red Sea off the coast of the Italian possession of Eritrea.

GREECE.**Patras—Smallpox—Typhus Fever.**

Smallpox and typhus fever were reported epidemic, June 9 and 10, respectively, in the consular district of Patras.

HAITI.**Jacmel—Plague.**

Plague was reported present, June 17, 1913, at Jacmel, Haiti.

JAPAN.**Communicable Diseases.**

The following statement of communicable diseases is for the Empire of Japan, exclusive of the island of Taiwan (Formosa):

MONTH OF MARCH, 1913.

Diseases.	Cases.	Deaths.	Diseases.	Cases.	Deaths.
Diphtheria.....	2,206	580	Scarlet fever.....	136	7
Dysentery.....	57	15	Smallpox.....	1	11
Paratyphoid fever.....	107	27	Typhoid fever.....	1,034	257

¹ At Nagasaki.

Of the scarlet fever cases 46 occurred in Tokyo, 34 in Kyoto, 16 in Saitama-ken, and 40 cases were notified in 17 different places in which there were 6 cases, more or less.

TURKEY IN ASIA.**Mersina—Smallpox.**

During the period from March 1 to May 10, 1913, 250 cases of smallpox occurred in Mersina.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.**Reports Received During Week Ended June 20, 1913.****CHOLERA.**

Places.	Date.	Cases.	Deaths.	Remarks.
Bulgaria:				
Burgas.....	May 1.....			Present.
Dutch East Indies:				
Java—				
Batavia.....	Apr. 26-May 3.....	16	12	
India:				
Bombay.....	May 4-10.....	2	2	
Calcutta.....	Mar. 9-22.....		74	
Do.....	Apr. 20-26.....		46	
Madras.....	May 4-10.....	3	1	
Japan.....				Total Jan. 1-Mar. 31: Cases 76, deaths 22, exclusive of Taiwan.

YELLOW FEVER.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia.....	Apr. 6-26.....	3	5	
Manaos.....	May 11-17.....	2	2	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received During Week Ended June 20, 1913—Continued.****PLAGUE.**

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	May 17-27	21	19	
Brazil:				
Bahia	Apr. 6-May 10	18	12	
British East Africa:				
Kisumu	Apr. 1-24	1		
Mombasa	do	5	5	
China				May 17, still present in Chaoyang and points along the railway.
Amoy	May 17			Still present in bubonic and pneumonic form.
Canton	Apr. 29			Present and in vicinity.
Hongkong				June 17: Cases 10.
Shanghai				June 17: Cases 1, deaths 7.
Swatow	May 17			Increasing.
Eritrea:				
Massowa	June 17			Present.
Haiti:				
Jacmel	do			Do.
India:				
Bombay	May 4-10	214	184	
Calcutta	May 9-22		79	
Do	Apr. 20-26		67	
Karachi	May 4-10	21	21	
Japan:				
Tamsui—				
Kagi	Apr. 27-May 17	30	28	
Persia:				
Bushir	May 11-17	2		
Philippine Islands:				
Manila	Apr. 27-May 3	5	5	

SMALLPOX.

Australia:				
Sydney—				
North Head Quarantine Station	Apr. 9-May 1	6		From s. s. Baralong from London via South Africa, Mauritius and Albany.
Do				May 1: 6 cases with 1 death on bark E. J. Spence from Mauritius.
Austria-Hungary:				
Trieste	May 11-17	1		
Brazil:				
Bahia	Apr. 6-May 3	5		
Para				June 18: Cases, 7.
Rio de Janeiro	Apr. 26-May 3	7	2	
Canada:				
Hamilton	May 1-31	8		
Chile:				
Santiago	May 11-17			Present.
China:				
Chungking	May 10			Do.
Nanking	do			Do.
Shanghai	May 5-18	1	13	
Egypt:				
Alexandria	May 14-27	11	4	
France:				
Paris	May 11-24	3		
Germany				May 25-31: 1 case.
Greece:				
Piræus	do	15		
India:				
Bombay	May 4-10	24	10	
Karachi	do	12	2	
Madras	do		1	
Moulmine	Mar. 3-29		3	
Italy:				
Naples	May 18-24	2		
Japan				Total, Jan. 1-Mar. 31: Cases 4, deaths 1, exclusive of Taiwan.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received During Week Ended June 20, 1913—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Aguascalientes.....	May 28-June 1.....	.....	5	
Hermosillo.....	May 31-June 6.....	8	4	80 cases among troops in quarantine 3 miles distant.
Manzanillo.....	May 14.....	.....	1	From s. s. General Pesqueira.
Progreso.....	.....	.....	.....	Cases on p. 1236 from s. s. Sinaloa from Guanavaca via Vera Cruz.
San Luis Potosi.....	Apr. 6-12.....	.....	2	
Vera Cruz.....	May 18-31.....	4	2	
Russia:				
St. Petersburg.....	May 11-17.....	4	.....

Reports Received From Dec. 27, 1912, to June 13, 1913.**CHOLERA.**

Bulgaria:				
Eski Saghara.....	Dec. 9.....	2	.....
Sofia.....	Nov. 21-Dec. 16.....	6	1	
Shumia.....	Dec. 30.....	18	.....
China:				
Amoy.....	Apr. 25.....	.....	.....	Present.
Foochow.....	Nov. 20-Dec. 2.....	.....	.....	Isolated cases.
Hongkong.....	Mar. 23-29.....	5	5	Among Chinese.
Shanghai.....	.....	.....	.....	Total 1912: Cases, 10, in the foreign settlement.
Dutch East Indies:				
Borneo—				
Bandermasin.....	Nov. 22-30.....	5	5	
Pontrank.....	Oct. 6.....	1	.....
Samarinda.....	Oct. 9-Nov. 2.....	26	25	
Singawang.....	Oct. 8-Nov. 1.....	2	2	
Celebes—				
Batangmata.....	Mar. 8-14.....	.....	.....	Present.
Java—				
Batavia.....	Nov. 9-Dec. 31.....	40	28	And Tanjong Priok, the harbor.
Do.....	Jan. 19-Mar. 29.....	145	111	Mar. 31-Apr. 5, 11 fatal cases.
Madioen.....	Sept. 15-Nov. 9.....	192	105	
Do.....	Jan. 31-Feb. 22.....	15	10	
Megalang.....	Oct. 7-12.....	9	6	
Paserocean Residency.....	Sept. 20-26.....	2	1	
Samarang.....	July 19-Dec. 26.....	591	485	
Do.....	Dec. 27-Mar. 17.....	13	14	
Surabaya.....	Oct. 16-Nov. 28.....	4	3	
Sumatra—				
Air Tiris.....	Dec. 3-22.....	11	11	
Benkoelen.....	Nov. 3-30.....	3	1	
Koeoh.....	Dec. 3-15.....	4	9	
Jambi.....	Sept. 18-24.....	1	.....
Roembo.....	Dec. 3-15.....	2	2	
Telokbetong.....	Nov. 1-Dec. 31.....	181	20	
India:				
Bassein.....	Jan. 25-Apr. 26.....	237	203	
Bombay.....	Nov. 17-May 3.....	221	157	
Calcutta.....	Nov. 9-Apr. 19.....	.....	853	
Cochin.....	Oct. 10-Nov. 9.....	6	6	
Do.....	Feb. 17-23.....	5	5	
Madras.....	Nov. 24-Apr. 5.....	38	37	
Moulmine.....	Feb. 23-Apr. 19.....	11	11	
Negapatam.....	Nov. 11-Apr. 19.....	43	43	
Rangoon.....	Nov. 1-Dec. 28.....	3	3	
Do.....	Dec. 29-Mar. 31.....	38	36	
Indo-China: Saigon.....	Aug. 20-Oct. 27.....	42	38	
Japan.				
Prefectures—				
Akita.....	Dec. 2.....	1	1	
Chiba.....	Nov. 21-Mar. 3.....	116	83	
Ehime.....	Sept. 21-Dec. 2.....	52	21	
Fukuoka.....	Aug. 1-Dec. 2.....	816	531	
				Total, year 1912: Cases, 2,722; deaths, 1,678, exclusive of Taiwan. Epidemic, Aug. 1, 1912-Mar. 3, 1913: Cases, 2,634; deaths, 1,696, including cases p. 2233, Vol. XXVII, and p. 859, Vol. XXVIII.

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

Reports Received from Dec. 27, 1912, to June 13, 1913—Continued.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Japan—Continued.				
Prefectures—Continued.				
Fukushima.....	Dec. 5.....	1	.....
Higo.....	Sept. 27–Nov. 24.....	137	100	
Hiroshima.....	Sept. 21–Nov. 23.....	49	32	
Ibariki.....	Dec. 6.....	2	2	
Iwate.....	Dec. 16.....	2	1	
Kagawa.....	Oct. 12–Nov. 21.....	15	10	
Kagoshima.....	Sept. 21–Oct. 18.....	11	5	
Kanagawa.....	Sept. 25–Feb. 4.....	122	94	Including Yokohama.
Yokohama.....	Sept. 29–Jan. 9.....	39	.....	Sept. 25–Dec. 7: 9 cases from vessels.
Kochi.....	Oct. 19–Dec. 4.....	25	14	
Kioto.....	Sept. 21–Nov. 1.....	5	5	
Kumamoto.....	do.....	15	9	
Minami Tokaigun.....	Sept. 15–Dec. 2.....	.....	.....	40 cases not included in total.
Nagasaki.....	do.....	188	112	Including Nagasaki city and with outlying islands, 134 deaths.
Oita.....	Sept. 21–Dec. 5.....	38	21	
Okayama.....	Sept. 21–Nov. 22.....	67	39	
Osaka.....	Sept. 21–Mar. 3.....	165	108	
Saga.....	Sept. 21–Dec. 3.....	109	76	
Saitama.....	Oct. 12–18.....	3	2	
Shizuoka.....	Oct. 19–Mar. 3.....	90	33	
Shimane.....	To Mar. 3.....	2	.....
Taiwan (Formosa).....	.....	.....	.....	Total year 1912: Cases, 334; deaths, 256.
Tokyo.....	Sept. 23–Feb. 4.....	314	217	
Tokushima.....	Sept. 15–Dec. 1.....	8	5	
Wakamatsu.....	Nov. 26.....	.....	.....	1 case not included in total.
Wakayama.....	Oct. 19–Nov. 16.....	13	12	
Yamaguchi.....	Sept. 21–Nov. 26.....	267	162	
Yamanchi.....	Feb. 3.....	1	1	
Russia:				
Odessa.....	Jan. 8–21.....	5	2	Nov. 18–20: 1 case from s. a. Bosnian, from Constantinople. Confined in the quarantine barracks.
Servia:				
Pirot.....	Apr. 10.....	5	.....	Among returning soldiers and prisoners.
Siam:				
Bangkok.....	Oct. 13–Mar. 22.....	.....	8	
Straits Settlements:				
Singapore.....	Nov. 17–23.....	2	2	
Do.....	Jan. 27–Apr. 12.....	6	2	
Turkey in Asia.....	.....	.....	.....	Total, Nov. 17–23: Cases, 160; deaths, 218.
Adana—				
Adana.....	Nov. 17–Dec. 2.....	2	.....
Aleppo—				
Aleppo.....	Nov. 24–Dec. 2.....	5	3	
Alexandretta.....	do.....	3	2	
Angora—				
Angora.....	Nov. 24–Dec. 11.....	29	23	
Balikesir.....	Nov. 24–Dec. 2.....	.....	1	
Beirut—				
Merdijoun.....	Dec. 3–11.....	.....	15	
Tavariyeh.....	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	
Kartal.....	Dec. 30–Feb. 12.....	9	3	
Khodavendikar—				
Karassi.....	Jan. 30–Feb. 12.....	.....	2	
Mosul.....	Nov. 17–Dec. 2.....	.....	2	
Sinope.....	Dec. 3–11.....	1	4	
Smyrna.....	Nov. 17–Dec. 2.....	3	1	
Syria—				
Haifa.....	Dec. 21.....	.....	1	
Tiberias.....	Dec. 3–25.....	129	68	
Tarsus.....	Nov. 24–Dec. 2.....	2	1	

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1912, to June 13, 1913—Continued.****CHOLERA—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Turkey in Europe:				
Constantinople.....	Dec. 3-Jan. 28....	1,598	787	Total, Nov. 5-Jan. 28: Cases, 2,515; deaths, 1,245.
Do.....	Mar. 12-Apr. 28....	15	5	New outbreak.
Kavala.....	Apr. 1.....		1	
Saloniki vilayet.....	June 10.....			June 10, 12 cases in Orfana and 100 cases in Seras.
Zanzibar.....	Nov. 8-Dec. 21....	131	130	Total, Aug. 5-Dec. 23: Cases, 943; deaths, 912, including previous reports from Mtwara, Chwaka, and Mokoton. Chwaka district, Oct. 4-Dec. 31, 332 cases, not included in previous reports.
At sea.....				Nov. 18-20: 1 fatal case on s. s. Bosnian, en route from Constantinople to Odessa.

