PUBLIC HEALTH REPORTS

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MEDICAL INSPECTION OF ALIENS.

MAY 6, 1914.

Medical officers of the Public Health Service engaged in the medical examination of aliens:

SIRS: Your attention is called to the following diseases, in order that you may be reminded of their presence in aliens arriving from the countries wherein said diseases are reported prevalent:

1. *Kala-azar.* Reported in China, Egypt, Arabia, Tunis, Algiers, Greece, Malta, and generally in the region surrounding the Mediterranean Sea.

2. *Schistosoma Haematobium.* Blood fluke infection. Found in South Africa, Egypt, and Cuba.

3. A group of infections found especially in China and Japan:

(*a*) *Clonorchis.* Formerly Opisthorchis Sinensis, also called Japanese liver fluke. It is stated to be as common in some parts of Japan as hookworm is in Africa.

(*b*) *Paragonimous Westermanii.* Japanese and Chinese lung fluke. The disease caused by this parasite is extremely chronic and is accompanied by more or less serious hemorrhage and is often mistaken for consumption.

(*c*) *Diplogonoporus Grandis.* Japanese tape worm. Resembles Russian tape worm.

(*d*) *Schistosoma Japonicum.* Blood flukes of China and Japan.

Respectfully,

RUPERT BLUE,
Surgeon-General.

PLAGUE IN YOKOHAMA.

MEASURES EMPLOYED FOR ITS SUPPRESSION.

Surg. B. W. Brown, on duty at Yokohama, has forwarded the following translations of reports made by the health officer of Yokohama to the department of state for home affairs on the measures used in the eradication of plague in Yokohama.

The reports are of interest in showing the nature and thoroughness of the measures taken, and are here published because of their interest to health officers who may be called upon to combat plague in American cities:

Report to the Department of State for Home Affairs, November 26, 1913.

Since the outbreak of plague in the city of Yokohama every possible effort to stamp it out has been made, yet there have been already 21 cases of human plague reported and also 99 infected rats found, and it is a matter of great regret to have to state that the infection is now widely spread in various parts of the city. As regards the present condition, I have the honor to report as follows:

In addition to what might be termed the initial undertaking after the outbreak of the plague, which undertaking consisted in effecting the wholesale cleaning of, and rodent-eradication measures in, the Yokohama customs compound, both old and new premises, Nippon Yusen Kaisha godowns,[1] Yokohama Dock. Co. godowns, Shohin Soko (Storage) godowns, and their neighboring houses, and also in effecting, whenever a plague-stricken patient or an infected rat was found or reported, wholesale cleaning of and distribution of rat traps and poisons in the district so found or reported, on November 5 the distribution of rat poison was effected throughout the city, as well as in the rivers and canals within the city limits, and along the protected coast of the harbor.

On and subsequent to October 1, 20 additional assistants, subordinate to the commissioned medical officers, were appointed for the general prevention work, and further supplies of instruments required for bacteriological examination were furnished for the purpose of omitting or neglecting no means or efforts of discovering the infected, and 1,000 to 2,000 rats are now being daily examined. On November 1 over 4,800 yen were appropriated as a supplementary budget, and 10 more quarantine commissioners (6 physicians and 4 pharmacists) were appointed. Physicians and inspectors for the prevention work were detailed to each of the police stations in the city to make public-health examinations. In the meantime enforcement of rat-eradication measures was encouraged, while special police officers were detailed to supervise and guard all godowns and warehouses, and they were also detailed to guard, supervise, and inspect, particularly when disinfecting or burning garbage or rags, or when sweeping the dust or fallen rice.

In the town of Hodogaya, adjoining the city, the same measures as to post-mortem examinations and rat eradication have been enforced since November 14.

[1] Godowns are warehouses.

On November 15, in the premises formerly occupied by the Imperial Hygienic Laboratory of the Department of State for Home Affairs, a factory to prepare rat poisons, both of arsenic acid and of phosphorus, was established, and girls were employed to prepare the poisons under the personal supervision of the experts and assistants. With the output from the factory the rat-eradication work was started on November 20, and a thorough cleaning for about 6,000 houses located within the deeply infected zone—three sections in the police district of Tobe, Kanagawa, and Kotobuki were so recognized—was begun, and so far the poison distribution and thorough cleaning for 815 houses within the zone have been completed.

The stone walls alongside the beach and fronting the waterside of the godowns of the Yokohama Dock Co., Shohin Soko, and the Nippon Yusen Kaisha (Japan Mail Steamship Co.) were perfectly girdled—as if encircled by a sash—with galvanized-iron sheets to prevent rats from passing in or out. In the districts known as infected instructions were given to each of the sanitary guilds to have all the sewers and drains, through which rats are likely to pass, made rat-proof with iron-wire netting. Further, they were instructed to give frequent lectures concerning sanitary measures, and the quarantine officers, police surgeons, quarantine commissioners, and sometimes members of the prefecture or city academy of medicine were detailed to give lectures, and to encourage rat-catching. Popular lectures as to measures and methods for plague prevention and control were given.

As previously reported, the quarantine bureau was divided into eight sections, namely, secretariat, microscopic examination, rat eradication, disinfection, segregation (isolation), and special, and on November 20 the headquarters were established in the premises formerly occupied by the Imperial Hygienic Laboratory of the Department of State for Home Affairs, and therein all matters relating to plague prevention are attended to expeditiously and uniformly.

Plans were made to effect a thorough and systematic rat eradication in certain parts of the city, and in the houses belonging to people engaged in certain designated lines of business, comprising more than 20,000 houses, and wherever necessary to disinfect them.

On November 24 further appropriation of 12,000 yen[1] was made for the purpose, and in addition to the rat-poison distribution now being carried on by the Yokohama municipal authorities, plans have been made to distribute at least 50 poison balls at three different dates, before the end of March, 1914, to each of more than 80,000 houses in the city. These plans are now being actually carried on,

[1] A yen is the equivalent of about 50 cents.

and I desire to assure the department that no effort will be spared to accomplish a complete and effectual eradication of the disease.

For further information of the department, I have the honor to add that in the districts considered infected efforts will be made, as a future precaution, to form a rat-eradication league or union, and methods for the enforcement thereof are being investigated and are receiving the most careful attention.

Report to the Department of State for Home Affairs, December 27, 1913.

Concerning the measures taken in connection with plague prevention in the city of Yokohama in this prefecture, a report was made to the department in a dispatch dated November 26, and for the department's further information the following reports describing the enforcement of the previously announced plans and measures are respectfully submitted:

For the 18,982 houses within the police districts of Kanagawa, Tobe, Isezakicho, Kotobuki, and Kagacho, all of which lie within the localities designated in the prefectural ordinance, and which were recognized as being infected, distribution of the rat poisons was effected. As regards the rat extermination within the designated districts, work was begun on November 20, supervising officers were detailed to encourage rat catching in each of the five districts, and 11,040 houses were thoroughly cleaned up to December 25. The thorough cleaning work for the remaining 10,000 or more houses within the above-mentioned districts is expected to be completed within the 10 days from January 4, 1914.

As a work to be carried on by this prefecture, beginning on November 13, 1913, examination of the internal organs of the dead rats found in the designated districts is being made to ascertain the efficacy of the poisons distributed. The result of the examination has been exceedingly satisfactory, 45 per cent of the dead rats examined showing either arsenic or phosphorus in them.

For the lighters and sampans in the harbor (including those plying between Tokyo and Yokohama) a squad of the water police (consisting of two police sergeants, eight patrolmen, and two sailors) was organized to enforce rat extermination work and a thorough cleaning; and commencing on October 5, the quarantine boat (headquarters for the squad) was stationed at the landing in the Kanagawa Reclamation Ground. Availing of the opportunities afforded by the regular boat inspection, all the lighters or sampans were unloaded and brought to the quarantine boat, and each boat was thoroughly cleaned and freed from rats.

Since December 7, when some infected rats were reported found in Tokyo, the Nippon Yusen Kaisha boats returning from Tokyo were all—each and every time so returning—brought to the rear

(water front) of the Yokohama office of the company, and those fumigable by sulphur were so fumigated; others were sent to the quarantine boat above mentioned in Kanagawa and there disinfected. The work is being still so carried on.

To effect the rat extermination along the water front within the harbor, and along the banks of the rivers and canals within the city limits, distribution of rat-poisoned rice (boiled rice mixed with arsenic acid) was first made to the close-to-the-Customs'-compound and comparatively rat-thriving parts of the water front of the Nippon Yusen Kaisha's Yokohama office, new customs' compound, Shohin storage company's godowns, the Imperial Lighthouse Bureau, Okawa Canal entrance, along the embankment constructed for the railway to the custom house, Yokohama dock company, and its godowns, and then to other parts, the work was begun on October 9 and was finished on November 6.

In the places deemed advisable to distribute the poison more than once—such places as the Yokohama dock company and its godowns, Okawa canals, and the Lighthouse Bureau—the poison was distributed three times, while in Hayashicho, Shohin storage company's godowns, West Landing place, Yamashitacho Reclaimed Land, and its neighborhood, and also along the embankment on Nakamura Machi in the designated districts, it was distributed twice. These second and third distributions of the poison were completed on December 8.

The police inspectors and their subordinate officers attached to the Benten bridge and the Yato bridge police officers were detailed to personally visit all lighters and vessels, large or small, anchoring along the embankment of the port or of the canals within their respective jurisdictions, and instructions were given the masters to set (compulsory) rat or mouse traps. The names of the lighters and vessels so instructed were duly noted and numbered, and in the morning the officers again visited the ships to see the result, and if any rats or mice were caught they were immediately purchased by the officers.

For the large steamers and sailing vessels anchoring in the harbor special police officers were detailed, and as in the case of lighters, instructions as to setting the traps (compulsory) were given, and if any rats or mice were caught they were also purchased. For the two months ending November 30, 1913, the total number of rats so purchased was as follows:

Trapped and caught	4,504
Found dead	355
Total purchased	4,859

So far fortunately, however, none of these rats purchased was found infected.

As regards the distribution of the rat poison to about 80,000 houses in this city, as previously reported, the work was begun on November 13, 1913, and up to December 26, 1913, 3,281,054 pills (morsels) of the poison were distributed to 67,192 houses, and it is expected the distribution to the remaining houses will be completed by December 29.

Report to the Department of State for Home Affairs, January 27, 1914.

Concerning the measures taken in connection with plague prevention in the city of Yokohama in this prefecture, reports were made to the department in two dispatches, one dated November 26, 1913, numbered Ken Hatsu 12, and the other dated December 27, 1913, and numbered Ken Hatsu 71, and for the department's further information, the following reports describing the enforcement of the previously announced plans and measures, and other matters in connection with plague prevention, are herewith respectfully submitted:

1. As regards the thorough cleaning and rat eradication within the districts designated in the prefectural ordinance, the work was completed, as previously reported, for 11,040 houses, up to December 25, 1913, and the work has been continuously carried on. Three thousand eight hundred and twenty-seven houses in Tobe-Cho, Hanazaki-Cho, Noge Machi, Fukushima-Cho, Miyagawa-Cho, and Sakuragi-Cho—all without the district designated in the ordinance—were also included among those to be thoroughly cleaned and to be rid of rats and mice; and on January 21, 1914, the work for the remaining houses therein, 14,949 in all, was completed.

2. As regards the distribution of the rat poison, the work within the designated districts was completed, as previously reported, on December 15, 1913, while the first distribution throughout the city was begun on December 13, and up to December 26 more than 3,281,000 morsels of poison were distributed among 67,192 houses. On December 29 the first distribution throughout the city was completed. On January 9 the second similar distribution was begun, and it was finished on January 27.

Examination of the internal organs of the rats has been continued, and the result accomplished by the distribution of the poisons has been even more satisfactory than before. It has been decided, therefore, to make two more distributions throughout the city in February and before the end of the present fiscal year [March 31, 1914—Translator]. The expenditure in this connection will be borne by the municipality of Yokohama, while the manufacturing or preparation of the poisons will be undertaken by this prefecture. The total and effective eradication or extermination of rats is the aim.

3. As regards the lighters and sampans within the harbor, the work for a thorough cleaning and rat eradication, as outlined and reported in the previous report, has been continuously carried on.

But as reported to the department in a special dispatch, an infected rat was found, on January 11, on board the lighter *Ganyetsu Maru*, belonging to the Naikoku Express Co. (Ltd.), and as the germ appears to have come anew from abroad, even closer attention than before was given to, and the most rigid inspection and examination was made on and about, the vessel.

At the same time all other lighters and boats in the harbor were closely watched, and the most rigid inspection and examination thereof were held. At the same time the distribution of the rat poisons and sulphur fumigation of the vesels are both being carried on oftener than before; likewise the distribution of the poisoned rice morsels along the embankment is thoroughly and carefully being carried on.

4. On January 16 two infected rats were found in the premises of the Nisshin (Japan-China) Flour Mill Co. (Ltd.), Shin-Urashimacho, Nichome, Kanagawa, Yokohama. The officials of the company were immediately directed and instructed to thoroughly clean and disinfect all its godowns and to get rid of the rats and mice therein. As a result thereof 11 more infected rats were found as follows: January 23, 1; January 25, 2; January 26, 6; January 27, 2, which, including the 2 found on January 16, make a total of 13.

Upon investigation as to the source or origin of the infection, it is found that Urashima-Cho, wherein the Nisshin Flour Mill Co. (Ltd.), is situated, comprises a small part of the reclaimed land—and is practically a small isolated island, so to speak—which is surrounded by the sea more than 120 yards wide on each side, and it is believed impossible for the rats on the reclaimed land to intercommunicate with those elsewhere. Moreover the godowns in the district were fumigated by sulphur on December 27 last, when no infected rats were found.

It is believed, therefore, that the case is traceable to the same source as that of the lighter *No. 254*, above mentioned, which lighter carried the unloaded cargo from entering steamers for the bean cake manufacturing company, and the fertilizer company, both adjoining the Nisshin flour mill, and also as that of the plague patient No. 1 (of the year), Kaigan Dori Gochome; that is, the plague seems to have been imported anew from abroad.

The utmost precaution is directed toward the vessels in the harbor, therefore, and all the parties concerned have been duly warned and admonished to be on guard.

5. As a measure to follow those now enforced, the distribution of flea powder to the 80,000 houses to make them flea proof before the

warm spring season sets in is now receiving the most careful consideration and attention.

As stated above, every effort is being made, both on land and sea, to prevent the further extension of the plague.

BACTERIOLOGICAL STANDARDS FOR MILK.

During the last few years a large number of cities have been paying particular attention to the sanitary control of market milk. Many of these cities have adopted what are known as bacteriological standards and require that milk offered for sale shall not contain more than a given number of bacteria per cubic centimeter as shown by the ordinary methods for counting bacteria.

To ascertain the extent to which these bacteriological standards have been adopted by American cities and their nature, a circular was sent to the health department of each city in the United States having a population of 10,000 or over (1910 census), asking whether they had adopted a standard, and if so, its nature. The following is a tabular statement of the replies from the cities in which such standards had been adopted.

The population of the cities in the table estimated as of July 1, 1914, total 21,043,325.

Cities.	Estimated population July 1, 1914.	Maximum number bacteria allowed per c. c.	Standard applies to—	Standard applies during—
Albany, N. Y.	102,961	500,000	Cream only	Entire year.
Alexandria, Va.	15,670	500,000	Raw milk	Do.
Altoona, Pa.	56,553	10,000	Certified milk	Do.
		100,000	Registered milk	Do.
Ann Arbor, Mich.	14,948	50,000	Raw milk	Do.
Amsterdam, N. Y.	35,223	500,000	....do	Do.
Arlington, Mass.	12,287	500,000	....do	Do.
Asheville, N. C.	20,157	50,000	....do	Do.
Atlanta, Ga.	179,292	100,000	....do	Do.
Augusta, Ga.	49,451	500,000	....do	Do.
Baltimore, Md.	579,590	50,000	Pasteurized milk	Do.
		500,000	Raw milk	Do.
Battle Creek, Mich.	28,122	10,000	Special milk	Do.
		60,000	Raw milk	Oct. 1–June 30.
		100,000	....do	July 1–Sept. 30.
Berkeley, Cal.	52,105	10,000	Certified milk	Entire year.
		100,000	Inspected milk	Do.
Berlin, N. H.	13,013	500,000	Raw milk	Do.
Binghamton, N. Y.	52,191	300,000	....do	Do.
Birmingham, Ala.	166,154	15,000	Certified milk	Do.
		500,000	Raw milk	Do.
Bloomfield, N. J.	17,372	100,000	....do	Do.
Boston, Mass.	733,802	500,000	....do	Do.
Brockton, Mass.	64,043	500,000	....do	Do.
Brookline, Mass.	31,138	300,000	....do	Do.
Cairo, Ill.	15,392	300,000	....do	Do.
Cambridge, Mass.	110,357	500,000	....do	Do.
Canton, Ohio	57,426	500,000	....do	Do.
Champaign, Ill.	13,835	100,000	....do	Do.
Charleston, S. C.	60,121	500,000	....do	Do.
Charlotte, N. C.	37,951	25,000	Grade A, pasteurized	Do.
		50,000	Grade B, pasteurized	Do.
		100,000	Grade A, raw	Do.
		500,000	Grade B, raw	Mar. 1–Aug. 31.[1]

[1] 400,000 Sept. 1–Feb. 28, 1915; 300,000 Mar. 1–Aug. 31; 200,000 Sept. 1–Feb. 28, 1916; 100,000 thereafter.

Cities.	Estimated population July 1, 1914.	Maximum number bacteria allowed per c. c.	Standard applies to—	Standard applies during—
Chattanooga, Tenn	57,077	500,000	Raw milk	Entire year.
Chelsea, Mass	32,452	500,000	do	Do.
Chicago, Ill	2,393,325	100,000	Inspected milk	Oct. 1–May 1.
		150,000	do	May 2–Sept. 30.
		150,000	Inspected cream	Oct. 1–May 1.
		300,000	do	May 2–Sept. 30.
Clinton, Iowa	26,802	1,000,000	Raw milk	Entire year.
Clinton, Mass	13,075	100,000	do	Summer months.
		60,000	do	Winter months.
Columbia, S. C	33,506	150,000	do	Entire year.
Columbus, Ga	21,805	200,000	Raw milk and cream	Do.
Columbus, Ohio	204,567	500,000	Raw milk	Do.
Concord, N. H	22,291	500,000	Raw milk and cream	Do.
Covington, Ky	55,896	500,000	Raw milk	Do.
Dayton, Ohio	123,794	100,000	do	Do.
Duluth, Minn	89,331	500,000	do	Do.
East Orange, N. J	39,852	100,000	do	Do.
Elizabeth, N. J	82,411	10,000	Certified milk	Do.
		50,000	Pasteurized milk	Do.
		250,000	Inspected milk	Do.
Elmira, N. Y	37,816	300,000	Raw milk	Do.
El Paso, Tex	49,505	150,000	do	Do.
Elyria, Ohio	17,396	500,000	do	Do.
Erie, Pa	72,401	100,000	do	Do.
Evanston, Ill	27,724	50,000	Pasteurized milk	Oct. 1–May 1.
		100,000	do	May 2–Sept. 30.
		100,000	Pasteurized cream	Oct. 1–May 1.
		150,000	do	May 2–Sept. 30.
		100,000	Inspected milk	Oct. 1–May 1.
		150,000	do	May 2–Sept. 30.
		150,000	Inspected cream	Oct. 1–May 1.
		300,000	do	May 2–Sept. 30.
Everett, Mass	37,381	50,000	Raw milk and cream	Entire year.
Everett, Wash	32,048	100,000	Raw milk	Do.
Fall River, Mass	125,443	200,000	do	Do.
Findlay, Ohio	14,858	500,000	do	Do.
Fitchburg, Mass	40,507	300,000	do	Do.
Fresno, Cal	29,809	30,000	do	Nov. 1–Mar. 31.
		50,000	do	Apr. 1–Oct. 31.
Fort Wayne, Ind	72,322	500,000	do	Entire year.
Galveston, Tex	40,289	100,000	do	Do.
Gardner, Mass	16,353	500,000	do	Do.
Grand Rapids, Mich	123,227	200,000	do	Do.
Greenville, S. C	17,395	100,000	do	Do.
Hagerstown, Md	17,749	500,000	do	Do.
Hamilton, Ohio	38,814	500,000	do	Do.
Harrisburg, Pa	69,493	500,000	do	Oct. 1–Apr. 1.
		1,000,000	do	Apr. 1–Oct. 1.
Haverhill, Mass	47,071	100,000	Raw milk and cream	Entire year.
Holyoke, Mass	62,852	500,000	Raw milk	Do.
Indianapolis, Ind	259,413	500,000	do	Do.
Jacksonville, Fla	70,173	200,000	do	Do.
Jamestown, N. Y	34,878	500,000	do	Do.
Johnstown, Pa	64,642	500,000	do	Do.
		1,500,000	Cream	Do.
		300,000	Raw milk	Do.
Kansas City, Kans	94,271	300,000	do	Do.
Kansas City, Mo	281,911	100,000	do	Do.
Kearny, N. J	21,967	100,000	do	Do.
Lancaster, Pa	49,685	50,000	do	Do.
Lansing, Mich	37,512	100,000	do	Do.
Lawrence, Mass	95,834	100,000	do	Do.
Lexington, Ky	38,819	100,000	do	Do.
Lima, Ohio	33,904	500,000	do	Do.
Lincoln, Nebr	45,643	100,000	do	Do.
		500,000	Cream	Do.
Little Rock, Ark	53,811	10,000	Pasteurized milk	Do.
		20,000	Certified milk	Do.
		400,000	Raw milk	Do.
Long Beach, Cal	24,437	100,000	do	Do.
Long Branch, N. J	14,719	50,000	Pasteurized milk	Do.
		100,000	Raw milk, Grade A	Do.
		300,000	Raw milk, Grade B	Do.
		600,000	Raw milk, Grade C	Do.
Los Angeles, Cal	438,914	500,000	Raw milk	Do.
Lowell, Mass	111,004	500,000	do	Do.
Lynchburg, Va	31,830	50,000	Pasturized milk	Do.
		500,000	Raw milk	Do.
Lynn, Mass	98,207	500,000	do	Do.
Macon, Ga	41,992	100,000	do	November–April.
		200,000	do	April–November.
		200,000	Sweet cream	November–April.
		500,000	do	April–November.

Cities.	Estimated population July 1, 1914.	Maximum number bacteria allowed per c. c.	Standard applies to—	Standard applies during—
Madison, Wis.	29,469	500,000	Raw milk	Entire year.
Malden, Mass.	48,979	500,000	do	Do.
Mansfield, Ohio	22,100	500,000	do	Do.
		1,500,000	Cream	Do.
Marquette, Mich.	11,971	500,000	Raw milk	Do.
		800,000	Cream	Do.
Medford, Mass.	25,240	500,000	Raw milk and cream	Do.
Melrose, Mass.	16,887	500,000	Raw milk	Do.
Milwaukee, Wis.	408,683	250,000	do	Do.
Minneapolis, Minn.	333,472	500,000	do	Do.
Mobile, Ala.	55,573	100,000	do	Do.
Montclair, N. J.	24,782	10,000	Pasteurized milk	Do.
		100,000	Raw milk	Do.
Montgomery, Ala.	41,777	500,000	do	Do.
Mount Vernon, N. Y.	35,047	100,000	do	Do.
Nashville, Tenn.	114,899	200,000	do	Do.
Newark, N. J.	389,106	10,000	Certified milk	Do.
		30,000	Guaranteed milk	Do.
		50,000	Pasteurized milk	Do.
		100,000	Inspected milk	Do.
New Bedford, Mass.	111,230	500,000	Raw milk	Do.
New Brunswick, N. J.	24,827	500,000	do	Do.
Newburyport, Mass.	15,147	100,000	do	Do.
New Haven, Conn.	144,505	100,000	do	Winter season.
		500,000	do	Summer season.
Newport, R. I.	59,154	300,000	do	Entire year.
New York, N. Y.	5,333,539	50,000	Pasteurized milk, Grade A	Do.
		60,000	Raw milk, Grade A	Do.
		100,000	Pasteurized milk, Grade B	Do.
North Yakima, Wash.	18,737	200,000	Raw milk	Do.
Norwalk, Conn.	26,033	30,000	Grade A milk	Do.
		50,000	Pasteurized milk	Do.
		200,000	Grade B	Do.
Norwood, Ohio	20,320	500,000	Raw milk	Do.
Oakland, Cal.	183,002	75,000	do	Oct. 1–Mar. 31.
		100,000	do	Apr. 1–Sept. 30.
Ogden, Utah	29,528	500,000	do	Entire year.
Orange, N. J.	31,968	100,000	do	Do.
Oshkosh, Wis.	35,097	250,000	do	Do.
Paducah, Ky.	24,170	500,000	do	Do.
Parkersburg, W. Va.	19,719	100,000	do	Do.
Peoria, Ill.	70,006	100,000	do	Oct. 1–May 1.
		150,000	do	May 1–Oct. 1.
Perth Amboy, N. J.	38,265	10,000	Pasteurized milk	Entire year.
		300,000	Raw milk	Do.
Pittsburgh, Pa.	564,878	500,000	do	Do.
Plainfield, N. J.	22,755	150,000	do	Do.
Portland, Me.	62,161	500,000	do	Do.
Portland, Oreg.	260,601	100,000	Pasteurized milk	Do.
		200,000	Raw milk	Do.
Rockford, Ill.	52,337	50,000	Pasteurized milk	Do.
		250,000	Raw milk	Do.
		500,000	Cream	Do.
Sacramento, Cal.	62,717	100,000	Raw milk	Do.
Salem, Mass.	46,994	500,000	do	Do.
Salt Lake City, Utah	109,530	15,000	Class A milk	Do.
		50,000	Pasteurized milk	Do.
		80,000	Class B milk	Do.
		250,000	Class C milk	Do.
San Diego, Cal.	48,900	50,000	Pasteurized milk	Do.
San Francisco, Cal.	448,502	10,000	Certified milk	Do.
		100,000	Inspected milk	Do.
Savannah, Ga.	67,917	100,000	Raw milk	Nov. 1–Apr. 1.
		300,000	do	Apr. 1–Nov. 1.
Schenectady, N. Y.	90,503	500,000	do	Entire year.
Seattle, Wash.	313,029	400,000	do	Do.
Shreveport, La.	32,906	100,000	do	Do.
Somerville, Mass.	83,881	500,000	do	Do.
Southbridge, Mass.	13,685	500,000	do	Do.
Spartanburg, S. C.	20,125	100,000	do	Winter.
		150,000	do	Summer.
Stamford, Conn.	33,095	10,000	Certified milk	Entire year.
		50,000	Pasteurized milk	Do.
		1,000,000	Raw milk	Do.
St. Joseph, Mo.	82,712	50,000	Pasteurized milk	Do.
		300,000	Raw milk	Do.
St. Louis, Mo.	734,667	50,000	Pasteurized milk	Do.
St. Paul, Minn.	236,766	500,000	Raw milk	Do.
Syracuse, N. Y.	149,353	10,000	Certified milk	Do.
		50,000	Inspected milk	Do.
		250,000	Market milk	Do.

Cities.	Estimated population July 1, 1914.	Maximum number bacteria allowed per c. c.	Standard applies to—	Standard applies during—
Tacoma, Wash.	103,418	200,000	Raw milk	Entire year.
Tampa, Fla.	49,156	20,000	Certified milk	Do.
		500,000	Raw milk	Do.
Toledo, Ohio	184,126	500,000	do	Do.
Trenton, N. J.	106,831	100,000	do	Do.
Troy, N. Y.	77,560	500,000	do	Do.
Waltham, Mass.	29,688	300,000	do	Do.
Waterbury, Conn.	82,517	300,000	do	Do.
Waterloo, Iowa	32,703	1,000,000	do	Do.
Westfield, Mass.	17,635	500,000	do	Do.
Wheeling, W. Va.	42,817	100,000	do	Do.
Winthrop, Mass.	11,866	300,000	do	Do.
Worcester, Mass.	157,732	500,000	do	Do.
Yonkers, N. Y.	93,383	500,000	do	Do.
Youngstown, Ohio	93,341	500,000	do	Do.
Zanesville, Ohio	29,949	500,000	do	Do.

