

PUBLIC HEALTH REPORTS

VOL. 29.

FEBRUARY 18, 1914.

No. 7

THE WATER SUPPLIES OF SHIPS.

A DISCUSSION OF THE WATER FURNISHED FOR DRINKING PURPOSES AND OF THE METHODS OF SEWAGE DISPOSAL ON SHIPS ON INLAND WATERS.

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The fact that drinking water aboard vessels operating on the lakes and rivers of this country is frequently responsible for serious outbreaks of typhoid fever and diarrheal affections and the generally high incidence of these diseases among crews and passengers clearly demonstrate the immediate necessity for the promulgation of regulations and the adoption of efficient measures to control a situation which is of paramount importance both to the health of the traveling public and the commercial welfare of inland waterway transportation.

Of the outbreaks during recent years, probably the best known and most widely reported in journals and newspapers throughout the country was the one which occurred in the summer of 1907 on a big steamer of the Great Lakes. It is stated that during one short period of the summer's cruise 77 cases of typhoid fever developed as the result of the use of impure drinking water taken from the Detroit River. Surg. L. L. Lumsden, of the United States Public Health Service, states, in his report of an outbreak among 1,200 passengers on a Mississippi River excursion steamer in 1912, that there occurred over 600 cases of diarrhea and 13 cases of typhoid fever with 5 deaths. Investigations by this service of similar outbreaks on three Great Lakes vessels during the summer of 1913 showed that out of a total of 750 people there were over 300 cases of diarrhea and 52 cases of typhoid with 7 deaths.

The foregoing instances do not by any means give a proper idea of the annual number of cases of typhoid fever and intestinal diseases in which the infection is undoubtedly contracted aboard vessels, but are merely cited as being illustrative of the intensity of distinct outbreaks which may occur at any time as a result of the entirely too prevalent use of polluted drinking water on ships. When we consider that the records for the fiscal year ending June 30, 1913, show over 1,600 steam vessels operating on the Great Lakes

alone, and that during this same period there were carried on these lakes over 16,000,000 passengers, it is easy to realize that our inland vessels may play more than a minor rôle in the maintenance of the country's high typhoid fever rate.

In reference to the incidence of typhoid among crews only, it may be stated that during the calendar year 1913 there were treated at the stations of the United States Public Health Service in the Great Lakes region 144 cases of typhoid fever among seamen of lake vessels. The seasonal prevalence of diarrhea among lake crews is so common as to be looked upon by them as normally incidental to the summer's sailing. Though of course the roving life of a sailor exposes him to many sources of infection on shore, from such evidence as is available it may be concluded that a large proportion of the typhoid cases and by far the majority of diarrheal cases among them may be properly attributed to the use of sewage-polluted drinking water on board, the facts developed in the investigations of distinct outbreaks clearly bearing out this deduction.

The character of the drinking water supplied on board ships is chiefly influenced by the amount and extent of pollution of the sources of supply, the responsibility and care displayed in selecting the immediate source, and the vessel's water-intake system.

As to the pollution of our lakes and rivers, it is well known that this has become a serious question and one which is at present demanding the attention of Federal, State, and municipal health authorities. The recent sanitary surveys of the Great Lakes region by the international joint commission have demonstrated that sewage pollution of these bodies of water is yearly becoming more extensive and is proportionately lessening their value as a source of pure water supply. As these lakes are used as cesspools for the sewage of many cities and ships, the amount of pollution is naturally commensurate with the growth of these cities and the increase in shipping.

Undoubtedly there are numerous areas where pure raw water can be obtained, but the extent and concentration of pollution are so variable on account of wind, currents, and other factors, that the customary lanes of travel and limited tank capacity too frequently necessitate a ship's taking water from areas of questionable safety. The effect of this variation in pollution was clearly demonstrated in the case of a vessel, the tanks of which were filled on one occasion when the vessel was about 4 miles offshore from Two Harbors, Minn. The water here is of good depth and generally of safe quality, but this time there happened to be a very strong offshore wind, and evidently sewage had been carried well out, as the subsequent use of the water pumped aboard resulted in a severe outbreak of diarrhea among the crew.

Not only is a ship exposed to city sewage, but to that from other ships as well. Vessels in going from port to port naturally take the shortest route, so there are definite lanes of travel along which an enormous amount of shipping moves. This means that not only are these pathways polluted with ship sewage, but that drinking water for ship use is being constantly pumped from the same areas.

The lack of responsibility and care, so often displayed in selecting the time and place to get water, is probably more the result of habit and ignorance than of willful negligence. Formerly ships could secure good water almost anywhere, and the idea seems to persist that this can still be done, so that there is not the proper appreciation of the necessity for attention to the important details which the present-day conditions demand. If various municipalities have learned by costly experience with typhoid epidemics that not only must extreme care be used in the selection of intake points for water supplies but that in the majority of instances it is necessary to efficiently treat the water before it is safe for drinking purposes, it most certainly follows that ships on these waterways will experience similar trouble unless the same amount of caution is displayed.

Where vessels operate on a definite schedule between ports, and their runs are short, filling tanks is routine duty and falls generally in a certain watch, so water is obtained at about the same place or places on each trip. However, the demand for water naturally varies according to the number of people on board and is therefore very inconstant. If the runs are long or if the ship has no regular schedule for ports of departure and call, there will of course be a great variation in the sources of supply. Aboard most vessels it is the duty of the engineer's department to attend to filling tanks. Very often one man is designated for this duty and always looks after it, but on too many ships there is not only variation in source, but also in the one who selects the source. On more than one occasion tanks have been filled when the vessel was lying in harbor near some sewer outlet because water happened to be needed at the time and some incompetent or careless individual took it upon himself to start the pumps. Again, it has happened that although a safe source has been selected well out from shore, somebody has forgotten to close a valve or stop the pump and the ship has steamed into some foul harbor still pumping water into her drinking tanks. On practically no vessel is any record kept as to when or where tanks are filled, so there is nothing to show just who attended to this duty each time, or what places were selected as sources of supply during a cruise. Many captains and engineers are very careful about this important matter, but still lack of individual responsibility and display of incompetency are very common.

The intake system varies more or less according to type, size, and class of vessel, but in general it may be stated that drinking water is pumped through a sea cock in the ship's bottom to the tanks and delivered from the latter by pipes to drinking points. On some ships there is a separate intake, pump, and pipe line for drinking water, but on by far the majority the sea cock, pump, and main line are used for various purposes, the pipe line to the tanks being a lateral from the main line and closed by a valve when not in use. On most of the freighters and on some passenger vessels the tanks are filled by connecting a hose to the deck line, the tanks having no pipe connection except for delivery of water to drinking points.

As stated above, the intake system is frequently used when water is needed for purposes other than drinking, such as boiler supply, washing down decks, fire control, flushing toilets, filling water-ballast tanks, etc. When lying in port, water for any one of these purposes may be more or less constantly pumped aboard, and if the harbor happens to be grossly polluted with sewage, as practically all harbors are, the sea cock, pump, and pipes must certainly become thoroughly fouled with all sorts of filth. The following extract and the diagram on page 397, both from the article "Water contamination aboard ship and its prevention," by Surg. J. O. Cobb, United States Public Health Service (Journal of the American Medical Association, Dec. 18, 1909), graphically illustrates this point.

All water used aboard, for whatever purposes, is pumped through the sea-cocks which perforate the shell of the ship in the bottom, as indicated by the arrow in the diagram, which represents a cross section of a ship, the sea valve, pony pump, and pipes to drinking tanks. Now, suppose that valve A is kept closed when not in use, which is never the case except when the boat is laid up for the winter, then when the ship lies in the Chicago River, say, all that portion of the piping and sea cock from the bottom of the boat to valve A stands filled with sewage, or Chicago River water, which is the same. But let us go further: Suppose that the boat is loaded down so she lies in the water to the depth indicated by B, then the river water would rise through the sea cock to the level of B at C. From the sea cock to the pony pump is a long stretch of pipe in most steamers, and as the pony pump is constantly in action to maintain the pressure in the various pipes and to feed the boilers it is plain that all this section of pipe is filled with sewage all the time that the boat lies in foul water.

Where there is direct pipe connection with tanks, if the valve which closes the tank lateral happens to be left open or is poorly seated, some of the sewage water, which is being pumped through the main, will be forced past the valve and into the drinking tanks. It will be stated on board ship that before filling tanks the intake system is flushed with clean water, but even if this be done—which is not always the case—most certainly the mere washing is not a sufficient surety for the removal of filth and pathogenic bacteria, so that there is always the danger of polluting the drinking water even though the source may be absolutely safe. Obviously an intake

system any part of which is liable to sewage pollution is unfit for service if raw water is to be used for drinking purposes.

The water tanks are variously placed—in the hold, forward, aft, or amidship, or on any one of several decks. They also vary greatly as to number and size, according to the ship they are on, there apparently being no definite scale or standard. As to condition, that varies as much as the tanks themselves. Aboard some vessels they are never cleaned, while on others this is attended to frequently and carefully, steam being often used for the purpose. On some vessels the water supplied to toilet room and cabin faucets for washing purposes does not come from the drinking tanks, but from directly overboard, irrespective of where the ship may be lying. From an esthetic standpoint alone, water out of a dirty harbor seems scarcely

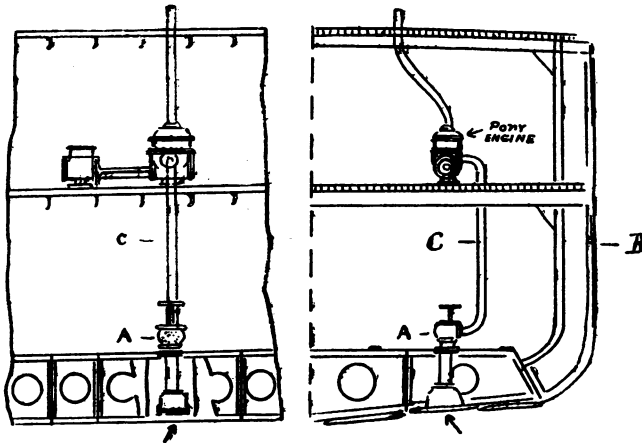


DIAGRAM NO. 1.—Diagram of a ship, showing method of supplying drinking water on shipboard. A, valve to shut off river water; B, C, level to which river water may rise when boat is loaded down. The diagram shows, on the left, a section taken fore and aft, and, on the right, across the hull.

the proper thing for cleansing one's face and hands or for washing one's teeth, but, what is still worse, passengers, through ignorance of the source of supply, not infrequently drink from these faucets.

As to the best way to handle the question of drinking water on board vessels taking their supply direct from our inland waters, there are a few measures which if properly carried out will solve the problem without difficulty.

Extensive pollution of our inland waterways exists and can not be controlled or limited by the ships themselves except in a comparatively slight degree. In regard to responsibility and care in the selection of immediate sources, however, something can be done. There should be some one on board, preferably an officer, whose duty alone it should be to have charge of filling tanks—this to be

done only by his orders and under his supervision—and to make an official entry in the ship's log stating the time and place where the tanks were filled. Though existing conditions prevent absolute certainty as to safety, it should always be endeavored to select places which are known to be free from pollution, and obviously polluted areas, such as harbors and rivers into which sewage is emptied, should be avoided. However, though these precautions will aid materially, it may be stated emphatically that if the supply is taken on board direct from lakes or rivers absolute safety can be assured only by efficient treatment of the water before it is used for drinking purposes.

There are a number of methods of water purification which are recognized as being efficient, but mechanical construction, cost of installation and operation, desired amount of supply, and many other factors will greatly influence their practical applicability to ship use. Some method which can be easily applied, which is not too expensive, which is efficient, and which does not have to depend to any great extent on the human element for operation, should be selected. There is no better purifier of water than heat, and as it is available on practically all vessels, some form of apparatus which uses this as the active principle would be the most feasible. A distilling apparatus meets all requirements, but it is not necessary to distill water in order to render it safe—boiling is sufficient, and there are several devices on the market which operate on the latter principle and are constructed for ship use. The ordinary engineer could no doubt devise some scheme of his own whereby the water would be raised to the proper temperature either before going to the tanks or before delivery to drinking points. Practically automatic operation, however, is a very necessary requisite, in order to avoid the possibility of carelessness or negligence on the part of some one.

Ozonization is a method which is rapidly coming into general use and there are various satisfactory ozonizers made for application to ships' water supplies.

Filters are to be condemned. Though many accomplish mechanical cleansing, very few can be depended upon for the constant and complete removal of harmful bacteria, and those types which are efficient are not constructed to meet the demands of a vessel's water supply. The sand and gravel type of rapid filter is frequently seen aboard ship, but though applicable to municipal use, the manufacturers themselves admit that filters of this class for ship use can not be depended upon always to deliver safe water. For one thing, frequent cleaning is necessary and this is a precaution which can very easily be neglected so that often the filtered is much more dangerous than the raw water.

As to the method of intake now in general use, though no doubt objectionable, it is not directly harmful if the water is properly treated

before it is used for drinking purposes. If the water is not treated, the method is decidedly dangerous and should be abandoned. Under any circumstances, a change should and can be easily made. A separate intake device, which can be raised above the water line when not in use and so be free from pollution while in harbors, and a separate pump and pipe line to be used only for filling tanks, would meet the necessary requirements.

The practice mentioned before of taking water from directly overboard for personal toilet use should be abandoned, as it exposes crews and passengers to the danger of infection. People can not be depended upon to stop and inquire if this or that water is intended for drinking, so it is imperative that no water, unless it comes from the drinking water system, be accessible for this purpose.

One of the best ways for vessels to avoid the dangers of uncertain sources and of contamination by faulty intake systems is always to get their drinking water from the municipal supplies in the ports visited. Most of our large cities have adopted measures to provide safe water and ships can easily take advantage of the opportunities thus afforded. Such things as tank capacity, number of people carried, length of trips between ports, etc., must be taken into consideration, but no doubt many vessels will find that the cheapest and easiest way to solve the problem will be to so increase their tankage that they can depend solely on municipal supplies for drinking water. There will then be no necessity for communication between sea cock and tanks, as the latter can be filled by attaching hose to city connections on the water front.