YELLOW FEVER.

Brazil:				
Bahia.....	Jan. 24-Apr. 5....	16	8	
Manaos.....	Jan. 5-May 10....	25	25	
Para.....				Case reported May 10, p. 953, from the Brazilian steamer Mararia May 6, and placed in observation hospital, where he died May 9.
Pernambuco.....				Year 1912: Deaths, 41.
British Gold Coast:				
Akkra.....	Mar. 22.....			Present. Apr. 26 free.
Ecuador:				
Agua Piedra.....	Dec. 1-31.....	7	4	
Do.....	Jan. 1-Mar. 31....	10	6	
Bucay.....	Nov. 15-Dec. 31....	3	2	
Do.....	Jan. 1-Apr. 30....	6	3	
Duran.....	Nov. 1-Dec. 31....	3	3	
Do.....	Jan. 1-Apr. 30....	16	9	
Guayaquil.....	Nov. 1-Dec. 31....	25	16	
Do.....	Jan. 1-Apr. 30....	154	79	
Milagro.....	Nov. 1-Dec. 31....	2	2	
Do.....	Jan. 1-Apr. 30....	40	22	
Naranjito.....	Nov. 1-Dec. 31....	3	2	
Do.....	Jan. 1-Apr. 30....	22	12	
Yaguachi.....	Apr. 1-30.....	1		
Mexico:				
Merida.....	Apr. 2-10.....	1	1	From Campeche.
Senegal:				
Dakar.....	Dec. 7.....			Present.
Venezuela:				
Caracas.....	Nov. 1-Dec. 31....	9	2	In September 2 deaths and in October 1 death not previously reported. Feb. 7, 1 case.
Do.....	Jan. 1-31.....	2		

PLAGUE.

Afghanistan:				
Tchebel-Bagdareh.....	Sept. 1-30.....			And vicinity, 100 deaths daily. Present to Oct. 29.
Arabia:				
Aden.....	Apr. 9-May 16....	46	29	
Oran.....				
Debai.....	Feb. 16.....			Present.
Argentina:				
Herrera.....	Feb. 22.....	9	6	Southeastern part of Entre Rios.
Rosario.....	Jan. 4.....	4	1	Endemic.
Brazil:				
Bahia.....	Jan. 12-Apr. 5....	20	8	
Pernambuco.....	Nov. 1-Jan. 31....		11	Year 1912: Deaths, 20.
Rio de Janeiro.....	Nov. 3-Apr. 26....	26	10	Year 1912: Cases, 21.
Santos.....	Dec. 1.....	2	2	

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

Reports Received from Dec. 27, 1912, to June 13, 1913—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
British East Africa.....	Jan. 14-Feb. 26....	.....	17	
Dagoretti.....	Jan. 14-Feb. 5....	1	.....
Khambu.....	Nov. 16-Dec. 8....	2	.....
Do.....	Feb. 27-Mar. 31....	1	.....
Kisumu.....	Dec. 8-28.....	7	.....
Do.....	Jan. 14-Mar. 31....	9	.....
Mombasa.....	Oct. 1-Dec. 25....	16	12	Free Nov. 18.
Do.....	Feb. 6-26.....	5	.....
Nairobi.....	Nov. 16-Mar. 31....	21	1	
Canary Islands:				
Teneriffe—				
Santa Cruz.....	Feb. 21-27.....		5	
Chile:				
Antofagasta.....	Feb. 12.....			Present.
Iquique.....	Jan. 8-May 10....	18	7	
Taltal.....	Oct. 22-28.....	3	.....
China.....				Apr. 25, present in Chaochowfu and vicinity, Chaoyang, Cheng-hai, Kityang, Mi-ou, San-ho-pa, and Puning.
Amoy.....	Apr. 6-12.....		1	Jan. 17-Apr. 15, few sporadic cases. Pneumonia form present and in vicinity. May 26, epidemic.
Fungshun.....	Apr. 25.....	10	.....	Increasing.
Kulangsu.....	Apr. 6-12.....			Present in pneumonic form in 2 localities in vicinity about 48 miles from Amoy.
Hai An.....	Mar. 8.....			Present.
Hoihow.....	Nov. 1-30.....			International settlement of Amoy.
Kulangsu.....	Jan. 17.....	3	.....	Total January to September, 1912: Cases, 1,848; deaths, 1,728.
Hongkong.....	Jan. 12-May 3....	34	33	May 14, still present.
Manchuria.....	Dec. 14.....			Present along the railway between Harbin and Chang-Chun.
Pakhoi.....	Dec. 1-31.....	30	.....	Feb. 1, from 10 to 12 deaths daily.
Shanghai.....	Nov. 18-Dec. 15....		2	Dec. 18, present in vicinity of the French settlement. Total 1912: Cases, 9, among natives.
Do.....	Mar. 31-Apr. 6....		1	
Swatow.....	Apr. 25.....	3	2	Jan. 9 and Apr. 3 present in vicinity.
Colombia:				
Santa Marta.....	Apr. 11.....			Not bacteriologically confirmed.
Dutch East Indies.....				Total Jan. 1-Mar. 31: Cases, 1,636; deaths, 1,559.
Java—				
Kediri.....	Oct. 6-Dec. 31....	406	377	
Do.....	Jan. 1-Mar. 31....	443	201	
Madioen.....	Oct. 6-Jan. 1.....	98	96	
Do.....	Jan. 1-Mar. 31....	156	146	
Malang.....				Total, year 1912: Cases, 1,477; deaths, 1,406, among natives, including Pasoeroean Residency.
Do.....	Jan. 1-Mar. 31....	949	928	
Surabaya.....	Oct. 6-Jan. 4.....	43	43	
Do.....	Jan. 1-Mar. 31....	47	46	
Ecuador:				
Alausi.....	Apr. 1-30.....	5	2	
Duran.....	Nov. 1-Dec. 31....	4	1	
Do.....	Jan. 1-Mar. 31....	9	6	
Guayaquil.....	Nov. 1-Dec. 31....	139	52	
Do.....	Jan. 1-Apr. 30....	145	77	And vicinity, Jan. 1-Feb. 24: Cases, 123; deaths, 61.
Huigra.....	Apr. 1-30.....	8	2	Apr. 1-30, in Guayaquil and vicinity: Cases, 19; deaths, 6.
Milagro.....	Dec. 1-31.....	8	1	
Do.....	Jan. 1-Mar. 31....	10	2	
Egypt.....				Total, Jan. 1-Dec. 31, 1912: Cases, 884; deaths, 441. Jan. 1-May 8, 1913: Cases, 335; deaths, 176.
Alexandria.....	Mar. 2-May 4.....	44	32	
Cairo.....	Dec. 30.....	1	1	

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

Reports Received from Dec. 27, 1912, to June 13, 1913—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Egypt—Continued.				
Port Said.....	Dec. 29.....	1	1	
Do.....	Jan. 1–Mar. 5.....	4	2	
Provinces—				
Assiout.....	Jan. 22–May 1.....	34	31	
Behera.....	Nov. 29–Dec. 12.....	2	1	
Do.....	Mar. 10–May 5.....	6	6	
Benisouef.....	Jan. 22–May 4.....	8	5	
Charkieh.....	Nov. 29–Dec. 12.....	3	2	
Do.....	Jan. 2–Mar. 22.....	16	7	
Fayoum.....	Jan. 19–May 6.....	43	21	
Galloubeh.....	Jan. 1–May 7.....	10	2	
Garbieh.....	Jan. 1–May 8.....	8	3	
Do.....	Nov. 23–Dec. 17.....	3		
Girgeh.....	Jan. 1–Apr. 30.....	14	14	
Do.....	Dec. 21–25.....	1	1	
Gizeh.....	Jan. 1–May 7.....	35	11	
Keneh.....	Apr. 15–May 4.....	2	2	
Menouf.....	Jan. 1–May 2.....	48	22	
Do.....	Oct. 1–Dec. 31.....	13	7	
Minieh.....	Nov. 28–Dec. 29.....	7	4	
Do.....	Jan. 23–May 7.....	48	12	
Shag.....	Apr. 4.....	15	6	
Hawaii:				
Honokaa.....	May 2.....	1	1	
Kukuihaele.....	Jan. 11–31.....	2	2	
Panauhau.....	May 8.....	1	1	
India:				
Bombay.....	Nov. 17–May 3.....	1,621	1,274	
Calcutta.....	Nov. 9–Apr. 19.....		422	
Madras.....	Dec. 29–Jan. 4.....	1	1	
Karachi.....	Nov. 19–Dec. 28.....	14	13	
Do.....	Mar. 2–May 3.....	124	102	
Rangoon.....	Oct. 1–Nov. 30.....	68	68	
Do.....	Dec. 29–Mar. 31.....	349	337	
Provinces				
Delhi.....	Oct. 27–Dec. 28.....	31	14	
Bombay.....	do.....	6,785	5,121	
Madras.....	do.....	1,835	1,337	
Bengal.....	do.....	60	59	
Bihar and Orissa.....	do.....	1,269	1,025	
United Provinces.....	do.....	7,844	6,001	
Punjab.....	do.....	952	709	
Burma.....	do.....	95	85	
Central Provinces.....	do.....	404	301	
Mysore.....	do.....	1,506	1,114	
Hyderabad.....	do.....	1,498	1,212	
Central India.....	do.....	70	60	
Rajputana.....	do.....	2,862	2,824	
Kashmir.....	do.....	3	1	
Provinces				
Delhi.....	Dec. 29–Apr. 5.....	155	116	
Bombay.....	do.....	6,896	5,245	
Madras.....	do.....	2,448	1,854	
Bengal.....	do.....	398	376	
Bihar and Orissa.....	do.....	19,963	16,405	
United Provinces.....	do.....	64,303	55,778	
Punjab.....	do.....	7,232	5,821	
Burma.....	do.....	1,960	1,762	
Central Provinces.....	do.....	664	486	
Mysore.....	do.....	1,821	1,379	
Hyderabad.....	do.....	1,221	1,005	
Central India.....	do.....	58	43	
Rajputana.....	do.....	1,646	1,486	
Kashmir.....	do.....	69	35	
Northwest Provinces.....	Dec. 29–Feb. 1.....	1	1	
Indo-China: Saigon.....	Aug. 20–Apr. 7.....	68	42	
Japan:				
Taiwan (Formosa).....				Total, year 1912: Cases, 223; deaths, 185.
Kagi.....	Mar. 18–Apr. 12.....	68	45	Apr. 2, 10 cases.
Mauritius.....	Oct. 11–Apr. 3.....	264	166	Feb. 27, 1 case.
Morocco:				
Mehedia.....	Apr. 24.....	4		Among the military.
Rabat.....	Nov. 1.....	3		Do.