RAILROAD WATER SUPPLIES IN MINNESOTA.

By R. H. MULLIN, Director, H. A. WHITTAKER, Assistant Director, and B. M. MOHLER, Chemist, Laboratory Division of the Minnesota State Board of Health.

On January 25, 1913, the Secretary of the Treasury, under authority of an act of Congress approved February 15, 1893, promulgated the following regulation regarding the water and ice furnished to passengers by common carriers in interstate traffic:

AMENDMENT TO INTERSTATE QUARANTINE REGULATIONS.

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

"Paragraph 15. Water provided by common carriers on cars, vessels, or vehicles operated in interstate traffic for the use of passengers shall be furnished under the following conditions:

"(*a*) Water shall be certified by the State or municipal health authority within whose jurisdiction it is obtained as incapable of conveying disease: *Provided*, That water in regard to the safety of which a reasonable doubt exists may be used if the same has been treated in such manner as to render it incapable of conveying disease, and the fact of such treatment is certified by the aforesaid health officer."

This regulation was brought to the attention of the secretary and executive officer of the Minnesota State Board of Health and considered at the April meeting of the board. It was then decided that in order to have a uniformity in results and to have the work done by trained observers, a survey of such water supplies should be undertaken by the Minnesota State Board of Health and reported to the Surgeon General of the United States Public Health Service to enable the railroads to conform with the regulation. Further it was decided to extend the scope of the work to include not only interstate traffic, but also intrastate traffic, in this way adding a further protection to the citizens of this State, who may be engaged in travel solely within its boundaries. This work was assigned by the board to the laboratory division. The field work was undertaken by H. A. Whittaker, and the analytical examinations were made by him and B. M. Mohler. All drawings in this report were made by the engineering division.

In order to conserve time and expense in traveling, circular letters were written to every railroad operating in Minnesota calling their attention to the regulation and to the fact that the State board of health was about to undertake the work for them. Each railroad was asked to submit a list of the localities from which water was taken for drinking purposes on its particular trains. With few exceptions, the railroads willingly cooperated in this work and promptly furnished the desired information. As soon as all the replies were obtained, the different localities were listed and divided into districts

in order that the greatest number of places could be visited in any one district with the smallest amount of travel. Owing to a State law the board was unable to accept transportation for its representative during these investigations, which had been offered by several of the railroad companies, so that the entire expense, not alone for mileage traveled during the investigation, but for the shipment of the field equipment and all other expenses, has been carried by this board.

From the replies received from the railroad companies, 66 localities were placed upon the list as requiring investigation. However, while the investigation was in progress, it became apparent that in 6 instances erroneous information had been supplied, thereby eliminating the necessity of investigating these localities. The 60 remaining localities are listed below, and in addition there is shown at each locality what particular railroad or railroads obtain their water supplies at that point. It will be noted that in this list the cities of Minneapolis and St. Paul are omitted. This omission is intentional, inasmuch as both cities have trained men and municipal laboratories at their disposal and should be competent to pass upon the suitability of the supplies within their city limits. The water of the city of Minneapolis is treated by filtration and subsequent hypochlorite treatment and has received numerous intermittent checks in this laboratory, in addition to continuous daily checks carried out in laboratories maintained by the city of Minneapolis.

TABLE 1.

No.	Locality.	Railroad.	No.	Locality.	Railroad.
1	Albert Lea	C., R. I. & P.	30	Mitchell	D., M. & N.
2	Barnesville	G. N.	31	Montevideo	C., M. & St. P.
3	Bemidji	Do.	32	Morris	G. N.; N. P.
4	Biwabik	D. & I. R.	33	Mountain Iron	D., M. & N.
5	Brainerd	N. P.	34	New Ulm	C. & N. W.
6	Breckenridge	Do.	35	Northfield	C., M. & St. P.
7	Browns Valley	G. N.	36	Ortonville	Do.
8	Chatfield	C. & N. W.	37	Pipestone	C., St. P. M. & O.
9	Cloquet	D. & N. E.	38	Plainview	C. & N. W.
10	Coleraine	D., M. & N.	39	Pokegama Springs	N. P.
11	Crookston	G. N.	40	Rainy Junction	D., M. & N.
12	Currie	C., St. P., M. & O.	41	Redby	M. R.; L. & M.
13	Deer River	M. & R. R.	42	Redwood Falls	C. & N. W.
14	Duluth	C. N.; C., St. P., M. & O.; D. & I. R.; D., M. & N.; G. N.; M., St. P. & S. Ste. M.; N. P.	43	Rochester	C. G. W.; C. & N. W.
			44	Rush City	N. P.
			45	St. James	C., St. P., M. & O.
			46	Sanborn	C. & N. W.
15	East Grand Forks	N. P.	47	Sandstone	G. N.
16	Ellsworth	C., R. I. & P.	48	Sleepy Eye	C. & N. W.
17	Elmore	C., St. P., M. & O.	49	Staples	N. P.
18	Ely	D. & I. R.	50	Stillwater	C., St. P., M. & O.
19	Eveleth	Do.	51	Tracy	C. & N. W.
20	Eyota	C. & N. W.	52	Two Harbors	D. & I. R.
21	Glencoe	C., M. & St. P.	53	Vesta	C. & N. W.
22	Glenwood	M., St. P. & S. Ste. M.	54	Virginia	C. N.; D., M. & N.; G. N.
23	Grand Rapids	G. N.			
24	Hayfield	C. G. W.	55	White Bear	N. P.
25	Hull Rust Yards	D., M. & N.	56	Willmar	G. N.
26	Jasper	C., R. I. & P.	57	Winona	C. & N. W.
27	Knife River	D. & N. M.	58	Worthington	C., St. P., M. & O.; C., R. I. & P.
28	Little Falls	N. P.			
29	Mankato	C. & N. W.; C., St. P., M. & O.	59	Wyoming	N. P.
			60	Zumbrota	C. & N. W.

Method of Conducting the Investigations.

In conducting this series of investigations it was decided to follow the regular routine methods which have always been in operation in the laboratory division of the State board of health with regard to the proper investigation of drinking-water supplies. It has been the custom of the State board of health in its routine work on water supplies to insist that the investigation shall be composed of two distinct parts—(1) a field investigation; (2) an analytical investigation. These investigations are undertaken by members of the laboratory staff, whose duties are confined largely to this work. By having one observer wholly responsible for each investigation it is possible to obtain a proper correlation between the field and analytical data, thereby insuring greater accuracy in the final results.

Experience has shown that the sooner analytical examinations are begun after the collection of samples the more accurate will be the final determinations. This is especially true of the work on the bacteriological side, on account of the alteration in the bacterial population of a water which spends indefinite lengths of time in transit, when shipped to a laboratory for examination, during which it is subject to varying conditions. For this reason a field outfit for the collection of bacteriological samples of water has been devised. This outfit has undergone a process of evolution until finally one very satisfactory for the purpose has been obtained. A complete description of the final outfit has not as yet been published, although various modifications which have been used during the last 10 years have been described from time to time.[1]

The outfit as used at present (fig. 1) is made of ½-inch basswood, the front and back being three-ply cross laminated to prevent warping. The front opens on strap hinges at the bottom, providing, when open, a fairly satisfactory bench for laboratory purposes. The cover has a carrying handle such as is ordinarily supplied by trunk manufacturers. It opens on strap hinges at the back and carries in front a hinged hasp which fits over a staple and can be securely fastened with a padlock. The free edges are protected with chain irons. The corners and edges are further protected with iron trunk corners. The case is stained inside and out with a simple oak stain. The inside of the case is divided into compartments of a size adapted to the contents which they are intended to hold, as shown in the perspective, figure 2. Detailed drawings giving the exact dimensions are shown in figures 3 and 4. The case packed for shipment is shown in figure 5. In the lower left-hand compartment is placed a Barthel alcohol lamp, inverted over which is a copper

[1] Journal of Infectious Diseases, Supplement No. 1, May, 1905, pp. 304–324. U. S. Dept. of Agriculture, Bureau of Plant Industry, Bulletin No. 154, 1909, pp. 18.

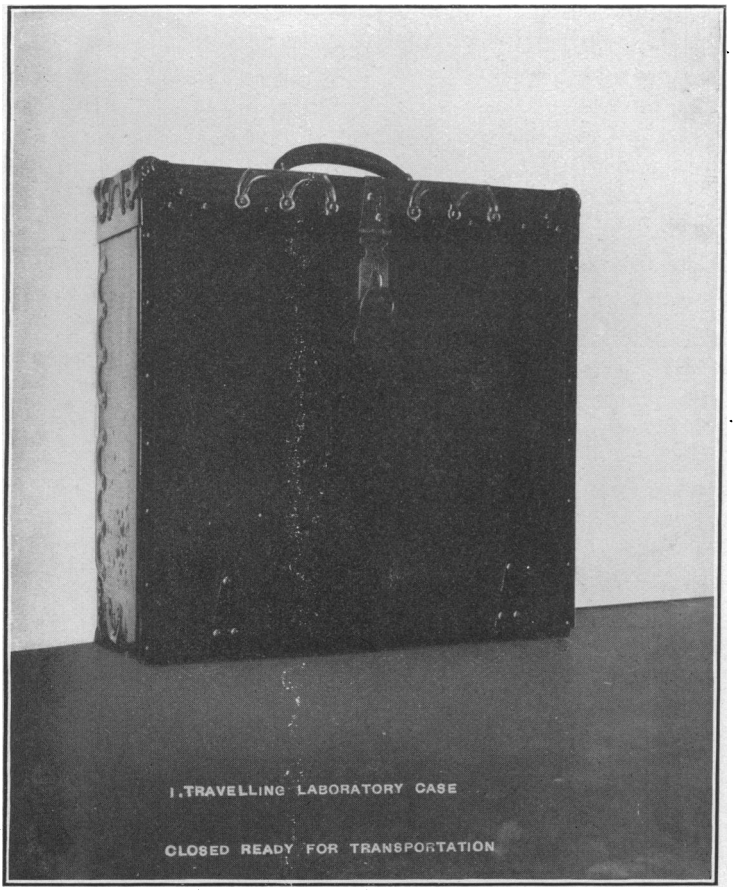

1. TRAVELLING LABORATORY CASE
CLOSED READY FOR TRANSPORTATION

FIG. 1.

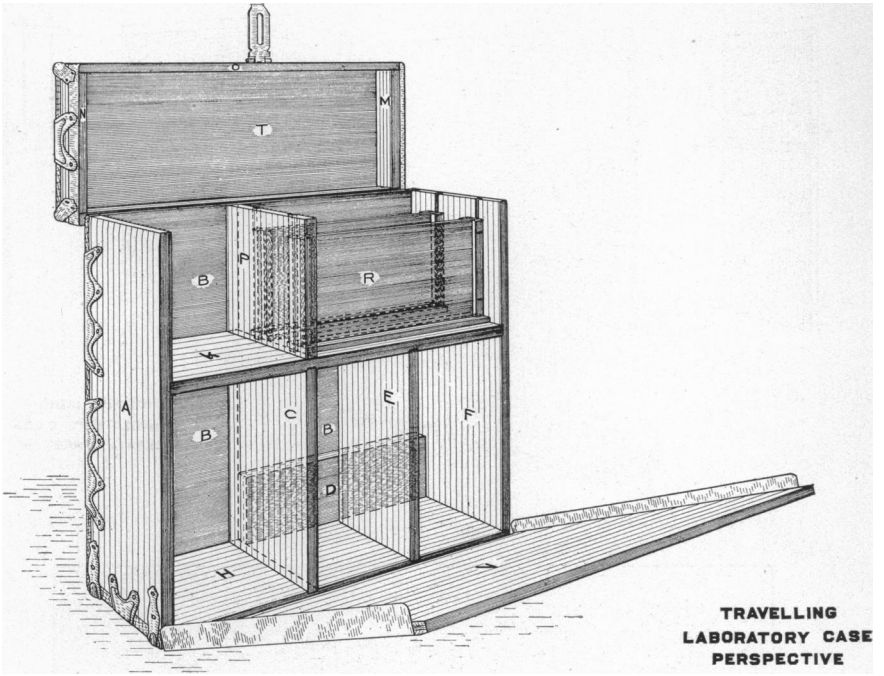

T
M
N
B
P
R
A
B
C
B
E
F
D
H
V
TRAVELLING
LABORATORY CASE
PERSPECTIVE

FIG. 2.

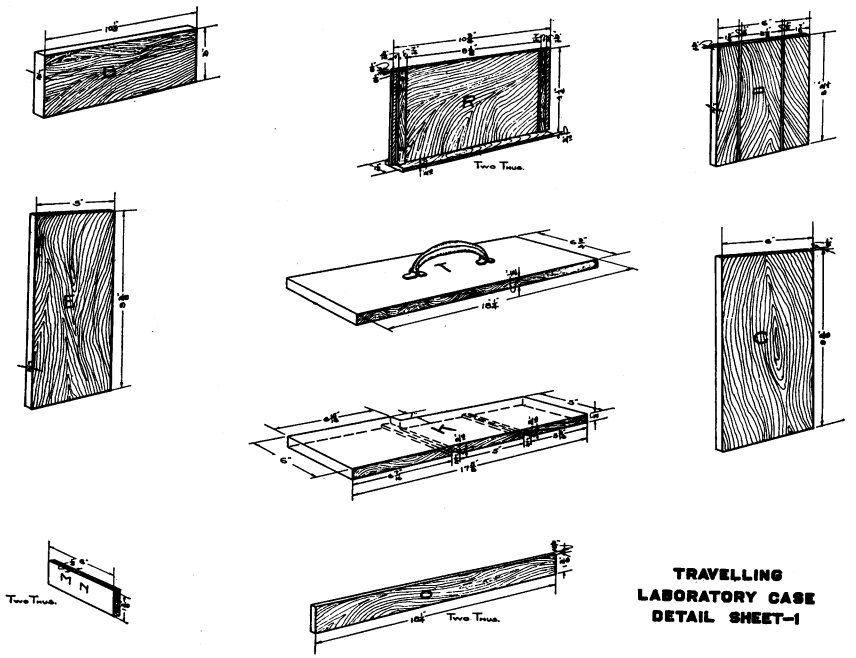

Two True.
TRAVELLING
LABORATORY CASE
DETAIL SHEET-1

FIG. 3

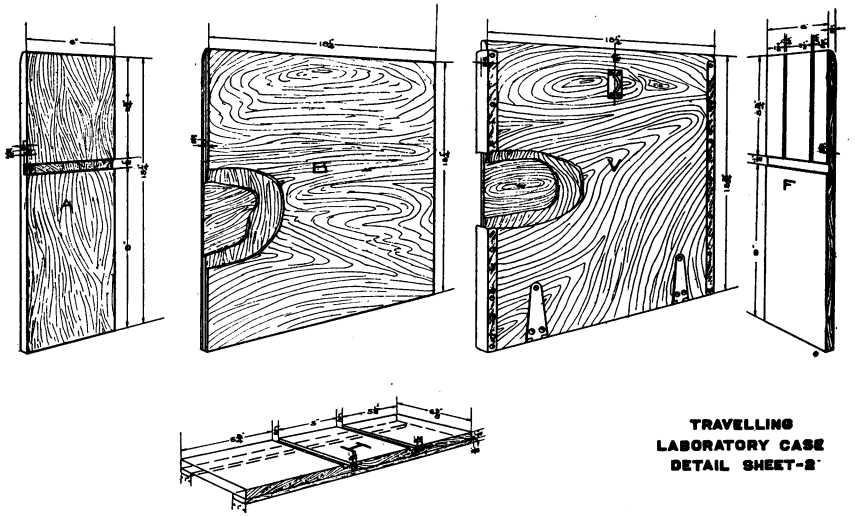

TRAVELLING
LABORATORY CASE
DETAIL SHEET-2

FIG. 4.


6. TRAVELLING LABORATORY CASE
OPEN READY FOR WORK

FIG. 5.

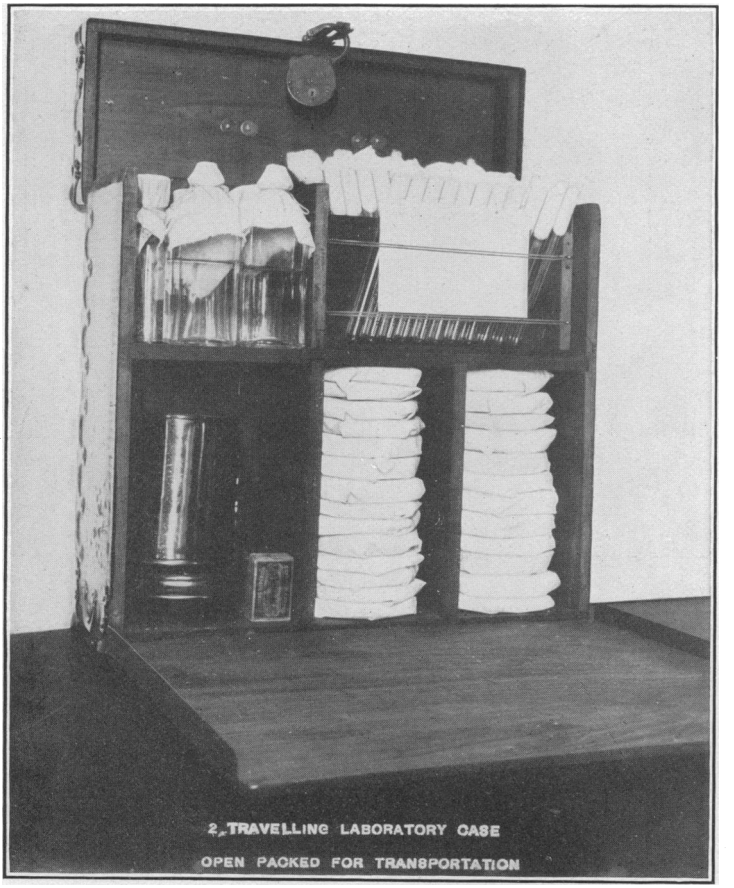

2 TRAVELLING LABORATORY CASE
OPEN PACKED FOR TRANSPORTATION

FIG. 6.

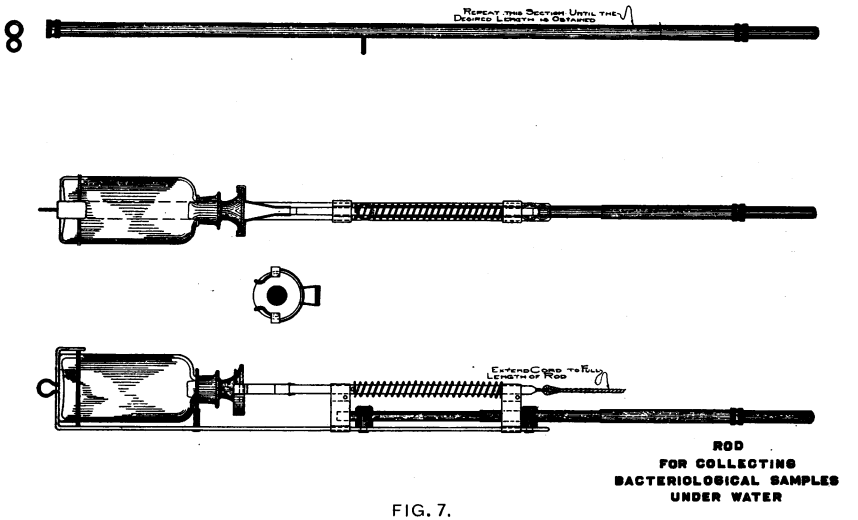

8
Repeat This Section Until the Desired Length is Obtained
Extend Cord to Full Length of Rod
ROD
FOR COLLECTING
BACTERIOLOGICAL SAMPLES
UNDER WATER

FIG. 7.

dish 4 inches in diameter and 5 inches high, used for boiling the water when liquefying the agar. This dish, when in use, is held over the lamp by means of a tripod, as shown in figure 6. An additional supply of alcohol in an 8-ounce bottle may be placed in this compartment. The contents are held securely by being packed with towels. The other two lower compartments carry each 11 Petri dishes of the porous-top variety, each capsule being separately wrapped in filter paper to prevent breakage in transit.

In the upper left-hand compartment are placed six 4-ounce XX ware ground-glass-stoppered sampling bottles (these are graduated to show 100 cubic centimeters capacity), and two dilution water bottles of 6-ounce capacity, rubber-stoppered. All of these bottles are previously sterilized after being capped with cotton, which is securely fastened around the neck by a string. The upper right-hand compartment holds two test-tube racks held in position by being provided with a tongue fitting into a vertical lateral groove. Each rack will carry 24 test tubes, which are held in position by rubber bands stretched between two projecting screws. One rack holds the agar for plating and the other sterile test tubes for dilution, when required. Behind this compartment is a sixth compartment for holding pipettes and thermometers. The thermometers are carried in the wooden tubes ordinarily supplied by the manufacturer. The pipettes are carried in brass tubes ¾ inch in diameter and 12½ inches long, provided with a tightly fitting cap. Four 1-cubic-centimeter pipettes delivering that amount and graduated in tenths, or one 10-cubic-centimeter pipette delivering that amount graduated in cubic centimeters and tenths, can be placed in each brass case. Data blanks are placed in the front test-tube rack. Matches, lead and wax pencils, shipping tags, labels, chalk, and extra rubber bands are placed in an envelope between the two test-tube racks. Figure 6 gives a more detailed idea of the contents of the case.

Field Investigations.

In a proper and accurate investigation of a given water supply, information derived from a field investigation is of the utmost importance if an exact sanitary determination of the value of the supply is to be obtained. It is obvious that an analytical examination will yield information concerning the supply applicable only to the particular time at which the sample is collected. A field investigation, on the other hand, will afford opportunities for determining the probability and possibility of pollution gaining entrance to the water supply, and will, therefore, enable an observer to give a more authoritative opinion concerning the safety of that water supply. It further affords an opportunity to make recommendations for the elimination of errors in the location, environment, construction, or

management of a given water supply, thereby affording the parties operating the supply an opportunity for putting it into a safe and sanitary condition. It is impossible to obtain such a result from a bacteriological examination alone. It is for these reasons that the Minnesota State board of health has always insisted upon a field examination made by a trained observer in its routine work on water supplies. To give an idea of the extent of the examination made in the field, the following outline is given, which is used as a basis for field investigations. By always following such an outline comparable information concerning different supplies may be obtained for statistical purposes. This outline is of such a character that it can be expanded at any point necessary to complete the description of any given water supply, and so may be made applicable to the conditions at any locality.

INSPECTION DATA ON WATER SUPPLIES.

1. Identification data:
   - A. Date of visit.
   - B. Ownership—private or public.
   - C. Location—
     - (1) Rural—Range, county, township, section, etc.
     - (2) Urban—City, town, village, street number, etc.
   - D. Size of site—Square miles, acres, or feet.
   - E. Use of site—Residence, manufacturing, farming, etc.
   - F. Sketch—
     - (1) Topography—Character of surface, drainage, etc.
     - (2) Location of—Water supply, buildings and factors affecting quality of water supply.
   - G. Photographs—Cases of unusual interest.
2. Local and structural water data:
   - A. Source of water supply—
     - (1) Wells—
       - (*a*) Location.
       - (*b*) Type.
       - (*c*) Depth.
       - (*d*) Strata.
       - (*e*) Casing.
       - (*f*) Well pit (casing and dimensions).
       - (*g*) Covering.
       - (*h*) Method of drawing water.
       - (*i*) Yield.
       - (*j*) Permanence of supply.
       - (*k*) Use.
       - (*l*) Abandoned wells.
       - (*m*) Sanitary aspect (environment and defects in structure and operation), etc.
     - (2) Cisterns—Same as (1) omitting (*f*) and substituting capacity for (*c*).
     - (3) Springs—Same as (1) omitting (*c*) and substituting spring pit for well pit in (*f*).

2. Local and structural water data—Continued.
   A. Source of water supply—Continued.
      (4) Rivers—
         (*a*) Name.
         (*b*) Source.
         (*c*) Size.
         (*d*) Character of basin—Topography, geology, populated, etc.
         (*e*) Contaminating factors—Sewage, trade wastes, etc.
         (*f*) Use of water.
         (*g*) Method of drawing water.
         (*h*) Local sanitary aspect.
      (5) Lakes same as (4).
      (6) Ponds same as (4).
   B. Storage of water supply—
      (1) Reservoir or tank—
         (*a*) Location.
         (*b*) Structure (wood, steel, concrete, etc.).
         (*c*) Capacity.
         (*d*) Elevation.
         (*e*) Covering.
         (*f*) Gravity or pressure distribution.
         (*g*) Sanitary aspect—
            When cleaned last and how.
            Decomposition of structure in contact with water.
            Character of sediment on bottom or sides.
   C. Distribution system of water supply.
      (1) Length and size of mains or piping system.
      (2) Number of hydrants and taps.
      (3) Sanitary aspect—
         (*a*) Relation to sewer system, cesspools, etc.
         (*b*) Sediment in pipes.
         (*c*) Previous or present infection of system.
         (*d*) Previous or present disinfection of system.
         (*e*) Other sources connected for fire protection.
   D. Consumption of water—
      (1) Average and maximum daily consumption.
      (2) Number of people supplied.
      (3) Per cent of total number.
   E. Sampling points—
      (1) Exact location.
      (2) Reasons for selecting these points.

Sampling Methods.

During the progress of this investigation two kinds of samples as a rule were collected on each water supply, one for a bacteriological and one for a physical and chemical examination. In obtaining a sample for bacteriological examination it is essential that a fair and representative sample should be obtained. It is customary, therefore, to collect samples from the source and from the distribution system as required. Under certain conditions it is necessary to collect samples from various depths, and for this purpose a sam-

pling rod was devised by Dr. H. W. Hill when assistant director of this laboratory. This rod based on the principle of a jointed fishing rod is made of one-half inch brass tubing cut in 2-foot lengths so as to fit an ordinary suitcase. Any number of lengths may be provided. In addition there is a special device of simple design for removing and replacing the glass stopper by means of a stout cord when the desired depth is reached (see fig. 7). In collecting samples for a bacteriological examination the 4-ounce, glass-stoppered bottle is used. In collecting samples for a physical and chemical examination a 1-gallon, glass-stoppered bottle is employed. For the latter a shipping case has been devised made of the same material as the bacteriological case, but holding two bottles only. Accompanying each sample there is a data blank of the following form:

LABORATORY DIVISION.

MINNESOTA STATE BOARD OF HEALTH.

WATER AND SEWAGE SAMPLE DATA CARD.

Spec. No.....
Material Collected.....
Town, Etc.....
Map Location.....
Specific Location.....
Source of Material.....
Collected by.....
Date and Hr. Coll.....
Temp.....1. Air.....2. Water.....
Kinds of Samples.....
Date and Hr. Plated .....
Plated by.....
Date and Hr. Shipped.....
Date and Hr. Rec'd.....

Map Location—Street, No., Etc., of house, pumping station, etc.
Specific Location—Name and place of well, faucet, etc., i. e., relative position to house, etc.
Material Collected—Nature of sample, i.e., water or sewage.
Source of material—City Supply, River, Private well, etc.

Analytical Investigations.

Bacteriological examination.—The bacteriological methods which are employed are those recommended by the committee on standard methods of water analysis of the American Public Health Association, with the following exceptions:

(1) Incubation was at room temperature and for four days from time of plating. If less than four days were established as a limit, plates would often be received in the laboratory so long after plating that the allowed incubation period would already have been exhausted in transit.