There is another question which has a direct bearing on the one of pure-water supply, and that is the disposal of ship sewage. The present practice is to discharge all sewage from toilets directly overboard. Though the point that the amount of general pollution of waterways by ships is small in comparison to that by cities is well taken, it can not be denied that in many instances sewage from ships may do a great deal of harm. As mentioned before, there are certain definite lanes of travel up and down which hundreds of ships pass, discharging their sewage as they go, so that the possibility of a ship taking on human filth along with her drinking water, if she happens to be following fairly close in the path of another vessel, is not so remote as one might suppose. Aside from the danger to one another, the promiscuous discharging of sewage by ships is very often a decidedly grave danger to cities. In the case of some of our Lake cities, the water intakes are so placed that ships frequently pass very close to them. It can be readily seen that a large vessel coming into port with several thousand people aboard may cause highly concentrated pollution of the area from which the city draws her drinking water. In Chicago, at least, this danger has been recognized and the health

department is requiring vessels which use this port to install carrying devices, so that no sewage may be discharged within a certain distance of the intakes or while in harbor. Diagram No. 2 illustrates the type of sewage tanks being installed on the ships of one of the Chicago lines. Each tank accommodates one, two, or three toilets. Their capacity is rather limited—the largest being only 12 by 44 inches—and therefore necessitates frequent emptying. They are designed as temporary carriers only, the raw sewage to be discharged when the ship is out in the lake, and by no means meet the proper requirements, but they are at least a step in the right direction. There is ample steam on most vessels, so that a tank or tanks somewhat of this type could no doubt be devised in which steam could be used as the sterilizing agent and the sewage efficiently treated before discharge, thereby doing away with any danger irrespective of the place of ultimate disposal.

From the foregoing facts and statements relative to water supply and sewage disposal on ships, it may be seen that the present existing conditions can be improved with comparative ease if proper cooperation and effort are made by the shipping people. The question of ship sanitation is important not only from a public health standpoint, but from a commercial one as well, for the public at large is beginning to take a genuine interest in such matters, and the companies affected by the outbreaks mentioned in this article can vouch for the fact that a ship which exposes her crew and passengers to unnecessary dangers receives unenviable advertising.

Gastroenteritis and Typhoid Fever among Personnel of Steamship *Gopher*.

The *Gopher* is a vessel of the United States Navy assigned to the naval militia of the State of Minnesota for use as a training ship.

The itinerary of the cruise during which the outbreak occurred was as follows: Ship left Duluth, Minn., at 6.42 p. m. August 7. Passed through locks, Sault Ste. Marie, at 9.40 a. m. August 9. Tied up at dock, Sault Ste. Marie, 9.56 a. m. same date. No general shore liberty granted, but men were allowed ashore on dock and adjacent common for a short period. Ship under way at 12.33 p. m. August 9. Arrived at Mackinac Island 8.31 p. m. August 9, and came to anchor in harbor. Liberty party (about one-half ship's company) ashore at 9.10 p. m., returned to ship at 10.50 p. m. Ship under way at 4.45 a. m. August 10, came to anchor, South Manitou Island, at 1.53 p. m. same date. Ship remained in neighborhood of South Manitou until morning of August 12. Shore liberty was granted several times at this port, practically entire ship's company taking advantage of the opportunity to go ashore. Quite a number of the crew were in swimming on August 11 while the ship was at anchor.

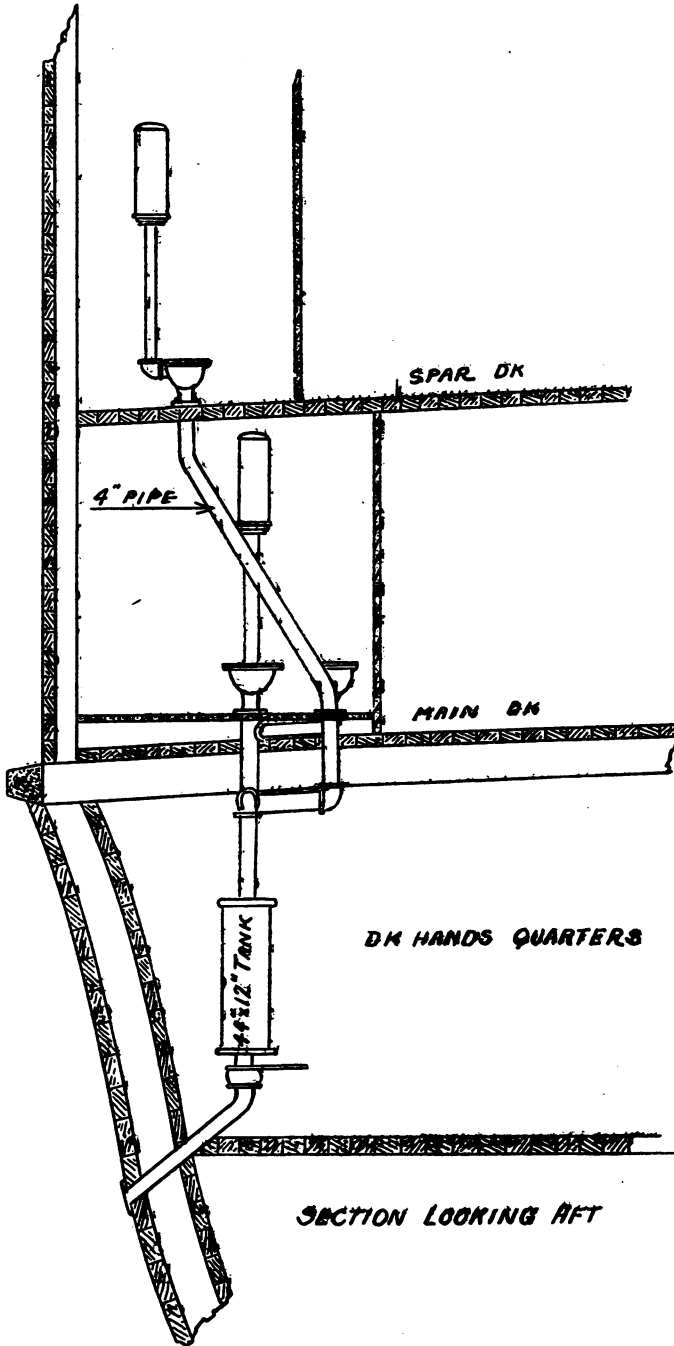


DIAGRAM No. 2.

The U. S. S. *Dubuque* and U. S. S. *Don Juan* were at South Manitou at this time and numerous visits were exchanged between the crews of the three ships. At 10.02 a. m. August 12, the *Gopher* got under way for Milwaukee, Wis., coming to anchor in that harbor at 5.10 a. m. August 13. Went alongside coal dock at 11.40 a. m.; returned to anchorage at 6.10 p. m. While at Milwaukee the entire crew was granted shore liberty. Ship again under way at 5.02 a. m. August 14, proceeded to Chicago, Ill., and came to anchor off the United States naval training station at 11.51 a. m. same date. A party of 130 men from the training station was taken on board and the ship proceeded to the city, coming to anchor in the Chicago basin at 5.55 p. m. The training station party was then disembarked. Shore liberty granted to one-half of *Gopher* crew at 7.45 p. m.; liberty party returned to ship same night. Ship under way at 6.56 a. m., August 16, proceeded to Milwaukee, coming to anchor in that harbor at 2.19 p. m. same date. Got under way at 4.34 p. m. and joined other ships about 20 miles off Milwaukee for fleet maneuvers. Again proceeded to Chicago on August 16, coming to anchor in basin at 6.58 p. m. same date. Ship remained at Chicago until noon of August 18. Liberty parties ashore in city on August 16 and 17. Ship got under way at 12.11 p. m. August 18, made short run, and returned to Chicago. Remained at Chicago until 3.50 a. m. August 20, when she proceeded to Mackinac Island, arriving at 10.05 a. m. August 21. Went alongside dock to coal. Very few men ashore at this place. Under way again at 12.46 p. m. August 21, passed through locks Sault Ste. Marie 9.11 p. m. same date, and proceeded to home port. Arrived at Duluth August 23 and tied up at her dock at 2 p. m. This being the end of her cruise, the officers and crew proceeded to their respective homes.

Of the 143 members of the ship's company, 102 were from Duluth and its immediate neighborhood, and 41 were from Pine City, Minn.

From data obtained by personal interview with officers and enlisted men living in Duluth and Pine City, it is estimated that about 60 per cent of the members of the ship's company had gastrointestinal disturbances during the cruise.

Three cases of typhoid fever among the men of the Pine City detachment were reported.

The general characteristics of the gastrointestinal cases were similar to those which have been noted in outbreaks of this nature occurring among crews and passengers of other lake vessels during the summer of 1913, except that in this instance the attacks were shorter and lacking in severity of symptoms.

Diarrhea was the most prominent symptom, and in all but a few cases, the only one. It was of mild type and short duration, the average being about one or two days.

In addition to the diarrhea, a few cases presented the following symptoms in varying combinations—nausea and vomiting, general malaise, headache, and abdominal cramps.

None of the cases gave history of fever. A review of the medical records of the cruise showed practically no absence from duty on account of the attacks.

It was noted that a larger percentage of the men from Pine City was affected than those from Duluth. The Pine City men were for the most part newly enlisted and had never been on a cruise of this character before, whereas those from Duluth had been members of the organization for a longer period, and the majority had been on similar cruises during former years.

Relative to the time of onset of the cases, the investigation showed that the majority developed during the period of August 12–14, five days after the beginning of the voyage.

The three typhoid patients all gave history of primary diarrheal attacks beginning, as near as they could recall, about August 12 or 13, and continuing for two weeks, nine days, and three weeks, respectively. The respective dates of onset of the definite typhoidal symptoms were August 31, September 2, and September 9.

The State laboratory reported positive Widals for all.

To determine whether the gastrointestinal infection had been contracted on shore or on board ship, careful inquiry was made relative to food, milk, water, etc., used on shore at the various ports visited. Though practically all the men interviewed stated that they ate and drank in various restaurants, hotels, lunch rooms, etc., at the different ports, and drank from the public water supplies in numerous places, as far as could be determined no large proportion of the cases ate or drank at any one place on shore. The character of the outbreak pointing undoubtedly to a common source of infection for all the cases, and the evidence failing to demonstrate the probability of such infection having been contracted on shore, it was concluded that the source of trouble was on the ship itself.

There have been no reports of similar outbreaks occurring during the past summer at any of the places visited by the ship, nor in either Duluth or Pine City, the home cities of the men.

With the exception of the three typhoid cases among the Pine City detachment, it was stated that there had been no cases in Pine City this year. The history of these three cases showed no absence from home prior to the cruise or the probability of the patients having contracted the infection at any time other than while on the cruise. As far as could be determined these men gave no history of a probable common source of infection on shore or of the likelihood of any of them having contracted the disease at any port visited by the ship.

It was therefore concluded that their infection was contracted on board.

The factors on board ship which were considered as possibly operative in causing the outbreak were milk, ice, water, and other foods.

As far as could be learned the milk, ice, and other food purchased were of good quality and there were no reports of similar illness among other customers who had purchased from the same dealers.

It may be stated, however, that on the part of a number of the men there was complaint relative to the meats served at times during the cruise. It was said that on more than one occasion the meat was tainted. This evidence was not sufficient, however, to point to food as a probable cause of an outbreak of the type in question, though improper food in some instances may have acted as a contributing factor.

So few of the cases gave history of having used milk that milk was easily eliminated as a probable factor.

The relatively small amount of ice used and the absence of any reason to suspect the high degree of contamination which necessarily would have had to exist also eliminated ice as a probable cause.

There was no history of any case of typhoid or of the presence of a probable carrier among the ship's company during the cruise.

In reference to the drinking water used on board, it was stated to have been obtained as follows: Tanks and scuttle butt filled on August 7 about 4 miles off shore from Two Harbors, Minn.; hose allowed to run a few minutes before filling tanks. Tanks again filled on August 15 when about 25 miles out from Milwaukee, and about 15 miles off shore. Scuttle butt filled by hose on August 13 on way from South Manitou Island to Milwaukee. Scuttle butt filled by hose twice on trip from Chicago to Mackinac Island, August 20 and 21. Tanks again filled after getting into Lake Superior on return trip. Scuttle butt frequently filled during the trip by carrying water from main tanks.

As it is not the custom on this or any other lake vessel to make a record of when and where water is taken on, the above information was furnished from memory by the petty officer having charge of the tanks.

There are four water tanks of about 150 gallons capacity each on the berth deck. These are filled with a hose connected to the main deck pipe line, the water being pumped through a sea cock in the ship's bottom. The tanks themselves have no pipe connections.

The scuttle butt stands on the port side of the main deck near the galley. It is an oblong wooden box with a three-compartment zinc water container inside, the middle compartment for water and the end ones for ice. There is a circular opening, with detachable cover, in the wooden cover of the scuttle butt through which water

is dipped when desired. The container is filled either with the hose above mentioned or by carrying water from the main tanks below.

It was stated that before filling either the tanks or scuttle butt with the hose the water was allowed to run free for a few minutes in order to cleanse the pipe line. As this same pumping system is used for washing down decks when the ship is in harbors, there is every opportunity for its becoming grossly polluted throughout. Simple flushing before filling tanks, even though at the time the source of drinking water may be safe, does not guarantee sufficient cleansing to eliminate the possible contamination of the supply from dirty pipes.

The water which is supplied to the officers' rooms and galley for washing purposes does not come from the tanks but is pumped from directly overboard through the sea cock and distributed by piping to the delivery faucets.