Total, Oct. 27–Dec. 28: Cases 25,212; deaths, 19,863.

Total, Dec. 29–Apr. 5: Cases, 108,835; deaths, 91,792.

Total, year 1912: Cases, 223; deaths, 185.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1912, to June 13, 1913—Continued.****PLAGUE—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
New Caledonia: Numea.....	Sept. 17-Dec. 2....	62	32	7 cases with 2 deaths among Europeans.
Persia: Bushir.....	Apr. 13-May 10....	25	22	
Peru:				
Departments—				
Ancachs.....	July 1-Aug. 31....	8	3	
Do.....	Jan. 1-Mar. 31....	8	3	
Arequipa.....	July 1-Aug. 31....	12	5	
Do.....	Jan. 1-Mar. 31....	14	10	Mollendo, Apr. 1-27: Cases, 3; deaths, 4. Present in September.
Callao.....	July 1-31.....	1	1	
Do.....	Jan. 1-Mar. 31....	14	9	
Ferrenaje.....	Dec. 23-Jan. 12....	1		
Ica.....	do.....	1		
Lambayeque.....	Jan. 1-Mar. 31....	168	81	Do.
Chiclayo.....	Apr. 1-27.....	2	3	
Jayanca.....	Dec. 2-22.....			Do.
Libertad.....	July 1-Aug. 31....	20	9	
Do.....	Jan. 1-Mar. 31....	107	52	
Humachuco.....	Mar. 25.....			Do.
Cosma.....	Dec. 2-22.....			Do.
Paijan.....	do.....			Do.
Salaverry.....	Dec. 23-Jan. 12....	1		
San Pedro.....	Dec. 2-Jan. 12....	27		
Do.....	Apr. 1-27.....	6	6	
Trujillo.....	Dec. 2-Jan. 12....	44		
Do.....	Apr. 1-27.....	6	7	
Lima.....	July 1-Aug. 31....	7	4	
Do.....	Apr. 1-27.....	6	6	
Piura.....	Jan. 1-Mar. 31....	21	13	
Catacaos.....	Dec. 2-Jan. 12....			Do.
Paita.....	do.....			Do.
Piura.....	Dec. 23-Jan. 12....			Do.
Sulanna.....	Dec. 2-22.....			Do.
Philippine Islands:				
Manila.....	Nov. 10-Apr. 26....	19	15	
Provinces.....				Third quarter, 1912: Cases, 8; deaths, 7. Fourth quarter, 1912: Cases, 39; deaths, 33. Jan. 1-Mar. 8: Cases, 5; deaths, 5.
Russia:				
Don, territory.....	Nov. 1-Apr. 2....	40	21	In Popova, Kiraejevo, and vicinity, including report, p. 1094.
Libau.....	Mar. 1-31.....		1	
Moscow.....	Dec. 29-Jan. 11....	3	1	
Trans-Baikal district—				
Verneudinsk.....	Oct. 18-28.....	3	3	Near Nerchinsk.
Trans-Caspian Ter., Merv.....	Dec. 9-21.....	29	29	Pneumonic.
Siam: Bangkok.....	Jan. 5-Mar. 22....		27	
Turkey in Asia: Jiddah.....	Mar. 10-May 16....	30	27	

SMALLPOX.

Arabia: Aden.....	Jan. 14-May 5....	15	2	Present.
Abyssinia: Adis Ababa.....	Nov. 24-Dec. 21....			
Algeria:				
Departments—				
Algiers.....	Oct. 1-31.....	11		
Constantine.....	do.....	11		
Do.....	Feb. 1-28.....	12		
Oran.....	Oct. 1-Dec. 31....	170	10	
Do.....	Jan. 1-Feb. 28....	25	5	
Argentina:				
Buenos Aires.....	Nov. 1-Dec. 31....		7	
Do.....	Feb. 1-Mar. 31....		3	
Australia: Darwin.....	Feb. 12.....			1 case in quarantine from s. s. Eastern en route from Japan to Sydney.
Austria-Hungary:				
Bohemia.....	Apr. 13-19.....	2		
Dalmatia.....	Feb. 9-15.....	1		
Galicia.....	Nov. 10-Dec. 7....	3		
Do.....	Apr. 15-26.....	3		
Fiume.....	Jan. 14-May 12....	9	2	
Moravia.....	Jan. 17-Apr. 21....	3		
Trieste.....	Dec. 8-May 10....	57		Returning travelers.

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

Reports Received from Dec. 27, 1912, to June 13, 1913—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Belgium: Antwerp.....	Mar. 24-31.....	1	.....
Brazil:				
Para.....	Dec. 8-Feb. 1.....	2	.....
Pernambuco.....	Nov. 1-Apr. 30.....	.....	200	Year 1912: Deaths, 762.
Rio de Janeiro.....	Nov. 3-Apr. 19.....	94	26	
British East Africa:				
Mombasa.....	Dec. 1-31.....	17	10	
Do.....	Feb. 1-28.....	16	3	
Canada:				
British Columbia—				
Fernie.....	Feb. 23-Mar. 1.....	12	.....	Apr. 22: 1 case in vicinity.
Vancouver.....	Feb. 2-Apr. 25.....	4	.....
Victoria.....	May 4-10.....	2	.....
Manitoba—				
Winnipeg.....	Mar. 30-May 17.....	17	.....
Ontario—				
Cornwall.....	Mar. 16-22.....	2	.....
Fort William.....	Mar. 31-Apr. 16.....	4	.....
Hamilton.....	Jan. 1-Mar. 31.....	60	.....
Niagara Falls.....	Feb. 1-Apr. 21.....	21	.....
Ottawa.....	Jan. 4-May 17.....	50	.....
Port Arthur.....	Mar. 16.....	1	.....
Sault de St. Marie.....	May 4-10.....	1	.....
Toronto.....	Dec. 1-May 17.....	25	.....
Windsor.....	Feb. 9-Apr. 26.....	12	.....
Quebec—				
Grosse Isle Quarantine.....				May 13: 1 case on s. s. Canada from Trieste, via Patras, Naples, and Lisbon.
Montreal.....	Dec. 15-May 24.....	176	1	
Quebec.....	Dec. 15-May 31.....	37	.....
St. Johns.....	Jan. 12-May 24.....	27	1	
Chile:				
Punta Arenas.....	Oct. 31-Nov. 30.....	3	.....	Oct. 31: 1 case in vicinity.
Do.....	Jan. 1-31.....	1	.....
China:				
Amoy.....	Mar. 15-Apr. 12.....	.....	2	
Kulangsu.....	Jan. 12-Feb. 29.....	1	1	Apr. 5, present.
An Kho.....	Jan. 4.....	.....	.....	Epidemic; 2 days' journey from Amoy.
Chungking.....	Nov. 3-Apr. 6.....	.....	.....	Present.
Dalny.....	Jan. 12-18.....	1	1	
Hankow.....	Dec. 29-Jan. 4.....	1	.....
Harbin.....	Dec. 1-31.....	6	.....
Do.....	Jan. 17-Feb. 13.....	2	.....
Hoihow.....	Jan. 3.....	.....	.....	Do.
Hongkong.....	Nov. 24-Apr. 19.....	78	54	
Nanking.....	Dec. 7-Mar. 8.....	.....	.....	Do.
Shanghai.....	Nov. 18-May 4.....	52	189	Deaths among natives. Year 1912: Cases, 144.
Tientsin.....	Nov. 17-May 10.....	9	27	
Costa Rica: Limon.....	Feb. 1.....	2	2	
Dutch East Indies:				
Java—				
Batavia.....	Nov. 9-Mar. 15.....	42	12	Jan 5-11: 10 cases, with 5 deaths in the district, mainly in Samarang.
Samarang.....	Oct. 4-24.....	57	23	
Do.....	Jan. 5-Mar. 15.....	906	202	
Surabaya.....	Mar. 16-Apr. 19.....	6	5	
Egypt:				
Alexandria.....	Dec. 9-May 13.....	71	21	
Cairo.....	Nov. 12-Apr. 23.....	42	7	
Port Said.....	Dec. 3-31.....	1	1	
France:				
Marseille.....	Nov. 1-Apr. 30.....	.....	28	
Nantes.....	Jan. 5-Mar. 31.....	8	.....
Nice.....	Feb. 1-28.....	2	.....
Paris.....	Dec. 1-May 10.....	63	1	
Germany.....				Total: Nov. 24-30, 5 cases not included in report, p. 2231, vol. xxvii; Dec. 1-May 17, 76 cases.
Breslau.....	Jan. 19-25.....	1	.....
Hamburg.....	Jan. 10-Mar. 29.....	4	.....
Kehl.....	Feb. 1-28.....	.....	1	
Gibraltar.....	Dec. 9-Apr. 27.....	4	1	