(2) The colon tests recommended alternatively as procedure A and procedure B by the committee on standard methods of water analysis of the American Public Health Association were both employed, the former on 100 cubic centimeter samples enriched

by quadruple strength broth and incubated; the latter on 1 cubic centimeter samples prepared in the field, which is also an enrichment method.[1]

(3) The preparation of media followed strictly the committee's recommendations except in the following details:

Artificial milk.—Owing to variability of ordinary milk the substitute described in Vol. II, No. 3, March, 1912, p. 162 of the American Journal of Public Health by H. A. Whittaker was used.

(4) The order of procedure in the adjustment of acidity in nutrient agar and gelatin media was slightly changed.[2]

(5) From all the dilutions made those plates were selected which yielded counts of not much much above 200, all that were higher being disregarded.

The work is commenced in the field by pouring plates, using 1 cubic centimeter and 0.1 cubic centimeter amounts, making dilutions where the field investigation indicates their necessity. At the same time 1 cubic centimeter of the water is mixed with from 1 to 2 cubic centimeters of molten agar at a temperature of 40° C. and allowed to cool. This is called an "agar shake" and provides for the protection and development of *B. coli* when present. The case is then repacked and shipped to the laboratory. There the agar shake is broken up with a twisted, sterilized, aluminum wire and emptied into a lactose broth fermentation tube for the isolation of *B. coli* in 1 cubic centimeter amounts where the presumptive test indicates its presence.

Physical and chemical examination.—All physical and chemical examinations are made following exactly the standard methods mentioned above.

Detailed sheets for the bacteriological, chemical, and physical, and a summary sheet are employed, the forms of each being shown here.

[1] Westbrook, F. F. Laboratory methods and devices. Journal of Infectious Diseases, supp. No. 1, pp. 322-323. 1905.

[2] Hill, H. W. Suggestions for changes in the schedules for making broth, gelatin, and agar, etc. Journal of Infectious Diseases, supp. No. 2, pp. 223-225. February, 1906.

Water and sewage bacterial detail sheet.

MINNESOTA STATE BOARD OF HEALTH.

LABORATORY DIVISION.

Details of bacterial examination of.....

Town, etc.....Specific location.....

Map location.....Source.....

Specimen No. ..... Date examined ..... Examined by.....

Bacterial count= per cc. Date counted.....

Amnt.	Amnt.	Amnt.	Amnt.	Count.	Medium.	Temp.	Time.

Bacillus coli = *in 1 cc.* *Bacillus coli* = *in 100 cc.*

Preliminary cultivation.

Medium.	Date.	Remarks.	Medium.	Date.	Remarks.
Agar Shake			Broth and Water		
Result			Result		
A. S. Ferm. Tube			B. Ferm. Tube		
Result			Result		
A. S. F. T. Plates			B. F. T. Plates		
Result			Result		
Replates			Replates		

Cultures isolated.

Pure Cultures.	A.	B.	C.	D.	E.	F.	G.	Pure Cultures.	1	2	3	4	5	6	7
L. L. Agar; Color								L. L. Agar; Color							
Morphology								Morphology							
Gas: Amt.								Gas: Amt							
Acid								Acid							
H:CO_2								H:CO_2							
Morphology								Morphology							
Motility								Motility							
S. F. Broth								S. F. Broth							
Lit. Milk								Lit. Milk							
Gelatin								Gelatin							
Potato								Potato							

Color+ = red.
Morph.+ = Bacillus, proper size and shape, without spores.
Motil.+ = slight motility, + + = marked, +++ = very rapid.
S. F. Broth+ = indol present.
Lit. Milk+ = red or decolorized, and coagulated.
Gelatin+ = no liquefaction.

Water and sewage chemical detail sheet.

MINNESOTA STATE BOARD OF HEALTH.

LABORATORY DIVISION.

Details of chemical examination of .....

Town, etc ..... Specific location .....

Map location ..... Source .....

Specimen number ..... Date examined ..... Examined by .....

Temp. Deg. C.	Turbidity.	Color.	Odor.		Tint and shade in percentages of—				
			20° C.	90° C.	Red.	Yellow.	Blue.	White.	Black.

TOTAL HARDNESS.

Amount taken= 200 c. c.
N/10 Soda Reagent=
N/20 H_2SO_4=

Parts ($CaCO_3$)=

ALKALINITY.

Amount taken= 25 c. c.
N/50 H_2SO_4=

Parts ($CaCO_3$)=

INCRUSTANTS.

Amount taken= 1000 c. c.
Total Hardness=
Alkalinity=

Parts=

FREE AMMONIA.

Amount taken= c. c.
1st 50 c. c.=
2nd 50 c. c.=
3rd 50 c. c.
..x..= Parts=

ALBUMINOID AMMONIA.

Amount taken= c. c.
1st 50 c. c.=
2nd 50 c. c.=
3rd 50 c. c.=
4th 50 c. c.=
5th 50 c. c.=
..x..= Parts=

ORGANIC NITROGEN.

Amount taken= c. c.
1st 50 c. c.=
2nd 50 c. c.=
3rd 50 c. c.=
4th 50 c. c.=

..x..= Parts=

TOTAL NITROGEN.

Amount taken= 1000 c. c.
N. as Org. Nit.=
N. as Free NH_3=
N. as Nitrites=
N. as Nitrates=

Parts=

TOTAL RESIDUE.

Amount taken= 100 c. c.
Wgt. Dish+Res.=
Wgt. Dish=
Wgt. Res.=

Parts=

FIXED RESIDUE.

Amount taken= 100 c. c.
Wgt. Dish+Res.=
(after ignition)
Wgt. Dish=
Wgt. Res.=
Parts=

LOSS ON IGNITION.

Amount taken= 100 c. c.
Wgt. Total Res.=
Wgt. Fixed Res.=

Wgt. Res.=
Parts=

SUSPENDED RESIDUE.

Amount taken= 100 c. c.
Wgt. Total Res.=
Wgt. Total Res.=
(filtered)
Wgt. Res.=
Parts=

DISSOLVED RESIDUE.

Amount taken= 100 c. c.
Wgt. Total Res.=
Wgt. Susp. Res.=
Wgt. Res.=

Parts=

Determination.	Parts.	c. c. taken.	Reagents.	c. c. taken.
Nitrites.			Sulphanilic Acid.	
			Amidonaphthalene.	
Nitrates.			Phenolsulphonic Acid.	
			Ammonium Hydrate.	
Chlorine.			Silver Nitrate.	
			Potassium Chromate.	
Iron.			Dilute HCL.	
			Pot. Sulphocyanide.	
Acidity.			N/50 Na_2CO_3.	
Dissolved Oxygen.			N/40 Sod. Thiosulph.	
			Capacity of bottle.	
Oxygen Consumed.			Sulphuric Acid.	
			Pot. Permang.	
			Amm. Oxalate.	
			Pot. Permang.	
Free Carbonic Acid.			N/22 Na_2CO_3.	
Calcium.				
Magnesium.				
Fats.				
Putrescibility.				

MINNESOTA STATE BOARD OF HEALTH.

LABORATORY DIVISION.

Results of analytical examination of.....

Town, etc..... Specific location.....

Map location..... Source.....

Specimen number						
Collected by						
Date collected						
Date reported						
BACTERIAL: exam. by						
Bacteria per c. c						
B. *Coli*						
PHYSICAL: exam. by						
Temperature						
Turbidity						
Color						
Tint and shade						
Odor..at 20°c: at 90°c						
CHEMICAL: exam. by						
(parts per million)						
Total hardness	W					
Alkalinity	W					
Incrustants	W					
Albuminoid ammonia	W					
Free ammonia	S. W					
Organic nitrogen 1	S. W					
Nitrites	S. W					
Nitrates	S. W					
Chlorine	S. W					
Total nitrogen	S					
Total residue	S					
Fixed residue	S					
Loss on ignition	S					
Suspended residue 2	S					
Dissolved residue	S					
Iron 5	S					
Acidity 4	S					
Dissolved oxygen 4	S					
Oxygen consumed	S					
Fats	S					
Putrescibility 4	S					
Free carbonic acid 4, 5						
Calcium 3						
Magnesium 3						

1. Except ground waters. 2. And turbid waters. 3. Softened waters only. 4. And highly polluted waters. 5. And ground waters.

Method of Reporting upon Investigation.

In the case of each water supply a formal report is prepared in which first the field data are carefully stated and discussed. The analytical data are given in the summary sheet devised for that purpose. These are followed by an interpretation of results in which the field and analytical data are co-related when possible or necessary, and the results adequately discussed. Finally, conclusions are drawn and recommendations made providing for the correction of any faults which may have been brought to light which would lead to the future protection of the water supply. Where it is apparent that the water supply in question is safe from a sanitary standpoint, a certificate to that effect is issued. Where the water supply in

question appears open to the possibility of pollution, or actually shows evidence of pollution, the form of certificate indicates that such is the case and the supply is not recommended as a drinking water. The form of certificate used differs slightly from that issued by the Surgeon General of the United States Public Health Service, inasmuch as it became apparent that alterations in the latter would be necessary before it could be utilized in this State. The form used here is as follows:

MINNESOTA STATE BOARD OF HEALTH.

Capitol Building, St. Paul.

CERTIFICATE OF EXAMINATION.

This is to certify that the supply at .....

from which the ..... is obtained for the use of passengers on the .....

.....

has been investigated by the Minnesota State Board of Health on .....

At the time of this investigation the field survey showed conditions which are .....

..... from a sanitary aspect; in the analytical examination indications of dangerous contamination were ..... found.

This ..... therefore can ..... be recommended for public consumption.

.....

Executive Officer.

Date, ...

It becomes necessary at once to arrive at certain standards for certification. This is a matter attended by difficulty as definite standards in this line of work are difficult to make on an absolutely numerical basis on account of the varying conditions which obtain. However, in this work it was decided that before a water supply could be recommended, it should be without objection from the following aspects: (*a*) Location, (*b*) environment, (*c*) construction. These are, of course, very general headings, and are stated not as an absolute basis but merely to give an idea of the means which are employed in arriving at a conclusion. Other factors in special cases may alter considerably the relative value of any one of these. On the bacteriological side, the absence of *B. coli* in 100 cubic centimeter amounts was required. Even in certain instances where *B. coli* was not found in 100 cubic centimeter amounts, if the count ran excessively high for water from such a source, recommendations for its use were not given. On account of the varying character of the supplies examined and the sources from which they come, it is impossible to lay down any general standards regarding the chemical or physical examinations. This is especially true as in many instances previous examinations of these water supplies had not been made so that it was impossible to make any comparisons regarding changes in the chemical or physical constituents of the water. Copies of these reports and certificates were sent, through the executive officer of the State board of health, to the party or parties operating the supply and to the railroads using that supply.

Discussion of the Results.

During the course of this investigation 61 water supplies were investigated at 60 of the localities visited, one locality having two different supplies which were used by different railway companies. The names of these localities and the railroads using the water supply at each have already been given. The following list will indicate the localities in this State at which water supplies were examined and reported to the respective railroads.

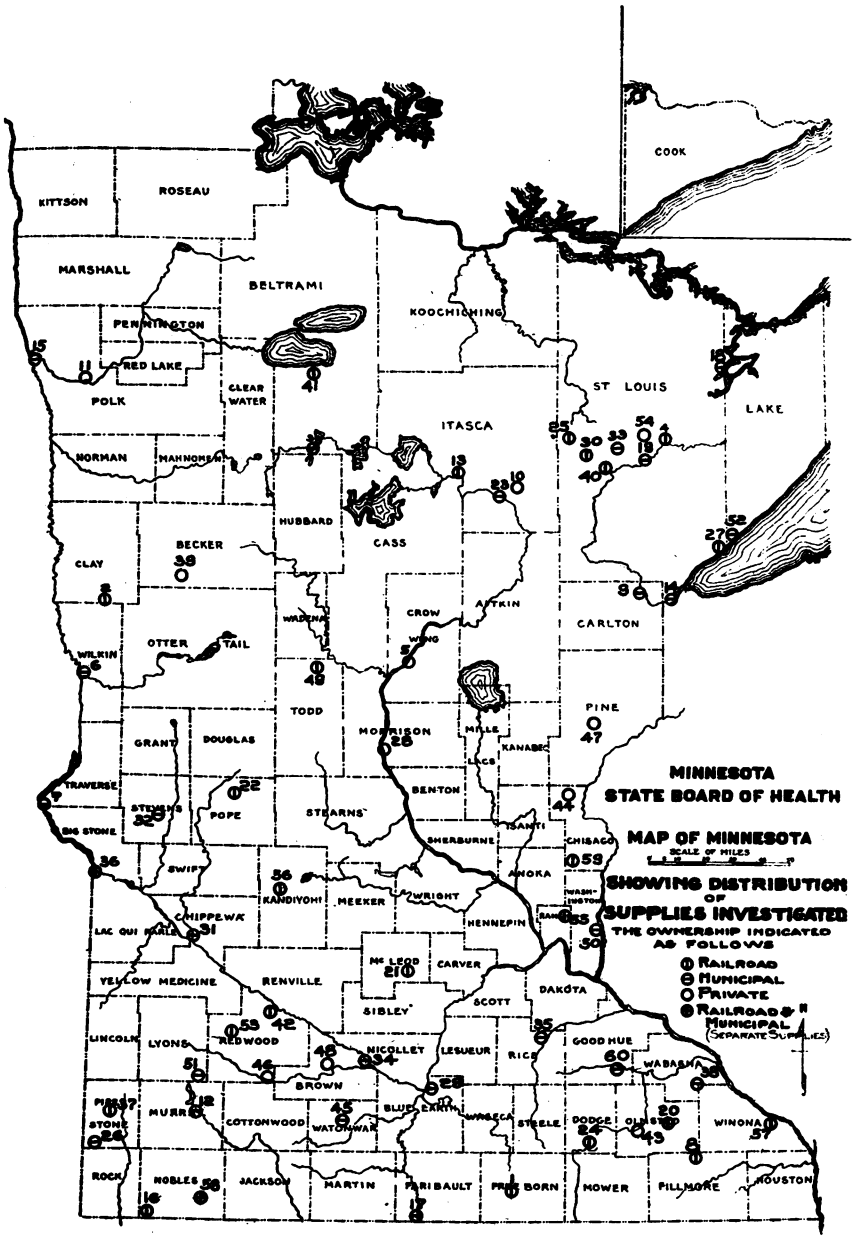
TABLE 2.

1. Canadian Northern—Duluth, Virginia.
2. Chicago, Great Western—Hayfield, Rochester.
3. Chicago, Milwaukee & St. Paul—Glencoe, Montevideo, Northfield, Ortonville.
4. Chicago & Northwestern—Chatfield, Eyota, Mankato, New Ulm, Plainview, Redwood Falls, Rochester, Sanborn, Sleepy Eye, Tracy, Vesta, Winona, Zumbrota.
5. Chicago, St. Paul, Minneapolis & Omaha—Currie, Duluth, Elmore, Mankato, Pipestone, St. James, Stillwater, Worthington.
6. Chicago, Rock Island & Pacific—Albert Lea, Ellsworth, Jasper, Worthington.
7. Duluth & Iron Range—Biwabik, Duluth, Ely, Eveleth, Two Harbors.
8. Duluth, Missabe & Northern—Coleraine, Duluth, Mitchell, Mountain Iron, Rainy Junction, Virginia.
9. Duluth & Northeastern—Cloquet.
10. Duluth & Northern Minnesota—Knife River.
11. Great Northern—Barnesville, Bemidji, Breckenridge, Browns Valley, Crookston, Duluth, Grand Rapids, Morris, Sandstone, Virginia, Willmar.
12. Minneapolis & Rainy River—Deer River.
13. Minneapolis, Red Lake & Manitoba—Redby.
14. Minneapolis, St. Paul & Sault Ste. Marie—Duluth, Glenwood.
15. Northern Pacific—Brainerd, Duluth, East Grand Forks, Little Falls, Morris, Pokegama Springs, Rush City, Staples, White Bear, Wyoming.
16. Minneapolis & St. Louis—No information could be obtained from this road regarding its drinking water supplies.

In order to give an idea of the geographical distribution of these localities map No. 1 has been prepared, indicating the position in the State of each locality and, in addition, the ownership of the particular supply.

It hardly seems advisable to insert the complete reports of the investigation at each locality. However, the results have been summarized and tabulated in Table 3. This table, in which the localities are arranged in alphabetical order, shows the date on which the investigation was made, the source of the supply, ownership of the supply, the sanitary condition of the supply, and there is also indicated whether a recommendation for the use of the water was given or refused. Under sanitary conditions of the supply the results obtained by field investigation and by analytical results are indicated merely. Where the field investigation is unsatisfactory, an attempt has been made to point out the nature of the principal objection by the numerals indicating, as required, an error either in the location, environment, or construction of the particular supply. In addition there is shown by the numerals, as required, whether or

not in certain of the surface water supplies any form of treatment or sanitary supervision is applied.



MAP NO. 1.

A summary of the bacteriological results on each supply investigated is given in Table 4 and the results of the physical and chemical analyses are given in Table 5. These tables require no further comment.

TABLE 3.—*General summary of investigation.*

Supply No.	Locality.	Date.	Source.	Ownership.	Sanitary condition of supply as shown by—		Recommendation for use.
					Field investigation.	Analytical results.	
1	Albert Lea	Nov. 8, 1913	Drilled well	Railroad	Satisfactory	Satisfactory	Given.
2	Barnesville	Aug. 12, 1913	Whiskey Creek [1]	do	Unsatisfactory [2 3]	Unsatisfactory	Refused.
3	Bemidji	June 12, 1913	Drilled wells	Municipal	Satisfactory	Satisfactory	Given.
4	Biwabik	June 5, 1913	Drilled well	Railroad	do	do	Do.
5	Brainerd	Aug. 11, 1913	Browns Spring	Private	do	do	Do.
6	Breckenridge	May 1, 1913	Ottertail River [4]	Municipal	do	do	Do.
7	Browns Valley	Oct. 4, 1913	Dug wells	do	Unsatisfactory [5 3]	Unsatisfactory	Refused.
8	Chatfield	Nov. 14, 1913	Drilled well	Railroad	do [3]	Satisfactory	Do.
9	Cloquet	July 22, 1913	Springs	Municipal	do [3]	Unsatisfactory	Do.
10	Coleraine	Nov. 6, 1912	Mine drifts	Private	do [3]	Satisfactory	Do.
11	Crookston	Aug. 13, 1913	Drilled wells and Red Lake River. [4]	do	Satisfactory	do	Given.
12	Currie	Nov. 3, 1913	Drilled well	Municipal	Unsatisfactory [3]	do	Refused.
13	Deer River	July 24, 1913	do	Railroad	Satisfactory	do	Given.
14	Duluth	July 3, 1913	Lake Superior [6]	Municipal	do	do	Do.
15	East Grand Forks	Aug. 13, 1913	Red Lake River [4]	do	Unsatisfactory [3]	Unsatisfactory	Refused.
16	Ellsworth	Nov. 5, 1913	Dug well	Railroad	do [5 3 2]	do	Do.
17	Elmore	Nov. 7, 1913	Drilled well	Municipal	do [3]	Satisfactory	Do.
18	Ely	June 5, 1913	Long Lake [7]	do	do [3]	Unsatisfactory	Do.
19	Eveleth	Nov. 12, 1912	St. Marys Lake [8]	do	Satisfactory	Satisfactory	Given.
20	Eyota	Nov. 14, 1913	Drilled well	Railroad	Unsatisfactory [3]	do	Refused.
21	Glencoe	Dec. 17, 1913	do	do	Satisfactory	do	Given.
22	Glenwood	Oct. 1, 1913	do	do	do	do	Do.
23	Grand Rapids	July 24, 1913	Hay Lake [1]	Municipal	Unsatisfactory [3 2]	Unsatisfactory	Refused.
24	Hayfield	Nov. 8, 1913	Drilled well	Railroad	Satisfactory	Satisfactory	Given.
25	Hull Rust Yards	June 7, 1913	Dug well	do	Unsatisfactory [3]	do	Refused.
26	Jasper	Nov. 6, 1913	Springs	Municipal	Unsatisfactory [5 3 2]	Unsatisfactory	Do.
27	Knife River	June 3, 1913	Drilled well	Railroad	Unsatisfactory [3]	Satisfactory	Do.
28	Little Falls	Jan. 19, 1914	Mississippi River	Private	Satisfactory	do	Given.
29	Mankato	Oct. 10, 1913	Drilled wells	Municipal	do	do	Do.
30	Mitchell	June 7, 1913	Drilled well	Railroad	Unsatisfactory [3]	do	Refused.
31	Montevideo	Oct. 6, 1913	Springs	Municipal	Satisfactory	do	Given.
32	Morris	Oct. 2, 1913	Drilled wells	do	do	do	Do.
33	Mountain Iron	June 7, 1913	Mine shaft and drill points	do	Unsatisfactory [3]	do	Refused.
34	New Ulm	Oct. 9, 1913	Drilled wells	do	Satisfactory	Unsatisfactory	Do.
35	Northfield	July 11, 1913	Drilled well	do	Unsatisfactory [3]	Satisfactory	Do.
36	Ortonville	Oct. 4, 1913	Dug well	Railroad	Satisfactory	Satisfactory	Given.
37	Pipestone	Nov. 6, 1913	Drilled well	do	do	do	Do.
38	Plainview	Nov. 14, 1913	Drilled wells	Municipal	Unsatisfactory [3]	do	Refused.
39	Pokegama Springs	Aug. 11, 1913	Spring	Private	Satisfactory	do	Given.

40	Rainy Junction	June 6, 1913	Dug well	Railroad	Unsatisfactory [5] [8]	[7]Unsatisfactory	Refused.
41	Redby	June 12, 1913	Drilled well	do	Unsatisfactory [2]	Satisfactory	Do.
42	Redwood Falls	Oct. 9, 1913	Dug well	do	Unsatisfactory [5] [2] [3]	Unsatisfactory	Do.
43	Rochester	Nov. 15, 1913	Dug wells	Private	Satisfactory	Satisfactory	Given.
44	Rush City	July 21, 1913	Dug well	do	Unsatisfactory [5] [2] [3]	Not examined	Refused.
45	St. James	Nov. 3, 1913	Drilled wells	Municipal	Unsatisfactory [2]	Satisfactory	Do.
46	Sanborn	Oct. 7, 1913	Dug well	Private	Unsatisfactory [5] [2] [3]	Unsatisfactory	Do.
47	Sandstone	July 26, 1913	Drilled well	do	Satisfactory	Satisfactory	Given.
48	Sleepy Eye	Oct. 8, 1913	Drilled wells	do	do	do	Do.
49	Staples	Aug. 11, 1913	Dower Lake,[1] drilled wells	Railroad	Unsatisfactory [5] [2] [3]	Unsatisfactory	Refused.
50	Stillwater	July 23, 1913	Spring and drilled well	Municipal	Satisfactory	Satisfactory	Given.
51	Tracy	Oct. 7, 1913	Drilled well	do	do	do	Do.
52	Two Harbors	June 3, 1913	Lake Superior [6]	do	do	do	Do.
53	Vesta	Oct. 8, 1913	Dug well	Railroad	Unsatisfactory [5] [2]	Unsatisfactory	Refused.
54	Virginia	June 6, 1913	Drilled wells	Private	Satisfactory	Satisfactory	Given.
55	White Bear	July 22, 1913	Drilled well	Railroad	Unsatisfactory [2]	do	Refused.
56	Willmar	Oct. 3, 1913	do	do	Satisfactory	do	Given.
57	Winona	Nov. 13, 1913	Driven well	do	do	do	Do.
58	Worthington	Nov. 4, 1913	Drilled wells	Municipal	do	do	Do.
58	Worthington	do	Dug well	Railroad	Unsatisfactory [5] [2] [3]	Unsatisfactory	Refused.
59	Wyoming	July 21, 1913	Driven well	do	Unsatisfactory [2]	Satisfactory	Do.
60	Zumbrota	Nov. 15, 1913	Drilled well	Municipal	do	do	Do.

[1] No form of purification.
[2] Construction faulty (may refer to well, purification plant, etc.).
[3] Environment unsatisfactory.
[4] Filtration and hypochlorite treatment.
[5] Location improper for type.
[6] Hypochlorite treatment only.
[7] Filtration only.
[8] Lake patroled by sanitary police.

TABLE 4.—*Bacteriological results on supplies investigated.*

Supply No.	Representing water collected from—	Bacteria per cc.	B. coli.	
			1 cc.	100 cc.
1	Drilled well	2	0	0
	Distribution system	0	0	0
2	Whiskey Creek	200	+	+
	Distribution system	170	+	+
3	Drilled well No. 1	145	0	0
	Drilled well No. 2	40	0	0
	Driven wells	575	0	0
	Distribution system	60	0	0
4	....do	50	0	0
5	Spring	5	0	0
6	Ottertail River	2,800	+	+
	Filter effluent	19	0	0
	....do	16	0	0
	Distribution system	160	0	0
7	Dug well	19	0	+
	Storage reservoir	30	0	+
	Distribution system	145	0	+
8	Drilled well	1,400	0	0
9	Springs	40	0	+
	Distribution system	35	0	+
	....do	35	0	+
10	Mine drifts Nos. 2 and 30	35	0	0
	Mine drift No. 9	80	0	0
	Storage sump	35	0	0
	Distribution system	80	0	0
	....do	35	0	0
11	Drilled well No. 1	8	0	0
	Drilled well No. 2	23	0	0
	Drilled well No. 3	7	0	0
	Red Lake River	240	+	+
	Effluent filter No. 1	70	0	0
	Effluent filter No. 2	10	0	0
12	Pressure tank	360	0	0
	Distribution system	170	0	0
13	Drilled well	1	0	0
14	Pumping station [1]	12	0	0
	Distribution system [1]	22	0	0
15	Red Lake River	750	+	+
	Sedimentation basin	150	0	+
	Effluent filter No. 1	950	0	+
	Effluent filter No. 2	3,500	0	+
	Distribution system	----	0	+
16	Dug well	450	0	+
17	Drilled well	1	0	0
	Distribution system	3	0	0
18	Long Lake	2,200	0	+
	Filter effluent	1,300	0	+
	Distribution system	1,700	0	+
	....do	1,600	0	+
19	St. Mary's Lake	3	0	0
	Distribution system	16	0	0
	....do	55	0	0
20	Drilled well	45	0	0
	Distribution system	53	0	0
21	Drilled well	50	0	0
	Distribution system	40	0	0
22	Drilled well	40	0	0
	Distribution system	8	0	0
23	Hay Lake	120	0	0
	Distribution system	125	0	0
	....do	160	0	0
24	Drilled well	6	0	0
	Distribution system	1	0	0
25	Dug well	850	0	0
	Distribution system	80	0	0
26	Springs	30	0	0
	Distribution system	60	0	+
27	Drilled well	450	0	0
28	Mississippi River	430	0	+
	Distribution system	335	0	0
	....do	9	0	0
	....do	9	0	0
29	Drilled wells	2	0	0
	Distribution system	3	0	0
30	Drilled well	8	0	0
	Distribution system	10	0	0
31	Springs	15	0	0

+=B. coli found. 0=B. coli not found.

[1] Average daily (except Sunday) examinations during April, 1913.

TABLE 4.—*Bacteriological results on supplies investigated*—Continued.