It can readily be imagined what character of water is thus supplied when the ship is lying in some sewage-polluted harbor. The system is obviously a dangerous one, as it was acknowledged by several that on more than one occasion they drank water from these faucets.

In reference to the character of water obtained from the sources previously mentioned, it may be stated that during the past summer another vessel gave a history of having filled her tanks when about 5 miles off Two Harbors and a severe outbreak of diarrhea among the crew developed.

As regards the supply from Lake Michigan, in taking on water between Milwaukee and Chicago, unless extreme care was used in selecting the source according to distance from shore, depth of water, set of currents, etc., there was ample opportunity for the *Gopher* to take her supply from an area more or less polluted with sewage.

Taking into consideration the fact that similar outbreaks, directly traceable to polluted water, occurred on other lake vessels during the summer of 1913, that there were many opportunities during the cruise for the drinking water to have been taken from polluted sources, that even though the source may have been safe there was every opportunity for pollution of the supply by the intake system, that the evidence pointed to the infection having been contracted on board ship only and eliminated factors other than water as the cause, I am of the opinion that the outbreak of typhoid fever and gastroenteritis aboard the *Gopher* was caused by infection in the drinking water furnished to the ship's company during the cruise in question and that this impure supply was probably taken on board prior to August 12 as the intensity of the outbreak made itself manifest during the period August 12-14.

RECOMMENDATIONS.

That whenever water is taken on board for drinking purposes it shall be done only by the order and under the supervision of a commissioned officer, and an official entry shall be made in the ship's log stating the time and source of supply.

That the present scuttle butt be replaced by one which will protect the contained water from contamination, fitted with a sanitary drinking faucet in order to avoid the use of a common drinking cup, and with the water and ice compartments so arranged that no ice shall come in direct contact with the water.

It would be much better, however, to abandon the use of a scuttle butt and to have the drinking water delivered under pressure through pipes from the main tanks to one or more drinking faucets on the main deck. For cooling purposes the piping can be arranged in the form of a coil at some point and ice packed around it. On many ships the coil is in the main ice box.

On account of the increasing pollution of the Great Lakes by sewage and the consequent danger in the use of raw water, no water which is taken on board at any place in the Lakes should be used for drinking purposes until it has been so treated that it is rendered absolutely safe. Any one of several methods of water purification could no doubt be applied in this case, but in view of the many points which would have to be considered in reference to operation and efficiency, I am of the opinion that some form of apparatus for the purification of water by heat would be found to be the most satisfactory in meeting the necessary requirements. Even though the water be efficiently treated, proper care should be used in the selection of the source of supply, and places avoided which are obviously liable to sewage pollution.

Some other method for filling the tanks should be used. The intake system for drinking water should be used for that purpose alone and so constructed that it will not be liable to contamination by sewage when the ship is lying in harbors.

The present system for delivering water from directly overboard to the galley and officers' quarters should be abandoned or so changed that the water furnished shall come from the tanks only.

Some efficient method of refrigeration should be adopted so as to assure the proper preservation of meats and other perishable foods during the cruise.

Gastroenteritis and Typhoid Fever among Passengers of Steamship Huron.

The *Huron* is a passenger steamship of the Star-Cole Line plying between Cleveland, Ohio, and Sault Ste. Marie, Mich., via the Georgian Bay route. She makes regular weekly runs from June 30 to August 31, sailing from Cleveland every Monday and returning the following

Sunday. Her regular ports of call are: Cleveland, Ohio; Toledo, Ohio; Detroit, Mich.; Port Huron, Mich.; Goderich, Ontario; Kincardine, Ontario; Killarney, Ontario; Little Current, Ontario; Manitowaning, Ontario; Bruce Mines, Ontario; Hilton, Ontario; Richards Landing, Ontario; and Sault Ste. Marie, Mich.

The outbreak investigated occurred during the last trip, August 25-September 1, 1913. Owing to a severe storm the ship remained at Killarney, Ontario, over August 29, so did not arrive at Cleveland until September 1, one day behind her regular schedule.

Most of the passengers boarded the ship at Cleveland, Toledo, or Detroit, and made the round trip, though quite a number came aboard at the various ports in the Georgian Bay district, having gone up on previous trips. Coming down, the passenger-carrying capacity of the ship was rather severely taxed, as there were fully 300 people on board.

As the passengers were from various sections of the country, it was impracticable to see them all, but a sufficient number were interviewed, either by personal visit or letter, to enable me to obtain, with the aid of information from other sources, ample data relative to the character and cause of the outbreak.

The symptoms of the gastroenteric attacks were the same as those noted and reported in other outbreaks of similar character. Diarrhea was the most prominent and constant symptom, varying in duration from a few days to several weeks. In general the stools were very loose and watery. A number of the cases had severe abdominal cramps accompanying the diarrhea and others gave history of the attack being ushered in with more or less nausea and vomiting. In many the diarrhea was intermittent in type, especially in those cases of several weeks' duration. A small proportion had fever during the attack, accompanied by more or less prostration, headache, and general malaise.

From the data collected it is estimated that at least 50 per cent of the passengers were involved in the outbreak.

Relative to the time of onset, the greatest number of cases developed during the period August 27-29, and of these the majority occurred on August 27. The outbreak was almost solely confined to those passengers who boarded the ship at the ports touched at early in the week and who made the round trip, very few of those who came on board at the various Canadian stops during the return journey from Sault Ste. Marie being affected.

The character of the outbreak clearly pointed to a common source of infection for all the cases, so taking into consideration the fact that the passengers came from many different points by various railroads, and that the outbreak did not develop until after the start of the cruise, the probability of the infection having been contracted

otherwise than during the course of the steamer's trip was safely eliminated.

There are no reports of similar outbreaks having occurred during the past summer at any of the ports visited.

Relative to the possibility of the infection having been contracted on shore at any place visited during the cruise, only a few of the cases gave history of having eaten or drunk anything at any port with the exception of Sault Ste. Marie. Here nearly everyone had dinner at the hotel on August 28. Therefore, this was the only place which might be suspected, but it also was eliminated as a probability, as the intensity of the outbreak had made itself manifest before the ship's arrival at this port.

Bearing in mind that drinking water has been proved to be the source of trouble in several similar outbreaks, an investigation relative to that used on the *Huron* was made. A thorough inspection of her water system was made by Asst. Surg. Joseph Bolten at Detroit, and I quote as follows from his report:

The boat receives its water directly from the lakes (Erie, St. Charles, Huron, etc.) by means of one large and one small pumping engine stationed on the lower deck. These pumps force the water into three large tanks, of 120 gallons capacity, situated on the starboard side of the hurricane deck.

The large pumping engine supplies two of these tanks, and is used only when the supply in them becomes insufficient. The smaller engine supplies the third tank with water and is in use continuously. The tanks supplied by the large pumps are the reservoirs for the drinking water and water used in the kitchen and pantry, respectively. These tanks have separate overflow pipes which empty directly into the paddle box, over the water.

The drinking water is conveyed through iron pipes, from the tank for this purpose, to the ice chest on the lower deck. There it is cooled by cakes of ice lying in close proximity to the water pipes. From the ice chest the water is then conveyed by means of pipes to the cabin deck, where passengers may drink by opening the tap connected with the pipes, there being no reservoirs to hold the water on this deck. There are two of these taps on this deck. In addition, there are two water stands containing bottles of water, from which passengers may drink. No sanitary cups or appliances for holding same were in evidence at the time of the investigation. The crew has a separate tap on the lower deck connected directly with the ice chest. At no time was there any possibility of the water becoming contaminated by ice in its passage from the tank to the passengers.

The tank for holding the water used in pantry and kitchen has the same supply pipe as the drinking-water tank, but has its own pipes leading to the pantry and kitchen, the latter being situated on the lowest deck of the boat, a few feet below the water line. As I said before, the above two tanks receive water by means of the large pump, which is used only when the supply in the tanks is low.

The third tank is placed alongside the other two tanks and is the reservoir for the toilets and wash rooms. This tank is supplied by the small pumping engine, which is in use continuously, drawing water from whatever source the boat happens to be in. This tank also has an overflow pipe leading out to the paddle box, but in no way coming in contact with the overflow pipes of the other two tanks. This tank supplies two toilet rooms on the cabin deck and one on the lower deck.

The tanks are all made of iron and each has an opening in the top, about 12 inches in diameter, which is always covered.

On this vessel, as on practically all lake steamers, the same intake system which is used for filling the tanks is frequently used while in harbors to supply water for other purposes. Pollution of an otherwise safe supply of drinking water can therefore easily happen during its passage through a sea cock, pump, and pipe line which may have a short time previously become fouled with harbor sewage.

It will be noted that the above report states that the tank which supplies the water for the washrooms and for flushing the toilets is filled by pumping from directly overboard. This means that the passengers may have the privilege of using dirty harbor water for washing purposes if the ship happens to be lying in port. Not only is this objectionable from an esthetic standpoint, but what is still worse water from these washroom faucets may be used and not infrequently is used for drinking purposes. No comment need be made as to the danger of such a system.

As stated in my reports on other outbreaks, no record is kept on any lake vessel as to when or where water for drinking purposes is taken on board. However, it was learned that the *Huron* obtained her supply from Lake Erie between Cleveland and Detroit, from Lake St. Clair, and from various points in the main body of Lake Huron, in Georgian Bay, and in the North Channel. Irrespective of other more grossly polluted sources which more than likely may have furnished the drinking water, it may be stated that the extensive studies of the Great Lakes by the international joint commission have shown that the western end of Lake Erie is very questionable as a safe source of water supply for ships. The extent and concentration of pollution being so variable, there is every opportunity for a vessel to get sewage-polluted water if she fills her tanks during runs between the various ports in that neighborhood.

Evidence in regard to food, milk, and ice used on board safely excluded any of them as being responsible for an outbreak of the type in question.

Seven cases of typhoid fever, including one death, were reported. Four of these cases were seen personally and detailed data obtained relative to their attacks. The respective dates of onset of definite typhoidal symptoms were given as September 13, September 25, September 29, and October 4. The case which terminated fatally was said to have had its onset of typhoid shortly after the patient's return home from the trip, death occurring on September 23. It may be stated that there was a history in this case of chronic nephritis of long standing. The two other cases were also stated to have developed within a short period after their return home. All the cases had primary diarrheal attacks, beginning while on the ship and continuing intermittently, accompanied by more or less

prostration and general malaise, until the definite typhoid onset. As far as could be determined by careful inquiry on all points, nothing in the histories of these cases tended to show the probability of their having contracted the disease at any place other than aboard the vessel.

Considering all the facts developed in the course of the investigation, I am of the opinion that the typhoid and gastroenteric cases were caused by infection in the water used for drinking purposes on board the *Huron*.

Though this is the first definite outbreak which has been reported as occurring on this steamer, I met several people in the course of my investigation who had been on former trips and had not only themselves had diarrhea but had heard other passengers complain of the same trouble. There were members of the crew also who gave histories of having had more or less persistent diarrhea during the entire season.

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.

Arkansas—Springdale—Virulent Smallpox.

An outbreak of virulent smallpox was reported at Springdale, Washington County, Ark., by Dr. Morgan Smith, State health officer, February 11, 1914. On that date there had been six cases, of which four had terminated fatally. The infection was introduced by a person from Tampico, Mexico.

These cases and the origin of the infection illustrate the manner in which virulent outbreaks of smallpox in this country have started during recent years. For several years a strain of mild smallpox has existed throughout practically all parts of the country. In no instance, however, has this mild infection been authentically shown to have been the cause of a virulent outbreak. All virulent outbreaks in which the source of the infection has been traced have had their origin in some existing virulent outbreak in this country or have been imported.

The manner in which the strain of mild smallpox existing in this country remains true to type is illustrated by an outbreak which occurred in New Zealand as the result of infection imported from the United States. A brief report of this epidemic is given under New Zealand on page 420.

Indiana—Evansville.

Acting Asst. Surg. Werry, of the Public Health Service, reported by telegraph that during the week ended February 7, 1914, 13 cases of smallpox had been notified at Evansville, Ind.

Kentucky—Knott, Leslie, and Letcher Counties and Vicinity.

Surg. McMullen reported January 27 that smallpox was present in Knott County, Ky., to a considerable extent; that the disease had been epidemic in Leslie County, where many of the schools were closed because of it; that the disease had also been prevalent in Letcher and other counties in the vicinity.

SMALLPOX—Continued.

The prevalence of the disease appears to have been due to the presence of a considerable number of people who had evaded the law requiring the vaccination of all residents of the State.

Kentucky—Louisville.

Surg. McIntosh, of the Public Health Service, reported February 4, 1914, that 15 cases of smallpox had been notified in Louisville, Ky., since December 25, 1913.

Maryland—Poolesville and Texas.

The State Department of Health of Maryland reported by telegraph that 3 cases of smallpox had been notified at Poolesville, Montgomery County, and 3 cases at Texas, Baltimore County, Md.

New York—Niagara Falls.

Acting Asst. Surg. Bingham, of the Public Health Service, reported by telegraph that during the week ended February 7, 1914, 50 cases of smallpox had been notified at Niagara Falls, N. Y.

Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Arizona (Jan. 1-31):			Idaho (Dec. 1-31):		
Counties—			Counties—		
Maricopa.....	16		Ada.....	2	
Mohave.....	12		Bannock.....	3	
Total.....	28		Bingham.....	77	
California (Dec. 1-31):		1	Bonner.....	1	
Counties—			Custer.....	5	
Alameda.....	5		Kootenai.....	4	
Butte.....	2		Nez Perce.....	9	
Contra Costa.....	1		Owyhee.....	4	
Fresno.....	4		Shoshone.....	10	
Imperial.....	4		Total.....	115	
Kern.....	12		Illinois (Dec. 1-31):		
Los Angeles.....	16		County—		
Mendocino.....	2		Winnebago.....	20	
Nevada.....	1		Washington (Dec. 1-31):		
Placer.....	2		Counties—		
Riverside.....	1		Clark.....	5	
Sacramento.....	1		Columbia.....	2	
San Diego.....	2		Cowlitz.....	5	
San Francisco.....	2		Douglas.....	2	
San Joaquin.....	19		Ferry.....	2	
Santa Barbara.....	1		Franklin.....	1	
Santa Clara.....	2		King.....	9	
Santa Cruz.....	1		Klickitat.....	6	
Stanislaus.....	1		Okanogan.....	10	
Yuba.....	2		Pierce.....	27	
Total.....	81	1	Skagit.....	1	
Colorado (Jan. 1-31):			Skamania.....	1	
Counties—			Snohomish.....	1	
Chaffee.....	1		Spokane.....	77	
Crowley.....	1		Whitman.....	5	
Denver.....	21		Yakima.....	2	
El Paso.....	2		Total.....	156	
Larimer.....	7				
Logan.....	2				
Weld.....	7				
Total.....	41				

¹ County not given.

² Supplement.

SMALLPOX—Continued.

City Reports for Week Ended Jan. 24, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Altoona, Pa.	3	1	Lynchburg, Va.	3	.....
Aurora, Ill.	1	.....	Milwaukee, Wis.	50	.....
Austin, Tex.	3	.....	Moline, Ill.	1	.....
Baltimore, Md.	3	.....	Nashville, Tenn.	26	.....
Chicago, Ill.	3	.....	Philadelphia, Pa.	1	.....
Cincinnati, Ohio.	1	.....	Pittsburgh, Pa.	3	.....
Columbus, Ohio.	16	.....	Portsmouth, Va.	8	.....
Dallas, Tex.	8	.....	Richmond, Va.	1	.....
Detroit, Mich.	16	.....	Rockford, Ill.	1	.....
Erie, Pa.	1	.....	St. Joseph, Mo.	2	.....
Evansville, Ind.	6	.....	San Diego, Cal.	2	.....
Hartford, Conn.	5	.....	San Francisco, Cal.	2	.....
Knoxville, Tenn.	11	.....	Spokane, Wash.	7	.....
Kokomo, Ind.	1	.....	Washington, D. C.	3	.....
La Crosse, Wis.	3	.....	Zanesville, Ohio.	2	.....
Los Angeles, Cal.	5	.....		

TYPHOID FEVER.

State Reports for December, 1913.

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
Idaho:		Washington—Continued.	
Ada County.....	1	Douglas County.....	1
Meridian.....	2	King County.....	2
Bannock County.....	4	Seattle.....	10
Bingham County—		Kititas County.....	1
Blackfoot.....	2	Klickitat County.....	1
Bonner County.....	1	Lincoln County.....	2
Kootenai County—		Lewis County.....	250
Harrison.....	1	Pierce County—	
Lewis County—		Tacoma.....	6
Nezperce.....	2	Washington—Continued.	
Nez Perce County—		Snohomish County—	
Merose.....	1	Everett.....	3
Oneida County—		Spokane County—	
Preston.....	1	Spokane.....	4
Total.....	15	Whatcom County—	
Washington:		Bellingham.....	1
Chehalis County.....	5	Whitman County.....	1
Columbia County.....	1	Yakima County.....	1
		Total.....	289

City Reports for Week Ended Jan. 24, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Ann Arbor, Mich.	2	.....	Milwaukee, Wis.	2	.....
Beaver Falls, Pa.	1	.....	Nashville, Tenn.	1	4
Baltimore, Md.	3	1	New Castle, Pa.	1	.....
Binghamton, N. Y.	1	.....	New Orleans, La.	3	1
Boston, Mass.	60	2	Norristown, Pa.	1	.....
Braddock, Pa.	1	.....	Oakland, Cal.	1	.....
Bridgeport, Conn.	1	.....	Pasadena, Cal.	.....	1
Chicago, Ill.	25	7	Philadelphia, Pa.	11	1
Cincinnati, Ohio.	2	.....	Pittsburgh, Pa.	1	1
Cleveland, Ohio.	6	.....	Plainfield, N. J.	2	.....
Columbus, Ohio.	2	2	Providence, R. I.	2	2
Dunkirk, N. Y.	1	.....	Reading, Pa.	1	.....
Elmira, N. Y.	1	.....	Richmond, Va.	.....	1
Erie, Pa.	2	.....	Sacramento, Cal.	30	.....
Fall River, Mass.	1	.....	St. Joseph, Mo.	1	1
Hartford, Conn.	1	.....	San Francisco, Cal.	3	2
Haverhill, Mass.	1	1	Trenton, N. J.	1	.....
Johnstown, Pa.	1	.....	Washington, D. C.	1	1
Lancaster, Pa.	1	.....	Worcester, Mass.	.....	1
Los Angeles, Cal.	1	.....	York, Pa.	2	.....
Lynchburg, Va.	3	.....	Zanesville, Ohio.	1	.....

CEREBROSPINAL MENINGITIS.

State Reports for December, 1913.

The State Board of Health of Idaho reported that during the month of December, 1913, 1 case of cerebrospinal meningitis had been notified at Hailey, Blaine County, Idaho.

The State Board of Health of Washington reported that during the month of December, 1913, 1 case of cerebrospinal meningitis had been notified at Seattle, Wash.

City Reports for Week Ended Jan. 24, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Baltimore, Md.		1	Los Angeles, Cal.	3	1
Boston, Mass.	4	2	New Orleans, La.	2	2
Chicago, Ill.	4		Newport, Ky.	1	1
Cleveland, Ohio.	1	2	Philadelphia, Pa.		1
Dallas, Tex.	1		Springfield, Ill.		1
Danville, Ill.	1	1			

POLIOMYELITIS (INFANTILE PARALYSIS).

State Reports for December, 1913.

The State Board of Health of Idaho reported that during the month of December, 1913, 1 case of poliomyelitis had been notified at Sugar, Fremont County, Idaho.

The State Board of Health of Washington reported that during the month of December, 1913, poliomyelitis had been notified in the State of Washington as follows: One case in Clark County, 1 in Seattle, King County, and 1 in Tacoma, Pierce County.

City Reports for Week Ended Jan. 24, 1914.

During the week ended January 24, 1914, 1 case of poliomyelitis was notified at Cleveland, Ohio, and 1 at Concord, N. H.

ERYSIPELAS.

City Reports for Week Ended Jan. 24, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Alameda, Cal.	1		Montclair, N. J.	1	
Binghamton, N. Y.	1		Nanticoke, Pa.	1	
Chicago, Ill.	16	4	New Castle, Pa.	2	
Cincinnati, Ohio.	2		Norristown, Pa.	2	
Cleveland, Ohio.	6		Passaic, N. J.	2	
Johnstown, Pa.	1		Philadelphia, Pa.	26	2
Lancaster, Pa.	2		Pittsburgh, Pa.	9	
Los Angeles, Cal.	2		Reading, Pa.	4	
McKeesport, Pa.	1		San Diego, Cal.	1	
Milwaukee, Wis.	2		San Francisco, Cal.	2	1

PELLAGRA.

During the week ended January 24, 1914, pellagra was notified by cities as follows: Dallas, Tex., 1 death; Haverhill, Mass., 1 case; Nashville, Tenn., 1 case; New Orleans, La., 1 case; Richmond, Va., 1 death.

PLAGUE.**Rats Collected and Examined.**

Places.	Week ended—	Found dead.	Total collected.	Examined.	Found infected.
California:					
Cities—					
Oakland.....	Jan. 17, 1914	15	536	73	.....
Berkeley.....	do		98	9	.....
San Francisco.....	do	39	1,582	176	.....
Washington:					
City—					
Seattle.....	do		1,427	1,328	2
Do.....	Jan. 24, 1914		1,510	1,338	2

California—Squirrels Collected and Examined.

During the week ended January 17, 1914, 5 ground squirrels from Alameda County and 1 from San Francisco were examined for plague infection. No plague-infected squirrel was found.

Washington—Seattle—A Case Which May Possibly Have Been Plague.

A woman died in Seattle on December 27 of an acute illness. An autopsy was performed and the findings were passed upon by a board of four physicians, one of whom was an officer of the United States Public Health Service, and one the chief medical inspector of the local health department. Previous to the autopsy the body had been embalmed, so that it was impossible to make cultures and ascertain definitely the nature of the disease. This board reported that the anatomical diagnosis was:

An acute infection, presenting in the spleen and in the cavity of the brain, microorganisms morphologically identical with bacillus pestis, associated with Gram-staining diplococci, not of a specific character.

On account of the thoroughness of the embalming process, it was impossible to obtain cultures of these organisms.

Conclusions: Probable diagnosis, septicemic plague. Absolute diagnosis impossible.

The report was made and signed by Dr. Charles B. Ford, Dr. F. S. Bourns, Surg. B. J. Lloyd, United States Public Health Service, and Dr. C. F. Davidson, chief medical inspector.

PNEUMONIA.

City Reports for Week Ended Jan. 24, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Alameda, Cal.....	1	.....	Pittsburgh, Pa.....	31	38
Ann Arbor, Mich.....	1	.....	Reading, Pa.....	1	3
Binghamton, N. Y.....	6	6	Sacramento, Cal.....	1	3
Chicago, Ill.....	157	117	San Diego, Cal.....	1	1
Cleveland, Ohio.....	42	25	San Francisco, Cal.....	9	8
Lancaster, Pa.....	1	.....	Saratoga Springs, N. Y.....	1	.....
Los Angeles, Cal.....	26	13	Spokane, Wash.....	4	4
McKeesport, Pa.....	2	.....	York, Pa.....	3	.....
Norristown, Pa.....	4	1	Zanesville, Ohio.....	1	.....
Philadelphia, Pa.....	50	104			

RABIES.

California—San Francisco and Vicinity—Rabies in Animals.

Surg. Long, of the Public Health Service, reported by telegraph that during the week ended February 7, 1914, rabies in dogs had been notified as follows: 1 case at San Francisco, 1 at Berkeley, and 4 at Oakland, Cal.

TETANUS.

During the week ended January 24, 1914, tetanus was notified by cities as follows: Austin, Tex., 1 death; Richmond, Va., 1 death; San Diego, Cal., 1 case with 1 death; Schnectady, N. Y., 1 case with 1 death.

SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS.

State Reports for December, 1913.

The State Board of Health of Idaho reported that during the month of December, 1913, 57 cases of scarlet fever, 29 cases of measles, and 4 cases of diphtheria had been notified in the State of Idaho.

The State Department of Health of Washington reported that during the month of December, 1913, 113 cases of scarlet fever, 380 cases of measles, and 39 cases of diphtheria had been notified in the State of Washington.

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

City Reports for Week Ended Jan. 24, 1914.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tubercu- losis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.....	558,485	221	25	2	9	1	21	1	45	20
Boston, Mass.....	670,585	290	62	4	61	1	82	1	66	20
Chicago, Ill.....	2,185,283	648	141	9	47	1	107	7	150	86
Cleveland, Ohio.....	560,663	176	63	6	21	.....	12	.....	39	14
Philadelphia, Pa.....	1,549,008	576	60	10	85	.....	68	6	135	49
Pittsburgh, Pa.....	533,905	176	28	3	38	2	112	6	24	20
From 300,000 to 500,000 inhabit- ants:										
Buffalo, N. Y.....	423,715	117	10	.....	19	.....	18	.....	27	10
Cincinnati, Ohio.....	364,463	.....	34	2	4	.....	13	1	28	26
Detroit, Mich.....	465,766	.....	65	5	.....	.....	14	3	.....	.....
Los Angeles, Cal.....	319,198	117	6	1	5	.....	7	1	52	21
Milwaukee, Wis.....	373,857	97	30	4	41	.....	27	1	13	9
New Orleans, La.....	339,075	156	25	.....	19	.....	4	.....	33	18
San Francisco, Cal.....	416,912	.....	11	2	11	.....	8	.....	21	17
Washington, D. C.....	331,069	142	12	1	33	.....	15	.....	17	15
From 200,000 to 300,000 inhabit- ants:										
Providence, R. I.....	224,326	88	5	1	3	.....	10	1	5	9
From 100,000 to 200,000 inhabit- ants:										
Bridgeport, Conn.....	102,054	38	7	2	44	1	2	.....	5	.....
Columbus, Ohio.....	181,548	57	6	1	4	.....	10	.....	1	7
Fall River, Mass.....	119,285	54	7	.....	2	.....	25	.....	8	2
Lowell, Mass.....	106,294	37	6	1	10	.....	3	.....	2	4
Nashville, Tenn.....	110,364	45	.....	.....	4	1	5	.....	12	4
Oakland, Cal.....	150,174	55	1	.....	.....	.....	2	.....	8	4
Richmond, Va.....	127,628	57	6	.....	1	.....	13	.....	2	2
Spokane, Wash.....	104,402	.....	1	.....	30	.....	2	.....	2	2
Worcester, Mass.....	145,986	55	4	.....	14	.....	2	.....	7	3
From 50,000 to 100,000 inhabit- ants:										
Altoona, Pa.....	52,127	14	4	.....	.....	.....	4	.....	.....	2
Bayonne, N. J.....	55,545	.....	.....	.....	27	.....	2	.....	1	.....
Camden, N. J.....	94,538	.....	4	.....	4	.....	1	.....	7	.....
Dallas, Tex.....	92,104	.....	.....	.....	3	.....	5	.....	.....	1
Erie, Pa.....	66,525	23	6	.....	3	.....	1	.....	4	.....
Evansville, Ind.....	69,647	15	2	.....	.....	.....	4	.....	3	2
Harrisburg, Pa.....	64,186	25	9	1	1	.....	.....	.....	.....	1
Hartford, Conn.....	98,915	33	12	.....	7	.....	.....	.....	.....	3
Hoboken, N. J.....	70,324	20	1	.....	.....	.....	3	.....	13	.....
Johnstown, Pa.....	55,482	22	6	.....	4	.....	3	.....	.....	.....
Lawrence, Mass.....	85,892	.....	6	.....	7	.....	1	.....	2	2
Lynn, Mass.....	89,336	30	4	.....	2	.....	9	.....	4	3
New Bedford, Mass.....	96,652	34	3	.....	6	.....	18	.....	7	5
Passaic, N. J.....	54,773	25	2	.....	10	.....	.....	.....	3	1
Pawtucket, R. I.....	51,622	.....	1	.....	.....	.....	3	.....	.....	.....
Reading, Pa.....	96,071	33	9	4	.....	.....	11	.....	1	.....
St. Joseph, Mo.....	77,403	20	.....	.....	.....	.....	1	.....	3	.....
Schenectady, N. Y.....	72,826	23	4	1	2	.....	13	1	.....	1
Springfield, Ill.....	51,678	30	3	.....	.....	.....	.....	.....	2	1
Springfield, Mass.....	88,926	33	3	.....	3	.....	1	.....	.....	1
Trenton, N. J.....	96,815	59	4	.....	3	.....	13	1	24	3
Wilkes-Barre, Pa.....	67,105	18	6	.....	6	.....	5	.....	3	.....
Yonkers, N. Y.....	79,803	28	3	.....	66	1	6	.....	9	6
From 25,000 to 50,000 inhabitants:										
Atlantic City, N. J.....	46,150	8	1	.....	.....	.....	7	.....	6	.....
Aurora, Ill.....	29,807	7	3	.....	.....	.....	3	.....	.....	1
Austin, Tex.....	29,860	13	2	.....	10	.....	.....	.....	.....	1
Binghamton, N. Y.....	48,443	25	1	.....	14	.....	3	.....	4	2
Chicopee, Mass.....	25,401	6	.....	.....	.....	.....	.....	.....	.....	1
Danville, Ill.....	27,871	13	3	.....	1	.....	2	.....	.....	1
East Orange, N. J.....	34,371	.....	3	.....	72	.....	7	.....	2	.....
Elmira, N. Y.....	37,176	12	1	.....	.....	.....	4	.....	.....	1
Fitchburg, Mass.....	37,826	4	.....	.....	.....	.....	4	.....	5	.....
Haverhill, Mass.....	44,115	20	2	.....	1	.....	2	1	.....	1
Knoxville, Tenn.....	36,346	.....	.....	.....	6	.....	.....	.....	.....	.....
La Crosse, Wis.....	30,417	14	2	1	.....	.....	.....	.....	3	.....
Lancaster, Pa.....	47,227	.....	2	.....	.....	.....	.....	.....	.....	.....
Little Rock, Ark.....	45,941	.....	3	.....	48	.....	.....	.....	.....	.....
Lynchburg, Va.....	29,494	11	2	1	.....	.....	3	.....	4	2
Malden, Mass.....	44,404	17	4	1	1	.....	4	.....	.....	3