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

Reports Received from Dec. 27, 1912, to June 13, 1913—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Great Britain:				
Hull.....	Mar. 8-Apr. 1.....	5	.....
Liverpool.....	Jan. 4-Apr. 26.....	4	1	
London.....	Apr. 27-May 24.....	3	.....
Newcastle on Tyne.....	Feb. 9-15.....	15	.....
Sheffield.....	Feb. 26-Mar. 2.....	1	.....
Greece:				
Athens.....	Feb. 10-Apr. 5.....	1	3	
Patras.....	Mar. 3-May 25.....	43	.....	Epidemic.
Piræus.....	Jan. 1-Mar. 13.....	119	49	
Hawaii: Paauhau.....	May 2.....	1	.....
Honduras: Trujillo.....	Feb. 2-8.....	1	.....
India:				
Bombay.....	Nov. 17-May 3.....	292	132	
Calcutta.....	Dec. 1-Mar. 8.....	.....	27	
Karachi.....	Dec. 1-Apr. 12.....	70	23	
Madras.....	Dec. 1-Apr. 19.....	49	11	
Moulmine.....	Feb. 23-Mar. 1.....	1	.....
Rangoon.....	Oct. 1-Mar. 31.....	180	49	
Indo-China: Saigon.....	Aug. 20-Dec. 23.....	3	3	
Italy:				
Leghorn.....				Year 1912: Cases, 315; deaths, 14.
Naples.....	Mar. 16-May 10.....	7	1	
Palermo.....	Dec. 15-Apr. 12.....	40	.....
Turin.....	Feb. 3-Mar. 2.....	5	.....
Japan:				Total, year 1912: Cases, 14; deaths, 1.
Hokkaido.....	Jan. 1-31.....	1	.....
Nagasaki.....	Mar. 9-May 11.....	6	4	Nov. 1-30, 1 case.
Nagahama quarantine station.....	May 9.....	1	.....	From s. s. Shingo Maru from Kobe to Yokohama.
Oita, Province.....	Apr. 1-30.....	1	.....
Osaka.....	Apr. 1-May 10.....	5	.....
Taiwan (Formosa).....				Year 1912: Cases, 4.
Kangawaken.....	Jan. 1-31.....	1	.....
Yokohama.....				Jan. 1-13, 2 cases from s. s. Pera from London via ports.
Malta.....	Feb. 1-28.....	1	.....
Mauritius.....	Mar. 22.....			Epidemic.
Mexico:				Feb. 16: Cases, 1,500 to 2,000, with 10 per cent of deaths; mainly along the western coast. Jan 30-Feb. 16: Present in Aguiñer-Cajame, Corral, Esperanza Navoja, Puga, and Tarín.
Aguascalientes.....	Dec. 9-May 25.....		65	
Cananea.....	May 22.....		.....	Many fatal cases.
Chihuahua.....	Dec. 9-May 25.....		25	
Durango.....	Dec. 1-Mar. 31.....		157	
Guadalajara.....	Jan. 5-May 3.....	32	3	
Hermosillo.....	Feb. 16-Apr. 31.....	50	6	
Juarez.....	Mar. 1-29.....	2	.....
Manzanillo.....	May 7.....		.....	2 cases among troops.
Mazatlan.....	Jan. 1-7.....	2	.....
Mexico.....	Nov. 17-Apr. 19.....	245	123	
Monterey.....	Mar. 24-May 8.....		7	
Nogales.....	May 23.....	3	.....
Progreso.....	May 24-30.....	2	.....
Salina Cruz.....	Nov. 17-May 3.....	17	7	
San Luis Potosí.....	Sept. 15-Apr. 5.....	10	4	
Sonora.....				
Agua Zarca.....	Jan. 30.....	2	.....
Nogales.....	do.....	1	.....
Tamaulipas, State.....	Apr. 16.....			Epidemic in Chamal, 100 miles north of Tampico.
Veracruz.....	Jan. 26-May 17.....	20	1	1 case imported from Pasco del Macho. Apr. 13-May 3: Cases, 28; deaths, 4.
Netherlands: Rotterdam.....	Dec. 22-28.....		1	
Newfoundland: St. Johns.....	Feb. 23-May 17.....	17	.....
Peru:				
Callao.....	Sept. 1-14.....			Present.
Lima.....	do.....			Do.
Mollendo.....	Nov. 24-Dec. 7.....	5	1	
Salaverry.....	Dec. 4-11.....	1	.....
Philippine Islands: Manila.....	Dec. 21.....			1 case removed from s. s. Maulbau to the San Lazaro Hospital. Third quarter, 1912: Cases, 9; deaths, 0. Fourth quarter, 1912: Cases, 16; deaths, 0.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1912, to June 13, 1913—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Portugal: Lisbon.....	Dec. 1-May 17....	64		Total, Oct. 1-31: Cases, 6.
Roumania.....				
Russia:				
Batoum.....	Dec. 1-31.....	1		
Libau.....	Dec. 16-May 18....	6		
Moscow.....	Dec. 8-May 3.....	58	13	
Odessa.....	Nov. 17-Apr. 26....	11	3	
St. Petersburg.....	Nov. 24-May 10....	134	20	
Warsaw.....	Sept. 22-Feb. 15...	51	45	
Riga.....	Dec. 1-31.....	1		
Siberia—				
Omsk.....	Jan. 1-27.....	7		
Vladivostok.....	Dec. 15-28.....	4	1	
Do.....	Jan. 1-13.....	4		
Servia: Belgrade.....	Dec. 22-28.....	2		
Siam: Bangkok.....	Nov. 10-Mar. 22...		11	
Spain:				
Almeria.....	Dec. 1-31.....		40	
Do.....	Jan. 1-Apr. 30....		23	
Barcelona.....	Dec. 1-May 24....		233	
Cadiz.....	Nov. 1-Dec. 31....		7	
Do.....	Feb. 1-Apr. 30....		3	
Madrid.....	Nov. 1-Dec. 31....		34	
Do.....	Jan. 1-Apr. 30....		87	
Malaga.....	Dec. 1-31.....		1	
Seville.....	do.....		27	
Do.....	Jan. 1-Apr. 30....		28	
Valencia.....	Nov. 14-May 24....	145	5	
Straits Settlements:				
Singapore.....	Nov. 24-Apr. 26....	19	5	
Penang.....	Mar. 31-Apr. 5....	1		
Sweden: Stockholm.....	Apr. 13-May 3....	36	1	Oct. 8-21, 3 cases.
Switzerland:				
Cantons—				
Aargau.....	Dec. 15-Apr. 5....	7		
Basel.....	Nov. 14-May 13....	51		
Grisons.....	Dec. 1-Feb. 1....	15		
Luzerne.....	Apr. 13-19.....	1		
St. Gall.....	Apr. 16-22.....		1	
Vaud.....	Apr. 27-May 3....	1		
Turkey in Asia:				
Adana.....	Apr. 26.....			Present.
Beirut.....	Dec. 8-May 17....	103	14	
Damascus.....	Mar. 8.....			Do.
Mersina.....	Mar. 9-May 17....	112	80	
Smyrna.....	Nov. 24-Dec. 14....		5	
Do.....	Jan. 19-Mar. 22....		11	
Tarsus.....	Apr. 12-26.....			
Trebizond.....	Mar. 9-15.....			Do.
Turkey in Europe:				
Constantinople.....	Dec. 1-28.....		43	
Do.....	Dec. 29-May 19....		175	
Saloniki.....	Apr. 21-May 18....	7	12	
Union of South Africa: Durban.	Feb. 2-8.....	1		
Uruguay:				
Montevideo.....	Dec. 1-31.....	3		Last previous case in May, 1912.
Do.....	Jan. 1-Feb. 28....	3	1	Feb. 18, present.
West Indies:				
Barbados.....	Mar. 8.....	1		From Grenada.
Grenada.....				May 8, 3 cases, in vicinity of St. Georges.
Concord.....	Apr. 23.....	1		
La Filette.....	do.....	1		
Pomme Rose.....	Apr. 17.....	3		
Zanzibar.....	Nov. 8-Feb. 7....	22	3	

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

PORTO RICO.

Communicable Diseases—Service of Sanitation to Establish Hospitals for the Treatment of. (Act No. 44, Mar. 13, 1913.)

SECTION 1. The service of sanitation is hereby authorized to create and establish, and is ordered to create and establish, an insular hospital in each one of the seven districts into which the island of Porto Rico is divided. Said hospital shall serve for the treatment of the sick suffering from transmissible and contagious diseases in the respective districts, especially tuberculosis and uncinariasis, as well as all those cases of sickness which can not be attended to in the municipal hospital.

SEC. 2. Said hospital shall be constructed in each district in the most adequate and hygienic locality to be determined by the service of sanitation upon recommendation of the insular board of health. For the organization and management of these sanitary institutions the director of sanitation will prepare the regulations.

SEC. 3. That the commissioner of the interior is hereby authorized and directed to order that such improvements as may be required be made on the lands obtained for the location and construction of the seven hospitals and to carry out the provisions of this act, and all projects and plans for improving buildings or constructions shall be made with future enlargement in view and executed in accordance with the legislation in force and must be previously approved by the insular board of health upon recommendation of the director of sanitation: *Provided*, That each hospital will have the number of beds which may be necessary to attend to local necessities.

SEC. 4. That for the purpose of complying with the provisions of the preceding section there is hereby appropriated such amount as may be necessary from any funds in the insular treasury not otherwise appropriated, but the total sum to be expended shall not exceed \$120,000 or so much thereof as may be necessary.

SEC. 5. The director of sanitation will appoint the medical superintendent of each one of these hospitals, as well as the assistants and subordinate personnel, necessary for the performance of the duties. The Executive Council is authorized to fix the salaries of all the employees of the hospitals, if the same shall not have been fixed already in the budget.

SEC. 6. That all laws or parts of laws in conflict herewith are hereby repealed.

Institute of Tropical Medicine and Hygiene—Organization and Duties. (Act No. 58, Mar. 13, 1913.)

SECTION 1. That the present Institute of Tropical Medicine shall be known as "The Institute of Tropical Medicine and Hygiene of Porto Rico." It shall be for the purpose of cooperating in the continuance of the campaign against uncinariasis and other transmissible diseases for the investigation of such diseases in the island of Porto Rico

and for the instruction of sanitary officials in special diseases of this country and latitude.

SEC. 2. The institute will be composed of the director of sanitation ex officio, the director of the bacteriological laboratory ex officio, and of one physician, resident of Porto Rico, and experienced in tropical medicine, who shall be appointed by the governor: *Provided*, That the director of sanitation shall be in charge of the financial and administrative responsibilities of the institute: *And provided further*, That the governor of Porto Rico be, and hereby is, authorized on the recommendation of the institute to request of any department or departments of the Federal Government the detail of one or more medical officers of the department or departments, who shall be experienced in tropical medicine to cooperate with the institute and who shall be ex officio members thereof. But under no circumstances will the institute consist of more than five permanent members.

SEC. 3. The director of sanitation will designate an employee of the service of sanitation, who shall act as secretary of the institute, and who shall serve without additional compensation.

SEC. 4. The permanent members of the institute shall receive the sum of \$3,600 annually: *Provided*, That any permanent member who has a salary from the Insular or Federal Government shall be entitled to an additional compensation equivalent to the difference between such salary and that provided by this act for said permanent members.

SEC. 5. No salary shall be paid any person already receiving from the Insular or Federal Government a compensation equal to or exceeding \$3,600 annually.

SEC. 6. The permanent members of the institute shall have full control of the scientific work of the institute and they shall be the only ones authorized to prepare for publication such reports and special studies as from time to time may be considered of scientific value.

SEC. 7. The governor, upon the recommendation of the institute, shall appoint an entomologist at a salary not to exceed \$2,500 annually, and such associate members of the institute as may be deemed necessary for the more perfect working thereof. These associate members shall receive a compensation of \$10 per day when actually on duty. When not actually on duty, they shall continue to be carried on the rolls as "associate members of the institute," without pay.

SEC. 8. The permanent members of the institute, and the associate members when actually on duty with said institute, during the time that they may be on expedition outside of the locality where they reside shall be allowed actual traveling expenses: *Provided*, That the institute shall be located in the city of San Juan.

SEC. 9. At the request of the permanent members of the institute, the director of sanitation will furnish them with the facilities for any expeditions authorized by them, and will employ the personnel for such expeditions and for special work, subject to the approval of the governor.

SEC. 10. The institute shall be permitted to utilize the laboratory of the sanitation service and such beds and rooms in hospitals under his control as the director of sanitation may consider available, provided that no work undertaken in the laboratory shall interrupt the current laboratory work of the sanitation service.

SEC. 11. For the purpose of defraying all kinds of expenses of said institute, there is hereby appropriated the sum of \$20,000, or so much thereof as may be necessary, and this sum shall be disbursed in accordance with the provisions of this law.

SEC. 12. All laws or parts of laws in conflict herewith are hereby repealed.

Rats—Trapping of, and Protection of Food Against. (Proclamation Jan. 2, 1913.)

The following amendment to section 3 of Sanitary Rules and Regulations No. 3, as promulgated in Administrative Bulletin No. 45, having been approved by the Executive Council on October 17, 1912, is hereby promulgated for the information and guidance of all concerned:

SECTION 1. Section 3 of the Rules and Regulations, entitled "Sanitary Rules and Regulations No. 3—Ratproofing of all buildings and outhouses in Porto Rico," approved July 11, 1912, is hereby amended to read as follows:

"SEC. 3. In no dwelling house or building shall food, remnants of food, or other matter which may be made use of by rats, be kept, except when placed in pantries, storerooms, or receptacles constructed so as to be inaccessible to said rodents. Any person occupying said houses or buildings, whether tenant, owner, or lessee, shall supply the same with one or more rat traps of a pattern approved by the director of sanitation, which traps shall be set and baited, the bait to be changed twice each week. The aforesaid traps shall be inspected daily by the owner or lessee, and all rats captured therein may be sent to the department of sanitation or the same shall be delivered to an authorized employee thereof, who may also inspect the said traps from 8 a. m. to 6 p. m.: *Provided*, That the owner or lessee may destroy the said rats by fire when not collected by the employees of the sanitation department within the time of 24 hours from and after the capture thereof."

Plumbers—Licensing of. (Proclamation Jan. 2, 1913.)