Supply No.	Representing water collected from—	Bacteria per cc.	B. coli. 1 cc.	B. coli. 100 cc.
32	Drilled wells	7	0	0
	Distribution system	3	0	0
	....do	5	0	0
33	Mine shaft and drill points	215	0	0
	Distribution system	300	0	0
34	Drilled well No. 1	3	0	0
	Drilled well No. 2	30	0	0
	Drilled well No. 3	125	0	+
	Distribution system	25	0	0
35	Drilled well	3	0	0
	Distribution system	3	0	0
	....do	2	0	0
36	Dug well	17	0	0
	Distribution system	11	0	0
37	Drilled well	50	0	0
	Distribution system	45	0	0
38	Drilled well No. 1	7	0	0
	Drilled well No. 2	44	0	0
	Distribution system	4	0	0
39	Springs	10	0	0
	Effluent filter No. 5	3	0	0
40	Dug well	1,350	0	+
41	Drilled well	140	0	0
	Distribution system	2,500	0	0
42	Dug well	97,000	+	+
43	Dug wells	5	0	0
	Distribution system	2	0	0
45	Drilled well No. 1	28	0	0
	Drilled well No. 2	80	0	+
	Distribution system	9	0	0
46	Dug well	1,150	0	0
47	Drilled well	7	0	0
	Distribution system	3	0	0
	....do	1	0	0
48	Drilled well	12	0	0
	Distribution system	1,700	+	+
49	Dower Lake	325	0	0
	Distribution system	375	0	+
50	Drilled well	1	0	0
	Spring	36	0	0
	Distribution system	83	0	0
	....do	12	0	0
	....do	21	0	0
51	....do	1	0	0
52	Lake Superior	35	+	+
	Distribution system	4	0	0
	....do	5	0	0
	....do	7	0	0
53	Dug well	250	0	+
54	Drilled wells	10	0	0
	Distribution system	15	0	0
	....do	50	0	0
55	Drilled well	120	0	0
	Distribution system	190	0	0
56	Drilled well	1	0	0
	Distribution system	185	0	0
57	Driven well	9	0	0
58	Drilled well No. 3	17	0	0
	Drilled well No. 4	14	0	0
	Drilled wells Nos. 3 and 4	6	0	0
	Distribution system	6	0	0
	Dug well	1,450	0	+
59	Driven well	160	0	0
60	Drilled well	13	0	0
	Distribution system	1	0	0
	....do	12	0	0

+ = B. coli found. 0 = B. coli not found.

TABLE 5.—*Physical and chemical results on supplies investigated.*

Supply No.	Representing water collected from—	Physical examination.			Total hardness.	Alkalinity.	Incrustants.	Chemical examination.					
		Turbidity.	Color.	Odor 20° C.				Albuminoid ammonia.	Free ammonia.	Nitrites.	Nitrates.	Chlorine.	Iron.
1	Drilled well	15	45	0	338	356	0.0	0.062	1.200	0.0	Trace.	3.5	1.40
2	Whiskey Creek	15	35	v 2	323	320	9.2	.222	.184	.003	Trace.	3.5	.0
3	Driven wells	20	34	d 1	189	204	.0	.060	.182	.0	0.0	3.5	1.40
4	Distribution system	0	15	e 1	186	220	.0	.022	.044	.0	.0	7.5	Trace.
5	Spring	8	138	v 1	106	96	10.0	.462	.072	.0	.0	3.5	.20
6	Ottertail River	60	55	e 3	171	200	.0	.364	.060	Trace.	.120	2.8	.40
7	Storage reservoir	5	10	d 1	593	428	165.0	.068	.320	Trace.	.40	6.5	.40
8	Drilled well	0	0	0	255	236	19.0	.120	.032	Trace.	3.20	4.5	1.80
9	Springs	0	30	0	301	80	221.0	.086	.028	Trace.	.0	2.5	.40
10	Distribution system	0	9	e 1	101	244	.0	.028	0.50	Trace.	.0	1.5	.0
11	Red Lake River	50	60	v 1	178	156	22.0	.350	.052	.0	.0	2.5	Trace.
12	Pressure tank	30	36	0	588	296	292.0	.152	2.220	Trace.	.28	4.5	3.00
13	Drilled well	0	10	s 1	404	284	120.0	.038	.680	.0	Trace.	5.5	Trace.
14	Lake Superior[1]	0	0	0	46	48	.0	.058	.004	.0	.08	2.0	.0
15	Red Lake River	40	50	v 1	185	164	21.0	.374	.048	.0	.0	7.5	.0
16	Dug well	5	11	e 1	600	416	184.0	.086	.036	.001	20.0013	6.0	.40
17	Drilled well	3	30	p 1	321	396	.0	.070	.694	.0	.080	5.5	.40
18	Long Lake	10	63	v 2	16	24	.0	.254	.052	Trace.	.0	1.8	.40
19	St. Marys Lake	2	24	m 2	11	20	.0	.196	.016	.0	.0	1.5	.0
20	Drilled well	0	0	0	228	196	32.0	.068	.016	Trace.	2.80	4.5	1.00
21	....do	10	40	e 1	185	342	.0	.076	1.340	.0	.0	9.5	1.60
22	....do	0	0	d 1	265	224	41.0	.012	.004	.003	1.60	10.0	.0
23	Hay Lake	0	10	v 1	346	128	218.0	.134	.050	.0	Trace.	3.5	.0
24	Drilled well	15	40	e 1	238	260	.0	.042	.548	.0	Trace.	3.5	1.4
25	Dug well	20	45	d 1	106	128	.0	.042	.104	.0	.0	2.5	.6
26	Springs	0	0	e 1	213	208	5.0	.040	.032	.0	2.40	11.0	.0
27	Drilled well	0	12	e 1	589	248	341.0	.154	.020	.005	25.60	218.0	.2
28	Mississippi River	2	70	v 2	148	168	.0	.244	.050	.0	.20	4.5	Trace.
	Distribution system	2	68	v 2	155	164	.0	.252	.060	.0	.20	3.5	Trace.
29	Distribution system[2]	5	20	d 1	375	312	63.0	.120	1.660	0.0	0.0	15.5	1.80
30	Drilled well	40	96	a 1	134	180	.0	.044	.032	.0	.08	6.5	5.00
31	Springs	10	34	a 1	510	348	162.0	.060	.024	.0	.0	4.5	1.40
32	Drilled wells	20	58	e 1	493	300	193.0	.032	.104	.0	.0	2.5	2.00
33	Mine shaft and drill points	3	15	e 1	175	164	11.0	.030	.018	Trace.	.16	15.0	.40
34	Drilled well	10	24	e 1	336	280	56.0	.104	2.700	Trace.	.0	129.0	.60
35	....do	15	30	e 1	309	328	.0	.048	.228	Trace.	.0	3.5	2.00
36	Dug well	40	34	e 1	573	408	165.0	.052	.152	.0	.12	7.0	1.00

37	Drilled well	3	9	e 1	393	200	193.0	.036	.024	.0	1.48	14.0	.0
38	....do	0	0	e 1	225	220	5.0	.074	.038	.0	.28	7.0	.40
40	Dug well	5	20	d 2	104	100	4.0	.086	.020	0.005	2.80	3.3	.80
41	Drilled well	0	34	0	266	340	.0	.062	.650	.0	.0	4.5	.20
42	Dug well	0	9	e 1	553	288	265.0	.068	.038	.0	1.20	36.0	.0
43	....do	0	10	0	243	224	19.0	.254	.166	0.001	3.20	7.0	.40
45	Drilled well No. 2	63	53	0	575	400	175.0	.182	2.510	0.010	.40	9.0	18.00
46	Dug well	0	Trace.	e 1	578	424	154.0	.078	.034	.0	2.80	95.0	Trace.
47	Drilled well	0	0	0	284	56	228.0	.020	.024	.0	Trace.	4.5	Trace.
48	....do	20	58	0	485	436	49.0	.094	1.840	.0	.0	4.5	4.00
50	....do	0	0	e 1	186	192	.0	.034	.014	.0	.80	7.0	.0
51	Distribution system	50	33	e 1	580	292	288.0	.112	.890	.0	Trace.	4.5	5.00
52	Lake Superior	0	5	0	24	40	.0	.100	.022	.0	0.20	2.5	.0
53	Dug well	0	0	e 1	263	156	107.0	.030	.032	.0	2.00	6.5	Trace.
54	Drilled wells	0	5	d 1	209	240	.0	.026	.036	.0	.0	4.5	.0
55	Drilled well	0	0	e 1	176	192	.0	.048	.368	0.003	1.60	9.0	Trace.
58	Drilled wells Nos. 3 and 4	40	30	0	575	316	259.0	.118	1.000	Trace.	.08	5.5	5.0
	Driven well	8	45	e 1	228	224	4.0	.022	.020	Trace.	.40	5.5	.0
59	....do	0	0	e 1	174	176	.0	.052	.020	.0	1.00	3.3	.0
60	Drilled well	5	25	e 1	253	252	1.0	.258	.132	Trace.	.0	2.5	.60

[1] Analysis of water made Aug. 11, 1910.

[2] Analysis of water made July 26, 1911.

From Table 3 it will be seen that a great variety of sources of water supply are used by the railroads in providing drinking water for the traveling public in Minnesota. Although the number of investigations made at this time is too small to afford any basis for drawing general conclusions, nevertheless some very interesting data become available. Rearranging the results and tabulating them according to the types of supply will bring plainly into view some of these interesting facts.

TABLE 6.—*Results according to types of supply.*

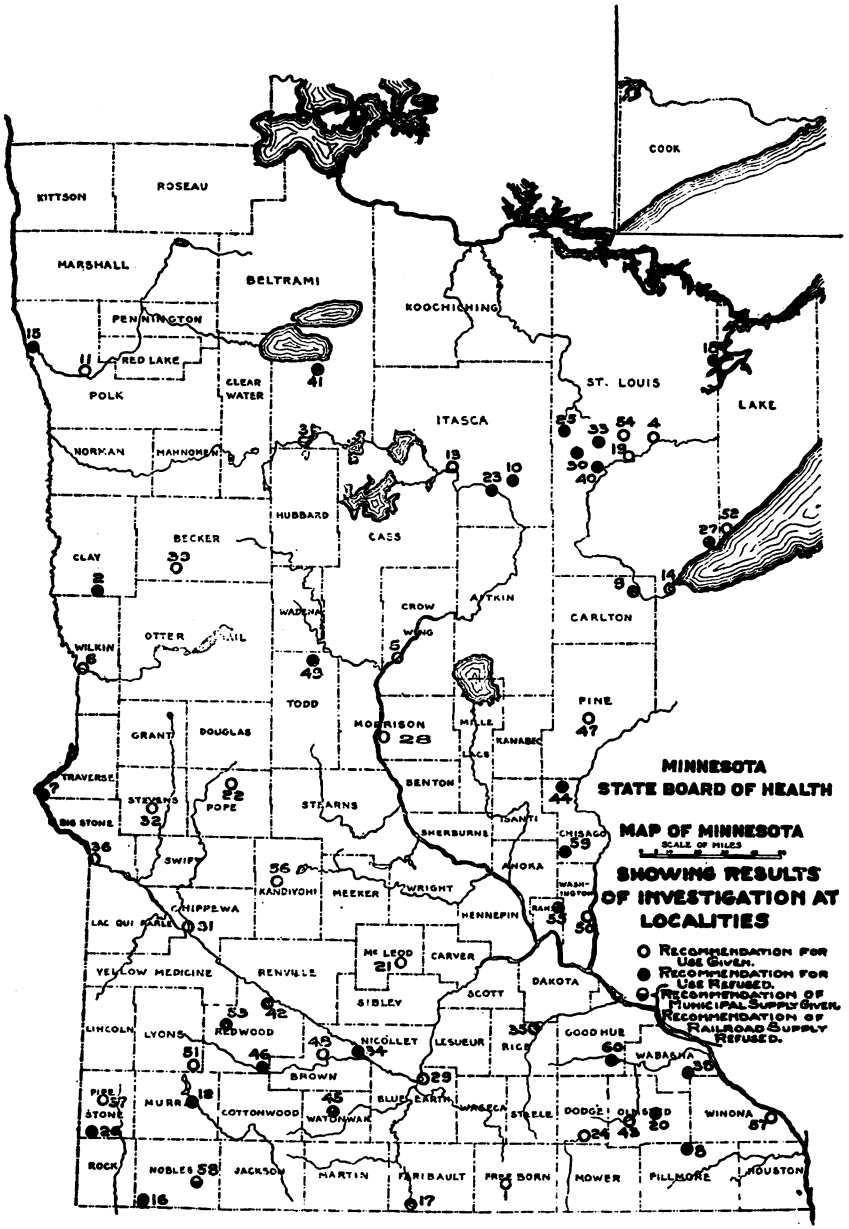
Type of supply.	Field investigation.				Analytical results.		Recommendation for use—	
	Number investigated.	Number satisfactory.	Number unsatisfactory.	Reason why unsatisfactory.	Number satisfactory.	Number unsatisfactory.	Given.	Refused.
Underground.								
Wells:								
Dug				*a*, *b*= 1				
				a, *b*, *c*= 5				
				c= 1				
	[1] 11	2	9	*a*, *c*= 2	3	7	2	9
Drilled	29	17	12	*c*=12	28	1	16	13
Driven	2	1	1	*c*= 1	2	0	1	1
				a, *b*, *c*= 1				
Springs	5	3	2	*c*= 1	3	2	3	2
Mine drifts	1	0	1	*c*= 1	0	1	0	1
Mine shafts and drill points	1	0	1	*c*= 1	0	1	0	1
	49	23	26	26	36	12	22	27
Surface.								
Lakes				*b*= 1				
	5	3	2	*c*= 1	3	2	3	2
Rivers	3	2	1	*c*= 1	2	1	2	1
Creek	1	0	1	*b*= 1	0	1	0	1
	9	5	4	4	5	4	5	4
Combined.								
Drilled wells and river	1	1	0	0	1	0	1	0
Drilled wells and lake	1	0	1	*a*, *b*, *c*= 1	0	1	0	1
Drilled wells and spring	1	1	0	0	1	0	1	0
	3	2	1	1	2	1	2	1
Total	61	30	31	31	43	17	29	32

[1] Analytical results were not obtained in one instance.

a. Location improper for type.
b. Environment unsatisfactory.
c. Construction faulty (may refer to well, purification plant, etc.).

Table 6 is a digest of Table 3, and indicates the number of each variety of supply that has been found and the results which were obtained by field and analytical investigation. There is indicated also whether or not recommendations for use were given. It becomes apparent that of the 61 supplies investigated, 49 were of the underground variety, 9 of the surface variety and 3 were a combination of surface and underground supplies. This is in conformity with the general usage throughout the State where for the most part underground water supplies are used. In certain localities the underground waters on account of their high mineral content or for other

reasons may be unfitted for drinking purposes, and it then becomes necessary to adopt some other form of supply. In a few localities where underground sources are used for water supply and where



MAP NO. 2.

the supply is to a certain extent limited, extra connections with the surface supply are installed for fire protection purposes. These are noted in the detailed reports of the localities in which they appear.

In 6 of the surface supplies investigated some form of purification or treatment is employed. These are indicated in Table 3 and are also noted in the detailed reports of the localities.

A most interesting fact is well brought out on examining Table 6 If analytical results alone were depended upon to determine the sanitary value of these water supplies, 43 would have been found satisfactory and 17 unsatisfactory. On the other hand, when the field investigation is also taken into consideration, only 29 are satisfactory while 32 are unsatisfactory. The geographical distribution of these is shown in map No. 2. As a matter of fact, in only one instance was a water supply condemned on account of analytical results alone, and in this particular case a complete field investigation was impossible on account of the construction of the well involved.

These figures bring prominently into view the large amount of importance that should be placed on the field investigation which should be undertaken by an individual specially trained in this line of work. As a result of taking both field and analytical findings into consideration 29 supplies were given and 32 were refused recommendation. It should be understood that in many cases refusal to recommend a supply was based not on finding actual evidences of pollution, but upon finding avenues through which pollution might gain entrance to the supply. These have been roughly divided into three classes: (*a*) Location faulty for the particular type involved; (*b*) environment unsatisfactory, showing that it would menace the present or future safety of the supply; (*c*) construction of the system faulty, showing means by which pollution could enter. This might refer to the improper construction of the apparatus already installed or to a lack of devices for adequately protecting or treating the supply. The frequency with which these general factors occur is shown in Table 7. An analysis of this table shows that faulty construction is the factor which most frequently occurred. This is very important from a sanitary viewpoint, inasmuch as defects can be readily remedied, thereby putting the supply in a sanitary condition—another evidence of the value of a field investigation.

TABLE 7.—*Summary of predominating unsatisfactory features of supplies.*

Predominating unsatisfactory features.	Feature appears alone.	In conjunction with others.	Total.
a.....	0	10	10
b.....	2	10	12
c.....	19	11	30

While the number of supplies on which recommendation was refused on account of the field investigation may be considered large, it should

be remembered that this investigation was very thorough for the purpose of bringing to light any possible means by which pollution might enter the system. A careful study shows without a doubt that many of these defects could be rectified easily and at a comparatively low cost, thereby converting an unsafe water supply into a safe one. Doubtless in many instances the defects were either unknown or their dangers not appreciated by the owners of the supply. Inasmuch as in each case the attention of the owner of the supply has been drawn to the defects which rendered that particular supply unfit for public consumption, by means of a full and complete statement of the facts in a formal report, together with recommendations whereby the supply may be corrected, it is confidently expected that these defects will be speedily remedied. Since many of these are municipal supplies, great benefit will be derived not only to the traveling public but also to the citizens of the municipality using the supply.

Summary.

1. The results of this investigation show that over 50 per cent (52.45 per cent) of the supplies investigated could not be recommended in their present state as drinking water supplies.

2. Of the 32 supplies on which recommendation was refused, 31 were pronounced unsafe by the field investigation and of these but 16 showed analytical evidence of pollution. In one instance only did the analytical results alone constitute the refusal for recommendation.

3. A careful and adequate field investigation in addition to the analytical determinations is required before a satisfactory opinion should be ventured concerning the safety of a given water supply.

4. The owners of practically all the condemned water supplies can convert these into safe supplies at a relatively small cost by following in detail the recommendations given each locality.

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.

Texas—Galveston.

Surg. Bahrenburg, of the Public Health Service, reported by telegraph that during the week ended May 8, 1914, 4 cases of smallpox had been notified in Galveston, Tex.

Washington—Bellingham.

Acting Asst. Surg. Markley, of the Public Health Service, reported that during the month of April, 1914, 28 cases of smallpox had been notified in Bellingham, Wash.

Miscellaneous State Reports.

Places.	Cases.	Deaths.
Arizona (Apr. 1-30):		
Counties—		
Mariposa	2	
Yuma	3	
Total	5	
Colorado (Apr. 1-30):		
Counties—		
Denver	9	
Jackson	5	
Larimer	1	
Las Animas	1	
Logan	5	
Montrose	1	
Otero	3	
Ouray	1	
Weld	13	
Yuma	2	
Total	41	
Idaho (Feb. 1-28):		
Counties—		
Ada	1	
Bannock	7	
Bingham	1	
Boise	21	
Bonneville	1	
Canyon	1	
Cassia	2	
Lewis	2	
Nez Perce	9	
Shoshone	21	
Twin Falls	1	
Total	67	
Idaho (Mar. 1-31):		
Counties—		
Ada	1	
Bannock	7	
Idaho (Mar. 1-31)—Continued.		
Counties—Continued.		
Bingham	2	
Blaine	1	
Bonneville	7	
Cassia	5	
Elmore	3	
Latah	4	
Lincoln	4	
Shoshone	2	
Total	36	
Montana (Mar. 1-31):		
Counties—		
Beaverhead	1	
Broadwater	1	
Blaine	2	
Carbon	7	
Cascade	14	
Chouteau	6	
Custer	2	
Dawson	6	
Deer Lodge	2	
Fergus	28	
Gallatin	9	
Granite	16	
Hill	3	
Lewis and Clar	1	
Meagher	1	
Missoula	1	
Park	1	
Rosebud	1	
Sanders	1	
Silver Bow	57	
Teton	3	
Valley	2	
Yellowstone	12	
Total	177	

SMALLPOX—Continued.

City Reports for Week Ended Apr. 25, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Austin, Tex	3	.....	Little Rock, Ark	1	.....
Baltimore, Md	8	.....	Los Angeles, Cal	1	.....
Buffalo, N. Y	1	.....	Lynchburg, Va	7	.....
Butte, Mont	5	.....	Massillon, Ohio	8	.....
Chicago, Ill	3	.....	Milwaukee, Wis	25	.....
Cincinnati, Ohio	4	.....	Muncie, Ind	1	.....
Coffeyville, Kans	2	.....	Nashville, Tenn	4	.....
Columbus, Ohio	2	.....	New Orleans, La	1	.....
Danville, Ill	1	.....	Portsmouth, Va	1	.....
Detroit, Mich	5	.....	Providence, R. I	1	.....
Duluth, Minn	3	.....	Racine, Wis	1	.....
Erie, Pa	1	.....	Rockford, Ill	1	.....
Evansville, Ind	16	.....	St. Joseph, Mo	2	.....
Kansas City, Kans	39	.....	St. Louis, Mo	5	.....
Kokomo, Ind	1	.....	Superior, Wis	3	.....
La Crosse, Wis	4	.....	Toledo, Ohio	3	.....
Lexington, Ky	1	.....	Zanesville, Ohio	2	.....

TYPHOID FEVER.

Idaho Report for February, 1914.

Places.	Number of new cases reported during month.
Idaho:	
Canyon County—	
Payette	3
Fremont County—	
Rexburg	1
Kootenai County—	
Harrison	2
Shoshone County	1
Wallace	1
Total	8

Idaho Report for March, 1914.

Places.	Number of new cases reported during month.
Idaho:	
Boise County—	
Garden Valley	1
Kootenai County—	
Harrison	2
Shoshone County	1
Total	4

TYPHOID FEVER—Continued.

City Reports for Week Ended Apr. 25, 1914.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Baltimore, Md	3		Nashville, Tenn	2	1
Braddock, Pa	1		Newark, N. J	2	
Chelsea, Mass	1		New Castle, Pa	1	
Chicago, Ill	11	1	New Orleans, La	2	
Cincinnati, Ohio	1		Niagara Falls, N. Y	1	
Cleveland, Ohio	3	1	Oakland, Cal	1	
Columbus, Ohio	1		Philadelphia, Pa	19	4
Dayton, Ohio	1		Passaic, N. J		1
Detroit, Mich		1	Pittsburgh, Pa	2	1
Dunkirk, N. Y	8		Plainfield, N. J	1	
Erie, Pa	1		Providence, R. I	1	
Fall River, Mass	4		Reading, Pa	1	
Grand Rapids, Mich	2		Richmond, Va	2	
Harrisburg, Pa		1	Saginaw, Mich	3	
Jersey City, N. J	2		St. Joseph, Mo		1
Kansas City, Kans	1	2	St. Louis, Mo	6	1
Lancaster, Pa	2		San Francisco, Cal	5	1
Los Angeles, Cal	8	1	South Bethlehem, Pa	2	
Lowell, Mass	2		Springfield, Mass	1	
Lynn, Mass	2		Toledo, Ohio	4	
McKeesport, Pa	1		Washington, D. C	1	
Manchester, N. H	4	1	Worcester, Mass	1	
Milwaukee, Wis	5	1	York, Pa	1	

CEREBROSPINAL MENINGITIS.

Idaho Report for February, 1914.

The State Board of Health of Idaho reported that during the month of February, 1914, 1 case of cerebrospinal meningitis had been notified at Pocatello, Bannock County, Idaho.

City Reports for Week Ended Apr. 25, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Aurora, Ill		1	New Orleans, La	2	2
Baltimore, Md		1	Philadelphia, Pa	1	
Boston, Mass	2	1	Pittsburgh, Pa	1	1
Butte, Mont	2	2	Pittsfield, Mass		2
Chicago, Ill	1		Richmond, Va		1
Cincinnati, Ohio		2	Rochester, N. Y		1
Cleveland, Ohio	4	3	St. Joseph, Mo	1	1
Columbus, Ohio	1		St. Louis, Mo	1	
Evansville, Ind	1	1	San Diego, Cal	1	1
Kansas City, Kans		1	San Francisco, Cal		1
Los Angeles, Cal	2	1	Toledo, Ohio	1	
Lowell, Mass	1		Washington, D. C	1	1
Newark, N. J	1		Yonkers, N. Y	1	1

POLIOMYELITIS (INFANTILE PARALYSIS.)

City Reports for Week Ended Apr. 25, 1914.

During the week ended April 25, 1914, poliomyelitis was notified by cities as follows: Boston, Mass., 1 death; Chicago, Ill., 3 cases; Springfield, Mass., 1 case with 1 death.

ERYSIPELAS.

City Reports for Week Ended Apr. 25, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Baltimore, Md.	1	.....	Philadelphia, Pa.	19	5
Boston, Mass.	.....	2	Pittsburgh, Pa.	3	.....
Bridgeport, Conn.	1	.....	Rochester, N. Y.	5	.....
Buffalo, N. Y.	3	1	St. Joseph, Mo.	1	.....
Chicago, Ill.	27	4	St. Louis, Mo.	10	1
Cincinnati, Ohio.	5	1	San Francisco, Cal.	3	.....
Cleveland, Ohio.	5	.....	Superior, Wis.	1	.....
Los Angeles, Cal.	4	.....	Wilkes-Barre, Pa.	1	.....
Newark, N. J.	.....	1	Wilkinsburg, Pa.	1	.....
New Orleans, La.	.....	1	Yonkers, N. Y.	2	.....

LEPROSY.

California—Los Angeles County.

Senior Surg. Brooks, of the Public Health Service, reported May 2, 1914, that 2 cases of leprosy had recently been notified at Los Angeles, Cal., and that both patients had been placed in the Los Angeles County Hospital. One of the cases occurred in a Mexican laborer, 31 years of age, married, who had been employed in Los Angeles, and had resided in California 6 years. The disease first appeared 3 years ago. The other case was in a Mexican woman, 45 years of age, a resident of a suburb of Los Angeles, had lived in California 4 years, and previously in Brooklyn, N. Y., 4 years. The disease appeared 2 years ago.

PELLAGRA.

During the week ended April 25, 1914, 1 death from pellagra was notified at New Orleans, La., and 1 at South Bend, Ind.

PLAGUE.

Washington—Seattle—Plague-Infected Rat.

Surg. Lloyd, of the Public Health Service, reported by telegraph, May 8, 1914, the finding of a plague-infected rat at Seattle.

PNEUMONIA.

City Reports for Week Ended Apr. 25, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Alameda, Cal.	1	1	Manchester, N. H.	3	3
Auburn, N. Y.	7	1	McKeesport, Pa.	2	.....
Beaver Falls, Pa.	1	.....	Nashville, Tenn.	.....	7
Binghamton, N. Y.	5	2	New Castle, Pa.	4	.....
Braddock, Pa.	6	.....	Newport, Ky.	3	3
Chicago, Ill.	209	119	Philadelphia, Pa.	45	101
Cleveland, Ohio.	21	11	Pittsburgh, Pa.	25	42
Columbus, Ind.	1	1	Reading, Pa.	6	8
Galesburg, Ill.	3	3	Rochester, N. Y.	9	13
Harrisburg, Pa.	1	2	San Francisco, Cal.	6	3
Kansas City, Kans.	8	13	Schenectady, N. Y.	5	3
Lancaster, Pa.	1	.....	South Bethlehem, Pa.	3	.....
Los Angeles, Cal.	12	8	York, Pa.	1	.....

TETANUS.

During the week ended April 25, 1914, 1 death from tetanus was notified at Philadelphia, Pa., 1 at New York, N. Y., and 1 at Yonkers, N. Y.

ROCKY MOUNTAIN SPOTTED FEVER.

Montana—Missoula.

Surg. Fricks, of the Public Health Service, reported that during the week ended May 2, 1914, 2 fatal cases of Rocky Mountain spotted fever had been notified in Missoula, Mont.

SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS.

Duluth, Minn.—Scarlet fever.

Acting Asst. Surg. Cheney, of the Public Health Service, reported by telegraph that during the week ended May 9, 1914, 15 cases of scarlet fever had been notified in Duluth, Minn.