FOREIGN REPORTS.

AUSTRALIA.

Smallpox—Sydney.

During the two weeks ended December 10, 1913, 31 cases of smallpox were notified at Sydney. The type of the disease was mild.

CHINA.

Plague-Infected Rats—Shanghai.

During the week ended January 3, 1914, 162 rats were examined at Shanghai for plague infection. One rat was found plague infected.

GREECE.

Cerebrospinal Meningitis.

Twelve case of cerebrospinal meningitis, with two deaths, were notified, January 21, 1914, at Kalamata. The cases occurred in the military barracks. The disease was reported to be epidemic, January 31, 1914, at Missolonghi.

Typhus Fever.

Two fatal case of typhus fever were notified, December 15, 1913, at Patras, Greece.

JAPAN.

Communicable Diseases.

Communicable diseases were notified in Japan, exclusive of the island of Taiwan (Formosa), as follows:

MONTH OF NOVEMBER, 1913.

Diseases.	Cases.	Deaths.	Diseases.	Cases.	Deaths.
Diphtheria.....	1,903	490	Scarlet fever.....	114	6
Dysentery.....	1,076	284	Smallpox.....	1	
Paratyphoid fever.....	361	49	Typhoid fever.....	2,906	680
Plague.....	112	9			

¹ Of the plague cases, 7 with 6 deaths were notified in Yokohama and 5 with 3 deaths in Hyogo-ken, in which Kobe is situated.

² In Tokyo.

JANUARY 1-NOVEMBER 30, 1913.

Diseases.	Cases.	Deaths.	Diseases.	Cases.	Deaths.
Cholera.....	78	22	Plague.....	26	20
Diphtheria.....	17,104	4,408	Scarlet fever.....	1,172	93
Dysentery.....	16,401	3,543	Typhoid fever.....	25,711	4,872
Paratyphoid fever.....	3,616	436			

NEW ZEALAND.**Smallpox.**

The following statement, dated January 7, 1914, relative to smallpox in New Zealand, was received from the district health officer at Auckland:

We have recently undergone in New Zealand a fairly widespread epidemic of smallpox of the mild type which seems to have been prevalent in America during the last 12 years. It appeared simultaneously in Australia, where, among nearly 900 cases no deaths have occurred. In our case the disease has been almost entirely confined to the Maori race, who are peculiarly susceptible to infectious diseases, more especially of the pustular type. The cases among these natives were on the whole much more severe than those among Europeans. In some cases the disease had all the appearance of confluent smallpox, and in a small percentage even proved fatal, yet other natives infected from such severe cases might take it in the usual mild form, and there was no evidence that it worked up in virulence permanently to the normal degree of severity. The majority of the cases even in natives, very few of whom were vaccinated, were more like chicken pox so far as severity was concerned.

We were able to trace the introduction into New Zealand to a party of persons who came from Utah by way of Vancouver in the steamer *Zealandia*, landing here on April 8. One of this party had a pustular disease of mild type while on board the steamer. In all, some 2,000 cases occurred, but owing to the fact that the natives are a wandering people without definite places of abode, and do not notify their cases, and rarely send for a European doctor, accurate statistics are impossible to obtain.

PERU.**Plague—Trujillo.**

Seven cases of plague were reported under treatment, January 9, 1914; at Trujillo. Province of Libertad, Peru.

TURKEY IN ASIA.**Cholera—Trebizond.**

During the week ended January 17, 1914, 4 cases of cholera and 5 deaths from the same disease were notified in Trebizond. Three of the cases occurred in the same group in the military barracks in which cholera has been previously notified,¹ and 1 case occurred in the city.

ZANZIBAR.**Examination of Rats—Zanzibar.**

During the period from December 7 to 21, 1913, 1,656 rats were examined at Zanzibar for plague infection. None was found plague infected.

¹ Public Health Reports, Jan. 9, 1914, p. 87, and Jan. 16, 1914, p. 142.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

Reports Received During Week Ended Feb. 13, 1914.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Hungary				Dec. 29, free
Bacs Bodrog	Dec. 21-27	1	1	
Ceylon:				
Colombo	Dec. 14-Jan. 3	1	7	
China:				
Hongkong	Dec. 14-20	1		
Dutch East Indies:				
Java—				
Batavia	Dec. 21-27	2	2	
India:				
Calcutta	Dec. 14-27		91	
Straits Settlements:				
Singapore	Dec. 14-20	2	2	
Turkey in Asia:				
Aivali	Jan. 10-23	9	6	
Trebizond	Jan. 11-17	4	5	Mainly among troops. One case in city.
Turkey in Europe:				
Constantinople	Jan. 12-25	14	6	Total Aug. 2-Jan. 25: Cases, 211; deaths, 92.

PLAGUE.

Brazil:				
Bahia	Dec. 28-Jan. 10	3	2	
China:				
Hongkong	Dec. 14-Jan. 3	15	15	
Egypt:				Total Jan. 1-15: Cases 6, deaths 4.
Provinces—				
Assiout	Jan. 5	1	1	
Garbleh	Jan. 15	4	2	
Minieh	Jan. 8	1	1	
India:				
Karachi	Dec. 21-Jan. 3	12	12	
Indo-China				Total Jan. 1-Nov. 20: Cases 3,605, deaths 3,465.
Saigon	Dec. 8-29	4		
Japan				Total Jan 1-Nov. 30: Cases 28, deaths 20.
Mauritius	Dec. 6-11	7	6	
Peru:				
Trujillo				Jan. 9, 13 cases in the lazaretto.

SMALLPOX.

Argentina:				
Buenos Aires	Nov. 1-30		1	
Australia:				
New South Wales				July 1-Dec. 20: Cases, 1,056.
Sydney	Dec. 6-20	8		July 1-Dec. 20: Cases, 1,017.
Brazil:				
Bahia	Dec. 28-Jan. 3	2		
Rio de Janeiro	Dec. 22-Jan. 3	55	9	
Canada:				
Hamilton	Jan. 1-31	9		
Montreal	Jan. 24-31	14		
Ottawa	Jan. 25-31	1		
China:				
Hongkong	Dec. 14-20	1		
Shanghai	Dec. 22-Jan. 4	3		
Egypt:				
Alexandria	Dec. 24-Jan. 14	7	3	
Cairo	Dec. 25-Jan. 7	38	10	
France:				
Marseille	Dec. 1-31		41	
Germany				Total Jan. 11-25: Cases, 5.
Hamburg	Dec. 11-25	4		
Greece:				
Achaia and Elis, province	Jan. 29			Present.
India:				
Calcutta	Dec. 21-27		3	
Karachi	do	1		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received During Week Ended Feb. 13, 1914—Continued.****SMALLPOX—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Japan.....				Total Jan. 1—Nov. 30: Cases, 106; deaths, 39, exclusive of Taiwan.
Tokyo.....	Nov. 1-30.....	1		
Yokohama.....	Jan. 6-12.....	1	1	
Mexico:				
Aguascalientes.....	Jan. 12-25.....		10	
Chihuahua.....	Jan. 4-25.....		8	
Guadalajara.....	Jan. 11-24.....	12	6	
Tampico.....	Dec. 24-Jan. 10.....	50	5	
New Zealand.....				Apr. 8, 1913, to Jan. 7, 1914: Cases, 2,000, including report, p. 2863, vol. 28.
Norway:				
Trondhjem.....	Dec. 1-31.....	5		
Russia:				
Odessa.....	Dec. 28-Jan. 3.....		1	
Spain:				
Barcelona.....	Jan. 4-17.....		15	
Turkey in Asia:				
Adana.....	Jan. 10.....	1		
Beirut.....	Dec. 28-Jan. 17.....	57	32	
Mersina.....	Jan. 4-10.....	1		
Tarsus.....	Jan. 10.....			Present.
Turkey in Europe:				
Constantinople.....	Jan. 11-17.....		1	
Salonki.....	Dec. 28-Jan. 17.....	30		

Reports Received from Dec. 27, 1913, to Feb. 6, 1914.**CHOLERA.**

Places.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Bosnia-Herzegovina—				
Brod.....	Nov. 13-18.....	2		
Kostjica.....	do.....	1		
Novigrad.....	Oct. 26-Nov. 5.....	1		
Sjekocac.....	Nov. 6.....	1		
Travnik, district.....	Dec. 10-16.....	6		
Vranduk.....	Nov. 20.....	1		
Zenica.....	Oct. 26-Nov. 19.....	9	2	
Croatia-Slavonia—				
Pozenga.....	Nov. 18-Dec. 1.....	2		
Syrmien—				
Adaseveci.....	do.....	6	2	
Semlin.....	do.....	1	1	
Vitrovia—				
Dobrovic.....	do.....	2	2	
Hungary.....				Total Sept. 1—Dec. 13: Cases 728, deaths 371.
Bacs-Bodrog, district.....	Nov. 9-Dec. 13.....	51	30	
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	
Szaboles—				
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-Dec. 13.....	30	16	
China:				
Hongkong.....	Nov. 9-22.....	3		

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1913, to Feb. 6, 1914—Continued.****CHOLERA—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Dutch East Indies:				
Java—				
Batavia and Tanjong Priok.	Nov. 9-Dec. 20....	43	32	
Samarang.....	Nov. 30-Dec. 20...	30	15	
India:				
Bombay.....	Nov. 10-Dec. 20...	13	4	
Calcutta.....	Nov. 9-Dec. 13.....		265	
Madras.....	Nov. 16-Dec. 20....	3	2	
Rangoon.....	Nov. 1-30.....	3	2	
Philippine Islands:				
Manila.....	Nov. 9-Dec. 27....	40	32	Total, Aug. 23-Dec. 27: Cases 157, deaths 108. Third quarter, 1913: Cases 14, deaths 6.
Provinces.....				Total, Aug. 23-Dec. 27: Cases 148, deaths 94.
Bulacan—				
Bulacan.....	Dec. 14-20.....			Present in vicinity.
Meycauayan.....	do.....			Present.
Cádiz.....				Total, Dec. 17-23: Cases 26, deaths 18.
Banga.....	Dec. 17-20.....			Present.
Calvo.....	do.....			One 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. 27.....			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		Present.
Pasig.....	Nov. 19.....			Total, Nov. 14 to Dec. 7: Cases 18, deaths 15.
Roumania.....				
Russia:				
Bessarabia—				
Ismail.....	Oct. 26-Nov. 8....	6	1	
Ekaterinoslav.....	do.....	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. 2-29.....		38	
Straits Settlements:				
Singapore.....	Nov. 2-Dec. 13....	18	14	
Turkey in Asia:				
Beirut.....	Dec. 23.....	2	1	From among troops on the s. s. Bahr Amer from Rodosto.
Smyrna.....	Dec. 16-Jan. 5.....	3		
Trebizond.....	Dec. 9-Jan. 11....	17	9	Dec. 9-16, 6 cases among troops from s. s. Guldjemal.
Turkey in Europe:				
Constantinople.....	Nov. 25-Jan. 11...	123	46	Total, Aug. 2, 1913, to Jan. 11, 1914: Cases 197, deaths 86.
Gallipoli.....	Jan. 1-3.....	2	2	
Pera.....	Jan. 3-10.....	5		
Rodosto.....	Dec. 21-Jan. 9.....	22		

YELLOW FEVER.