The following amendments to sections 9 and 13 of Sanitary Regulations No. 7, entitled "Regulations governing plumbing and sewerage in Porto Rico," as promulgated in Administrative Bulletin No. 52, having been approved by the Executive Council on December 27, 1912, are hereby promulgated for the information and guidance of all concerned:

"SEC. 9. Applicants for licenses as journeyman plumbers must be at least 18 years of age, and applicants for licenses as master plumbers must be at least 21 years of age and properly qualified as to knowledge and experience in the plumbing business. The application must be made to the plumbing board on blank forms provided for the purpose and must be accompanied by a certificate of good character and a statement as to the time that the applicant has been engaged in the plumbing business, said certificate to be signed by at least three reputable citizens of Porto Rico.

"SEC. 13. For the licenses issued, as provided in section 7 hereof, master and journeyman plumbers shall pay, respectively, \$5 and \$2, as provided by section 5 of the law of sanitation. Upon the payment of said license dues, the director of sanitation shall issue badges to said plumbers, which shall be worn by them while on duty, and shall be shown upon request to any plumbing inspector or health officer: *Provided*, That applicants for licenses as journeyman plumbers proceeding from the Boys' Charity School shall be exempted from the payment of \$2 as license dues."

Buildings, Yards, and Vacant Lots—Sanitary Maintenance of. (Proclamation Jan. 28, 1913.)

SECTION 1. All houses, edifices, and outhouses are subject to sanitary inspection by the service of sanitation in accordance with the provisions set forth in section 30 of the law of sanitation now in force, and the owners, lessees, and tenants of same are under obligation to carry out the sanitary repairs or alterations which may be ordered in each case, and also to the limit the number of inhabitants in proportion to the air space of each room.

SEC. 2. The owner or tenant, as the case may be, must see that all the different sections of the house are kept strictly clean; that no household waste or rubbish is allowed to accumulate therein, nor on flat roofs, in yards, alleyways, and environs;

that no water is allowed to stagnate; and that no coconut husks, empty cans, nor injurious substances, nor such as may used as food or shelter by rats, be thrown out. Building material shall only be allowed to be deposited in vacant spaces when the house itself is to undergo repairs.

SEC. 3. Gardens, parks, and vacant lots must be kept clean, but the right is reserved to cultivate therein flowers, plants, or grass, fruit trees or coconut trees, the latter to be properly protected against rodents.

SEC. 4. All vacant lots or unimproved sites which are within the urban zone, or within a town, must be fenced in and kept clean from underbrush, provided that said vacant lots or parcels of land may be utilized for gardens or orchards. They shall not be used as permanent deposits for lumber and other building material nor for second-hand articles, nor as a dumping place for rubbish, unless the same shall be burned within a maximum period of 48 hours.

SEC. 5. All houses or edifices must be provided with water for domestic purposes to the quantity of not less than 150 available liters for each inhabitant. They shall also be provided with a sufficient number of faucets on each floor.

SEC. 6. When, for lack of payment of water taxes, any municipality shall proceed to cut off the water supply from any house or edifice, said municipality shall immediately forward to the director of sanitation a list of such contributors as have failed to make payments, specifying the name, place of residence, and sums charged to each, and as soon as this list has been received the director of sanitation shall immediately notify the owner, owners, or agent of the said house or edifice, who within a period of 24 hours (which period can not be extended), dating from the receipt of said notification, shall proceed to pay in full all taxes and overcharge dues for which he is indebted.

SEC. 7. If said owner, owners, or agent shall fail to pay the said amount in full within the specified time the director of sanitation or sanitary authority to whom the right may appertain shall pay the account in full, and the municipality shall at once renew the water supply.

SEC. 8. The sanitary authority shall notify the owner, owners, or agent that within another period of 24 hours the amount paid out by the sanitary authority must be refunded to the director of sanitation, as well as all expenses incurred, in accordance with article 31 of the law of sanitation now in force; and if the owner, owners, or agent should refuse to refund said amount after receiving notification of same, he shall be liable to punishment in accordance with article 33 of the law of sanitation, without prejudice to the liability incurred under the civil law and to the fees which, for filing notification of the expenses incurred, are authorized in the last paragraph of article 33 of the law of sanitation.

SEC. 9. In all houses or edifices, all cisterns, tanks, or other deposits for water shall be kept in such manner that they will not impart dampness to the living rooms and that they will not receive filtrations from pipes or cesspools, and they shall be kept tightly covered with mosquito-proof wire-screened covers, and only such fountains and jets of water as shall be constantly supplied with running water shall be allowed.

SEC. 10. In houses or edifices which are equipped for occupancy, an adequate number of baths and showers shall be installed, and this requirement shall be essential if intended for rental.

SEC. 11. The floors of bathrooms, kitchens, and water-closets must be of impermeable material, and the walls, if of stone, must be reenforced to a height of $1\frac{1}{2}$ meters with the same material, and if of wood must be painted in oil paints.

SEC. 12. Kitchens shall be provided with chimneys and hoods which will insure the free outlet of smoke and gases. Said chimneys must be kept constantly in good working order, provided that this section shall not be applicable to kitchens in which electricity, gas, or oil is used.

SEC. 13. All houses or edifices, as well as outhouses and the plumbing systems of same, must be kept in good sanitary condition. Inner walls, as well as all doors and windows, must be kept smooth and free from cracks and properly painted or white-washed. In localities where wooden buildings are authorized, care shall be taken to see that the walls and beams of same are kept in good condition, free from rotten or worm-eaten wood and that they are properly painted. The roofs shall be kept in good condition so as to avoid dampness within the dwelling. Roofs, ceilings, double partitions, walls, and floors shall be kept in rat-proof condition.

SEC. 14. No underground cellar or room shall be used as a dwelling. When one of the sides of the floor, however, is situated above the natural level of the site, the same may be inhabited, but no part of a site whose floor is situated more than $1\frac{1}{4}$ meters below the natural level of the soil may be destined for habitation. The outside walls and floors of these sites must be rendered impermeable to moisture by building them of concrete or by reinforcing those made of stone with the same impermeable material, and in every case they must be situated on lands that are well drained.

SEC. 15. In towns provided with aqueducts, sewers, or sewerage system, all houses and edifices must be provided with water-closets which have been approved and have therefore been accepted as serviceable and which have free discharge into the said sewer, to the exclusion of any other system of latrine. In towns not provided with aqueducts or sewerage system and where cesspools have to be used, the same shall be built at a distance of not less than 10 meters from wells, cisterns, bedrooms, and kitchens, or as far as possible therefrom within the limits of the property, but the director of sanitation shall be notified in order that he may dictate in each case the requirements of such construction. Said cesspools shall be kept proof against inundations from rainfall. In both cases said installations shall fulfill the requirements set forth in the regulations governing plumbing, approved September 5, 1912.

SEC. 16. The owner or agent of any house or edifice must have drains and cesspools cleaned before they get too full and overflow. He shall also see that said drains and cesspools are treated with quicklime, calcium chloride, creoline, or any other disinfectant, when the service of sanitation shall, for any special reason, so require it. He shall also see that any deficiencies in the construction of water-closets, latrines, drains, or cesspools which may be the cause of troublesome emanations be corrected.

SEC. 17. Garbage and other household refuse shall be deposited in metal receptacles, which shall be provided with handles and with a tight-fitting cover, the said receptacles to be in good condition, free from cracks and holes through which the contents may leak out. They shall be placed at the greatest possible distance from the living rooms, provided that said garbage and refuse may be burned every 48 hours, when the house or edifice has sufficient and appropriate land pertaining to it upon which said burning may take place without detriment to public health.

SEC. 18. In no case shall hogs or pigs be allowed to be kept in yards, corrals, or environs of any house or edifice within the urban zone or within a town nor within a distance of 100 meters from the limits of said urban zone or of a town, provided that this disposition does not apply to the corrals of the slaughterhouses.

SEC. 19. The installation of stables and barns within the urban zone or in a town shall not be authorized unless these same shall be built in well-ventilated sites and shall be maintained in accordance with the specifications set forth in the rules and regulations governing the construction and making rat proof of all buildings and outhouses in the island of Porto Rico, approved July 11, 1912.

SEC. 20. If barnyard fowls are kept within the urban zone, a rat-proof feeding place shall be built, the floor of which shall be at least 2 square meters, shall be made of concrete and may be covered with clean sand or gravel. The walls shall be sunk in the ground to a depth of 2 feet and extend 1 foot above the level of the floor. The floor and walls shall be at least 4 inches thick, the sides and roof shall be of one-half inch mesh wire netting or of any other rat-proof material. It shall be provided with

only one door, which shall be kept closed except when in use for the ingress and egress of the fowls. It is essential that the fowls be fed only within this inclosure.

SEC. 21. When, upon inspection by the service of sanitation as referred to in section 1 of these rules and regulations, any house or edifice or part of the same shall for any reason be found to be unhealthy, the director of sanitation shall inform the owner or agent of the said house to this effect in writing and shall fix a period of time within which the work of repairs or improvements must be finished, said limit of time to be fixed according to the importance of the work to be done. If at the expiration of the said period the work shall not have been completed, the director of sanitation may declare said house or edifice or part of same to be uninhabitable, and may order its closure within a period of not less than 30 days, and it shall be kept closed until the work is completed.

SEC. 22. The owner or agent of any house or edifice which is occupied by two or more families who live in separate parts shall be responsible for any infringement of these regulations not otherwise provided for herein, which may occur in connection with the parts of the house in common use, such as vestibules, yards, staircases, cisterns, wells, and alleyways, without prejudice to the action which for open violations of the regulation in each case is hereby conferred in favor of the owner or agent against the tenant or person who is found to be directly responsible. Equally, the owner or representative of any untenanted house or edifice shall be responsible for any infringement of these regulations which may take place in connection with same. Tenants of houses, apartments, flats, or edifices shall also be responsible for the infringements of these regulations which may occur in the other parts of the house or flat, and which are not included in the previous paragraphs.

SEC. 23. No houses or edifices within the urban zone or within a town or within 100 meters of one or the other shall be allowed to be built, rebuilt, totally or partially, or changed or altered unless the plans for same shall have been presented to the director of sanitation for approval. Said plans shall be presented in triplicate, one copy of which will be retained for the files of the service of sanitation. The plans shall contain a detailed account of the arrangement and dimensions of the foundations, floors, and roofs, and if the director of sanitation so wishes he may demand other details. If asked for, specifications and explanations shall accompany said plans. If reinforced concrete or steel frames are used, the dimensions of all details shall be presented. Latrines or water-closets must be indicated in all plans. If the same are not approved, the defects and means for correcting the same shall be noted on the plans and the same returned to sender within a period of 10 days, provided that nothing in this section shall be understood to be contrary to the dispositions of the department of the interior and the municipal ordinances governing construction plans now in force.

SEC. 24. No newly built house or edifice which has been reconstructed or altered, partially or completely, may be utilized until the same shall have been inspected by the service of sanitation for the purpose of ascertaining whether the approved plans have been duly carried out, the said inspection to take place within a period of 10 days.

SEC. 25. Every newly constructed house or edifice shall have an open space which shall be used as yard, said space to be in the proportion of 20 per cent of the area built upon.

SEC. 26. In houses or edifices used as dwelling places the capacity of each room shall be not less than 22.75 cubic meters. They shall receive their light directly from street, yard, garden, or passageway, the total area of the doors and windows shall be not less than one-fifth of the area of the floor of each room, and at least one-fifth of the area of the openings shall be disposed of in such manner as to insure ventilation when the doors and windows are closed. The total area of the floor of each room shall be at least 7 square meters, the width of the same shall be not less than 2½ meters, the height from floor to ceiling shall be not less than 3.25 meters, and the length shall not exceed twice the altitude.