Pittsburgh, Pa.—Scarlet fever.

Surg. Stoner, of the Public Health Service, reported by telegraph that during the week ended May 9, 1914, 81 cases of scarlet fever, with 3 deaths, had been notified in Pittsburgh, Pa., making a total of 3,329 cases, with 160 deaths, reported since August 1, 1913.

Idaho Reports for February and March, 1914.

The State Board of Health of Idaho reported that during the month of February, 1914, 30 cases of scarlet fever, 23 cases of measles, and 3 cases of diphtheria had been notified in the State of Idaho; and that during the month of March, 1914, 22 cases of scarlet fever, 35 cases of measles, and 7 cases of diphtheria had been notified.

City Reports for Week Ended Apr. 25, 1914.

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	214	7	1	25	.....	14	1	26	27
Boston, Mass	670,585	281	46	3	72	4	102	.....	42	21
Chicago, Ill	2,185,283	735	117	15	181	3	111	7	189	93
Cleveland, Ohio	560,663	171	34	.....	41	.....	13	1	37	16
Philadelphia, Pa	1,549,008	598	60	8	402	2	62	6	36	58
Pittsburg, Pa	533,905	180	21	3	29	1	91	3	50	9
St. Louis, Mo	687,029	246	55	2	160	5	39	1	35	25
From 300,000 to 500,000 inhabitants:										
Buffalo, N. Y	423,715	.....	11	2	35	1	20	.....	31	13
Cincinnati, Ohio	364,463	140	16	2	7	0	9	.....	40	16
Detroit, , Mich	465,766	163	33	3	.....	3	28	3	.....	6
Los Angeles, Cal	319,198	106	5	.....	10	1	18	.....	58	18
Milwaukee, Wis	373,857	131	26	6	69	.....	44	4	18	14
Newark, N. J	347,469	115	31	1	144	2	54	.....	25	12
New Orleans, La	339,075	141	16	3	45	.....	17	.....	28	16
San Francisco, Cal	416,912	127	8	.....	82	.....	7	.....	16	18
Washington, D. C	331,069	104	11	.....	13	.....	1	.....	25	17

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

City Reports for Week Ended Apr. 25, 1914—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 200,000 to 300,000 inhabitants:										
Jersey City, N. J.	267,779	74	8	1	24	.....	36	.....	28	9
Kansas City, Mo.	248,381	84	3	.....	15	1	7	1	2	10
Providence, R. I.	224,326	77	7	1	18	3	8	.....	6	5
Rochester, N. Y.	218,149	90	9	1	83	2	23	2	7	7
From 100,000 to 200,000 inhabitants:										
Bridgeport, Conn.	102,054	29	4	2	5	1	1	.....	1	.....
Cambridge, Mass.	104,839	31	1	1	35	.....	15	.....	6	8
Columbus, Ohio.	181,548	68	3	.....	96	.....	3	.....	8	5
Dayton, Ohio.	116,577	.....	3	.....	6	.....	5	.....	1	.....
Fall River, Mass.	119,295	.....	.....	.....	.....	.....	4	.....	5	3
Grand Rapids, Mich.	112,571	39	5	.....	24	.....	9	1	.....	3
Lowell, Mass.	106,294	40	1	.....	18	.....	.....	.....	1	1
Nashville, Tenn.	110,364	48	.....	.....	10	.....	.....	.....	5	6
Oakland, Cal.	150,174	28	3	.....	31	.....	3	1	4	2
Richmond, Va.	127,628	47	.....	.....	5	.....	1	.....	4	2
Toledo, Ohio.	168,497	68	1	.....	19	.....	.....	.....	.....	9
Worcester, Mass.	145,986	46	8	2	24	1	5	.....	8	3
From 50,000 to 100,000 inhabitants:										
Altoona, Pa.	52,127	20	1	.....	12	1	5	.....	.....	.....
Bayonne, N. J.	55,545	21	3	.....	8	1	1	.....	.....	1
Brockton, Mass.	56,878	15	2	.....	6	.....	9	.....	6	2
Camden, N. J.	94,538	.....	3	.....	19	.....	5	.....	6	.....
Duluth, Minn.	78,466	.....	.....	.....	3	.....	20	1	3	5
Erie, Pa.	66,525	25	2	.....	12	.....	2	.....	9	.....
Evansville, Ind.	69,647	27	3	.....	15	.....	3	.....	1	3
Harrisburg, Pa.	64,186	26	.....	.....	31	.....	1	.....	7	1
Hartford, Conn.	98,915	42	6	.....	7	.....	4	.....	3	.....
Hoboken, N. J.	70,324	.....	3	.....	15	.....	6	.....	15	.....
Johnstown, Pa.	55,482	29	14	.....	7	.....	4	.....	.....	1
Lynn, Mass.	89,336	29	3	1	1	.....	8	.....	5	2
Manchester, N. H.	70,063	27	1	.....	2	.....	8	.....	2	2
New Bedford, Mass.	96,652	35	.....	.....	.....	.....	6	.....	5	3
Passaic, N. J.	54,773	17	1	.....	7	.....	1	.....	6	2
Pawtucket, R. I.	51,622	.....	.....	.....	.....	.....	5	.....	.....	2
Portland, Me.	58,571	29	1	1	.....	.....	3	.....	.....	3
Reading, Pa.	96,071	38	1	.....	7	.....	14	.....	3	1
Saginaw, Mich.	50,510	22	.....	.....	.....	.....	4	.....	1	1
St. Joseph, Mo.	77,403	28	2	.....	2	.....	.....	.....	3	3
Schenectady, N. Y.	72,826	18	.....	.....	1	.....	6	.....	1	1
South Bend, Ind.	53,684	.....	2	.....	1	.....	4	.....	.....	2
Springfield, Ill.	51,678	13	1	1	.....	.....	.....	.....	.....	.....
Springfield, Mass.	88,926	32	1	.....	15	.....	4	.....	4	3
Trenton, N. J.	96,815	49	4	.....	.....	.....	18	4	1	.....
Wilkes-Barre, Pa.	67,105	29	4	1	98	1	10	1	1	1
Yonkers, N. Y.	79,803	26	7	.....	5	.....	7	.....	9	1
From 25,000 to 50,000 inhabitants:										
Atlantic City, N. J.	46,150	.....	.....	.....	5	.....	1	.....	2	.....
Auburn, N. Y.	34,668	11	.....	.....	19	.....	1	.....	.....	1
Aurora, Ill.	29,807	12	.....	.....	.....	.....	2	.....	.....	1
Austin, Tex.	29,860	10	1	.....	.....	.....	1	.....	.....	.....
Binghamton, N. Y.	48,443	17	.....	.....	75	1	2	.....	2	1
Brookline, Mass.	27,792	6	3	.....	5	.....	2	.....	1	.....
Butte, Mont.	39,165	22	.....	.....	8	.....	7	1	5	4
Chelsea, Mass.	32,452	13	3	1	6	.....	3	.....	2	3
Chicopee, Mass.	25,401	9	.....	.....	.....	.....	.....	.....	.....	.....
Danville, Ill.	27,871	8	.....	.....	3	.....	.....	.....	.....	.....
East Orange, N. J.	34,371	.....	.....	.....	36	.....	8	.....	6	2
Elmira, N. Y.	37,176	18	.....	.....	3	.....	.....	.....	2	1
Everett, Mass.	33,484	7	1	.....	2	.....	6	.....	1	.....
Fitchburg, Mass.	37,826	14	1	.....	2	.....	2	.....	1	.....
Haverhill, Mass.	44,115	13	1	.....	.....	.....	4	.....	2	.....
La Crosse, Wis.	30,417	11	2	.....	.....	.....	.....	.....	.....	2
Lancaster, Pa.	47,227	.....	.....	.....	.....	.....	2	.....	1	.....
Lexington, Ky.	35,099	17	2	.....	47	.....	1	.....	.....	3
Little Rock, Ark.	45,941	16	.....	.....	15	.....	.....	.....	.....	.....
Lynchburg, Va.	29,494	7	1	.....	6	.....	2	.....	2	1
Malden, Mass.	44,404	12	4	1	2	.....	8	.....	1	.....
McKeesport, Pa.	42,694	16	1	.....	.....	.....	1	.....	.....	2
Newcastle, Pa.	36,280	.....	2	.....	.....	.....	.....	.....	.....	.....
Newport, Ky.	30,309	14	1	.....	.....	.....	2	.....	3	3
Newport, R. I.	27,149	10	.....	.....	1	.....	.....	.....	2	.....

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

City Reports for Week Ended Apr. 25, 1914—Continued.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 25,000 to 50,000 inhabitants—Continued.										
Newton, Mass.	39,806	11			6		4		2	
Niagara Falls, N. Y.	30,445	14			1					1
Orange, N. J.	29,630	14			14		5		5	3
Pittsfield, Mass.	32,121	11	3	1			8		1	
Portsmouth, Va.	33,190	10			10		1			1
Racine, Wis.	38,002	13	1				5	1	3	
Roanoke, Va.	34,874	14			44		5		1	1
Rockford, Ill.	45,401	11	3			1	3			1
Sacramento, Cal.	44,696	15	2	1					7	2
San Diego, Cal.	39,578	5					2		4	4
South Omaha, Nebr.	26,259	5								
Superior, Wis.	40,384	15	3				6			
Taunton, Mass.	34,259	14	1		1		4			1
Waltham, Mass.	27,834	9	1		5					
West Hoboken, N. J.	35,403		3	1			2			
York, Pa.	44,750		3	2	1				1	1
Zanesville, Ohio.	28,026		1							
Less than 25,000 inhabitants:										
Alameda, Cal.	23,383	3	1		10					
Ann Arbor, Mich.	14,817	13	1		1		1		4	
Beaver Falls, Pa.	12,191		1				2			
Braddock, Pa.	19,357				6		2			
Cambridge, Ohio.	11,327		1		7					1
Clinton, Mass.	13,075	7					1			
Coffeyville, Kans.	12,687				7					
Concord, N. H.	21,497	6								
Cumberland, Md.	21,839	9			1		6			
Columbus, Ind.	8,813	2	2	1	2				1	
Dunkirk, N. Y.	17,221						3			1
Galesburg, Ill.	22,089	8								
Harrison, N. J.	14,498		1				3			
Kearny, N. J.	18,659	4			1		1		1	1
Kokomo, Ind.	17,010	3					4			
Marinette, Wis.	14,610	2					1			
Massillon, Ohio.	13,879	1	1				1			
Medford, Mass.	23,150	11	2				8		1	2
Melrose, Mass.	15,715	7			1				1	
Moline, Ill.	24,199	6								1
Montclair, N. J.	21,550	11	1		44		1		2	2
Morristown, N. J.	12,507	9	1		1		1			
Muncie, Iowa.	24,005	9	2				3			
Muscatine, Iowa.	16,178	1								
Nanticoke, Pa.	18,877	9	1		1					
Newburyport, Mass.	14,949	7	1							1
North Adams, Mass.	22,019	8								
Northampton, Mass.	19,431	4			23		2		2	1
Palmer, Mass.	8,610	2								
Plainfield, N. J.	20,550				20				2	1
Portsmouth, N. H.	11,269		1				4			
Pottstown, Pa.	15,599	6			1					1
Rutland, Vt.	13,546	3					2			
Saratoga Springs, N. Y.	12,693	6			1					
South Bethlehem, Pa.	19,973	5	2		25					
Steelton, Pa.	14,246	4				1			1	
Wilkinsburg, Pa.	18,924		1				12		2	
Woburn, Mass.	15,308	6								

FOREIGN REPORTS.

CHINA.

Cholera—Plague—Plague Rats—Hongkong.

During the week ended March 28, 1914, 11 cases of cholera with 7 deaths and 48 cases of plague with 32 deaths were notified in Hongkong.

During the same period 2,629 rats were examined at Hongkong for plague infection. Of this number 22 rats were found plague infected.

During the week ended May 6, 1914, 203 cases of plague were notified in Hongkong.

Epidemic Scarlet Fever—Chefoo.

During the two weeks ended April 4, 1914, 1,000 deaths from epidemic scarlet fever were notified at Chefoo.

Plague—Amoy and Vicinity.

During the week ended March 28, 1914, 3 cases of plague were notified at Amoy. On April 6, 1914, the disease was reported present at Amoy and Hwei-Ann, an inland town 30 miles distant from Amoy.

Plague Rats—Shanghai.

During the week ended April 4, 1914, 280 rats were examined at Shanghai for plague infection. Seven rats were found plague infected.

GIBRALTAR.

Quarantine Against Fedala, Morocco, on Account of Plague.

By order of the board of health of Gibraltar, issued April 8, 1914, vessels arriving from Fedala, Morocco, shall be admitted to free pratique at Gibraltar only when they have been 7 days out from Fedala, have been subjected to medical inspection, and shall have no case of sickness on board and no history of sickness occurring during the voyage. Articles capable of conveying infection shall not be brought on shore without being previously disinfected and no rags shall be admitted.

INDO-CHINA.

Communicable Diseases.

Communicable diseases have been notified in Indo-China as follows:

MONTH OF JANUARY, 1914.

Provinces.	Typhoid fever.		Smallpox.		Cholera.		Plague.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Annam	.....	.....	13	1	1	1	218	211
Cambodia	.....	.....	.....	.....	.....	.....	45	40
Cochin China	.....	.....	1	1	1	2	1	3
Kouang-Tcheou-Wan	.....	.....	.....	.....	.....	.....	5	5
Laos	.....	.....	46	7	.....	10	.....	.....
Tonquin	5	.....	100	7	.....	.....	.....	.....
Total	5	.....	160	16	2	13	269	259

During the same period there were notified 40 cases of dysentery (Annam, Cochin China, and Tonquin) 7 cases of measles (Annam, Cochin China, and Tonquin), and 14 cases of leprosy (Cambodia and Tonquin).

ITALY.

Measures Against Importation of Typhus—Naples.

In view of information indicating an extensive spread of typhus fever in the eastern ports of the Mediterranean, the health authorities at Naples have issued orders that all persons arriving at Naples from those ports with the intention of emigrating to the United States, or any other country, shall, instead of going to emigrant boarding places, be sent to the official detention house and be placed under observation for 12 days, their effects to be disinfected and their persons freed from vermin.

Typhus Fever—Leghorn.

During the week ended April 25, 1914, a fatal case of typhus fever was notified at Leghorn, Italy.

JAPAN.

Plague-Infected Rats—Hiogo.

During the period from January 1 to April 20, 1914, the finding of 55 plague-infected rats was reported at Hiogo, Japan.

Typhus Fever.

During the period from April 4 to 11, 1914, 262 cases of typhus fever were reported in Tokyo and 21 cases in Yokohama.

SIAM.

Quarantine Against Hongkong and Swatow.

Quarantine measures against arrivals from the ports of Hongkong and Swatow, China, were ordered into effect at Bangkok, Siam, March 14, 1914. Vessels arriving from those ports were required to remain at the quarantine station on the island of Koh Phra for inspection.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

Reports Received During Week Ended May 15, 1914.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Galle	Mar. 22-28	11		
China:				
Hongkong	do	11	7	
Dutch East Indies				Jan. 1-31: Cases, 91; deaths, 74.
Java—				
Pamanoekan	Jan. 18-24	1	1	
Samarang	Jan. 1-31	8	5	
Sumatra—				
Padang—				
Baros	Jan. 15-31	55	46	
Sorkam	Jan. 1-17	22	17	
India:				
Calcutta	Mar. 22-28		75	
Siam:				
Bangkok	Feb. 22-Mar. 21		53	

YELLOW FEVER.

Brazil:				
Bahia	Mar. 29-Apr. 4	2	2	

PLAGUE.

Brazil:				
Bahia	May 29-Apr. 4		2	
China:				
Amoy	Mar. 22-28	3		
Chao-Chowfu	Mar. 29-Apr. 4			Present.
Hongkong	Mar. 22-Apr. 4	139	86	Apr. 30-May 6: Cases, 203.
Hweian	Apr. 6			About 4 deaths daily per week. 30 miles from Amoy.
Egypt				Jan. 1-Apr. 16: Cases, 23; deaths, 10.
Provinces—				
Fayoum	Apr. 15	1		
Minieh	Apr. 16	2		
India				Total, Mar. 1-28: Cases, 68,260; deaths, 57,577.
Calcutta	Mar. 22-28		30	
Indo-China:				
Saigon	Mar. 19-Apr. 6	13	3	
Japan				Apr. 18-20: 11 cases in Komikawa Cho, and Katori-Gun Chiba, near Tokyo.
Taiwan—				
Kagi	Mar. 29-Apr. 11	38	30	
Mauritius	Feb. 13-19	8	6	
Morocco:				
Fedala	Mar. 26-Apr. 4	2		
Persia:				
Lingah	Mar. 25	1		
Peru:				
Trujillo	Apr. 14			9 cases in hospital.
Siam:				
Bangkok	Feb. 22-Mar. 21		6	

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

Reports Received During Week Ended May 15, 1914—Continued.

SMALLPOX.

Places.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Departments—				
Algiers	Jan. 1–Feb. 28	3		
Constantine	do	1		
Oran	do	117		
Brazil:				
Bahia	Mar. 29–Apr. 11	2		
Rio de Janeiro	do	51	14	
Canada:				
Hamilton	Apr. 1–30	3		
Montreal	Apr. 29–May 4	1		
Vancouver	Apr. 19–25	1		
Winnipeg	Apr. 12–18	3		
China:				
Hongkong	Mar. 22–28	4	3	
Dutch East Indies:				
Java				Mar. 1–28: Cases, 647; deaths, 141.
Egypt:				
Alexandria	Apr. 2–8	4		
Cairo	Mar. 19–Apr. 1	50	7	
Port Said	Mar. 19–25	2		
France:				
Marseille	Mar. 15–31		5	
Paris	Mar. 29–Apr. 11	8		
Japan:				
Nagasaki	Mar. 6–19	6	3	
Taiwan—				
Kagi	Apr. 5–11	2		
Mexico:				
Acapulco	Apr. 12–18		2	
Chihuahua	Apr. 14–26		3	
Monterey	Apr. 6–19		4	
Nogales	Apr. 27	2		
Vera Cruz	Apr. 19–25	5		2 among refugees.
Siam:				
Bangkok	Feb. 22–Mar. 22		1	
Switzerland:				
Basel	Mar. 29–Apr. 18	12		
Turkey in Asia:				
Beirut	Mar. 22–Apr. 11	26	10	
Jaffa	do	14	1	
Jerusalem	Mar. 1–31	8		
Trebizond	Apr. 11			Present.
Tripoli	Mar. 15–Apr. 4	17	2	

Reports Received from Dec. 27, 1913, to May 8, 1914.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Bosnia-Herzegovina—				
Brod	Nov. 13–18	2		
Kostjnica	do	1		
Novigrad	Oct. 26–Nov. 5	1		
Sjekocac	Nov. 6	1		
Travnik, district	Dec. 10–16	6		
Vranduk	Nov. 20	1		
Zenica	Oct. 20–Nov. 19	9	2	
Croatia-Slavonia—				
Pozenga	Nov. 18–Dec. 1	2		
Syrmien—				
Adasevci	do	6	2	
Semlin	do	1	1	
Vitrovica—				
Dobrovic	do	2	2	
Hungary				Total, Sept. 1–Dec. 29: Cases, 729; deaths, 372; Dec. 29, free.
Bacs-Bodrog, district	Nov. 9–Dec. 29	52	31	
Jasz-Nagy-Kun-Szolnok—				
Szolnok	Nov. 9–15	2	2	
Maramaros	Nov. 30–Dec. 6	1	1	
Pest Pilis—				
Soroksar	Nov. 9–22	2	1	

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

Reports Received from Dec. 27, 1913, to May 8, 1914—Continued.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary—Continued.				
Szabolcs—				
Nyiregyhaza	Nov. 9–15	1	1	
Temes—				
Varasliget	do		1	
Torontal	Nov. 9–Dec. 13	27	19	
Ung—				
Jasza	Nov. 9–15	1	1	
Ceylon:				
Colombo	Nov. 9–Jan. 17	33	19	
Galle	Feb. 9	1		
China:				
Hongkong	Nov. 9–Mar. 22	10	4	
Dutch East Indies:				
Java—				
Batavia and Tanjong Priok.	Nov. 9–Feb. 14	47	35	
Do	Jan. 18–24	1	1	
Samarang	Nov. 30–Dec. 27	47	25	
Sumatra—				
Padang	Dec. 1–Jan. 24	136	101	
India:				
Bassein	Feb. 1–Mar. 7	15	13	
Bombay	Nov. 10–Mar. 28	25	12	
Calcutta	Nov. 9–Mar. 21		1,099	
Madras	Nov. 16–Mar. 7	14	5	
Moulmine	Jan. 4–Feb. 28	23	23	
Negapatam	Jan. 4–Mar. 14	108	89	
Rangoon	Nov. 1–Dec. 31	5	1	
Do	Jan. 1–Feb. 28	6	4	
Indo-China				Year 1913: Cases, 432; deaths, 13. Total, Jan. 1–Feb. 10: Cases, 16; deaths, 13.
Cholon	Jan. 21–31	1		
Laos (Shan States)	Jan. 1–10	10		Along the upper Mekong River.
Phanri	Jan. 1–Feb. 10		3	
Saigon	Jan. 13–Feb. 23	3		
Philippine Islands:				
Manila	Nov. 9–Mar. 14	86	56	Total, Aug. 23–Jan. 24: Cases, 186; deaths, 124. Third quarter, 1913: Cases, 14; deaths, 6. Fourth quarter, 1913: Cases, 107; deaths, 104. Jan. 3, 1 fatal case on s. s. Sigismund from Rabal, New Guinea. At the necropsy, pathological lesions of cholera and beriberi were found.
Provinces				Total, Aug. 23–Dec. 27: Cases, 148; deaths, 94.
Bulacan—				
Bulacan	Dec. 14–20			Present in vicinity.
Meycauayan	do			Present.
Capiz				Total, Dec. 17–23: Cases, 26; deaths, 18. Feb. 21, still present.
Banga	Dec. 17–20			Present.
Capiz	Jan. 28			Do.
Calivo	Dec. 17–Jan. 24			1 death daily.
New Washington	do			Present.
Cavite—				
Santa Cruz	Nov. 13–19			Do.
Cebu—				
Cebu	do			Do.
Opon	Nov. 19	1		On Mactan Island.
Pampanga	Dec. 7–Jan. 28			Present in Guagua, Macabebe, San Fernando, and other places.
Pangasinan	Dec. 19–29			Present in Dagupan, Lingayen, San Carlos, and Urdaneta.
Rizal—				
Las Pinas	do	1		
Pasig	Nov. 19			Present.
Pateros	Jan. 28			Do.
Rizal	do			Do.
Roumania				Total, Nov. 14–Dec. 7: Cases, 18; deaths, 15.
Russia:				
Bessarabia—				
Ismail	Oct. 26–Nov. 8	6	1	

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

Reports Received from Dec. 27, 1913, to May 8, 1914—Continued.

CHOLERA—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia—Continued.				
Ekaterinoslav	Oct. 26–Nov. 8	1		
Kherson	do	6	9	
Taurida—				
Dneiper district	do	1	2	
Servia				Nov. 10–24: 8 cases with 2 deaths in the districts Podrigne and Pojarevatz.
Siam:				
Bangkok	Nov. 2–Feb. 21		115	
Straits Settlements:				
Singapore	Nov. 2–Mar. 7	22	20	
Kedah, Province	Feb. 4			Present.
Turkey in Asia:				
Aivali	Jan. 10–23	9	6	
Beirut	Dec. 23	2	1	From among troops on the s. s. Bahr Amer from Rodosto.
Smyrna	Dec. 16–Jan. 8	11	4	
Trebizond	Dec. 9–Jan. 24	22	16	Dec. 9–16: 6 cases among troops from s. s. Guldjemal. Jan. 17, 1 case in the city.
Turkey in Europe:				
Adrianople	Feb. 28–Mar. 28	99	38	Among the military.
Constantinople	Nov. 25–Feb. 15	141	56	Total, Aug. 2–Feb. 15: Cases, 216; deaths, 96. Total, Jan. 1–Mar. 21: Cases, 30; deaths, 14; Mar. 24, 1 fatal case.
Dardanelles	Jan. 9–20	10	9	
Gallipoli	Jan. 1–3	2	2	
Kirk Kilisse	Mar. 16	2	2	
Pera	Jan. 3–10	5		
Rodosto	Dec. 21–Jan. 9	22		

YELLOW FEVER.

Brazil:				
Bahia	Nov. 23–Mar. 28	22	25	Apr. 1–21: Cases, 24; deaths, 17.
Ceara	Nov. 1–30		2	
Pernambuco	Mar. 1–15		17	
Ecuador:				
Guayaquil	Nov. 1–Dec. 31	9	6	
Do	Jan. 1–Feb. 15	12	3	
Milagro	Jan. 1–Feb. 28	6	4	
Naranjito	Jan. 1–31	3	2	
Mexico:				
Merida	Dec. 10–11	1	1	From Campeche.
Do	Jan. 4–10	1	1	Do.
Southern Nigeria:				
Lagos	Oct. 20–Dec. 28	5	1	Among Europeans from a vessel.
Do	Feb. 13–14	2		Feb. 26, present.
Omitsha	Jan. 24	1		
Togo:				
Lome	Sept. 12	1		
Trinidad:				
Brighton	Dec. 30	1		Total, Nov. 22–Dec. 30: Cases, 10; deaths, 3. Mar. 26, 1 case, 3½ miles distant.
Labrea	Mar. 27	1		
Venezuela:				
Caracas	Feb. 1–28		3	

PLAGUE.

Arabia:				
Debai	Mar. 7			Present.
Australia:				
Thursday Island Quarantine Station.	May 21	5		Pestis minor from s. s. Taynan from Hongkong to Townsville.
Azores:				
Terceira—				
Angra-Heroismo	Dec. 21		1	

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

Reports Received from Dec. 27, 1913, to May 8, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Bahia	Nov. 23–Mar. 21	26	17	
Pernambuco	Dec. 16–31	.....	1	
Do	Jan. 1–Feb. 28	.....	2	
Rio de Janeiro	Nov. 16–22	1	1	
British East Africa:				
Kisumu	Sept. 12–Oct. 13	2	.....	Jan. 14–Nov. 15, 1913: Cases, 20; deaths, 22.
Mombasa	Sept. 12–Dec. 15	31	16	Feb. 6–Dec. 15: Cases 200; deaths, 173, including previous reports.
Nairobi	Sept. 12–Nov. 15	3	3	
Ceylon:				
Colombo	Jan. 25–Mar. 28	79	67	Total Jan. 25–Mar. 25: Cases, 100; deaths, 88; of which 71 fatal cases were septicemic and 29 cases, with 17 deaths, bubonic.
Kandy	Jan. 25–Feb. 7	1	.....	From Colombo.
Chile:				
Iquique	Nov. 9–Jan. 31	18	9	
Do	Jan. 11–Mar. 28	19	12	
Santiago	Mar. 11–15	.....	2	
China	.....	.....	.....	Mar. 14, present in Ampo and Tah-tau-po. Jan. 17–Mar. 1, present in localities 15 miles from Chaoyang, and in Chin Khoi, Hak Is, Hweilai, Ko Khoi, Khoi Tau, Kun Pau, Sua Ming Sia, and Toa Phau.
Amoy	Feb. 18	.....	5	Present in the island. Mar. 7, still present in Amoy.
Hongkong	Nov. 2–Mar. 21	244	195	Apr. 30–May 6: Cases, 203.
Shanghai	Oct. 1–7	1	.....	Apr. 22, 1 case.
Cuba:				
Artemisa	Apr. 23	1	.....	
Habana	Mar. 5–May 6	17	3	
Dutch East Indies:				
Java	.....	.....	.....	Total in East Java, year 1913: Cases, 11,218; deaths, 10,556.
Provinces—				
Kediri	Nov. 1–Dec. 31	547	481	
Do	Jan. 1–Feb. 28	406	380	
Madioen	Nov. 1–Dec. 31	151	140	
Do	Jan. 1–Feb. 28	284	251	
Pasoeroean, including Malang.	Nov. 1–Dec. 31	1,550	1,463	
Do	Jan. 1–Feb. 28	1,481	1,295	
Surabaya	Nov. 1–Dec. 31	93	93	
Do	Jan. 1–Feb. 28	99	90	
Ecuador:				
Babahoyo	Nov. 1–Dec. 31	1	.....	
Duran	Dec. 1–31	1	.....	
Do	Jan. 1–31	1	1	
Guayaquil	Nov. 1–Dec. 31	349	157	
Do	Jan. 1–Feb. 28	71	32	
Manta	Dec. 1–31	8	.....	
Milagro	Nov. 1–Dec. 31	2	1	
Naranjito	....do	3	1	
Yaguachi	Nov. 1–30	2	2	
Do	Jan. 1–31	1	1	
Egypt	.....	.....	.....	Jan. 1–Dec. 24, 1913: Cases, 654; deaths, 304. Jan. 1–Apr. 6: Cases, 20; deaths, 9.
Alexandria	Feb. 19	1	1	
Cairo	Feb. 13–22	2	.....	
Port Said	Feb. 10–Apr. 6	4	3	
Provinces—				
Assiout	Jan. 5	1	1	
Assouan	Dec. 10	1	.....	
Do	Jan. 5	1	1	
Dakahlia	Mar. 23	1	.....	
Fayoum	Feb. 10	1	.....	
Garbieh	Dec. 11	1	.....	
Do	Jan. 15–Apr. 3	8	2	
Menouf	Mar. 31–Apr. 2	2	2	
Minieh	Dec. 9–24	3	1	
Do	Jan. 8–29	2	2	
German East Africa:				
Dar-es-Salaam	Mar. 13	1	1	Pneumonic.