Brazil:				
Bahia.....	Nov. 23-Dec. 20...	5	4	
Ceara.....	Nov. 1-30.....		2	
Ecuador:				
Guayaquil.....	do.....	5	3	
Milagro.....	do.....	1	1	
Naranjito.....	do.....	1	1	

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

Reports Received from Dec. 27, 1913, to Feb. 6, 1914—Continued.

YELLOW FEVER—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Merida.....	Dec. 10-11.....	1	1	From Campeche.
Do.....	Jan. 4-10.....	1	1	Do.
Southern Nigeria:				
Lagos.....	Oct. 20-23.....	3	1	Among Europeans from a vessel. Including previous report.
Togo:				
Lome.....	Sept. 12.....	1		
Trinidad:				
Brighton.....	Dec. 30.....	1		Total Nov. 22-Dec. 30: Cases 10; deaths 3, including previous reports.

PLAGUE.

Australia:					
Thursday Island Quarantine Station.	May 21.....	5			Pestis Minor from s. s. Taynan from Hongkong to Townville.
Azores:					
Terceira—					
Angra-Herolsmo.....	Dec. 21.....			1	
Brazil:					
Bahia.....	Nov. 23-Dec. 27...	16		5	
Rio de Janeiro.....	Nov. 16-22.....	1		1	
British East Africa:					
Kisumu.....	Sept. 12-Oct. 13...	2		2	
Mombasa.....	Sept. 12-Dec. 15...	31		16	
Nairobi.....	Sept. 12-Nov. 15...	3		3	
Chile:					
Iquique.....	Nov. 9-Jan. 4.....	15		6	
China:					
Hongkong.....	Nov. 2-Dec. 6.....	19		17	
Shanghai.....	Oct. 1-7.....	1			
Dutch East Indies:					
Provinces—					
Kediri.....	Nov. 1-30.....	307		268	
Madloen.....	do.....	89		81	
Malang.....	do.....	820		770	
Surabaya.....	do.....	60		64	
Ecuador:					
Babahoyo.....	Nov. 1-30.....	1			
Guayaquil.....	do.....	193		83	
Milagro.....	do.....	1			
Yaguachi.....	do.....	2		2	
Egypt					Jan. 1-Dec. 24: Cases 654, deaths 304.
Provinces—					
Assouan.....	Dec. 10.....	1			
Garbleh.....	Dec. 11.....	1			
Minieh.....	Dec. 9-24.....	3		1	
India.....					Total Jan. 1-Nov. 29, 1913: Cases, 209,710; deaths, 176,966.
Bombay.....	Nov. 9-Dec. 20.....	20		16	
Calcutta.....	Nov. 2-Dec. 13.....			11	
Karachi.....	Nov. 9-Dec. 20.....	86		83	
Madras.....	Nov. 16-Dec. 20.....	4		2	
Rangoon.....	Oct. 26-Nov. 30.....	26		25	
Indo-China:					
Saigon.....	Nov. 11-24.....	5			
Japan:					
Kobe.....	Dec. 1-7.....	1			
Yokohama.....	Jan. 4-10.....	1			Total Sept. 19-Jan. 10: Cases, 22; deaths, 17.
Mauritius.....	Oct. 28-Nov. 27.....	56		37	Total Jan. 1-Nov. 27: Cases, 273; deaths, 163.
Morocco:					
Casablanca.....	Jan. 7.....	1		1	
El-Araish (Larache).....	Sept. 17.....	1			Among the military.
New Caledonia:					
Bourail.....	Sept. 1-Oct. 14.....	8		2	In a school of the tribe of the Azaren.
Peru:					
Trujillo.....					Jan. 7, 7 cases in the lazaretto.
Philippine Islands:					
Manila.....	Nov. 23-29.....	1		1	Third quarter, 1913: Cases, 2 deaths, 1.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1913, to Feb. 6, 1914—Continued.****PLAGUE—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Russia:				
Ural, territory.....				Total Oct. 20–Nov. 10: Cases, 212; deaths, 170; and 2 fatal cases from Issum Tube.
Djakisabevsk district—				
Djumarta.....	Nov. 9–10.....	5	1	
Djantayu.....	Nov. 8–10.....	2	2	
Kizilu.....	Nov. 8.....	1	1	
Fourteenth village.....	Nov. 7–9.....	6	7	
Sarbas.....	Nov. 8–10.....	13	7	
Kaziljar district.....	Nov. 5–10.....	39	24	In Assaukurt, Baitchurek, Bis-kuduk, and Djamankuduk.
Lbistchensky district—				
Issum Tube.....	Oct. 20–Nov. 10.....	138	127	
Kaimikov.....	Nov. 4–10.....	6	6	
Siam:				
Bangkok.....	Nov. 2–29.....		1	
Turkey in Asia:				
Beirut.....	Dec. 10–23.....	2	2	

SMALLPOX.

Algeria:				
Departments—				
Algiers.....	Sept. 1–Oct. 31.....	2		
Constantine.....	Oct. 1–31.....	9		
Oran.....	Sept. 1–Oct. 31.....	84		
Arabia:				
Aden.....	Nov. 25–Dec. 15.....	5	4	
Maska.....	Nov. 30–Dec. 6.....	10		Dec. 20, present.
Matarah.....	Dec. 23–26.....	9		Nov. 30, present.
Australia:				
New South Wales.....				Total, July 1–Dec. 6: Cases, 1,049.
Sydney.....				Oct. 29–Dec. 6, 16 cases.
July 1–Dec. 6: Cases, 1,069.				
Austria-Hungary:				
Tyrol.....	Nov. 23–29.....	1		
Upper Austria.....	Dec. 14–20.....	2		
Brazil:				
Bahia.....	Nov. 23–Dec. 27.....	14		
Para.....	Dec. 1–Jan. 10.....	23	26	
Pernambuco.....	Nov. 1–Dec. 15.....		49	
Rio de Janeiro.....	Nov. 9–Dec. 20.....	112	19	
Canada:				
Ontario—				
Ottawa.....	Dec. 7–20.....	3		
Toronto.....	Dec. 7–Jan. 10.....	3		
Quebec—				
Montreal.....	Dec. 7–Jan. 17.....	21		
Ottawa.....	Dec. 28–Jan. 14.....	8		
Ceylon:				
Colombo.....	Nov. 30–Dec. 6.....	1		
China:				
Amoy.....	Dec. 14–27.....			Present.
Dalny.....	Dec. 7–13.....	2	1	
Hankow.....	Nov. 2–Dec. 20.....	7	1	
Shanghai.....	Dec. 8–14.....	1		
Tientsin.....	Nov. 9–15.....		1	
Tong An.....	Dec. 27.....			Present, 20 miles from Amoy.
Dutch East Indies:				
Java.....				Dec. 13, 16 cases with 6 deaths in the interior.
Batavia.....	Nov. 9–Dec. 13.....	33	5	
Surabaya.....	Oct. 28–Nov. 9.....	3		
Egypt:				
Alexandria.....	Nov. 26–Dec. 23.....	5	3	
Cairo.....	Nov. 19–Dec. 23.....	41	18	
Port Said.....	Dec. 3–9.....		1	
France:				
Marseille.....	Nov. 1–30.....		31	
Nice.....	do.....	1		
Paris.....	Nov. 23–Dec. 27.....	11		
St. Etienne.....	Nov. 16–30.....	8	3	

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

Reports Received from Dec. 27, 1913, to Feb. 6, 1914—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Germany.....				Dec. 7-13: Case, 1.
Gibraltar.....	Dec. 1-29.....	3		
Great Britain:				
Nottingham.....	Dec. 21-27.....	98		
India:				
Bombay.....	Nov. 23-Dec. 13.....	7	3	
Calcutta.....	Nov. 2-Dec. 13.....		9	
Karachi.....	Nov. 2-Dec. 20.....	3	1	
Madras.....	Nov. 2-Dec. 13.....	11	4	
Indo-China:				
Saigon.....	Nov. 11-24.....	1	1	
Italy:				
Leghorn.....	Dec. 21-27.....	1		
Turin.....	Dec. 22-28.....	1		
Japan.....				Total, Jan. 1-Oct. 31: Cases, 105; deaths, 39.
Mexico:				
Acapulco.....	Dec. 6.....		1	
Aguascalientes.....	Dec. 1-Jan. 18.....		20	
Chihuahua.....	Dec. 29-Jan. 4.....		1	
Imuris.....	do.....	5		
Llano.....	Jan. 17.....	8		
Mexico.....	Oct. 26-Nov. 15.....	15	10	
Monterey.....	Nov. 17-Jan. 4.....		4	
San Luis Potosi.....	Nov. 2-29.....	2		
Vera Cruz.....	Dec. 6-Jan. 10.....	8	2	
Norway:				
Trondhjem.....	Nov. 1-30.....	5		
Philippine Islands:				Third quarter 1913: Cases, 15.
Manila.....				
Portugal:				
Lisbon.....	Nov. 16-Dec. 27.....	7		
Russia:				
Moscow.....	Dec. 14-27.....	2	2	
Odessa.....	Nov. 16-Dec. 20.....	2	1	
St. Petersburg.....	Nov. 23-Dec. 27.....	35	5	
Warsaw.....	Oct. 5-18.....	7	4	
Servia:				
Belgrade.....	Nov. 7-Jan. 5.....	13	5	
Spain:				
Almeria.....	Nov. 1-Dec. 31.....		7	
Barcelona.....	Nov. 30-Jan. 3.....		16	
Madrid.....	Nov. 1-Dec. 31.....		58	
Seville.....	Nov. 1-30.....		1	
Valencia.....	Dec. 1-27.....	3		
Straits Settlements:				
Penang.....	Nov. 2-Dec. 6.....	13	1	
Singapore.....	Nov. 2-22.....	2		
Switzerland:				
Canton—				
Basel.....	Nov. 23-Dec. 13.....	21		
Genoa.....	Nov. 23-29.....	3	1	
Turkey in Asia:				Epidemic.
Adana.....	Dec. 22-28.....			
Beirut.....	Nov. 23-Dec. 27.....	135	53	
Jaffa.....	Dec. 6-27.....	12		
Smyrna.....	Nov. 16-Dec. 13.....		85	
Tarsus.....	Dec. 28.....			Still present.
Turkey in Europe:				
Constantinople.....	Nov. 20-Jan. 3.....		9	
Saloniki.....	Dec. 1-21.....		29	

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH,

ARIZONA.

State Board of Health—Organization, Powers, and Duties—Superintendent of Public Health. (Act May 7, 1913.)

CHAPTER I.—SECTION 1. There is hereby established a State board of health, composed of a president, a vice president, and a superintendent of public health. The governor shall be *ex officio* president and the attorney general shall be *ex officio* vice president of such board. The governor shall nominate and by and with the advice and consent of the senate appoint a superintendent of public health, who shall be a practicing physician of the State. The superintendent thus appointed shall hold his office for two years. The several persons thus appointed shall hold their offices for two years from the first Tuesday in April succeeding their appointment, and until their successors are appointed and qualified.

SEC. 2. The president of the board shall preside at the meetings thereof, and the vice president shall perform the duties thereof in his absence. The superintendent of public health shall be secretary of said board. He shall keep a record of the proceedings of the State board of health, and of his own acts as such superintendent and he shall perform such other duties as are prescribed by this chapter, or which may be prescribed by the State board of health. The records kept by the superintendent shall be at all times open to the inspection of the public.

SEC. 3. The several persons composing the State board of health shall meet as often as once every six months at such place in the State as they may appoint.

SEC. 4. The board shall have power, and it shall be its duty:

1. To fix a time and place of the meetings of the board subject to the provisions of the preceding section.

2. To make rules and regulations for the government of the board, its officers, and its meetings.

3. To make and enforce all needful rules and regulations for the prevention and cure, and to prevent the spread of any contagious, infectious, or malarial diseases among persons and domestic animals.

4. To establish quarantine and isolate any person affected with any contagious or infectious or epidemic and endemic disease.

5. To isolate, kill, or remove any animal affected with contagious or infectious disease when necessary to protect public health.

6. To remove or cause to be removed any dead, decaying, or putrid body or any decayed putrid or other substance that may endanger the health of persons or domestic animals.

7. To condemn or cause to be destroyed any impure or diseased article of food that may be offered for sale.

8. To superintend the several boards of health in the cities and towns and the county boards of health of the several counties.

9. To empower and direct the superintendent of public health to do or cause to be done any and all of the things mentioned in subdivisions 4, 5, 6, 7, and 8 of this chapter.

10. To make such rules and regulations as it may deem necessary to govern the preparation of dead bodies for transportation and to govern what classes of dead bodies may be transported and the manner thereof.

SEC. 5. The president and vice president of the board shall receive no compensation, but they shall be paid 10 cents for every mile actually and necessarily traveled by them in the performance of their official duties and other necessary expenses incurred by them.

SEC. 6. The superintendent of public health shall be paid a yearly salary of \$1,000 in equal semimonthly installments. He shall also be paid 10 cents per mile for every mile actually and necessarily traveled in the performance of his official duties, and such other sum or sums as he may necessarily pay or become liable to pay for hotel or other incidental expenses, for the official books, records, and papers kept by him and for the printing of his reports, and such circulars and blanks as may be required for the proper conduct of the business of his office, not to exceed in the aggregate the sum of \$300. The accounts of the superintendent for his mileage and other expenses of his office shall be audited by the State board of health, and the same, together with his salary, shall be paid out of the State treasury.

County Boards of Health—Organization, Powers, and Duties—County Superintendent of Health. (Act May 7, 1913.)