SEC. 27. The height of every house or edifice measured from the middle point of its façade between the level of the sidewalk and the roof line shall not exceed the following dimensions taken with relation to the width of the road or street: A height of 20 meters for a road or street not exceeding 10 meters wide; a height of 30 meters for a road or street not exceeding 15 meters wide; and a height equal to twice the width for a road or street exceeding 15 meters wide.

SEC. 28. Every newly built house or edifice of more than three stories shall be made fireproof and shall be provided with a fire escape on each floor.

SEC. 29. The floors of the ground-floor rooms shall be raised above the level of the yard, and this in turn above the street level, and where this is not feasible, direct authorization shall be given by the department of sanitation, who shall dictate the measures necessary to be adopted in each case with relation to these regulations and shall see that they be obeyed. Said floors shall be built of concrete or other approved impermeable material, the right being reserved to floor same with boards in rat-proof style. Where wooden floors for the lower-story rooms are allowed, they shall be constructed in accordance with sanitary regulation No. 3, entitled "Rat proofing of all buildings and outhouses in Porto Rico, as amended January 2, 1913." The floors of courtyards shall be made of cement or other impermeable material and shall have sufficient slope to insure drainage, provided that there may be spaces for grass plots or flowers if the same are kept in good condition.

SEC. 30. The discharge pipes from roofs, sheds, flat roofs, water-closets, urinals, sinks, and drains shall be of cast iron or such other material as shall be approved by the director of sanitation, and their location shall be approved by the director of sanitation.

SEC. 31. The room in which a latrine is installed shall be in the yard or in any other light and well-ventilated place, the floor shall be of concrete or other impermeable material, and the total area shall be at least $1\frac{1}{2}$ square meters. It shall be provided with a door of proportionate size and with an opening 60 centimeters square immediately beneath the roof or covering. Where there is no aqueduct, said place shall be completely separated by a partition wall from the kitchen, dining room, sleeping rooms, and pantry.

SEC. 32. Every infraction of any of the provisions of these regulations shall be punished in accordance with the provisions of section 33 of "A law to reorganize the service of sanitation," approved March 14, 1912, and in defect of this shall be liable to punishment as under the Civil Code.

SEC. 33. Every ordinance or regulation not in accord with this regulation is hereby annulled. These rules and regulations shall have the force and effect of law as soon as approved by the executive council and promulgated and published in accordance with the provisions of section 13 of "A law to reorganize the service of sanitation," approved March 14, 1912.

Rat Proofing of Buildings. (Proclamation Jan. 28, 1913.)

The following amendments to sections 2, 4, 7, and 10 of Sanitation Rules and Regulations No. 3, as promulgated in Administrative Bulletin No. 45, having been approved by the Executive Council on January 24, 1913, are hereby promulgated for the information and guidance of all concerned:

SECTION 1. Sections 2, 4, 7, and 10 of the rules and regulations entitled "Sanitary Rules and Regulations No. 3, governing the construction and making rat proof of all buildings and outhouses in the island of Porto Rico," approved July 11, 1912, are hereby amended in the following manner:

"SEC. 2. In houses and buildings already constructed the following rules shall be observed:

"Dwelling houses and buildings intended for dry goods stores, warehouses, or factories therefor, dressmaking establishments, banks, and offices which have the floor

of the lower story of wood shall be made rat proof by (1) raising the floor to a height of at least 2 feet from the ground, with all underpinnings free, or (2) shall have all space beneath flooring made rat proof by a foundation wall of stone or concrete extending below the surface of the ground to a depth of 2 feet and fitting flush to floor of house. All decayed wood must be replaced.

"SEC. 4. Roofs, garrets, courtyards, yards, alleys, cellars, and any other open space belonging to houses or buildings must be kept free from food, garbage, forage, and other material which may serve as food or as a refuge for rats. All masonry walls surrounding courtyards and yards which are not in good condition shall be made rat proof by being reinforced on the inner side with concrete to a depth of 2 feet below surface and 2 feet above level of ground.

"SEC. 7. Every building the lower story of which is not intended for any of the uses specified in section 2 of these rules and regulations shall have the floor of the said lower story constructed in the following manner:

"(a) Those intended for markets, piers, or storehouses for provisions at wholesale must necessarily have the floor of the lower story of concrete.

"(b) Buildings intended for any other use shall also have the floor of concrete or plaster, except in localities in which, due to the nature of the ground or to the natural situation, the lower story of the building is at a height greater than 2 feet above the level of the ground, in which case wooden floors may be used: *Provided*, That the distance between the ground and the said floor be maintained (at least on three of its sides) absolutely free and with all underpinnings free: *Provided further*, That if it should have one or more of its sides at a height less than 2 feet the same must rest upon a wall of stone or concrete, which shall extend below the surface of the ground to a depth of 2 feet and be raised 2 feet above the level of same.

"(c) Buildings the lateral and rear walls of which are below the level of the ground or street must necessarily have the floor of concrete or plaster, surrounded by a concrete or masonry wall extending 2 feet above the level of the floor and 2 feet below the surface of same.

"SEC. 10. Stables and stalls within the city limits must fulfill the following conditions:

"1. Each horse cared for shall have a space of not less than 5 square meters.

"2. The floor shall be of concrete and with an adequate slope as of one-eighth of an inch per foot and with a wall of concrete or stone extending 2 feet below the surface of the ground.

"3. Upon this concrete floor may be placed planks for a floor for the horses; this to be made in sections so that it may be easily raised. The boards which form the floor shall be separated from each other by at least 2 inches.

"4. The sections or parts of the floor must be raised once a week in order to do the necessary cleaning.

"5. Each stable shall be provided with a well, lined with cement, in which to deposit the manure, the well to have a capacity of at least one-fourth of a cubic meter for each horse. Said receptacle shall have a tight-fitting cover divided into two sections.

"6. The manure shall be placed in said receptacles and carefully covered. The cleaning of said wells or receptacles shall be done once a week and the manure carried to the place which the director of sanitation may designate.

"7. The stable, stall, and manger and their surroundings must be kept strictly clean.

"8. Grain to be used as food for the live stock shall be kept in a rat-proof box.

"9. Each manger shall be placed at a minimum distance of 2 feet from the wall of building and its sides shall have a slope of 2 inches toward the bottom and shall be covered with tin or zinc, and the said manger shall be at least 18 inches deep to avoid the spilling of food."

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

GREENFIELD, MASS.

Stables—Licensing, Sewer Connections, Disposal of Manure. (Reg. Bd. of H., July 17, 1912.)

ARTICLE 1. Each license issued by the board under the provisions of chapter 102 of the revised laws and acts amendatory thereof and in addition thereto shall expire on the 1st day of July succeeding its issue; such license shall not be transferable and shall be revokable at any time in the discretion of the board of health.

ART. 2. All places licensed shall, where practicable, be connected with a sewer or drain large enough to carry off all waste liquid, and the entrance to and passage through such sewer or drain shall be kept at all times clear so as to afford free passage for liquids.

ART. 3. Manure shall be allowed to accumulate only in water-tight receptacles. If such accumulation is in the basement of a building, the bottom and sides of the pit containing manure shall be of cement, the sides not less than 3 feet in height. If the accumulation is not in the basement of a building, then a suitable water-tight pit shall be supplied, the sides of which shall be not less than 3 feet high, the entire pit being covered at all times when manure is not being placed within or removed from it by a tight roof or covering.

ART. 4. All licensed stables shall be kept clean and no loose manure or pools of liquid shall be allowed to accumulate or remain about the same except as provided in article 3.

ART. 5. All manure shall be hauled away from stables in which more than four horses are kept, at least once a month, and no more than 5 cords of manure shall be allowed to remain upon the premises at any one time.

ART. 6. A copy of these regulations shall be kept posted at all times in each place licensed in accordance with the terms of these regulations.

Stables—Regulations Applying to Those Within and to Those Outside of Fire District No. 1. (Reg. Bd. of H., Aug. 5, 1912.)

ART. 7. Articles 1 to 6 in the foregoing regulations shall apply to stables within the limits of fire district No. 1.

ART. 8. All stables licensed outside the limits of said fire district No. 1 shall be maintained in a condition satisfactory to the board of health.

HARTFORD, CONN.

Garbage and Refuse—Disposal of. (Reg. Bd. of Health, Mar. 20, 1912.)

The owner of any tenement house, the head of every family living in a dwelling house, the keeper of every hotel, restaurant, eating house, boarding house, or other place where meals are furnished and every other person having garbage, shall cause the same to be placed in water-tight covered metal vessels, in some part of his premises convenient for removal, or in some place designated by the board of health, and shall not allow it to be mingled with ashes or other waste matter: *Provided, however,*

That any person may be excepted from the provisions of this section upon obtaining a permit to that effect from the board of health.

He shall provide that all ashes intended for removal by the city shall be placed in receptacles not larger than an ordinary flour barrel, so constructed as to permit its removal without scattering the contents and which must be protected from rain and snow. All other refuse must be placed in receptacles or tied in bundles, so as to permit its removal without scattering.

Births and Deaths—Reporting of. (Ord. Mar. 26, 1912.)

Be it ordained by the court of common council of the city of Hartford, That sections 307 and 308 of the Revised Ordinances be, and the same are, hereby amended to read as follows:

"No. 307. *Reports of deaths by clerk to council.*—The clerk of the board of health shall each month prepare and submit to the court of common council a report of the deaths occurring during the preceding month, which report shall exhibit in a tabular form the age, sex, and color of the deceased; shall embrace in distinct classes those under 1 year of age, those from 1 to 5, those from 5 to 10, those from 10 to 20, and so on from each decennial period; shall show the rate per cent of mortality for the city, and contain a summary of the causes of death. During the month of March in each year, said clerk shall prepare and submit to the court of common council a report of the deaths which have taken place in the city and its several wards during the previous year, showing the age, sex, color, civil condition, occupation, and nativity of the deceased, the cause of death, and rate per cent of mortality, classified in tabular form.

"No. 308. *Annual report of births.*—Said clerk shall, during the month of March in each year, submit to the court of common council a report of the births which have taken place within the city and within its several wards during the preceding year, which report shall exhibit in tabular form the rate per cent of births in the city, the number of each sex born during the year and during each month of the year, the number stillborn, the color of all in each class, and the nativity of the parents."

Foodstuffs—Not to be Wrapped in Soiled Paper or Newspaper. (Ord. Apr. 16, 1912, Amending Ord. of Feb. 28, 1910.)

Be it ordained by the court of common council of the city of Hartford, That the second paragraph of an ordinance relating to the sale of human food, passed by the court of common council February 28, 1910, be, and the same hereby is, amended by adding at the end thereof the following: "No newspaper or soiled paper of any sort may be used for wrapping articles designed for sale or delivery as human food," so that said paragraph shall read as follows:

"Every person being the owner, lessee, or occupant of any rooms, stall, vehicle, or place where any meat, fish, birds or fowls, fruit or vegetables, or any breadstuffs, cake, pastry, or confectionery designed or held for human food, shall be stored or kept, or shall be offered for sale, shall put and keep such room, stall, vehicle, or place and its appurtenances in a clean and wholesome condition; and every person having charge or interested or engaged, whether as principal or agent, in the care or custody of any meat, fish, birds or fowl, fruit or vegetables, or any breadstuffs, cake, pastry, or confectionery, designed for human food, shall put and keep the same in a cleanly and wholesome condition, and shall not allow the same or any part thereof to be poisoned, infected, or rendered unsafe or unwholesome for human food. No newspaper or soiled paper of any sort may be used for wrapping articles designed for sale or delivery as human food."

Markets—Regulation of. (Reg. Bd. of H., Sept. 4, 1912.)