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

Reports Received from Dec. 27, 1913, to May 8, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Hawaii:				
Kukuihaele	Apr. 18		1	
India				Total Jan. 1, 1913–Jan. 3, 1914: Cases, 238,198; deaths, 198,875. Jan. 4–31: Cases, 34,714; deaths, 28,061.
Bassein	Jan. 4–Mar. 15	161	136	Total, Jan. 1, 1913–Jan. 3, 1914: Cases, 304; deaths, 283.
Bombay	Nov. 9–Mar. 28	666	576	
Calcutta	Nov. 2–Apr. 4		63	
Karachi	Nov. 9–Apr. 4	625	544	
Madras	Nov. 16–Feb. 14	5	3	
Moulmine	Jan. 4–24		18	Jan. 1, 1913–Jan. 3, 1914: Cases, 574; deaths, 576.
Negapatam	Feb. 1–Mar. 14	41	41	
Rangoon	Oct. 26–Dec. 31	74	68	
Do	Jan. 1–Feb. 28	328	311	
Indo-China				Year 1913: Cases, 4,038; deaths, 3,805. Jan. 1–Feb. 10: Cases, 330; deaths, 303.
Saigon	Nov. 11–Mar. 16	28		
Japan				Total Jan. 1–Dec. 31: Cases, 27; deaths, 20; exclusive of Taiwan.
Kobe	Dec. 1–7	1		
Taiwan—				
Kagi	Feb. 1–Mar. 21	69	59	
Tokyo	Apr. 18–May 4	20		Apr. 18, 5 cases in the vicinity.
Yokohama	Jan. 4–10	1	1	Total Sept. 19–Jan. 10: Cases, 22; deaths, 18.
Mauritius	Jan. 1–Feb. 12	32	17	Total year 1913: Cases, 305; deaths, 183.
Morocco:				
Casablanca	Jan. 7	1	1	
El-Arish (Larache)	Sept. 17	1		Among the military.
Fedala	Mar. 16–25	3	1	
New Caledonia:				
Bourail	Sept. 1–Oct. 14	8	2	In a school of the tribe of the Azaren.
Peru				Deaths not reported. Total year 1913: Cases, 869; deaths, 459.
Ancachs—				
Casma	Feb. 9–15	2		Dec. 1–Feb. 8, present.
Nepena	Nov. 1–Jan. 18			Do.
Arequipa—				
Mollendo	Dec. 1–Feb. 22	14		Apr. 4, present.
Cajamarca—				
Contumaza	Jan. 19–24	12		Feb. 8, present.
Callao—				
Callao	Jan. 19–Feb. 22	7		
Lambayeque—				
Chiclayo	Dec. 1–Feb. 15	72		
Ferrenaje	Dec. 1–Feb. 8	18		
Guadalupe	Dec. 1–Feb. 22	21		Dec. 1–Feb. 8, present.
Pacasmayo	Jan. 25–Feb. 15	5		
Libertad—				
San Pedro	Dec. 1–Feb. 8	34		
Salaverry	Feb. 16–22	3		Mar. 17–25: Cases, 3; deaths, 1.
Trujillo	Dec. 1–Feb. 22	73		Mar. 31: 16 cases in hospital.
Lima	Dec. 1–Jan. 18	6		
Lima	Dec. 1–Feb. 22	48		
Pisco	Dec. 1–Jan. 18	2		
Monsefu	do	2		
Piura—				
Catacaos	Dec. 1–Feb. 15	13		
Piura	Dec. 1–Jan. 24	10		Feb. 8, present.
Philippine Islands:				
Manila	Nov. 23–Mar. 14	12	11	Third quarter, 1913: Cases, 2; deaths, 1. Fourth quarter, 1913; Case, 1; death, 1.
Russia:				
Saratov	Feb. 11	1		
Ural territory				Total Oct. 20–Nov. 10: Cases, 212; deaths, 170; and 2 fatal cases from Issum Tube.
Djakisabevsk district	Mar. 2–13	16	16	
Djumarta	Nov. 9–10	5	1	
Djantayu	Nov. 8–10	2	2	
Kizilu	Nov. 8	1	1	
Fourteenth village	Nov. 7–9	6		
Sarbas	Nov. 8–10	13	7	

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

Reports Received from Dec. 27, 1913, to May 8, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Russia—Continued.				
Ural territory—Continued.				
Kaziljar district	Nov. 5-10	39	24	In Assaukurt, Baitchurek, Biskuduk, and Djamankuduk.
Lbistchensky district	Mar. 2-13	16	15	
Issum Tube	Oct. 20-Nov. 10	138	127	
Kaimikov	Nov. 4-10	6	6	
Siam:				
Bangkok	Nov. 2-Feb. 21		20	
Tripoli:				
Bengazi	Jan. 31			Present.
Turkey in Asia:				
Beirut	Dec. 10-23	2	2	
Jiddah	Feb. 2-Mar. 11	5	2	
Venezuela:				
Caracas	Apr. 7		1	Of case reported Apr. 12.
Zanzibar	Dec. 31-Jan. 21	5	3	On s. s. President from Dar-es-Salaam.

SMALLPOX.

Algeria:				
Departments—				
Algiers	Sept. 1-Dec. 31	10		
Constantine	Oct. 1-Dec. 31	15		
Oran	Sept. 1-Nov. 30	216		Feb. 1-28: Cases, 5; deaths, 4.
Arabia:				
Aden	Nov. 25-Mar. 9	6	6	
Maskat	Nov. 30-Dec. 6	10		Dec. 20, present.
Matarah	Dec. 23-Jan. 10	9		Nov. 30, present; Mar. 7, still present.
Argentina:				
Buenos Aires	Nov. 1-30		1	
Rosario	Dec. 1-31	1		
Australia:				
New South Wales				Total July 1, 1913-Jan. 31, 1914: Cases, 1,078.
Sydney, metropolitan area				July 1, 1913-Jan. 8, 1914: Cases, 1,032. Feb. 1-Mar. 13: 17 cases in the metropolitan area of Sydney and 15 cases at Singleton.
Western Australia—				
Fremantle				Dec. 2: 1 fatal case on R. M. S. Malwa, from London via Port Said, Aden, and Colombo.
Victoria—				
Melbourne				At Point Napean quarantine station, Jan. 19: 1 case from F. M. S. Caledonian from Noumea via Sydney.
Austria-Hungary:				
Coastland—				
Trieste	Jan. 25-31	3		
Galicia	Feb. 15-21	1		
Krain	Mar. 1-14	4		
Lower Austria—				
Vienna	Jan. 4-24	6		
Moravia	Jan. 18-Feb. 21	5		
Silesia	Feb. 15-18	1		
Tyrol and Vorarlberg	Nov. 23-Feb. 21	6		
Upper Austria	Dec. 14-Feb. 21	20		
Belgium:				
Liege	Mar. 1-7		6	
Brazil:				
Bahia	Nov. 23-Mar. 28	81	1	
Para	Dec. 1-Apr. 11	80	85	
Pernambuco	Nov. 1-Feb. 28		78	
Rio de Janeiro	Nov. 9-Mar. 28	535	107	
Canada:				
Manitoba—				
Winnipeg	Feb. 14-Apr. 4	21		
Ontario—				
Cornwall	Feb. 26-Apr. 4	1		
Fort William	Feb. 24-Mar. 2	1		
Hamilton	Jan. 1-Mar. 31	30		
Ottawa	Dec. 7-Apr. 25	24		
Toronto	Dec. 7-Apr. 4	14	1	
Quebec—				
Montreal	Dec. 7-Apr. 25	92		
Quebec	Jan. 24-31	1		

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

Reports Received from Dec. 27, 1913, to May 8, 1914—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Canal Zone:				
Panama				Nov. 1-30: Santo Tomas hospital, 1 case from a vessel from Callao.
Ceylon:				
Colombo	Nov. 30-Dec. 6	1		
Do	Mar. 22-28	1		
China:				
Amoy	Dec. 14-Jan. 10			Present.
Antung	Jan. 4-Mar. 29	5	2	
Chefoo	Feb. 22-Mar. 7	2	1	
Dairen	Dec. 7-Mar. 28	24	6	
Hankow	Nov. 2-Feb. 28	14	1	
Hongkong	Dec. 14-Mar. 29	32	21	
Mukden	Mar. 8-15	3	1	
Nanking	Jan. 24			Do.
Shanghai	Dec. 8-Mar. 22	18	24	Deaths among natives.
Tientsin	Nov. 9-15		1	
Ting Chow	Jan. 5			Epidemic, 130 miles from Amoy.
Tsing Tau	Jan. 15-Feb. 28	4		
Tong An	Dec. 27			Present, 20 miles from Amoy.
Cuba:				
Sagua la Grande	Feb. 1-28	1	1	
Dutch East Indies:				
Java				Dec. 13-Feb. 21: 322 cases with 91 deaths in the western part, and 100 cases with 63 deaths in the interior.
Batavia	Nov. 27-Jan. 11	66	69	
Besoeki	Oct. 19-29	227	47	
Madioen	Oct. 19-28	36	12	
Surabaya	Oct. 28-Jan. 31	6		
Surakarta	Oct. 19-Dec. 6	481	91	
Sumatra—				
Padang	Jan. 1-31			Present.
Egypt:				
Alexandria	Nov. 26-Apr. 15	32	13	
Cairo	Nov. 19-Mar. 18	193	87	
Port Said	Dec. 3-Mar. 4	7	1	
France:				
Bordeaux	Mar. 8-14		1	
Marseille	Nov. 1-Feb. 28		113	
Nantes	Feb. 1-Apr. 11	6	2	
Nice	Nov. 1-Dec. 31	2		
Paris	Nov. 23-Mar. 21	40		
St. Etienne	Nov. 16-Mar. 14	12	4	
Toulon	Jan. 1-31		1	
Germany				Dec. 7-Mar. 28: Cases, 26.
Berlin	Feb. 8-14	2		
Bremen	do	1		
Breslau	do	1		
Hamburg	Dec. 11-25	4		
Kehl	Jan. 1-31		1	
Lubec	Feb. 15-21	1		
Gibraltar	Dec. 1-Mar. 22	6		
Great Britain:				
Aberdeen	Feb. 22-Mar. 21	6	1	
Cardiff	Feb. 16-21	1		
Edinburgh	Mar. 1-7		1	
Liverpool	Mar. 15-21	1		From a vessel.
London	Jan. 18-Mar. 22	6		
Nottingham	Dec. 21-27	28		
Southampton	Feb. 2-28	1		
Greece				Jan. 28-Feb. 12: Present in the barracks at Athens and at the surrounding country.
Achaia and Elis, Province	Mar. 8-14	7	5	Jan. 29, present.
Piraeus	Jan. 18-Feb. 12	19	11	
Grenada	Mar. 18	3		In St. Andrews Parish, 20 miles from St. Georges.
St. Georges	Mar. 22-28	4		
Guadeloupe:				
Pointe a Pitre quarantine station, Islet a Cosson.	Feb. 16-23	10	1	From among returned troops from s. s. Perou from Havre, via Bordeaux and Santander.
Guatemala:				
Guatemala	Apr. 21			Present.

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

Reports Received from Dec. 27, 1913, to May 8, 1914—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Nov. 23–Feb. 28	78	35	
Calcutta	Nov. 2–Mar. 7	.....	142	
Karachi	Nov. 2–Mar. 14	25	5	
Madras	Nov. 2–Mar. 21	53	16	
Rangoon	Jan. 1–Feb. 28	18	1	
Indo-China:				
Saigon	Nov. 11–24	1	1	
Italy:				
Genoa	Mar. 1–15	1	1	
Leghorn	Dec. 21–27	1	.....	
Naples	Jan. 3	1	.....	
Turin	Dec. 22–28	1	.....	
Japan		.....	.....	Total Jan. 1–Dec. 31, 1913: Cases, 108; deaths, 39, exclusive of Taiwan. Total Jan. 1–Feb. 28: Cases, 17; deaths, 3.
Fukuoka ken	Dec. 1–31	2	.....	
Nagasaki	Jan. 1–Mar. 22	3	1	Feb. 1–Mar. 8: 15 cases, 2 deaths.
Taiwan	Mar. 22–28	1	.....	
Tokyo	Nov. 1–Mar. 7	10	.....	
Yokohama	Jan. 6–12	1	1	
Mauritius	Oct. 2–25	60	4	
Mexico:				
Acapulco	Dec. 6–Apr. 4	5	4	
Aguascalientes	Dec. 1–Mar. 29	.....	112	
Chihuahua	Dec. 29–Apr. 16	.....	17	
Cruz	Apr. 2	.....	.....	Epidemic in vicinity.
Durango	Apr. 1–May 31	.....	77	
Guadalajara	Jan. 11–Feb. 14	89	46	
Imuris	Dec. 29–Jan. 4	5	.....	
Juarez	Feb. 15–Apr. 4	1	4	
Llano	Jan. 17	8	.....	
La Paz	Jan. 16–22	3	1	
Manzanillo	Mar. 21–27	2	.....	
Mexico	Oct. 26–Jan. 17	129	40	
Monterey	Nov. 17–Mar. 29	12	4	
Salina Cruz	Jan. 18–24	1	1	
San Luis Potosi	Nov. 2–Jan. 24	4	7	
Tampico	Dec. 24–Mar. 10	200	58	Feb. 1–24: 22 cases, with 16 deaths.
Vera Cruz	Dec. 6–Apr. 11	68	30	
Morocco:				
Casablanca	Mar. 7	.....	.....	Present.
Tangier	Apr. 11	.....	.....	Present.
Netherlands, The	Feb. 8–14	1	1	
New Zealand		.....	.....	Apr. 8, 1913, to Jan. 7, 1914: Cases, 2,000, including report, p. 2863, vol. 28.
Norway:				
Trondhjem	Nov. 1–Feb. 28	19	.....	
Peru:				
Callao	Jan. 26	.....	.....	Still epidemic, Mar. 7, improving.
Lima	do	.....	.....	Do.
Philippine Islands:				
Manila		.....	.....	Third quarter, 1913: Cases, 15. Fourth quarter, 1913: Cases, 18.
Portugal:				
Lisbon	Nov. 16–Apr. 18	24	.....	
Russia:				
Moscow	Dec. 14–Mar. 21	67	18	
Odessa	Nov. 16–Mar. 28	42	2	
Riga	Jan. 1–Apr. 4	43	4	Feb. 22–Mar. 28: Cases, 18.
St. Petersburg	Nov. 23–Mar. 21	84	24	
Vladivostok	Dec. 22–Jan. 28	5	.....	
Warsaw	Oct. 5–Jan. 3	73	43	
Servia:				
Belgrade	Nov. 7–Mar. 28	142	50	
Siam:				
Bangkok	Jan. 25–Feb. 21	.....	3	
Spain:				
Almeria	Nov. 1–Jan. 31	.....	9	
Barcelona	Nov. 30–Mar. 14	.....	101	
Madrid	Nov. 1–Feb. 28	.....	98	
Seville	do	.....	2	
Valencia	Dec. 1–Mar. 14	13	.....	
Straits Settlements:				
Penang	Nov. 2–Dec. 6	13	1	
Singapore	Nov. 2–22	2	.....	
Sweden:				
Malmo	Mar. 22–28	13	.....	

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

Reports Received from Dec. 27, 1913, to May 8, 1914—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Switzerland:				
Canton—				
Basel	Nov. 23–Mar. 28	123		
Genoa	Nov. 23–29	3	1	
Turkey in Asia:				
Adana	Jan. 10–24	2		Dec. 28, epidemic.
Beirut	Nov. 23–Mar. 21	318	137	
Jaffa	Dec. 6–Feb. 28	25	6	
Jerusalem	Feb. 1–28	1		
Mersina	Jan. 4–Mar. 7	3	3	
Smyrna	Nov. 16–Mar. 14		176	
Tarsus	Dec. 28–Feb. 8			Still present.
Trebizond	Jan. 11–24			Present.
Tripoli	Jan. 25–Mar. 14	93	6	
Turkey in Europe:				
Constantinople	Nov. 20–Apr. 11		24	
Saloniki	Dec. 1–Apr. 4		93	

SANITARY LEGISLATION.

COURT DECISIONS.

ILLINOIS SUPREME COURT.

Milk, Pasteurized—Chicago Ordinance Held Valid.

KOY *v.* CHICAGO. February, 1914.

The regulation of the sale of milk and its products is essential to the preservation of the public health. The right to regulate extends from the health and keeping of the cows which produce the milk through all the processes of transportation, preservation, and delivery to the consumer.

The city, having power to require milk to be pasteurized, may prescribe the conditions under which the pasteurization shall be done in order to prevent evasion of the ordinance and insure that the product shall be such as the ordinance requires.

The question whether or not recording apparatus required by an ordinance to be used in pasteurizing milk is practicable and will accomplish the objects intended, is one of judgment and discretion, determination of which must be left to the legislative department, and courts can not overrule the determination of a city council that a particular method of protecting the public health should be adopted unless it is so clearly and manifestly wrong that there can be no doubt about it.

Mr. Justice Dunn delivered the opinion of the court:

Gustave E. Koy filed a bill in the circuit court of Cook County on November 28, 1913, in behalf of himself and of all other persons similarly situated, to restrain the city of Chicago and its officers from revoking licenses issued to him as a milk dealer and from interfering with the distribution of milk products by him and by others similarly situated, for failure to comply with certain provisions of sections 1273 and 1274 of the Chicago code of 1911 as they were amended by an ordinance of August 14, 1912.[1] A preliminary injunction was ordered, but on motion of the defendants it was dissolved and a demurrer was sustained to the bill, which was dismissed for want of equity. The complainant has appealed to this court, the validity of an ordinance being involved and the court having certified that the public interest required that the appeal be brought to the supreme court.

The bill alleges that the complainant for 10 years has conducted a milk business in the city of Chicago, and has furnished to a large number of citizens, and is now delivering clean, pure, pasteurized milk, and has complied with all ordinances of the city of Chicago relative to purity and cleanliness; that on January 7, 1913, he obtained licenses to conduct his business and run six wagons; that the product handled by him is perishable, and the ordinance requires him to mark his product on the cap on the day on which the milk was pasteurized and dispose of the milk on the day following; that he complies with this requirement, and if he is prevented from disposing of his milk on the day following, as marked on the cap, he loses the entire product not sold, as the ordinance prohibits him from repasteurizing and recapping, and that his daily loss would amount to $178; that it is necessary for him to deliver the milk product at an early hour each day; that there are other persons similarly situated in the business and they handle 135,000 gallons of milk each day, and if they are prevented from selling and delivering the same on the day following the pasteurization the product

[1] Public Health Reports, Jan. 3, 1913, pp. 37–44.

will become a total loss, amounting to $35,000 a day; that the total value of their business in the city is worth $500,000, and that there are more than 1,200 persons engaged in the business, scattered over a territory of 191 square miles.

It is further alleged that on August 14, 1912, the city council of the city of Chicago passed an ordinance regulating the producing, handling, and sale of pasteurized milk, which amended sections 1273 and 1274 of the Chicago code of 1911. In accordance with paragraph (h) of Article B of section 1273, the complainant installed and is operating a pasteurizer, and he has complied with the ordinance in regard to notifying the commissioner of health of such pasteurizer and has obtained a permit to operate the same. The milk used by him is obtained from farms which have been inspected by the commissioner of health, and it is such that 99 per cent of the bacteria and all pathogenic bacteria are killed and the milk treated at the temperature required in paragraphs (j) and (i) of Article B of the ordinance. In all pasteurization the product is heated to the temperature required by the ordinance and fixed by the commissioner of health, and in accordance with paragraph (k) of Article B of the ordinance, all milk is properly labeled on every package and on the tags attached thereto, and the day of pasteurization is plainly marked thereon. In accordance with paragraph (m) the product is cooled at a temperature of 45 degrees without being exposed to contamination. The apparatus used can be readily cleaned and sterilized, as required by the ordinance. The pasteurized product complies with the provisions of the ordinance and does not contain more bacteria per cubic centimeter than is within such provisions. The Department of Health has notified the complainant that it is going to enforce paragraph (i) of Article B of the ordinance, which refers to pasteurization, and is as follows:

"All continuous pasteurizers shall be equipped with feeding pipe that is so constructed that the pasteurizer can not be fed in excess of its normal working capacity—that is, in excess of the working capacity of the machine at which 99 per cent of the bacteria are killed when the required amount of heat is applied. A recording apparatus shall be installed on all pasteurizers to record during operation the temperature of the pasteurized product as it flows from the heater. The thermometer of the recording apparatus must be accurate and kept submerged in the milk in such a way that it is not exposed to escaping steam or other heat except the heat of milk: *Provided*, That if the pasteurizing is done in bottles or in other final containers, the temperature recording apparatus must be attached and adjusted in a manner so as to accurately record the temperature to which the milk, cream, skim milk, or buttermilk is raised and the duration of time for which said temperature is maintained. The records made by this recording thermometer must be accurate and made in a chamber which is kept under lock and key in the control of the commissioner of health. The mechanism of the pasteurizer or pasteurizer system shall be such that the three important elements, namely, the temperature, time of exposure, and the quantity of milk exposed at one time can be readily kept under control and observation by the commissioner of health."

It is further alleged that the recording apparatus required is of no benefit to the appellant for the reason that he now has and uses thermometers and apparatus by which he can determine at what temperature his product is pasteurized and for what length of time the product so pasteurized is kept at that temperature and can comply with the requirements of the ordinance in regard to properly pasteurizing milk without the recording apparatus mentioned in the ordinance, and that the requirement of the ordinance in this respect is unreasonable and unjust, and would require the expenditure of between $45 and $220 for useless apparatus which would not benefit the city or the health department in enforcing compliance with the ordinance. The bill further alleged that the ordinance is ambiguous and uncertain; that there is no device that will comply with the requirements of the ordinance; that the only devices on the market to meet the requirements are complicated and expensive and cost in the neighborhood of $65, the cheapest costing $45 up; that on all flash pasteurizers an additional

requirement of a controller would be necessary, costing $185 for the cheapest, and that such devices have never been proved to be correct but have been proved to be incorrect. It is further alleged that all the devices offered for sale to meet the requirements of the ordinance are worthless and do not guarantee compliance with the ordinance because of defects in their construction or operation, which are described and because of the ease with which they can be manipulated so as to show incorrect results; that none of these recording devices furnish reliable information as to compliance with the ordinance unless kept under lock and key, and that it would be impossible for the officers of the health department to visit the various places throughout the area of the city of Chicago where milk is pasteurized, between the time of one pasteurization and the next, and the ordinance could not be enforced without stationing an inspector in each place during the entire operation of pasteurization, and in such case there would be no necessity of having the recording devices.

Various technical objections to the bill of complaint as a pleading have been urged by the appellees in their brief which seem to be of considerable force, but since we have arrived at the conclusion that the decree is right upon the merits they will not be further mentioned. The bill is founded upon the proposition that the ordinance is unreasonable, unjust, and oppressive, and should therefore be held void. When the legislature has authorized the city council to pass ordinances upon any subject, the power thus conferred must be reasonably exercised. Whether its exercise in a particular case is reasonable is a judicial question, and an unreasonable ordinance will be held void by the courts. The regulation of the sale of milk and its products is essential to the preservation of the public health, and authority for its regulation is clearly given to the city council by paragraphs 50, 53, 66, and 78 of Section I of article 5 of the cities and villages act. (City of Chicago *v.* Bowman Dairy Co., 234 Ill., 294; City of Chicago *v.* Union Ice Cream Co., 252 id., 311; Gundling *v.* City of Chicago, 176 id., 340.) In fact the appellant does not question the power of the city to require the pasteurization of milk, but only the reasonableness of requiring the use of the recording apparatus mentioned in the portion of the ordinance which has been set out. He alleges that he is furnishing cream, pure and properly pasteurized milk, and that the requirements of the ordinance are no more reasonable than would be a requirement that he should furnish equipment for the city laboratory or pay an inspector for ascertaining whether he was complying with the ordinance.

It is argued that the apparatus is of no benefit to the appellant because he has, and is using, thermometers and apparatus by which he can comply with the requirements of the ordinance in regard to properly pasteurizing milk at the temperature and for the length of time required in the ordinance without the use of recording apparatus, and that such apparatus has no effect upon the food product itself. The object of the ordinance is not to benefit persons engaged in the milk business or to enable them to comply with the ordinance in regard to pasteurizing milk, but is to make sure that the milk offered for sale within the city shall be of a quality which shall not be detrimental to the public health. The city having power to require milk to be pasteurized is not limited to the imposition of a penalty for violation of this requirement, but may prescribe the conditions under which the pasteurization shall be done in order to prevent an evasion of the ordinance and insure that the product shall be such as the ordinance requires. In City of Chicago *v.* Bowman Dairy Co., supra, an ordinance was held to be a valid exercise of the police power which required every glass bottle or jar in which milk or cream was sold or offered for sale to have its capacity blown into it or otherwise permanently and indelibly indicated on it, and the fact that the effect of the ordinance was to deprive persons of the use of their bottles on hand at the time the ordinance was adopted did not render it invalid. In City of Chicago *v.* Schmidinger (243 Ill., 167) an ordinance was sustained which fixed the weight of loaves of bread which might be offered for sale, required a label at least an inch square or an inch in diameter to be affixed in a conspicuous place to each loaf sold or offered

for sale, having printed thereon the weight of the loaf and the name and address of the maker, baker, or manufacturer, and required every maker, baker, manufacturer, or seller of bread to keep scales and weights suitable for weighing bread in a conspicuous place, and to weigh in the buyer's presence, when requested, the loaf or loaves of bread sold or offered for sale. In People *v.* Freeman (242 Ill., 373) a statute was held valid which prohibited the coloring of imitation butter to make it resemble genuine butter, though the coloring matter used might be harmless and its use in genuine butter not prohibited. The ordinances and the statute involved in these cases were of no benefit to the dealers, except as they protected the honest dealers from the unfair competition of dishonest persons engaged in the same business.