SEC. 7. There are hereby established county boards of health, composed of a president, vice president, and a superintendent. The chairman of the board of supervisors in each county shall be ex-officio president, of the county board and the county attorney of such county shall be ex-officio vice president of such board. The board of supervisors shall appoint a superintendent of public health for the county, who shall be a practicing physician within the county, and the superintendent thus appointed shall hold his office for two years and until his successor is elected and qualified.

SEC. 8. The president of each county board of health shall preside at the meetings thereof, and in his absence the vice president shall perform the duties of the president. The county superintendent of health shall keep a record of all the proceedings of the board and of his official acts, and he shall, at the end of every month, make a full report in writing to the superintendent of public health of the proceedings of the county board of health and of his official acts, and shall, whenever the health of persons is in danger and when any contagious and infectious disease occurs in his county among persons, immediately report the same to the superintendent of public health.

SEC. 9. The several county boards of health shall meet at the county seat of their respective counties, at such times within 30 days after the appointment of the county superintendent of health as he may designate. Notice of the time and place of such meeting shall be made by him, given to the other members of the county board at least five days prior to such meeting, and thereafter the board shall meet at the county seat as often as once in every three months.

SEC. 10. The several county boards of health shall have power within their respective counties, outside of the corporate limits of cities having a city board of health, subject to the supervisory control of the State board of health and the superintendent of public health—

1. To fix a time and place of the meetings of the board, subject to the provisions of the preceding section.

2. To make rules and regulations for the government of the board, its officers, and its meetings.

3. To make and enforce all needful rules and regulations for the prevention and cure and to prevent the spread of any contagious, infectious, or malarial diseases among persons and domestic animals.

4. To establish quarantine, and isolate any person affected with any contagious or infectious or epidemic and endemic disease.

5. To isolate, kill, or remove any animal affected with contagious or infectious disease when necessary to protect public health.

6. To remove or cause to be removed any dead, decaying, or putrid body, or any decayed, putrid, or other substance that may endanger the health of persons or domestic animals.

7. To condemn or cause to be destroyed any impure or diseased article of food that may be offered for sale.

8. To empower and direct the superintendent of public health to do or cause to be done any and all of the things mentioned in subdivisions 4, 5, 6, and 7 of this chapter.

9. To make such rules and regulations as it may deem necessary to govern the preparation of dead bodies for transportation and to govern what classes of dead bodies may be transported and the manner thereof.

SEC. 11. The president and vice president of the board shall receive no compensation, but they shall be paid 10 cents for every mile actually and necessarily traveled by them in the performance of their official duties and other necessary expenses incurred by them. All expenses actually and necessarily incurred by the county board of health in carrying out the provisions of this chapter shall be audited by the board and certified to the county supervisors and shall be paid the same as other county expenses are paid.

SEC. 12. The county superintendent of health shall have charge of and superintend, subject to the approval of the board of which he is a member, and supervisory control of the State board of health and the superintendent of public health, the establishment of quarantine and the isolation of persons afflicted with any contagious, infectious, epidemic, or endemic disease within this State.

SEC. 13. The president and vice president of the board shall receive no compensation for the performance of their official duties, but shall receive 10 cents for every mile actually and necessarily traveled in the discharge of such duties. The county superintendent of health shall receive such compensation as the boards of supervisors may fix: *Provided*, That the county superintendent of health shall receive not to exceed the sum of \$300 per annum and not to exceed \$10 per day when actually and necessarily engaged, and 10 cents for each mile actually and necessarily traveled in the performance of his duties, and he shall also receive such other sum as he may necessarily pay or become liable to pay in carrying out and performing the various duties imposed upon him under the provisions of this section or by the county board of health: *Provided, however*, That the board of supervisors shall not be obliged to pay out any sums for carrying out and performing the various duties of the county superintendent of health unless the same is first directed to be done by the board of health, and that all such accounts for services, mileage, and other expenses shall be audited by the board and certified to the board of county supervisors and paid as any other county expenses are paid.

SEC. 14. The superintendent of public health shall on the 1st day of December of each even-numbered year, make a full report to the governor, which report shall show all that has been done by the State board of health and by such superintendent during the two years preceding the making of such report, the number of cases treated by him in each county by the superintendent, the character and extent during such time of all contagious and infectious diseases that have been reported to him, all expenditures of the State board, and in each of the organized counties by the county board, and such recommendations as he may deem advisable for the better protection

of the public health and the prevention and cure of contagious and infectious diseases of persons.

SEC. 15. In case a vacancy occur in the office of vice president or superintendent, such vacancy shall be filled by appointment by the governor, and the person so appointed shall hold office for the unexpired term. In case a vacancy occurs in the office of vice president or superintendent of health in any county board of health, the president of such county board of health shall appoint some suitable person to fill such vacancy, and the person so appointed shall hold office until a successor to such officer has been appointed by the board of county supervisors.

SEC. 16. Nothing contained in this article shall in any manner affect any board of health heretofore established, or that may hereafter be established in any city or incorporated town, provided, however, that all such boards of health shall be under the superintending control of the State board.

City Boards of Health—Organization, Powers, and Duties—Health Officer. (Act May 7, 1913.)

SEC. 17. There is hereby established in each incorporated city in this State a board of health, which shall be constituted as follows: The mayor of such city shall, at the first meeting of the city council in April in each year, appoint two members of the city council who, together with the city engineer and the health officer as hereinafter provided, shall constitute a board of health and shall have and exercise the powers conferred upon such board by law and by the ordinances of such city.

SEC. 18. At the first meeting of the city council in April in each odd-numbered year there shall be appointed by the mayor and confirmed by the council one health officer, who shall hold his office until his successor is appointed and qualified. He shall be a practicing physician and shall perform such duties as may be devolved upon him by law or by ordinances of such city. Before entering upon the duties of his office he shall take the usual oath of office and give a bond to be approved by the city council in the sum of \$1,000, conditioned for the faithful performance of his duties, and shall receive such compensation as the city council shall determine.

SEC. 19. Each city board of health shall perform the duties and exercise the powers herein provided within the limits of the city for which it is established. Each county board of health and city board of health shall be known as the local board of health.

Nuisances—Abatement of. (Act May 7, 1913.)

SEC. 20. Each local board of health, within its jurisdiction, shall examine into all nuisances, sources of filth, and causes of sickness and make such regulations regarding the same as it may judge necessary for the public health and safety of the inhabitants, and any person who shall violate any published order or regulation made by any board of health shall be guilty of a misdemeanor and punished by a fine of not exceeding \$100, or by imprisonment in the county jail not exceeding 30 days or both.

SEC. 21. Notice shall be given by each local board of health of all general orders and regulations made by them by publishing the same in some newspaper, if there be one published within the jurisdiction of such board; if there be none, then by posting such orders and regulations in five public places therein, and such publication of such orders and regulations shall be deemed a legal notice to all persons.

SEC. 22. Whenever any nuisance, source of filth, or cause of sickness is found on private property the local board of health shall order the owner or occupant thereof, at his own expense, to remove the same within 24 hours, and such order may be given to such owner or occupant personally or left at his usual place of abode.

SEC. 23. Whenever such owner or occupant shall fail to comply with the order of such board, it shall cause such nuisance, source of filth, or cause of sickness to be removed and all expenses incurred thereby shall be paid by such owner or occupant, or by such other person as has caused or permitted the same.

SEC. 24. Whenever any local board shall deem it necessary for the preservation of the health of the inhabitants within its jurisdiction to enter any building or other structure within such jurisdiction for the purpose of examining into and destroying, removing, or preventing any nuisance, source of filth, or cause of sickness and shall be refused entrance, any member of the board may make complaint under oath to a justice of the peace within the jurisdiction of the board, stating the facts in the case so far as he has knowledge thereof.

SEC. 25. Such justice shall thereupon issue a warrant directed to the sheriff or other peace officer, commanding him to take sufficient aid, and accompanied by at least one member of the board of health, between the hours of sunrise and sunset, to have such nuisance, source of filth, and cause of sickness destroyed, removed, or prevented under the direction of such member of the board of health as accompanies him.

Morbidity Reports—Control of Communicable Diseases. (Act May 7, 1913.)

SEC. 26. Whenever it shall come to the knowledge of any physician or other person that a contagious epidemic or infectious disease exists within the jurisdiction of any local board he shall immediately report to such board in writing the name and place of residence, if known, of every person afflicted with such disease, and if he is the attending physician of such person he shall report not less than twice in each week the condition of each person so afflicted and the state of such disease.

SEC. 27. It shall be the duty of each practicing physician in this State to report in writing to the local board of health the death of each of his patients who shall have died within the jurisdiction of such board, of any contagious, infectious, or epidemic disease. Such report shall be made within 24 hours after such death, and shall state the specific name and character of such disease.

SEC. 28. Each keeper of any private house, boarding house, lodging house, in, or hotel shall report in writing to the local board of health within whose jurisdiction the same may occur, each case of contagious, infectious, or epidemic disease which may occur in his house, inn, or hotel; such report shall be made within 24 hours after the existence of such disease shall have become known to such person and shall state the name of each person afflicted with such disease and the nature thereof.

SEC. 29. No person shall, without a permit from the local or State board of health, carry or cause to be removed from without this State, or from one building to another within this State, or from or to any car or vessel, any person afflicted with any contagious, infectious, or epidemic disease, or the body of any person who dies of such disease.

SEC. 30. Each parent or guardian having the care, custody, or control of any minor or other person shall cause such minor or other person to be vaccinated.

SEC. 31. No principal, superintendent, or teacher of any school and no parent or guardian of any minor child shall permit any child having scarlet fever, diphtheria, smallpox, whooping cough, measles, or any other dangerous, infectious, or contagious disease, or any child residing in any house in which such disease exists, or has recently existed, to attend any public or private school until the local board of health shall have given permission therefor.

SEC. 32. No person shall allow to be unburied the body of any human being for a longer time than four days, or, when death has been caused by infectious or contagious disease, for a longer time than 24 hours after the death of such person, without a permit from the local board of health, which permit shall specify the length of time during which said body may be unburied. In all cases where death has been caused by an infectious or contagious disease, the body shall, if directed by said board, be immediately disinfected as may be directed by it; if the body remains unburied for more

than 24 hours, it shall be immediately inclosed in a tightly sealed metallic coffin, which shall not thereafter be opened, and the funeral of such person shall be strictly private.

In the removal of such body for burial or otherwise, only such hearses or other vehicles shall be employed as may be authorized by said board, and no undertaker or other person shall bury or prepare for burial the body of any human being without a certificate signed by the attending physician or the coroner, which certificate shall state the name, age, sex, place of abode, and date of death of such deceased person, the name and duration of the disease of which such person died, and whether or not the disease is contagious, and such certificate shall, after the burial of such body, be filed with the local board of health, and whenever any such dead body shall be presented to any common carrier within the State for transportation by such carrier it shall be accompanied by a duplicate of such certificate signed by such attending physician or coroner, and no common carrier shall receive any such body for transportation unless such certificate shall state the disease of which such a person died is not contagious, which duplicate shall be securely attached to and remain upon the outside of the coffin or other receptacle containing such dead body.

SEC. 33. It shall be the duty of each local board of health when it shall come to its knowledge that a case of smallpox, scarlet fever, diphtheria, or other infectious or contagious disease exists within its jurisdiction, immediately to examine into the facts of the case, and if such disease appears to be of the character herein specified such board shall adopt such quarantine and sanitary measures as in its judgment tend to prevent the spread of such disease, and may immediately cause any person infected with such disease to be removed to a separate house, if, in the opinion of the health officer or superintendent of public health, such person can be so removed without danger to his health, and, if such infected person can not be removed without danger to his health the local board shall make such quarantine regulations as is deemed proper with reference to the house within which such infected person is, and in such cases may cause the persons in the neighborhood to be removed, and take such other measures as it deems necessary for the safety of the inhabitants, and shall immediately notify the State board of health of the existence and nature of such disease, and of the measures adopted by it with reference thereto.

SEC. 34. Each local board of health may provide such temporary hospital or place of reception for persons afflicted with infectious or contagious diseases as it judges best for their accommodation and safety of the inhabitants, and all such hospitals and all private houses or other places in which exists any infectious or contagious diseases shall, during the existence of such disease, be under the control and subject to the regulations of the local board of health and all the inmates of such house or other place during the existence of such disease therein must conform to the regulations and obey the instructions of such local board with reference thereto.

SEC. 35. Any local board of health may cause to be destroyed any bed or bedding, clothing, carpets, or other articles which have been exposed to infection from such infectious or contagious disease and may allow reasonable compensation for the same, or may provide a proper place with all necessary apparatus and attendants for the disinfection of such articles and cause all such articles to be disinfected thereby, and may provide a carriage for the conveyance of such articles or of persons suffering from such contagious or infectious disease.

SEC. 36. Local boards of health may employ such persons as may be necessary to carry into effect the provisions of this chapter and the regulations established by them, and such physicians as they deem necessary, and provide such necessaries of life as in their judgment shall be needed for the maintenance, welfare, and comfort of persons afflicted with contagious or infectious diseases. All expenses incurred by any local board of health in carrying into effect the provisions of this chapter, and in providing for the care and maintenance of such sick persons, and all expenses incurred

under any of the provisions of this section shall be audited and allowed by the board incurring the same. Such expenses, in case of city board of health, shall be certified to the city auditor and paid out of the general funds of the city, and, in case of county boards of health, shall be certified to the county board of supervisors and paid out of the general fund of the county. All expenses incurred by such boards of health for the care, medical attendance, or support of any such sick person shall be a charge upon such person and upon the person legally chargeable with the support of such person (except where persons are unable to pay, then such expenses shall be chargeable to the county in which such person resides) and may be collected by suit in the name of the county or city which shall have incurred such expense; provided, that if a physician is called at the instance of such local board of health to attend a person infected with a contagious or infectious disease, it shall be at the expense of such city or county.