1. The market shall be open from 4.30 a. m. to 9 a. m. from May 1 to November 1.
2. The market shall be in charge of the inspector of food or his deputy, and he shall have power to assign stands, collect rents, control employees, and to enforce all rules that may be made for the management of the market.
3. Permits for the use of the stands shall not be transferable, and no one shall be allowed to sublet, rerent, or give permission to use stands without the consent of the inspector in charge.
4. Each team on entering the market shall proceed as directly as possible to the stall assigned, and no sales shall be made till the team is in place in the stall, and while there each horse shall be securely fastened in such manner as the inspector may direct. On leaving the stall the team shall go at once to the designated exit. Drivers entering or leaving the market shall at all times be subject to the orders of the inspector or his assistants.
5. No refuse material shall be thrown on the ground, but if placed in barrels or other suitable receptacles will be removed by the city at the close of market day.
6. No person within the market shall be guilty of any lewd or disorderly conduct or use any profane or vulgar language, or anything which is calculated to lead to a breach of peace.
7. Nothing but fresh goods will be allowed to be sold in the market. This will not prohibit the sale of goods from the South.
8. No children are allowed inside the market unless on teams of gardeners or peddlers.
9. All goods sold must be as represented or money returned.
10. Rates for the rental of stalls shall be until further notice: One stall 10 cents per day; day ends at 9 a. m. One stall \$1 per month; month ends at 9 a. m. on the last week day of the month.

Mosquitoes—Prevention of the Breeding of. (Reg. Bd. of H., Nov. 6, 1912.)

In the judgment of the board of health commissioners of the city of Hartford, the growth of vegetation in the bed of Park River and adjoining its banks, especially above the mill dam maintained by the Hartford Machine Screw Co., is dangerous to life and health in that it permits the development of mosquitoes in still water. During the past summer, in the neighborhood of Park River, especially south of said mill dam, mosquitoes have been a pest.

Acting therefore under section 63 of the Compiled Charter of the City of Hartford and section 253 of the revised ordinances, the board of health commissioners hereby order all persons and corporations, owners of property abutting either bank of the Park River within the corporate limits of the city of Hartford, to keep that portion of the bed of said river owned by them, respectively, free from vegetable growth

Plumbers—Examination and Licensing of. (Reg. Bd. of H., Nov. 6, 1912.)

There shall be a board of examiners of plumbers, which shall consist of one member of the board of health commissioners, appointed by vote of the board, the superintendent, the plumbing inspector, and the assistant plumbing inspector.

Meetings.—Said board shall meet at least once a month, except during July and August.

Examinations.—The board shall examine each applicant as to his knowledge of ventilation, lighting, plumbing, and drainage; shall subject him to a satisfactory practical test, and if satisfied that he is competent, shall so certify to the board of health, which shall thereupon issue to him a license authorizing him to engage in or work at the business of plumbing.

Licenses.—Any license issued under these rules or under any former rules or ordinances may be suspended or revoked by the board of health for cause after a hearing, of which due notice shall be given the licensee.

HAVERHILL, MASS.**Foodstuffs—Protection of. (Reg. Bd. of H., Dec. 14, 1912.)**

SEC. 39. The dressed body or carcass of any animal, or any part thereof, which is to be used as human food shall not be carried through the streets or avenues of the city unless it is so covered as to protect it from dust, dirt, and flies, and no meat, poultry, cherries, blackberries, dates, figs, grapes, salted peanuts, cracked nuts of any kind, corn cakes, corn crisp, maple sugar, candy, cake, bread, nor any other article that may be used for human food not ordinarily cooked, peeled, or washed shall be hung, kept exposed for sale in any street or public place, or outside of any shop or store, stand, or stall, or in the open windows or doorways thereof, unless they are wrapped or covered and inclosed, so as to protect them from dust, dirt, and insects. No vegetables or other articles which are to be used as human food shall be kept or placed or exposed for sale outside of any shop or store, market, or in any open doorways or windows where it is possible for such vegetables or other articles to be contaminated by dogs.

SEC. 40. Every person being the occupant or lessee of any room, stall, building, or place where any meat, fish, birds, fowl, milk, vegetables, butter, fruit, or other articles intended or held for human food shall be stored or kept, or shall be offered for sale, shall put and keep such room, stall, building, or place and its appurtenances in a clean and wholesome condition, and every person having charge or interested or engaged, whether as principal or agent, in the care or in respect to the custody or sale of any meat, fish, birds, fowl, milk, butter, fruit, vegetables, or other articles intended for human food shall put and preserve the same in a clean and wholesome condition, and shall not allow the same or any part thereof to be poisoned, infected, or rendered unsafe or unwholesome for human food.

SEC. 41. Every proprietor or manager of a store, market, dairy, café, lunch room, or any other place in the city of Haverhill where a food or a beverage or confectionery or any similar article is manufactured or prepared for sale, stored for sale, offered for sale, or sold shall cause it to be screened effectually or effectually protected by power-driven fan or fans, so as to prevent flies and other insects from obtaining access to such food, beverage, confectionery, or other article, and shall keep such food, beverage, confectionery, or other similar article free from flies and other insects at all times. This section shall take effect from and after the expiration of 30 days immediately following the date of its promulgation.

Milk—Care and Sale. (Reg. Bd. of H., Dec. 14, 1912.)

SECTION 1. The conditions under which every cow whose milk is sold or exposed for sale in the city of Haverhill shall be made known to the board of health if said board shall deem it necessary.

SEC. 2. No milk kept for sale shall be stored, strained, cooled, or mixed in any room used in whole or in part for domestic or sleeping purposes or for the stabling of horses or cattle or other animals or for the storage of manure, offal, or other offensive matter.

SEC. 3. All rooms in which milk is stored, cooled, strained, or mixed shall be provided with tight walls and floors and kept constantly clean. Proper apparatus shall be provided for washing or sterilizing all utensils used in handling milk, and such utensils shall be washed with boiling water or sterilized by steam after being so used.

SEC. 4. No urinal, water-closet, or privy shall be located in the rooms called for in the preceding section or so situated as to pollute the atmosphere of said rooms.

SEC. 5. Every person keeping a milch cow shall permit it to be examined from time to time, as to its freedom from disease, by a proper person designated by the board of health.

SEC. 6. All milk produced for the purpose of sale shall be strained and cooled as soon as it is drawn from the cow.

SEC. 7. Milk kept for sale in any store, booth, or stand shall at all times register on test a temperature not higher than 50° F., and shall be stored in a covered cooler, box, or refrigerator.

SEC. 8. All cans, bottles, or other vessels of any sort used in the sale or handling of milk shall be cleaned or sterilized before they are used again for the same purpose.

SEC. 9. No person shall use a milk vessel as a container for any other substance than milk.

SEC. 10. Every person engaged in the production, storage, transportation, sale, delivery, or distribution of milk, immediately on the occurrence of any case or cases of infectious disease, either in himself or in his family or amongst his employees or their immediate associates, or within the building or premises where milk is stored, sold, distributed, shall notify the Haverhill Board of Health.

SEC. 11. No person having an infectious disease, or having recently been in contact with a person having an infectious disease, shall milk or handle cows, measures, or other vessels used for milk intended for sale, or in any way take part or assist in handling milk intended for sale, until all danger of communicating such disease to other persons shall have passed.

SEC. 12. No vessels which have been handled by persons suffering from such an infectious disease shall be used to hold or convey milk until they have been thoroughly sterilized.

SEC. 13. No bottle, can, or receptacle used for the reception or storage of milk shall be removed from a private house, apartment, or tenement wherein a person has an infectious disease except with the consent of the board of health.

SEC. 14. No person, by himself or by his servant or agent, or as the servant or agent of any other person, firm, or corporation, shall bring into the city of Haverhill for the purposes of sale, exchange, or delivery, or sell, exchange, or deliver any milk, skimmed milk, or cream which contains more than 100,000 bacteria per cubic centimeter.

SEC. 15. Milch cows from which milk is produced to be sold in this city shall be kept free from filth and in a cleanly condition.

SEC. 16. No person, firm, or corporation shall sell, or offer, expose, or keep for sale in any shop, store, or other place where goods or merchandise are sold, milk or cream unless the same is sold or offered, exposed, or kept for sale in tightly closed or capped bottles or receptacles which have been approved by the board of health, its agent, or inspector of milk. Nothing contained herein shall prevent the sale of milk or cream from cans, crocks, coolers, or other receptacles in restaurants or hotels when the milk or cream is to be consumed in the restaurant or hotel by guest or patrons ordering the same.

Ice Cream—Manufacture, Care, and Sale. (Reg. Bd. of H., Dec. 14, 1912.)

SECTION 1. No ice cream shall be manufactured or stored in any portion of a building which is used for stabling of horses or other animals, or in any room which is used in whole or in part for domestic or sleeping purposes, unless the manufacturing and storage room for ice cream is separated from other parts of the building to the satisfaction of the board of health.

SEC. 2. All rooms in which ice cream is manufactured or stored shall be provided with tight walls and floors, window and door screens, and shall be kept constantly clean. The walls and floors of said rooms shall be of such construction as to permit rapid and thorough cleansing. The room or rooms aforesaid shall be equipped with appliances for washing or sterilizing all utensils employed in the mixing, freezing, storage, sale, or distribution of ice cream, and all such utensils after use shall be thoroughly washed with boiling water or sterilized by steam. Vessels used in the

manufacture and sale of ice cream shall not be employed for other substance than ice cream.

SEC. 3. All establishments in which ice cream is manufactured shall be equipped with facilities for the proper cleansing of the hands of the operatives and all persons immediately before engaging in the mixing of the ingredients entering into the composition of ice cream, or its subsequent freezing and handling, shall thoroughly wash his or her hands and keep them cleanly during such manufacture and handling. All persons shall be dressed in clean outer garments while engaged in the manufacture and handling of ice cream.

SEC. 4. No urinal, water-closet, or privy shall be located in the rooms mentioned in the preceding section, or so situated as to pollute the atmosphere of said rooms.

SEC. 5. All vehicles used in conveyance of ice cream for sale or distribution shall be kept in a cleanly condition.

SEC. 6. Ice cream kept for sale in any shop, restaurant, or other establishment shall be stored in a covered box or refrigerator. Such box or refrigerator shall be properly drained and cared for, and shall be kept tightly closed, except during such intervals as are necessary for the introduction or removal of ice cream or ice, and they shall be kept only in such locations and under such conditions as shall be approved by the board of health, or its inspector of meats and provisions.

SEC. 7. Every person engaged in the manufacture, storage, transportation, sale, or distribution of ice cream, immediately on the occurrence of any case or cases of infectious or communicable disease, either in himself or in his family or amongst his employees, or within the building or premises where ice cream is manufactured, stored, sold, or distributed, shall notify the board of health and at the same time shall suspend the sale and distribution of ice cream until authorized to resume the same by the board of health. No vessels that have been handled by persons suffering from such disease shall be used to hold or convey ice cream until they have been thoroughly sterilized.

SEC. 8. All cream, milk, or skimmed milk employed in the manufacture of ice cream shall before use be kept at a temperature not higher than 50° F.

SEC. 9. No person, by himself, or by his servant or agent, or as the servant or agent of any other person, firm, or corporation; shall, in the city of Haverhill, sell, exchange, or deliver any ice cream which contains more than 500,000 bacteria per cubic centimeter.

SEC. 10. No old or melted ice cream, or ice cream returned to a manufacturer from whatever cause, shall again be used in the preparation of ice cream.

HOLLAND, MICH.

Milk and Milk Products—Production, Care, and Sale. (Ord. No. 279, Feb. 21, 1912.)

SECTION 1. That no person, persons, partnership or corporation shall engage in the sale, delivery or distribution of milk, cream, buttermilk, skimmed milk or sour milk in the city of Holland, without first having obtained a license so to do from the city clerk of said city; and no person shall bring or send milk, cream, buttermilk, or sour milk for sale in said city except through a licensed dealer as hereinafter provided.