It is contended on behalf of the appellant that the ordinance is, in effect, the same as a requirement that the appellant and other milk dealers shall pay for deputy health inspectors of the city for the purpose of detecting violations of the ordinance, and that this police duty is a purely public burden which can not be cast upon the individuals who happen to be engaged in the business concerned. The case of the City of Chicago *v.* Weber (246 Ill., 304) is cited in support of the argument. In that case an ordinance required all persons conducting theaters to employ firemen to be detailed by the fire marshal of the city from the regular city fire department and to pay for their services. It was required that a fireman should be present at each performance, in the uniform of the fire department, should report to the fire marshal and be subject to his orders, and should see that the exit doors were unlocked, the fire apparatus in proper condition, and all the appliances in working order. It was held that the city had no power to require theater owners to employ and pay a city fireman to be present at each performance, and it was stated that the principle involved was the same as in Gridley *v.* City of Bloomington (88 Ill., 554), and City of Chicago *v.* O'Brien (Ill. id., 532), where it was held that the burden of keeping sidewalks free from obstructions by snow could not be laid upon the private owners of adjoining property, and Village of Lemont *v.* Jenkins (197 Ill., 363), where a charge upon improved lots as compensation for the benefits of increased fire protection, in addition to the regular water rates, was held unauthorized by law. The principle has no application to this case, which relates to the supervision, by law, of a business directly concerning the public health.

There is no article of food in more general use than milk; none whose impurity or unwholesomeness may more quickly, more widely, and more seriously affect the health of those who use it. The regulation of its sale is an imperative duty which has been universally recognized. This regulation in minute detail is essential, and extends from the health and keeping of the cows which produce the milk, through all the processes of transportation, preservation, and delivery to the consumer. Not only may laws and ordinances require that milk offered for sale shall be pure, wholesome, and free from the bacilli of any disease, but they may and do, in order to produce this result, prescribe the manner in which such purity, wholesomeness, and freedom from disease shall be secured and made to appear. The cows may be required to be registered with a designated public authority; the dairies to be conducted and managed according to prescribed regulations, and, together with the dairy utensils, subjected to inspection; the receptacles in which milk is contained to be of prescribed character in capacity; the labels to be placed according to fixed regulations and to contain certain required information; the milk to be prepared in the manner, at the times, and by the means directed, and at all times to be subject to inspection. These may be drastic restrictions upon a private business, but experience and the increasing knowledge of the causes of disease and agencies of its propagation have demonstrated the necessity of such restrictions to the preservation of the public health, and as a means to that end, the protection of the general public against dishonest vendors of milk, they all impose inconveniences and expense upon the dealers in milk, but they are not on that account unreasonable, unjust, or oppressive.

Legislatures and city councils, in the exercise of the police power, may prohibit all things hurtful to the health and safety of society even though the prohibition invade the right of liberty or property of an individual. (Booth *v.* People, 186 Ill., 43.) Such an enactment must be an appropriate measure for the promotion of the public health, safety, or welfare. We can not say that the requirements complained of in the ordinance under review are not adapted to the object sought or are not reasonable. Statutes or ordinances have been held valid which require the vendor of milk to register his herd of cattle with the live-stock board; State *v.* Broadbelt (89 Md., 565), which required vendors of milk to furnish, gratuitously, samples of milk for inspection and analysis on application of sanitary inspectors; State *v.* Dupaquier (46 La. Ann., 577), which authorized milk inspectors to enter any place where milk is stored and take specimens of the milk whenever the inspectors have reason to believe it was adulterated; Commonwealth *v.* Carter (132 Mass., 12), and which prohibited bringing into the city for sale any milk or cream from cows outside of the city unless the packages containing it were marked with a stamp, tag, or impression bearing the name of the owner of the cow from which such milk was drawn, giving his place of business, city, street, and number or other proper address, and unless the owner of such cow should file in the office of the Commissioner of Health a certificate of a duly authorized veterinary surgeon stating that such cow had been tested with tuberculin and found free from tuberculosis or other contagious diseases. Adams *v.* City of Milwaukee (144 Wis., 371); State *v.* Nelson (66 Minn., 166); Nelson *v.* City of Minneapolis (112 id., 16).

The appellant insists that the recording device is impracticable; that the record can be made by using water and heating it, without any milk; that the pointer can be manipulated to show a temperature different from the actual temperature; that the dial can be taken out and marked by hand, and that the number of dealers and extent of territory covered by them is so great that it would be physically impossible for the officers of the department of health to visit places where milk is pasteurized and change the dials between the times of each pasteurization and the next. These are questions of judgment and discretion, determination of which must be left to the legislative department. If the apparatus should not record the temperature accurately at all times, or should not indicate the length of time the temperature was maintained, or if it can be manipulated so as not to show an accurate record, these are matters for the city council to consider. Courts can not overrule determination by the city council that a particular method of protecting the public health should be adopted unless it is so clearly and manifestly wrong that there can be no doubt about it. A personal inspection of all milk sold in the city would be manifestly a requirement difficult, if not impossible, to carry out. Even though the recording apparatus may be manipulated by a dishonest dealer so as to show an untrue record, the city council may have thought its use better for the protection of the public than a system by which no record was preserved, but the health officers were compelled to rely wholly upon the dealer, and we can not say that they were clearly and unmistakably wrong.

Whether officers of the health department shall be provided in sufficient number to visit the places where pasteurization takes place between each pasteurization and the next is also a question for the council.

The decree is affirmed.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

OHIO.

Births and Deaths—Registration of. (Act Apr. 24, 1913.)

SECTION 1. That sections 198, 218, 219, 220, 225, and 226 of the General Code of Ohio be, and the same are hereby, amended to read as follows:

"SEC. 198. The secretary of state shall prescribe methods, forms, and blanks and furnish necessary postage for obtaining registration of births, and deaths in each district and of preserving the records thereof and those of the central bureau. He shall enforce the provisions of this chapter thoroughly and uniformly throughout the State, and from time to time shall recommend necessary legislation for that purpose. He shall provide for necessary clerical and other assistance to carry out the provisions of this chapter. No system of registration of births and deaths in municipalities in conflict with this chapter shall be maintained or continued.

"SEC. 218. Each birth that occurs in the State shall be immediately registered in the district in which it occurs, as hereinafter provided. Within 10 days thereafter the attending physician or midwife shall file with the local registrar of the district in which the birth occurred a certificate of birth, properly and completely filled out, giving all the particulars herein required. If there be no attending physician or midwife, the father or mother of the child, householder or owner of the premises, manager or superintendent of public or private institutions in which the birth occurred, shall notify the local registrar within 10 days thereafter of such birth having occurred. In such case the local registrar shall secure the necessary information and signature to make a proper certificate of birth.

"In case the attending physician or midwife certifies as provided in section 219, that he or she does not possess and can not obtain without an independent inquiry the information necessary to fill out items Nos. 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, and 18 of the certificate required by section 219, the local registrar shall secure the necessary information to properly fill out such omitted items in such certificate from the father or mother of the child, householder or owner of the premises, manager or superintendent of public or private institution in which the birth occurred, or other person qualified to supply such information, and shall properly fill out the omitted items of said certificate with the information so obtained, and the person from whom such information is obtained shall sign a statement indorsed on such certificate that he or she furnished the information necessary to fill out the items omitted by the attending physician or midwife.

"SEC. 219. The certificate of birth shall contain the following items:

"(1) Place of birth; including State, county, township, village, or city. If in a city, the ward, street, and house number; if in a hospital or other institution, the name thereof instead of the street and house number.

"(2) Full name of the child. If the child dies without a name before the certificate is filed, enter the words "died unnamed." If the living child has not been named at the date of filing certificate of birth, the space for "full name of child" is to be left blank, to be filled out subsequently by a supplemental report, as hereinafter provided.

"(2a) Full name of mother.

"(3) Sex of child.

"(4) Whether a twin, triplet, or other plural birth. A separate certificate shall be required for each child in a case of plural birth, giving number of child in order of birth.

"(5) Whether legitimate or illegitimate.
"(6) Full name of father, except in the case of illegitimate births.
"(7) Residence of father.
"(8) Color or race of father.
"(9) Birthplace of father.
"(10) Age of father at last birthday, in years.
"(11) Occupation of father.
"(12) Maiden name of mother, in full.
"(13) Residence of mother.
"(14) Color or race of mother.
"(15) Birthplace of mother.
"(16) Age of mother at last birthday, in years.
"(17) Occupation of mother.
"(18) Number of child of this mother, and number of children of this mother now living.
"(19) Certificate of attending physician or midwife as to attendance at birth; including statement of year, month, day, and hour of birth, and whether the child was alive or dead at birth. This certificate shall be signed by the attending physician or midwife, with date of signature and address.
"If the physician or midwife does not possess and can not obtain without an independent inquiry the information necessary to supply items 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, and 18 of said certificate, said physician or midwife shall so certify in said certificate. If there is no physician or midwife in attendance, or if the physician or midwife in attendance certifies that he or she does not possess and can not obtain without an independent inquiry the information necessary to fill out items Nos. 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 16, 17, and 18 of such certificate, then such certificate, or portion of the same not filled out by the physician or midwife, shall be signed by the father or mother of the child, householder or owner of the premises, or manager or superintendent of public or private institution, or other competent person whose duty it shall be to notify the local registrar of such birth, as required by the preceding section.
"(20) Exact date of filing in office of local registrar, attested by his official signature, and registered number of birth, as hereinafter provided.
"SEC. 220. All certificates, either of birth or death, shall be written legibly, in unfading ink. No certificate shall be held to be complete and correct that does not supply all of the items of information called for therein, or satisfactorily account for their omission, as provided by law.
"SEC. 225. The State registrar shall carefully examine the monthly certificates from the local registrars, and shall secure such further information as may be necessary to make the record complete and satisfactory. He shall arrange, bind, and permanently preserve the certificates in a systematic manner. He shall maintain a card index of all births and deaths registered, to show the name of child, or deceased, place and date of birth or death, number of certificate, and the volume in which it is contained.
"SEC. 226. The local registrar shall supply blank forms of certificates and stamped and addressed envelopes to such persons as require them. He shall require each certificate of birth or death when presented for record to be made out in accordance with law and the instructions of the State registrar. If a certificate of death is incomplete or unsatisfactory, he shall indicate the defects therein and withhold the burial or removal permit until corrected. If the certificate of death is properly executed and complete, he shall issue a burial or removal permit to the undertaker."
SEC. 2. That said original sections 198, 218, 219, 220, 225, and 226 of the General Code be, and the same are hereby, repealed.

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

MAHANOY CITY, PA.

Cow Stables—Construction and Maintenance—Care of Manure. (Ord. June 3, 1913.)

SECTION 1. No cow stables shall be kept or maintained within the borough of Mahanoy City so near to any dwelling house or other building as to render the ordinary use or occupation of such dwelling house or other building physically uncomfortable to the inhabitants or occupants thereof, or so near as to interfere with the reasonable enjoyment of such dwelling house or other building.

SEC. 2. No cow stable shall be kept or maintained in the borough of Mahanoy City unless all of the following conditions and requirements be strictly complied with, viz:

(1) The cow stable must be provided with adequate ventilation, and at least 600 cubic feet of air space must be provided for each cow.

(2) Stable floors must be water-tight, must be properly graded and well drained, and must be made of some nonabsorbent material, such as cement.

(3) Manure gutters must be provided not less than 6 inches deep constructed of some nonabsorbent material.

(4) The platform on which the cow stands must be made of some nonabsorbent material and so constructed that manure and urine will drop into the gutter, and it must be well lighted and kept clean at all times.

(5) Manure must be removed from the stable at least once each day and the floors must be swept and kept free from dirt, rubbish, and decaying animal or vegetable matter.

(6) All liquid matter must be removed from the stable daily and must not at any time be allowed to overflow or saturate the ground under or around the cow stable.

(7) Manure when removed from the stable must be immediately hauled away out of the borough, or be stored in a water-tight receptacle outside of the stable constructed of some nonabsorbent material, which receptacle must be tightly covered at all times, except when manure is being put into or taken out of it.

(8) Manure stored in a receptacle must be removed therefrom at least once a month and hauled away out of the borough.

(9) Enough windows must be installed for the satisfactory lighting of the stable—2 square feet of window light to each 600 cubic feet of air space to represent the minimum.

SEC. 3. Any person who shall violate any provision of sections 1 or 2 shall upon judgment against him or her therefore pay a fine of not less than $10 nor more than $20 for the use of the borough, and, in default of the payment of the said judgments with costs, may be sentenced and committed to the borough lockup for a period not exceeding 5 days or to the jail of the county of Schuylkill for a period not exceeding 30 days.

MANILA, P. I.

Cigar, Cigarette, and Tobacco Factories—Sanitary Regulation. (Ord. 210, Dec. 6, 1913.)

SECTION 1. *General sanitary provisions.*—All provisions of the revised ordinances of the city of Manila and of ordinance No. 86, enacted October 20, 1906, by the municipal board of the city of Manila, relative to licenses, the sanitary maintenance of buildings and premises, the collection or disposal of garbage, the prohibition against expectorating in public places, and the definition and prohibition of nuisances dangerous to the public health are hereby declared to include and apply to all cigar, cigarette, and tobacco factories in the city of Manila and to all houses, shops, and places where tobacco is subjected to any preparatory process or is manufactured into commercial products.

SEC. 2. *Air space.*—Every cigar, cigarette, or tobacco factory shall have not less than 6 cubic meters of air space for each employee in rooms having a window area from one-tenth to one-fifth of the floor area and not less than 5 cubic meters of air space for window area equal to or greater than one-fifth of the floor area.

Rooms having a window area of less than one-tenth of the floor area shall not be used as workrooms.

SEC. 3. *Closets.*—Every cigar, cigarette, or tobacco factory shall maintain separate closet accommodations for men and women and shall be equipped with one or more properly constructed, installed, and vented sanitary closets for each 50 employees of the sex using such accommodations. In addition to the required number of sanitary closets there shall be required one properly constructed and installed urinal for every 60 male employees of such factory: *Provided*, That nothing in this section shall be held to prevent the requirement of additional closets if it is shown to the satisfaction of the director of health that the number is insufficient.

SEC. 4. *Wash rooms.*—In every cigar, cigarette, or tobacco factory there shall be provided in connection with, or easily accessible from, the toilet rooms for each sex a properly equipped lavatory with an adequate supply of water, soap, and sanitary towels and one or more washbasins for each 50 employees of the sex using such accommodations: *Provided*, That the management of the cigar, cigarette, or tobacco factory may require the employees to supply themselves with the necessary towels.

It shall be obligatory upon the management of the cigar, cigarette, or tobacco factory to maintain said toilet rooms and lavatories in a sanitary condition satisfactory to the director of health.

SEC. 5. *Washing of hands.*—Every laborer, workman, operator, or other employee of cigar, cigarette, or tobacco factories who is engaged in the handling, cleansing, preparation, manufacture, or packing of cigars, cigarettes, or other commercial products of tobacco, upon each arrival at such factories, and before beginning work, and after each visit to a closet or urinal and before resuming work shall wash his or her hands thoroughly with soap and water and shall dry them with a clean towel, and, when required by the regulations of the bureau of health, the hands shall also be washed with a suitable disinfecting solution. The manager or other person in charge of such factory or place shall detail a sufficient number of employees to effect the enforcement of the requirement with reference to the washing of the hands of employees. It shall be obligatory upon the manager or other person in charge of the cigar, cigarette, or tobacco factory to see that the provisions of this section are faithfully carried out.

SEC. 6. *Cuspidors.*—There shall be provided in each room of all cigar, cigarette, or tobacco factories not less than one cuspidor for every eight persons and no person shall expectorate or deposit any mucus or phlegm on the floor or walls in or about such factories. The cuspidors herein required shall be of an impervious material with smooth or polished surfaces so as to be easily cleansed, and shall be emptied,

cleaned with water, and partly filled with a disinfecting fluid every day, or oftener when so required by the bureau of health regulations. An employee of the factory shall be detailed for this work, and it shall be the duty of the management to see that the provisions of this section are maintained.

SEC. 7. *Wearing apparel, handkerchiefs, etc.*—No employee of any cigar, cigarette, or tobacco factory shall use any article of wearing apparel or any handkerchiefs, tapis, or similar article for the purpose of holding, wrapping, or conveying from one place to another any tobacco or tobacco products.

SEC. 8. *Restaurants, living rooms, peddlers.*—No restaurant, canteen, dining room, or carenderia shall be permitted or allowed in the interior of any cigar, cigarette, or tobacco factory, nor shall any part of the building in which the manufacture of tobacco is carried on be used for living or sleeping quarters, unless the part so used is entirely separated from that part of the building used as factory and has no interior connection therewith. No peddler shall be allowed to enter the factory premises for the purpose of selling fruit, sweets, aerated waters, or any other articles of food or drink.

SEC. 9. *Children and domestic animals.*—No employee of any cigar, cigarette, or tobacco factory, during the hours of employment therein, shall be accompanied by or receive visits from any child who is not employed for pay in the same factory nor shall any domestic animal be permitted to enter or remain in any workroom of such factory.

SEC. 10. *Sanitary preparation and manufacture of tobacco products.*—All manual operations pertaining to the selection and classification of leaves, the preparation for and the manufacture of tobacco products shall be carried on in a sanitary manner in properly ventilated and lighted rooms upon dry, clean tables or upon dry, clean mats, spread upon floors or tables and so protected by troughs, flanges, or other satisfactory devices that the material employed may be kept from falling on the floor and from contamination from any other source: *Provided*, That this section shall not be construed as prohibiting the use of dry, clean, smooth, impervious pavements, which have aisles or walks so arranged that the tobacco will not be stepped upon.

SEC. 11. *Insanitary acts.*—No persons engaged in the handling, preparation, processing, manufacturing, or packing of tobacco or any tobacco product or supervising such employment shall cause, permit, or suffer to be permitted any insanitary act during such employment, nor shall such person touch or contaminate any tobacco or tobacco products with filthy hands or permit the same to be brought into contact with the tongue or lips or to use saliva, impure water, or other unwholesome substance as a moistening agent, nor shall any such employee trample, walk, or stand upon such tobacco or tobacco products or permit or suffer the same to be done.

SEC. 12. *Dangerous or communicable diseases—Medical inspections and certificates.*—No person suffering from a dangerous communicable disease shall be employed in any cigar, cigarette, or tobacco factory. For the purpose of making effective this provision every employee of such factory shall be inspected by a duly qualified physician within 24 hours of original entrance upon and every two weeks thereafter during such employment. The fact that such inspections have been made shall be evidenced by the initials of the physician placed on individual report cards after each inspection, such cards to be retained by the employer. These cards shall show the name, age, factory, sex, character of work, residence, and, in the case of employees under 16 years of age, the name of the mother. The cards shall be furnished by the factory to the employee free.

The physician shall keep a record of the inspection of each case of dangerous communicable disease, showing date, name, age, address, and finding, which record shall be subject to examination by the proper representative of the bureau of health at any time. There shall be on file in the factory a card for each employee.

SEC. 13. *Inspection by bureau of health.*—The foregoing provisions shall not be construed so as to affect the right of the duly authorized representatives of the bureau of

health to make such inspections as may be deemed advisable. In all matters involving questions of sanitation and public health and regulation of cigar, cigarette, and tobacco factories as required by the sections of this ordinance the decision of the director of health shall be final.

SEC. 14. *Inspection of cigar factories.*—All cigar, cigarette, and tobacco factories shall be subject to inspection by the duly authorized agents of the bureau of health without previous notice, upon reporting to the owner, representative, or person in charge of same if he is on the premises, before making such inspection, which may be made at any hour of the day or night when work is being performed, for the purpose of ascertaining whether the sanitary ordinances and regulations are properly observed and enforced.

SEC. 15. *Reports of violations of the ordinance by factory employees.*—It shall be the duty of every owner or legal representative of any cigar, cigarette, or tobacco factory whose employees violate any section of this ordinance to report same forthwith to the director of health or his representatives.

SEC. 16. *Penalty.*—Any owner, legal representative, employee, or other person violating any of the provisions of this ordinance shall, upon conviction, be punished by a fine of not more than 200 pesos or by imprisonment for not more than six months, or by both such fine and imprisonment, in the discretion of the court, for each offense.

Garbage and Refuse—Care and Disposal. (Ord. 208, Nov. 22, 1913.)

SECTION 1. Chapter 71 of the revised ordinances of the city of Manila is hereby amended to read as follows:

"CHAPTER 71.—GARBAGE AND RUBBISH.

"SEC. 687. *'Garbage' defined.*—The word 'garbage' whenever used in this title shall include the refuse of such animal or vegetable matter or food supplies as were intended for human food but have been rejected for such use, dead animals weighing approximately less than 14 kilos, offal, and the refuse of slaughterhouses.

"SEC. 688. *'Rubbish' defined.*—The word 'rubbish' whenever used in this title shall include waste or used papers, pasteboards, woven materials, matting, straw, wood, husk, metal cans or other metallic vessel, broken glass or porcelain; also loose or decayed materials and dirt-like substance which may accumulate from repairing operations or from storing or cleaning of property and goods; and the dung of cattle, horses, mules, and other animals, and stable litter, refuse, and sweepings; and any other matter of similar kind which the development of any business or industry in the city may produce.

"SEC. 689. *Receptacle, requirements as to.*—A separate receptacle shall be provided and maintained for garbage, and another for rubbish. All receptacles for garbage shall be water-tight, fitted with tight covers, and shall be not less than 25 centimeters in depth by 20 centimeters in diameter, nor more than 81 centimeters in depth by 47 centimeters in diameter, fitted with handles, and of such construction as readily to permit handling. It shall be unlawful for any person or persons to place or to keep garbage in any place or vessel other than the proper garbage receptacles provided therefor. No garbage receptacle shall be filled to more than approximately 10 centimeters from the top thereof.

"Rubbish receptacles shall be suitable and appropriate for containing rubbish with safety and without leakage or spilling.

"SEC. 690. *Owners, agents, or administrators of buildings to provide and maintain garbage receptacles—Occupants or tenants to provide and maintain rubbish receptacles.*—The owner or owners, agent, or administrator of every building, premises, or place of business shall provide and at all times maintain in such building, premises, or place of business, for the use of the occupants thereof, suitable and sufficient garbage receptacles to contain, without leakage, all the garbage that may accumulate for each

period of 24 hours in or upon such building, premises, or place of business, and it shall be unlawful for any person to lease, sublease, or turn over to another, for occupancy, any building, premises, or place of business, or any part or portion thereof, without providing such garbage receptacles.

"The department of sanitation and transportation, upon request by such owner, agent, or administrator, shall furnish, maintain, and replace in case of loss all the garbage receptacles required by this section for use in the city of Manila for an annual rental of not more than 3 pesos for each receptacle; and it shall be unlawful for any person to use, or for any owner, agent, or administrator, as required in the next preceding paragraph, to provide any receptacle for garbage, other than one so furnished by the department of sanitation and transportation, without first obtaining from the director of health a certificate that such a receptacle, proposed so to be used or provided, is suitable and sufficient in kind, capacity, and condition: *Provided*, That the chief of the department of sanitation and transportation, in his discretion, may furnish without cost such garbage receptacle to people living in houses that have no sewer or water connection.

"The occupants or tenants of every building shall provide and at all times maintain in such building suitable and sufficient rubbish receptacles to contain all the rubbish that may accumulate for each period of 24 hours in or upon such building.

"SEC. 691. *Time to place receptacles on sidewalk—Large quantities of rubbish.*—It shall be the duty of the occupant of every building, premises, or place of business to have the receptacles for garbage or rubbish placed on the outer edge of the sidewalk each day, or at the outer edge of the street if there be no sidewalk, at such time, not earlier than 8 o'clock p. m. nor later than 11 o'clock p. m., as may be directed by the chief of the department of sanitation and transportation: *Provided, however*, That whenever there are large or unusual quantities of rubbish or trade refuse to be removed from any building, premises, or place of business the occupant thereof shall notify the person or persons authorized to collect such rubbish or trade refuse at least 24 hours before removal is necessary, in order that proper transportation may be furnished for same: *And provided further*, That whenever there are large or unusual quantities, or to exceed one 5-ton truck load, of garbage or rubbish, condemned goods, building or trade refuse to be removed from any building, premises, or place of business, the occupant thereof shall provide the necessary transportation and remove the same under the direction of the chief of the department of sanitation and transportation.

"SEC. 692. *Collection of contents of receptacles.*—It shall be the duty of the department of sanitation and transportation or any authorized collector to collect daily the contents of such receptacles in suitable carts, trucks, or other vehicles: *Provided*, That whenever it comes to the knowledge of the director of health that the emptying of the receptacles at the point of collection by the garbage collector is a source of nuisance, it shall be the duty of the department of sanitation and transportation, or any authorized collector upon the request of the director of health, to collect daily the receptacles containing garbage, in suitable carts, trucks, or other vehicles, replacing each loaded receptacle thus removed with a receptacle cleansed and disinfected as provided by the bureau of health: *And provided further*, That in each case where the director of health requires the daily removal and replacement of receptacles at hotels, hospitals, boarding houses, and any other exceptional case, the expense of such removal and replacement shall be borne by the occupant of the premises, but in no case shall the charge exceed the actual cost of this service.

"SEC. 693. *Interference with garbage or garbage collector.*—No person other than the owner or an authorized collector shall interfere with or disturb any garbage after it shall have been put in a garbage receptacle and placed in an accessible place for collection, nor shall any unauthorized person molest, hinder, delay, or in any other manner interfere with any garbage collector in the discharge of his duty.

"SEC. 694. *Regulating vehicles for hauling refuse.*—The boxes or bodies of vehicles for hauling manure or dry waste and refuse must be sufficiently tight to prevent any leakage or escape of their contents.

"SEC. 695. (*a*) *Disposal.*—As soon as the garbage wagon or vehicle is loaded it must be driven at once to the specified place of disposal and on no account be allowed to stand in the vicinity of any human habitation, schoolhouse, or place of assembly. All such materials must be disposed of within 12 hours after collection.

"(*b*) *Sale or removal.*—It shall be unlawful for any unauthorized person or persons to sell, remove, or cause the sale or removal of slops, decayed vegetables, fruits, unwholesome or decayed meats, or fire-damaged foodstuffs without a permit issued by the director of health or his representative."

Public Dance Halls—Communicable Diseases in—Examination of Females. (Ord. 189, Apr. 14, 1913.)

SECTION 1. It shall be unlawful for any person to dance in any public dance hall in the city of Manila who has tuberculosis or any dangerous communicable disease.

SEC. 2. It shall be unlawful for any person of the female sex to dance in a public dance hall, whether for a fee or otherwise, without having a valid certificate from the bureau of health showing that such person is free from tuberculosis or other dangerous communicable disease.

SEC. 3. Such certificate of the bureau of health shall be issued from Station J, Intramuros, only after such examination as may be necessary to determine the state of health of the person examined, and shall be valid for 30 days only from the date of issue: *Provided, however,* That all examinations of females required by this section shall be made by a female physician.

SEC. 4. It shall be unlawful for the owner, proprietor, manager, or person in charge of any public dance hall to allow or permit any female to dance in such public dance hall without having a certificate as required in section 2 of this ordinance.

SEC. 5. Any person violating any of the provisions of this ordinance shall, upon conviction, be punished by a fine of not exceeding 200 pesos or by imprisonment not exceeding six months, or by both such fine and imprisonment, in the discretion of the court.

Rats and Mosquitoes—Appropriations for Extermination of. (Ord. 205, Sept. 1, 1913.)

SECTION 1. The following sums are hereby appropriated out of any funds accruing to the city of Manila during the fiscal year 1914 and made available for expenditure by the department of sanitation and transportation, as follows:

For the extermination of rats, 7,500 pesos.