SEC. 2. The word "person" shall, for the purpose of this ordinance, hereinafter be construed to include individual, copartnership, firm, and corporation.

SEC. 3. Every person desiring to engage in the sale, delivery, or distribution of milk, cream, buttermilk, skimmed milk, or sour milk in the city of Holland, before doing so, shall make application to the city clerk of the said city of Holland for a license for that purpose, which application shall be in writing, upon the form prescribed by the board of health of said city, and shall be approved by the health officer or the milk and food inspector of said city.

SEC. 4. Said application shall state fully:

(a) The full name and place of residence of said applicant. The exact location of the place or places from which said applicant obtains milk and, if said applicant obtains milk from other persons, the name of the person or persons from whom said applicant obtains milk.

(b) The number of cows in each herd supplying said milk or any portion thereof.

(c) The manner in which said applicant intends to dispose of said milk and the location of the place where he proposes to conduct said business if same shall be fixed.

SEC. 5. The fee charged for the license herein provided for shall be: For selling milk or cream from wagon, \$5 for each wagon; from a dairy, restaurant, creamery, or milk company, \$5; for selling from the house, or when delivered by hand at the rate of \$1 for each cow owned or kept within the city supplying said milk or milk products, but not to exceed \$5, and all moneys so received shall be turned into the public health fund of the city of Holland, to be used by the board of health in carrying out the provisions of this ordinance.

SEC. 6. The license herein provided for, if issued, shall not be transferable, and shall not extend beyond the first Monday in June next after the issue of the same: *Provided further*, That said license may be revoked or suspended at any time upon hearing by the mayor of said city after notice by the board of health, when any of the provisions of this ordinance, or any section or sections of the dairy and food laws of the State of Michigan governing the sale or distribution of milk shall have been violated by the holder of said license.

SEC. 7. Every person engaged in the sale, delivery, or distribution of milk in said city shall notify, in writing, the board of health of said city, immediately upon changing the source of supply of said milk. Said notice shall state the exact location of the new place from which said milk is procured, the number of cows producing the same, the quantity received, and the name of the person or persons supplying the same.

SEC. 8. No person shall sell or deliver, or have in his possession for sale in the city of Holland any milk or cream which is adulterated, or to which water has been added, or which contains any preservative, foreign or unhealthful ingredient, constituent, or substance, or cream which does not contain 18 per cent butter fat, or milk or cream which has been kept at a temperature above 60° F., or which has been stored or transported in an unclean manner, or which is produced by cows which are diseased or which are kept or stabled under unhealthful, filthy, or insanitary conditions, or which have access to any yard or premises which contain undue accumulation of manure, barnyard sewerage, or mud; nor shall any milk be sold or delivered in said city which is procured from any farm or dairy where any contagious, infectious, or communicable disease may exist.

SEC. 9. No person shall sell, hold, or offer for sale in the city of Holland any milk containing: (a) More than 87.50 per cent of watery fluid; or (b) less than 12.50 per cent of milk solids; or (c) less than 3 per cent butter fat; or (d) at 60° F. the specific gravity of which is not between 1.029 and 1.033; or (e) containing any pathogenic bacteria; or (f) containing more than 200,000 bacteria per cubic centimeter; or (g) produced by a herd which contains any diseased cattle; or (h) produced by any cow or cows within 20 days before or 7 days after parturition (calving); (i) produced by any cow or cows fed of garbage, refuse, swill, moist distillery waste, or other improper food, or which do not receive a proper and sufficient supply of pure drinking water and wholesome food: *Provided*, That subdivisions a, b, c, and d, of this section do not apply to milk sold under the name of "skimmed milk," as hereinafter provided.

SEC. 10. For the purpose of inspection, the health officer, milk inspector, and the assistants of either of them or any member of the board of health, are authorized to enter any building, room, or premises, either within or without the corporate limits

of the city of Holland, where milk, cream, or milk products are produced for sale, sold, or held for sale within the city of Holland. The aforesaid health officer, milk inspector, assistant, or any member of the board of health are empowered to open any can, vessel, or package, whether in transit or otherwise, containing milk or cream for sale or consumption in the city of Holland, and take therefrom a suitable sample for examination or analysis: *Provided*, That they shall pay therefor the current market price. Examination or analysis shall be made with such instruments or appliances as are in general use for that purpose at the time of inspection.

SEC. 11. Every person using a wagon or other vehicle for the sale or distribution of milk, cream, buttermilk, skim milk, or sour milk within the city of Holland shall keep the name of the owner thereof and the license number in plain legible letters and figures not less than 2 inches in height upon the side of said wagon or vehicle. The aforesaid wagon or vehicle shall be covered by canvas or other material to adequately protect from sun and dust. All wagons, vehicles, and utensils used for delivery, distribution, handling, or storing of milk shall at all times be kept in a cleanly condition and free from any substance liable to contaminate milk or milk products. Rusty or broken cans shall not be used in the handling, storing, or delivery of milk.

SEC. 12. No person shall give, furnish, sell, or offer for sale any milk or cream in quantities less than 1 gallon, except in sterilized, suitably capped bottles or single service packages approved by the board of health, except where milk is sold at the milk house or dairy, when the same may be dipped: *Provided*, That dipped milk shall not be carried on the street in open vessels: *Provided further*, That skimmed milk, buttermilk, or whey in any quantity may be delivered in closely covered containers.

SEC. 13. No person shall transfer any milk or cream intended for sale from one can, bottle, or receptacle into another can, bottle, or receptacle, on any street, alley, or thoroughfare, or upon delivery wagon or other vehicle, or in any exposed place in the city of Holland except in a creamery milk depot or inclosed premises of the customer or dealer in milk.

SEC. 14. No person shall bring into the city of Holland for sale, offer or hold for sale, milk from which the cream has been removed, either in whole or in part, unless sold as "skimmed milk" from can, vessel, or container on the side of which there shall be prominently displayed in plain legible letters not less than 1 inch in height the words "skimmed milk." Skimmed milk shall contain not less than 9.50 milk solids.

SEC. 15. All dealers in milk shall have a room separate and apart from horse or cow stable or other place which is liable to contaminate milk. Said milk room or dairy shall be properly lighted and ventilated and shall be used exclusively for handling and storing milk and milk products. The construction of said milk room or dairy shall be such that same may be kept clean and sanitary at all times. All vats and utensils used in the handling or storing of milk shall be made of nonabsorbent material. Windows of said milk room or dairy shall be screened and doors shall be fitted with self-closing wire-screen doors of mesh sufficiently fine to exclude all flies and insects, and all vats shall be covered or screened.

SEC. 16. No person shall remove from any dwelling or place in which exists any case of contagious, infectious, or communicable disease any bottles or other receptacle used in the sale or distribution of milk, except with the permission of the health officer, after quarantine has been released. No person suffering from any venereal or communicable disease shall be employed to handle or come in contact with milk or milk products. Milk tickets shall not be used more than once.

SEC. 17. The health officer or milk inspector of the city of Holland may condemn or exclude from sale in the city of Holland any or all milk or cream which are produced in whole or in part on premises to which access, for the purpose of inspection, has been refused the health officer or milk inspector or either of their assistants. The health officer, milk inspector, or any of their assistants or any member of the board of health

may seize and confiscate any milk, cream, or other milk products sold, offered for sale, or held with intent to sell within the city of Holland, contrary to any section of this ordinance, and may pour out, color, or otherwise denaturize any or all milk, cream, or other milk products so seized, to prevent the use of same for food purposes. The health officer or milk inspector or any of their assistants may affix or cause to be affixed to any can, receptacle, or vehicle containing any condemned milk, cream, or other milk products a card or tag stating that same has been condemned and the reason therefor. Said tag or card so attached shall be deemed due and sufficient notice of condemnation. No milk, cream, or other milk product condemned as herein provided shall be used for human food, sold, held, or offered for sale in the city of Holland. The health officer or milk inspector or their assistants shall not be required to take sample of milk or cream which shall show a temperature higher than the allowed temperature specified in this ordinance, but may condemn any or all milk or cream showing a higher temperature than that specified.

SEC. 18. Cows kept for the production of milk for sale or consumption in the city of Holland shall be free from tuberculosis (pasteurized cream excepted). Before any license shall be granted to any applicant under the provisions of this ordinance the cows from which said applicant proposes to obtain milk shall have been tested by some person or persons legally qualified to administer the tuberculin test or tests and who shall be approved by the board of health. For the purpose of diagnosis of tuberculosis in any of said cows the tuberculin test or any official approved method for the detection of tuberculosis may be used under the direction of the board of health. For the purpose of identification, all cows tested as herein provided shall be suitably tagged or branded and all reacting animals isolated from the herd or disposed of according to the laws of the State of Michigan governing the disposal of animals which have reacted to the tuberculin test.

SEC. 19. Utensils used for the sale, handling, or delivery of milk or cream in the city of Holland shall, before using, be thoroughly washed with pure water and salsoda, or some other cleaning agent that will not contaminate the same, and shall be thoroughly sterilized with boiling water, dry heat, or steam, at a temperature of not less than 212° F., and shall be placed on a rack or some appliance to air until wanted for use. Shippers' cans shall be thoroughly rinsed with clean water before being returned to the shipper or producer.

SEC. 20. Any person operating, owning, or managing any hotel, restaurant, or other place where meals and lunches are served who shall serve, sell, or expose for sale any milk, cream, or other milk products shall be subject to the requirements of this ordinance and the inspection herein provided for: *Provided, however,* That no license shall be required unless milk shall be sold at wholesale or retail. Cans, bottles, crates, or containers used for the sale or delivery of milk shall be kept in a clean condition until returned to dealer supplying the same.

SEC. 21. Stables in which cows from which milk is obtained for sale, delivery, or distribution in the city of Holland are housed or confined shall be cleaned not less than once daily. Cleaning of manure or removal of bedding and litter shall be performed not less than one-half hour prior to milking. Manure shall be removed to not less than 30 feet from any such stable. Said stables shall contain not less than 500 cubic feet per cow, and shall be properly ventilated and lighted. Said stable shall be fitted with either cement or tight plank floors which can be properly cleaned. If the stable contains a loft, the same shall be properly ceiled. All stables shall be whitewashed inside at least twice yearly and no undue amount of dust or filth shall be allowed to accumulate. All barnyards and premises to which cows have access which are kept wholly or in part for the production of milk or cream for sale or delivery in the city of Holland shall be kept free and clean from any undue accumulation of of manure, barnyard sewage, or mud. The health officer or milk inspector may

condemn or exclude from sale in the city of Holland milk produced on premises where the provisions of this section are not complied with.

SEC. 22. Each and every day that a violation of this ordinance shall continue shall constitute a separate and distinct offense.

SEC. 23. Any person violating any of the provisions of this ordinance shall be punished for the first offense by fine not exceeding \$10 and costs of prosecution, and in default of the payment of any fine or costs the court may imprison such person in the county jail of Ottawa County until such fine is paid, not, however, to exceed 10 days; for the second offense by a fine not exceeding \$25 and costs of prosecution, and in default of the payment of such fine the court may imprison such person in the county jail of said Ottawa County, not, however, to exceed 25 days; for the third offense by a fine not exceeding \$100 and costs of prosecution, and in default of the payment of such fine the court may imprison such person in the county jail of Ottawa County, not, however, to exceed 90 days.

SEC. 24. A copy of this ordinance shall be furnished by the city clerk to every person who shall be granted a license as herein provided.

SEC. 25. All ordinances or parts of ordinances inconsistent with the provisions of this ordinance are hereby repealed.

SEC. 26. This ordinance shall take effect the 1st day of July, 1912.

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