For the extermination of mosquitoes, 18,000 pesos.

Total amount appropriated by this ordinance, 25,500 pesos.

Appropriation for Sanitary Improvements. (Ord. 204, Sept. 1, 1913.)

(The appropriations are for the fiscal year ending June 30, 1914.)

SECTION 1. The following sums, or so much thereof as may be respectively necessary, are hereby appropriated out of any funds in the insular treasury transferred to the city of Manila as provided by act numbered 1765 of the Philippine Commission, and made available for expenditure as follows:

PUBLIC WORKS AND PERMANENT IMPROVEMENTS.

Buildings:

For public sanitary laundry, bath, and toilet in the district of Tondo, 12,000 pesos.

* * * * * * *

Equipment:

For purchase or manufacture of 3,000 garbage receptacles, 15,000 pesos.

For motor truck for pail system, 10,000 pesos.

Sanitary improvement:

For opening of sanitary barrios, improving those already existing, and making other sanitary improvements in the city of Manila: *Provided*, That all expenditures under this head shall have the prior approval of the director of health and of the city engineer, 100,000 pesos.

For sanitary improvements and public works in the barrios of Dagupan, Antonio Rivera, Angustias, Licheros, and Gagalangin, 60,000 pesos.

LYNN, MASS.

Foodstuffs—Protection and Sale. (Reg. Bd. of H., May 1, 1913.)

SECTION 1. It is hereby ordered that, except during the process of sale or while in the act of loading or unloading vehicles, no cut meat, fish, shucked shellfish, dried or preserved fruits, dates, figs, cut fruits, cut melons, cracked nuts, nut meats, popped corn, candies, confectionery or bakers' products, which are intended for sale for human food shall be conveyed from place to place, or kept in an open window or doorway or kept outside of a building or in any public or private way of the city of Lynn, unless so covered with clean material and so placed as to be protected from dust, flies, and animals.

SEC. 2. Every person being the occupant or lessee of any room, stall, building, or other place, and every person being the owner or person in charge of any stand, case, rack, bench, pushcart, or other vehicle where or from which human food is kept, stored, sold, or offered for sale shall maintain such room, stall, building, or other place, stand, case, rack, bench, pushcart, or other vehicle and its appurtenances in a clean and wholesome condition.

SEC. 3. All persons while engaged in the handling of articles of food in such room, stall, building, or other place shall wear clean outer garments, and shall be free from contagious or infectious disease.

SEC. 4. No room in which articles of food are prepared, kept, stored, sold, or offered for sale, shall be used for domestic purposes, or open directly into any room so used, unless the conditions of such room are approved by the board of health. In no such room shall there be a water-closet, unless the same is approved by the board of health. All shops or stores used for the sale of articles of food shall be equipped with such lavatory accommodations as the board of health may order and approve.

SEC. 5. The use of unclean paper as an inside or outside wrapping of articles of food is prohibited.

SEC. 6. Every peddler of foodstuffs from wagon or carts, in addition to the clean covering provided for in this regulation, shall keep in his wagon or cart a water-tight and sufficient receptacle for the wastes of his business, and such wastes shall be so disposed of as not to cause a nuisance.

MADISON, WIS.

Milk and Cream—Production, Care, and Sale. (Ord. Jan. 10, 1913.)

SECTION 1. *License.*—It shall be unlawful for any person, association, or corporation to sell, offer for sale or delivery in the city of Madison any milk or cream without first having obtained a license therefor from the clerk of said city as hereinafter provided.

SEC. 2. The clerk of said city shall, upon application made in writing, setting forth:

1. The name, residence, post-office address, and the exact location of the dairy of the applicant.

2. The number of cows from which milk or cream is obtained for sale or delivery or controlled by the applicant.

3. If the applicant does not keep cows then the source or sources from which he obtains milk or cream for sale or delivery.

4. Said applicant shall also present written consent from each person from whom he obtains milk or cream, granting permission to the board of health, or their authorized representative, free and open access to his premises for the purpose of making an inspection of the sanitary condition of the same, and upon the recommendation of the board of health of said city to the effect that applicant has complied with the provisions of this ordinance, that he has made a personal examination of the proposed dairy and certifies that in his judgment the proposed location and surroundings are in a good, sanitary condition, sufficient and proper in every way for the conduct of the proposed business, and that all said animals are free from disease, and that in his judgment the applicant is a proper person to conduct a dairy, and has complied with the terms of this ordinance, and on payment of $1, said clerk shall issue a license showing that the person, association, or corporation to whom the same is issued has complied with this ordinance and the rules and regulations adopted by or in pursuance of it in the name of the applicant and the location of the dairy.

SEC. 3. Each license shall expire on the 15th day of April following the date of issuing the same, unless sooner revoked as herein provided.

SEC. 4. It is further provided that each building or conveyance employed in distributing or delivering milk or cream shall have marked on it in plain figures the license number of the person or corporation in whose service it is employed, and further that the driver or person in charge of each such conveyance or building shall have in his possession while engaged in the sale, distribution, or delivery of milk or cream a certified copy of the license issued to him or to the party by whom employed, and that said license or copy thereof shall be produced for inspection at any time when requested by any patron or official in the city of Madison. The certified copies required herein shall be furnished by the city clerk on application therefor.

SEC. 5. *Sanitary conditions.*—The board of health shall from time to time make such further rules and regulations respecting the sanitary conditions of the stable, and sheds in which said cows are kept, the manner of handling the same, the person, buildings, conveyances, bottles, and cans in which milk and cream are handled, and such other rules and regulations respecting the obtaining, sale, and distribution of milk and cream in the city of Madison as said board shall deem proper. Any such rules and regulations before going into effect shall be published in the official paper at least three times.

Sec. 6. *Tuberculosis.*—No license shall be issued until all the cows of the applicant have been examined and tested for tuberculosis by the tuberculin test and found free from tuberculosis, and the milk or cream of no cow or cows shall be sold or offered for sale which milk or cream shall become the property of any licensed person until such cow or cows have been examined and tested for tuberculosis by the tuberculin test at the expense of the applicant by some competent person, approved by the city health officer or by the State veterinarian, or by the State live-stock sanitary board, and the tuberculosis certificate filed with the city clerk, which certificate shall give an accurate description of the different cows, stating age, breed, and distinctive markings, with complete temperature record before and after injection for such test.

The health officer of said city may require at any time a test or retest of any herd furnishing milk in the city suspected of insanitary or diseased conditions, and shall require such a test at least every two years unless any test shall disclose tuberculosis in any member of the herd tested, in which case tests of such herds shall be made annually thereafter so long as said tests shall disclose such tuberculosis.

If after the issuance of the license any of the cows of any licensee be disposed of and replaced by others, or if additional cows be added to the number stipulated in the

certificate of health hereinbefore mentioned, or if any change be made in the location of the dairy or the place of business, the owner must forthwith inform the board of health in writing of such change or increase in the number of cows. If after the issuance of the license there are introduced into any herd new cows or any which have not been examined or tested as hereinbefore provided, no milk or cream shall be sold or disposed of from such herd in said city until said new cows have been examined and tested as herein provided.

Whenever it shall be found that any milk-producing cow is affected with tuberculosis or any other disease rendering the milk impure or insanitary, no milk or cream from the cow or from the herd in which she is kept shall be sold or offered for sale in this city until such cow or cows have been removed or killed or such disease cured.

SEC. 7. *Standards.*—No person, association, or corporation, producing milk or cream, or obtaining milk or cream from others shall sell or offer same for sale, unless it meets the following standards:

Standards: Milk containing less than 3 per cent of milk fat or milk containing less than 8½ per cent of milk solids, not fat, shall be termed and mean adulterated milk, and it shall be unlawful to sell or offer for sale any milk which shall contain less than 8½ per cent of milk solids or to sell or offer for sale any cream which contains less than 18 per cent of milk fat: *Provided, however,* That skimmed milk may be sold to any person who is informed at the time of each sale of its character, but only from can-painted and distinctly labeled in white letters "Skimmed milk," each and every letter being at least 1 inch high and one-half inch wide, said words to be on the side or top of said container in such a position as to be most easily seen when such milk is sold or delivered.

No person shall sell or offer for sale in this city as pure milk any milk to which any preservative has been added.

SEC. 8. *Inspection and examination.*—The board of health or any inspector designated by said board of health shall have the right to enter any building, wagon, or place where milk or cream is kept or exposed for sale within the limits of the city of Madison, to ascertain whether or not the owner or occupant is complying with the provisions of this ordinance, and shall have the right to take samples of milk or cream not to exceed 1 pint from any can, vessel, or bottle, for the purpose of inspecting, testing, analyzing, or for microscopic examination.

And whenever a sample or samples so taken shall not correspond with or shall be in violation of the requirements of this ordinance, such person, persons, corporations, or company, in whose possession, care, custody, or control such milk or cream shall be found, shall be deemed guilty of misdemeanor, and punished as hereinafter provided. Any person, association, or corporation that shall not permit such examination by said board of health or their representative, shall forthwith forfeit his, her, or their license or licenses, and shall be punished as hereinafter provided.

SEC. 9. *Fines.*—Any person, association, or corporation who shall violate any of the provisions of this ordinance or rules of the board of health made in pursuance hereof shall be fined not less than $5 nor more than $50 or be imprisoned in the county jail for not less than 5 days nor more than 30 days on conviction thereof for each offense and on the third conviction within any one year his license shall ipso facto stand forfeited.

SEC. 10. *Complaints.*—Upon complaint in writing by any resident of this city and filing the same with the board of health that any such licensee sold or offered for sale milk or cream that is impure, unhealthy, or insanitary, or that the dairy or place in which said cows are kept is filthy or unhealthy or that the milk sold by such person is drawn from cows that are affected with tuberculosis or other disease rendering the milk unhealthy or insanitary, or that he is violating any of the provisions of this ordinance or rules of the board of health made in pursuance thereof, the board of health shall cause an examination of such premises and animals, and of

such milk or cream to be made, and if conditions warrant the board of health shall summon such person or persons to appear before them within three days after the date of service of such summons to show cause why his or their license or licenses shall not be revoked. The board of health shall proceed to hear such matters and, in their discretion, if the allegations of said complaint are true and in their judgment sufficient, revoke the license or licenses of such person complained of.

And in case of difficulty of determining the character of the milk sold, a chemical and bacteriological examination may be secured and the sale of milk which does not conform to the following standards shall be prohibited. Chemical analysis: Standards hereinbefore stated. Bacteriological analysis: Milk, 500,000 bacteria per cubic centimeter; cream, 800,000 bacteria per cubic centimeter.

MEADVILLE, PA.

Garbage and Refuse—Care and Disposal. (Reg. Bd. of H., Aug. 5, 1913.)

No. 1. Garbage as herein used means refuse from animal and vegetable matter, and foodstuffs after it has been used as food, except night soil, and all refuse animal and vegetable matter which was intended to be so used, and refuse from the market, house and store refuse, floor sweepings, kitchen and table waste of animal or vegetable nature, vegetables, meats, fish, bones, fat and all offal, broken glass, chinaware, paper, rags, bottles, shoes, and like refuse.

No. 2. Every resident householder, tenant, hotel keeper, boarding-house keeper, all business places, and also all parties and persons occupying dwellings, including all private persons and corporations, shall provide or cause to be provided and keep or cause to be kept at all times portable metal cans for garbage, said cans to be perfectly water-tight, and to be kept with handles on the outside, and tight-fitting covers.

The said persons or corporations shall also keep or cause to be kept a separate receptacle for miscellaneous refuse. These receptacles shall not be less than 1 bushel capacity.

The receptacles for garbage and miscellaneous refuse shall be kept in the rear of the house or passageway. These receptacles shall not be placed or kept at any time on the street, alley, sidewalk, or any other public place.

No. 3. The collection of garbage and miscellaneous refuse must be made from every part of the city of Meadville twice each week. The health officer will designate how often the garbage and refuse shall be removed from hotels, restaurants, boarding houses, butcher shops, stores, groceries, etc.

No. 4. The garbage can must be scalded after it has been emptied. When leaking or in any way defective, it must be repaired or replaced by a new can.

No. 5. Carts or wagons for the removal of garbage shall be equipped with body boxes of metal composition with metal lids, water-tight, and strongly built. They must be kept thoroughly cleansed and well painted.

No. 6. No person or persons except such as are duly licensed as garbage collectors shall haul any garbage within the city of Meadville, and garbage collectors must take all garbage collected to the city crematory.

No. 7. No garbage or miscellaneous refuse or refuse of any kind shall be thrown in or upon any street, alley, public or private grounds, any running stream or any body of water within the city of Meadville.

No. 8. The person or persons to whom a license is granted to collect garbage and miscellaneous refuse shall not charge above the sum of 40 cents per month for each private family, $1 per month for each store or boarding house, and from $2 to $5 per month for hotels and restaurants, this to be regulated according to the amount of garbage and miscellaneous refuse to be removed; and amount of charges to be fixed by health officer.

No. 9. No person shall bury or burn any garbage in their private yards or gardens, or in any other place within the city limits.

No. 10. Any person violating any of these rules shall, on conviction before the mayor or any magistrate of the city of Meadville, be fined not less than $5 nor more than $100 for each offense, or, in default of payment, be committed to the county jail for a period not exceeding 30 days.

Foodstuffs—Protection and Sale. (Reg. Bd. of H., Feb. 4, 1913.)

Rules adopted by the Meadville board of health to be observed by grocers, bakers' and butchers in the sanitary care of food products in grocery stores, bake shops, butcher shops, and markets:

RULE 1. Food products that do not have to be peeled, pared, or cooked before they are fit for consumption, when inside or outside, must be tightly covered with a wood or glass cover or exposed in special cases for this purpose. Inside they must be elevated from the floor 20 inches, and when outside they must be elevated 30 inches from the floor or sidewalk. All other food products that have to be peeled, pared, or cooked before they are fit for consumption may be exposed, but must be elevated above the floor or sidewalk 20 inches.

RULE 2. All crackers, cakes, candies, or breadstuffs in barrels, boxes, buckets, baskets, and cans must be covered with tight-fitting covers which may be either wood or glass, or exposed in glass show cases.

RULE 3. All containers of various kinds holding pickles, fish, and fruit butters must be covered with tight-fitting wood or glass covers.

RULE 4. All cases or boxes used to contain breadstuffs, cakes, pies, or other like products must be cleaned once every week thoroughly by washing with soap and water both inside and outside, then thoroughly rinsed and aired. All stands and wagons from which food products are vended or sold must be at all times kept clean and in sanitary condition, free from offensive odors or any accumulation of decomposed animal or vegetable matter.

RULE 5. Handling or tasting of food products, such as butter, fruit butters, all dairy products or allied products, by prospective customers will not be allowed at any grocery store, bake shop, meat shop, or market.

RULE 6. The wrapping of food products in newspapers, old sacks, or any paper that has been formerly used is strictly forbidden.

Penalty.—That any person or persons violating any of the above rules, whether vendor or vendee, shall be liable to a fine of not less than $1 or more than $10 for the first offense nor less than $10 or more than $100 for each subsequent offense, together with costs of prosecution, which fines and penalties shall be collected in the manner provided by law for the recovery of like fines and penalties: *Provided*, That in default of payment the defendant shall be committed to the county jail for not less than 1 day or more than 30 days for each offense.

Poultry—Keeping of, in City. (Reg. Bd. of H., June 3, 1913.)

SECTION 1. It shall be unlawful for any person to keep chickens, ducks, geese, or other fowls in the city of Meadville without having obtained a license or written permit from the board of health.

When permits are granted for the keeping of chickens, ducks, geese, or other fowls in the city of Meadville, they shall not be maintained or kept within 40 feet of any dwelling, and must be kept confined in proper pens constantly between the 1st day of April and the 1st day of November of each year.

SEC. 2. All pens, yards, and inclosures shall be kept in a clean and sanitary condition; and all accumulation of filth in and about the same shall be removed weekly.

SEC. 3. Any violation of this rule is punishable by a fine of not less than $5 or more than $100 for each and every offense.

Stables and Manure—Care of. (Reg. Bd. of H., June 3, 1913.)

SECTION 1. All stables, yards, and inclosures where horses, mules, and cattle are kept shall be free from filth. All manure must be kept in bins, vaults, or boxes and tightly covered, and from the 1st of May to the 1st day of November, in addition, said bins, vaults, or boxes must be kept screened from flies. All manure bins, vaults, or boxes shall be entirely emptied and the contents taken from the premises at least once in two weeks and the bins, vaults, or boxes thoroughly cleaned.

SEC. 2. Any person violating any of the provisions of this rule shall be subject to a fine of not less than $5 or more than $100 for each and every offense.

MONTCLAIR, N. J.

Morbidity Reports—Venereal Diseases—Wassermann Test. (Reg. Bd. of H., Jan. 28, 1913.)

Resolved, First. That on and after March 1, 1913, the superintendent or other officers in charge of all public institutions, such as hospitals, dispensaries, clinics, homes, asylums, charitable and correctional institutions, including all institutions which are supported in whole or in part by voluntary contributions, be required to report promptly to the board of health the home, sex, age, nationality, race, marital state, and address of every patient under observation suffering from syphilis in every stage, chancroid, or gonorrheal infection of every kind (including gonorrheal arthritis), stating the name, character, stage, and duration of the infection, and the date and source of contraction of the infection, if obtainable.

Second. That physicians are requested to report promptly all cases of venereal diseases coming under their observation in the future, omitting the name and address, if desired, but always giving the initials for identification in case of duplicate reports, and stating the sex and age of the patient, the name, character, stage, and duration of the infection, and the date and the source of contraction of the inspection, if obtainable.

Third. That cases reported by private physicians will be filed by case numbers, which will be given to the physicians for future identification when the cases are acknowledged.

Fourth. That a supply of report cards to be used for this purpose will be forwarded on request. All information will be regarded as absolutely confidential and will not be accessible to the public, nor will the records be deemed public records.

Fifth. *Diagnosis of venereal diseases.*—That the board of health will hereafter make, without charge, the Wassermann test for the diagnosis of syphilis, and will also provide facilities for the free bacteriological examination of specimens which have been taken for the diagnosis of gonorrheal infections. The board will also furnish treatment for indigent cases.

Sixth. That outfits with full directions for obtaining specimens will hereafter be furnished to physicians free of charge at the office of the board of health.

Tuberculosis—Disinfection of Vacated Apartments—Separation of Patients from Children. (Reg. Bd. of H., Dec. 9, 1913.)

Whereas chapter 169 of the State laws of 1910 requires that any apartment that is vacated by a tuberculous patient shall be disinfected at public expense in order that it may be rendered safe and suitable for occupancy: Be it

Resolved, That in the interest of public health the health officer be, and hereby is, instructed to notify the owners of each house in which there is a case of tuberculosis of the existence of such a case, and to further notify him that the apartment occupied by the patient must be disinfected after the removal or death of the patient before it can be occupied by another family, and to request such owner to notify this board

of the vacation of any such apartment in order that adequate disinfection may be performed by this board.

Resolved, That the public health requires that in all cases except where extreme precautions have been taken to prevent the apartment from becoming infected the disinfection shall be performed by thoroughly wetting with formaldehyde the walls, ceiling, and floor of the rooms occupied by the patient. In all other cases the rooms so occupied shall be disinfected with formaldehyde gas, or, at the discretion of the board, by thorough cleaning and renovating.

Resolved, That the board of health hereby directs that no person having tuberculosis of the lungs shall be allowed to remain in the same household where there are children under 16 years of age unless the patient can be and is adequately separated from the children so that in the judgment of the board there is no danger of the transference of infection.

Ice Cream—Board of Health to Regulate Manufacture of—Bacterial Standard. (Ord. Oct. 29, 1913.)

An ordinance entitled "An ordinance establishing a sanitary code for the town of Montclair," passed April 9, 1907, is hereby amended as follows:

Article 7, section 6, by adding thereto two clauses, as follows:

1. The board of health may, from time to time, when in its opinion the public interest may require, permit, by resolution, the sale of ice cream that is manufactured from milk and cream that could not legally be sold as milk and cream, provided that such milk and cream are pasteurized at a temperature equivalent to 145° F. for 20 minutes, and provided that the maximum allowable bacteria counts of the pasteurized milk and cream are set forth in the resolution.

2. No person shall sell or offer for sale in the town of Montclair any ice cream that contains over 500,000 bacteria per cubic centimeter, measurement to be made immediately after the ice cream has been reduced to a fluid condition.

Ice Cream—Manufactured from Pasteurized Milk—Bacterial Standard. (Reg. Bd. of H., Dec. 9, 1913.)

Resolved, That until this resolution is rescinded ice cream that is manufactured from milk and cream that could not legally be sold as milk and cream may be sold in the town of Montclair: *Provided*, That the milk and cream are obtained from dairies that score at least 60 on the United States Bureau of Animal Industry score card: *And provided*, That the cows have been examined by a veterinarian within one year and have been found to be in good health: *And further provided*, That the said milk and cream are pasteurized by the holding process at a temperature equivalent to 145° F. for 20 minutes and that the bacteria count of the milk at no time after pasteurization exceeds 50,000 per cubic centimeter and that the bacteria count of the cream at no time after pasteurization exceeds 250,000 per cubic centimeter.

Meat—Inspection Before and After Slaughtering. (Ord. Oct. 28, 1913.)

An ordinance entitled "An ordinance establishing a sanitary code for the town of Montclair," passed April 9, 1907, is hereby amended as follows:

Article 7, section 9, by adding thereto the following clause:

No pork, beef, veal, mutton, or lamb nor any part of any animal from which any of said meats is obtained shall be sold for food purposes or exposed for sale or held in possession in a store in which food is sold, unless the said animal has been examined both before and after slaughter by a meat inspector duly appointed by the United States Government, or by some other competent public official, and has been passed as fit for food and has been stamped with a proper identification mark or marks accord-

ing to the system adopted by the United States Bureau of Animal Industry. The provisions of this ordinance shall be construed to apply to all meat sausages and chopped meats.

Milk and Cream—Bacterial Standards. (Ord. Oct. 28, 1913.)

An ordinance entitle "An ordinance establishing a sanitary code for the town of Montclair," passed April 9, 1907, is hereby amended as follows:

Article 8, section 7 (*b*) by adding thereto "No pasteurized milk that contains over 10,000 bacteria per cubic centimeter shall be sold or offered for sale or delivered in the town of Montclair."

Article 8, section 8, by adding thereto "No unpasteurized cream that contains over 300,000 bacteria per cubic centimeter and no pasteurized cream that contains over 100,000 bacteria per cubic centimeter shall be sold, or offered for sale or delivered in the town of Montclair. Cream that has been pasteurized must be labelled in the manner hereinbefore prescribed for labeling pasteurized milk."

Any person violating any of the regulations above set forth shall, upon conviction thereof forfeit and pay a penalty of $25 for each offense.

MORRISTOWN, N. J.

Milk—Tuberculin Test of Dairy Cows Required. (Reg. Bd. of H., July 14, 1913.)

Be it ordained by the board of health of the town of Morristown, That subdivision (*f*) of section 6, article 12 of the sanitary code regulating the production and sale of milk be amended so as to read as follows:

(*f*) No milk shall be sold or offered for sale or distributed in the town of Morristown unless the cows from which it is obtained have within one year been examined by a veterinary whose competency is vouched for by the State veterinary association or other proper authority; and no license for the sale or delivery of milk within the limits of the town of Morristown shall be issued to any person, firm or corporation after September 1, 1913, unless the applicant or applicants for such license has filed with the board of health a certificate of such veterinary that the cows from which the milk to be sold or delivered have been tested with tuberculin. Such certificate shall be accompanied by charts showing the reaction of each individual cow of the herd and a license may be withheld or revoked, unless it shall appear to the satisfaction of the board that all cows which react have been removed from the premises occupied by the herd.

No cows may be added to the herd of any licensee unless certificates of satisfactory tuberculin tests of said cows have first been filed with the board of health.

MOUNDSVILLE, W. VA.

Milk and Cream—Production, Care, and Sale. (Ord. Aug. 11, 1913.)

SECTION 1. No milk shall be received, held, kept, offered for sale, sold, or delivered in this city without a permit in writing from the clerk of said city issued by him by order of council and subject to the conditions imposed by council.

SEC. 2. No milk which has been watered, adulterated, reduced, or changed in any respect by the addition of water or other substance, or by the removal of cream, shall be brought into, held, kept, offered for sale, or sold at any place in this city, nor shall anyone keep, have, offer for sale, or sell in this city any such milk. The term "adulterated," when used in this section, means:

First. Milk containing more than 88 per cent of water or watery fluids.

Second. Milk containing less than 12 per cent of milk solids.

Third. Milk containing less than 3 per cent of fats.

Fourth. Milk drawn from animals within 15 days before or 5 days from parturition.

Fifth. Milk drawn from animals fed on distillery waste, or any substance in a state of fermentation or putrefaction, or any unhealthy food.

Sixth. Milk drawn from cows kept in a crowded or unhealthy condition.

Seventh. Milk from which any of the cream has been removed.

Eighth. Milk which has been adulterated with water or any other fluid, or to which has been added, or into which has been introduced, any foreign substance whatever.

SEC. 3. No milk which has been transported or stored in an unclean manner or place shall be sold or offered for sale in this city.

SEC. 4. Any milk found to be adulterated, either by the addition of water or any other substance, or by the removal of cream, or which has been brought into or held or offered for sale in this city, contrary to sections 2 and 3 of this ordinance, may be seized and destroyed by the city health officer or other officer designated by council to assist the health officer in enforcing the provisions of this ordinance.

SEC. 5. Any person or persons engaged in the sale of milk in the city of Moundsville shall hereafter, upon request of the health officer or any assistant of his authorized to inspect milk, furnish a statement as to the locality from which said milk was procured, and also a full and complete list of the persons from whom said milk was purchased, and the names and addresses of all customers or persons to whom he or they sell or deliver milk in this city.

SEC. 6. No person shall distribute or sell, or offer for distribution or sale, or have in possession with intention to distribute or sell, any milk which has been produced, in whole or in part, by any animal which is not daily supplied with pure and wholesome water; and no person shall wash or attempt to cleanse any can, bottle, vessel, or utensil used for handling or transporting milk which is intended for distribution or sale, in water which is polluted, contaminated, or impure.

SEC. 7. No person having the possession or care of any milk which is intended or sale or distribution shall permit it to be exposed to or contaminated by the emanations, discharges, or exhalations from any person sick with any contagious disease, and no person shall distribute or sell, or offer to distribute or sell, or have in his possession with intent to distribute or sell, any milk which has been so exposed or contaminated.

SEC. 8. No person having custody of a milk can, bottle, or other vessel used as a container for milk intended for sale or distribution shall place, or permit to be placed, therein any article or substance other than milk or its products, or water or other agent used for cleaning such can, bottle, or vessel.

SEC. 9. No person shall send, ship, return, or deliver, or cause or permit to be sent, shipped, returned, or delivered to any producer, wholesaler, or retailer of milk within this city any can, bottle, or other vessel used as a container for milk containing any articles or substance other than milk or its products.

SEC. 10. No milk or cream shall be sold or handled by any person or persons in whose family or residence there is a case of contagious or infectious disease.

SEC. 11. No person granted a permit to sell milk under this ordinance shall refill any milk bottles used for the purpose of delivery of milk to their customers until said bottles into which such milk is to be put shall have first been sterilized by boiling the same in water.

SEC. 12. Any person or persons, firm, or corporation engaged in the sale or handling of milk in this city violating any of the provisions of sections 5, 6, 7, 8, 9, 10, and 11 of this ordinance shall, on conviction thereof for a first offense be fined the sum of $5 and on conviction of a second offense shall be fined not less than $10 nor more than $20, and at the discretion of the mayor may be confined in the jail of Marshall County for a period not exceeding 30 days and the permit of any such person or persons, firm or corporation granted to sell milk under this ordinance may be revoked.