SEC. 37. Any person who willfully secrets himself or others known to have a contagious or infectious disease, or any health officer, superintendent of public health, or any member of any local board of health who shall neglect or refuse to perform any of the duties required to be performed by him under the provisions of this chapter, and any person who fails to comply with or violates any of the provisions of this chapter, or neglects or refuses to conform to any rule, regulations, or measures adopted by the local board of health within whose jurisdiction he shall at the time be, and which shall have been published or shall have come to his knowledge, or refuses or neglects promptly to obey any orders, directions, or instructions given to him by such board of health, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not less than \$10 nor more than \$50, or by imprisonment in the county jail not exceeding 30 days, or by both, and any physician convicted under this chapter shall have his license revoked.

SEC. 38. All acts and parts of acts in conflict with the provisions of this act are hereby repealed.

SEC. 39. This act shall take effect and be in force from and after the 1st day of October, 1913.

MONTANA.

Trachoma—Children Suffering from, not to Attend School. (Reg. Bd. of H., July 14, 1913.)

REGULATION 1. No child suffering from trachoma shall be allowed to attend any public school in the State of Montana.

REG. 2. Teachers having reasons to believe that any of the children under their care are suffering from trachoma shall notify the county or local health officer and the parents of said children.

Schools—Instruction Regarding Communicable Diseases. (Act Mar. 12, 1913.)

612. *Prevention of communicable diseases.*—1. There shall be taught in every year in every public school of elementary grade in Montana the principal modes by which each of the dangerous communicable diseases spread, and the method for the restriction and prevention of each such diseases as smallpox, diphtheria, scarlet fever, measles, tuberculosis, chicken pox, and such other diseases as may be named, and attention called to the same by the board of health of this State.

2. School boards shall annually send to the public school superintendents and teachers throughout the State printed data and statements which will enable them to comply with the provisions of this chapter.

3. School boards are hereby required to direct superintendents and teachers to give oral and blackboard instruction, using the data and statements supplied by the State board of health.

4. Neglect or refusal on the part of any superintendent or teacher to comply with the provisions of this chapter shall be considered a sufficient cause for dismissal from the school by the school board.

5. Any member of any school board who shall willfully neglect or refuse to comply with any provisions of this chapter shall be deemed guilty of a misdemeanor and shall be subject to punishment by a fine not exceeding \$100.

School Buildings—State Board of Health to Approve Plans. (Act Mar. 12, 1913.)

1601. *Architecture.*—No schoolhouse shall hereafter be erected, repaired, or enlarged in any school district of the State at an expense which shall exceed \$500 until the plans and specifications thereof shall have been submitted to the State board of health, and its approval indorsed thereon: *Provided*, That districts of the second and third class shall also have the approval of the superintendent of public instruction. Such plans and specifications shall show in detail the ventilation, the heating, and lighting of such building.

1602. *Floor space—Air—Light.*—The board of health shall not approve plans for the erection of any school building or addition thereto or remodeling thereof, unless the same shall provide (a) at least 15 square feet of floor space and 200 cubic feet of air space for each pupil to be accommodated in each study or recitation room therein; (b) at least 30 cubic feet of pure air per minute per pupil shall be furnished by a satisfactory ventilating system, which should also provide means for exhausting the foul or vitiating air from the room.

The light shall come from the left or from the left and rear of each schoolroom, and the window space shall be not less than one-seventh of the floor space of each room.

1603. *Penalties.*—The county treasurer shall not make any payments on any contract arising under the provisions of this chapter until the contractor furnishes a certified statement signed by the State board of health that the plans and specifications of the school building to be erected or remodeled have been fully approved by the State board of health.

1604. *Suggestive plans.*—It shall be the duty of the State board of health to furnish to all districts of the third class suggestive plans for school buildings to be erected in conformity with the above rules.

1605. *Vestibules.*—No one and two room schoolhouses shall be erected without a vestibule of reasonable size.

1606. *Care of schoolhouses.*—It shall be the duty of boards of trustees in districts of the third class to require that the school room or rooms shall be thoroughly scrubbed and cleaned, including the floors, interior woodwork, and windows, at least once every three months.

1607. *Water supply and toilet accommodations.*—The board of trustees shall furnish such water supply and toilet accommodations as shall be approved by the State board of health.

NEW JERSEY.

Employees of Boards of Health—Pensions for. (Act Apr. 2, 1913.)

1. In all cities in this State which have heretofore established, or which may hereafter establish, local boards or departments of health therein, it shall be lawful for the employees of such local boards or departments of health to associate themselves together as a corporation for the purpose of providing and obtaining a fund to pension such employees.

2. For the purpose of forming such a corporation the health officer or other chief officer or person in charge of such employees shall notify each and every employee of such local board or department of health to attend a meeting to be held not less than five days after the giving of such notice, to consider the formation of a corpora-

tion in accordance with this act. Said notice shall be in writing and shall specify the time and place of the meeting of such employees. If two-thirds of the employees present at such meeting shall vote in favor of forming such a corporation, they shall adopt a resolution to that effect and shall choose a name for the corporation and shall send a copy of such resolution to the local board or department of health or other municipal board having charge or control of such board or department, and shall recommend to such board or body four members of such board or department as trustees. The first trustees created under this act shall prepare and sign a certificate reciting the adoption of the resolution by the employees, as hereinbefore directed, the name adopted, the appointment of trustees, the organization, and the names of officers and execution of the certificate, for the purpose of forming a corporation under this act for the purposes herein set forth, which certificate shall be recorded in the office of the clerk of the county wherein such corporation shall be organized and shall then be filed in the office of the commissioner of banking and insurance at Trenton, in this State, and thereupon such trustees, their associates and successors, shall be and become a body politic and corporate in law, with all the powers incident thereto.

3. The pension fund to be formed as hereinafter provided for shall be under the control and management of the board of five trustees, to be composed of the health officer of such board or department, ex officio, and four members of such local board or department to be elected by a majority vote of the entire number of employees of such local board or department. The first board of trustees selected, as in section 2 of this act, shall serve until the month of January following the incorporation of such association, at which time a board of trustees shall be appointed as heretofore provided in this section; one for the term of one year, one for the term of two years, one for the term of three years, and one for the term of four years, who shall serve for the respective terms for which they each were chosen, and thereafter annually in the month of January in each year, a member of such board of trustees shall be chosen for a full term of four years to serve in the place and stead of the trustee whose term shall have then expired, so that the term of office of but one member shall expire in each year.

4. Such trustees and all other officers of the said corporation shall give bonds with some duly authorized security company, as surety thereon, for the faithful performance of their duties in such sum or sums as shall be fixed by the by-laws of the corporation.

5. The said board of trustees shall at the first annual meeting thereof elect a chairman, secretary, and treasurer and such other officers as they may deem necessary; the secretary may be one of their own members, or the clerk of such local board or department of health; the board of trustees shall fix the compensation of the secretary and treasurer; the chairman shall serve without compensation.

6. All moneys paid out of such pension fund shall be paid by the treasurer of such corporation upon warrants signed by the chairman of the board of trustees and countersigned by the secretary thereof, and no warrant shall be drawn except by the order of said board upon a ye-a-and-nay vote and recorded in the minutes of said board. Such board of trustees may deposit such fund in any of the banks or trust companies of such cities, and may invest the same in bonds secured by first mortgages on improved property worth at least twice the amount loaned, or in bonds of the United States or of this State, or any city or county in this State. All income, interest, or dividend which shall be paid or agreed to be paid on account of any loan or deposit shall belong to and constitute a part of said fund.

7. The board of trustees shall make a semiannual report of the condition of such fund and the manner in which the same is invested to the local board or department of health of any such city in the months of January and July in each year, and at such other times as they may be requested so to do by such local board or department.

8. All pensions granted under this act shall be exempt from execution, attachment, or any other legal process whatever. Such pension fund shall be provided and sustained as follows:

(a) By paying into such pension fund moneys which shall have been received by any such board or department of health from fines and fees, and which may, from time to time, be designated for such purpose by the local board or department of health of any such city, not to exceed, however, \$2,500 in any one year.

(b) By all rewards, fees, gifts or emoluments paid or given for extraordinary services rendered by any such employee of such board or department, except when the same is allowed by such local board or department of health or other duly authorized municipal authority having charge and control of such board or department, to be retained by such employee or member, or when the same is specially given to endow a medal or other competitive reward.

(c) By all appropriations, donations, devises and bequests that may be made or given to such pension fund by any such municipality or other corporation or person.

(d) If the amount of any such pension fund shall at any time be less than \$20,000, the board of trustees of any such corporation may assess and collect from each and every employee of such board or department who shall take advantage of this act as hereinafter provided, a sum not exceeding 2 per cent of this salary; said sum shall be paid by each and every member monthly to the treasurer of such corporation, and such assessment and collection shall be in manner and form as may be provided in the by-laws of the corporation, and whenever any such employee who has taken advantage of the provisions of this act shall die, shall leave or be discharged from the employ of any such board or department, having served therein for a less term than 20 years, all payments made by such employee to such pension fund shall be forfeited by him and shall be added to and become a part of such pension fund.

9. Pensions shall be paid from such fund in the manner following:

(a) In all cities of this State in which this act shall become operative, all employees of such local board or department who shall have honorably served therein for 25 years, shall, upon application to the local board or department of health in such city, be retired by such board, and shall thereupon receive from such pension fund an amount, annually, equal to one-half of the salary received by such employee at the time of his retirement.

(b) If any employee of such board or department shall hereafter become incapacitated, either mentally or physically, for the performance of his duties, whenever such incapacity is the result of injury received or illness incurred in the discharge of his duties as an employee of such department, he shall be retired by such local board or department of health, and shall thereupon be entitled to receive from such pension fund, during the term of such incapacity or injury, an amount equal to one-half of his salary received by him at the time of his retirement.

(c) Any employee of any such local board or department of health who shall have served therein for 25 years continuously, who shall become incapacitated, either mentally or physically, from illness or injury incurred in the performance of his duties as such employee, or who, by reason of advanced age, is found unfit for the performance of his duties, shall be retired by the local board or department of health of such city, and thereupon he shall receive from such pension fund an amount equal to one-half the salary received by him at the time of such retirement. No pensions shall be paid out of any such fund until after the 31st day of December, in the year 1918.

10. The employees of any such local board or department of health who shall be entitled to accept the provisions of this act shall be the health officer or chief inspector employed by such board or department; all persons employed in the sanitary department of any such board; all persons regularly employed by any such board in the care of any tuberculosis or any other hospital which is or may be under the control of any such board; all persons actually engaged as physicians, nurses, or

otherwise, in taking care of patients in any such tuberculosis or any other hospital, excepting visiting physicians not on the regular staff of any such hospital; all persons employed in any dispensary or laboratory under the control and management of any such board, including chemists regularly employed by any such board; it being the intent of this section of this act to include under the provisions thereof all persons and employees on the pay roll of the department of health.

11. Persons employed by any such board or department of health at the time of the passage of this act shall not be permitted to take advantage of the provisions hereof after the expiration of two years from the date of the passage hereof; and all persons coming into the employ of any such board or department subsequent to the date of this act shall not be entitled to take advantage of the provisions hereof unless he shall, within two years after the date upon which he shall have been appointed, make application to said board for membership in such pension fund as hereinafter provided; and any such applicant shall be required to pay into such fund together with such application a sum of money equal to 1 per cent of the salary of such employee from the date of his appointment to the date of such application; and no such application shall be antedated.

12. Any person who shall willfully or knowingly swear falsely in any oath or affirmation for the purpose of obtaining or procuring any pension or the payment thereof, under the provisions of this act, shall be deemed guilty of perjury upon conviction thereof, and shall be punished by law for such crime.

13. Any employee of any board or department of health who shall be included in the provisions of this act who shall unlawfully retain any of the moneys, funds, properties or effects of any corporation organized under this act shall forever be debarred from receiving any relief or benefit from any such pension fund.

14. Any employee of any such board or department of health hereinbefore mentioned may avail himself of the benefits of such pension fund by making application in writing for membership therein and paying into said fund monthly 1 per cent of the salary received by such employee at the time of such application: *Provided, however,* That employees who desire to take advantage of this act after the formation of such corporation or the creation of such pension fund shall be required to conform with the provisions of section 11 of this act.

Regulations of Local Boards of Health—Enforcement of. (Act Apr. 9, 1913.)

1. The recorder or police justice of any town or borough and the mayor of any borough shall have jurisdiction over all actions brought to enforce ordinances passed by the board of health of such town or borough in the same manner and to the same extent as other actions brought to enforce ordinances passed and adopted by the town council of such town or the mayor and council of such borough.

2. The police officers of all towns and boroughs are authorized and empowered to serve all papers, processes, and orders in actions to enforce ordinances passed by the board of health of said towns or boroughs in the same manner and to the same extent as they are authorized now to serve papers, processes, and orders in actions to enforce ordinances of the town council or borough.

3. All fees, costs, fines, and sums of money in all actions to enforce ordinances of the board of health shall be paid over to the town or borough authorities, in the same manner and to the same extent as the same are paid over in actions to enforce ordinances of the town council or borough.

Hospitals—Municipal Appropriations for. (Act Feb. 27, 1913.)

1. It shall and may be lawful for any borough, town, or township of this State which has no hospital located therein maintained by such municipality, to make an appropriation of a sum of money not exceeding \$1,000 each year in the same manner that

appropriations for other municipal purposes are made, which sum so appreciated shall be included in the annual tax levy of such municipality and collected in the same manner and at the same time as other municipal taxes, and shall be applied to the purpose of supporting and maintaining such indigent persons resident of such municipalities, as may be sent by order of any overseer of the poor or other proper authority of such municipality to any hospital duly incorporated under the laws of this State and located in such municipality or in any other municipality in the same or an adjoining county.

2. Where no appropriation has been made in the manner provided in section 1 of this act for the purpose therein mentioned, it shall and may be lawful for the council or other legislative body of any such municipality which has no hospital located therein maintained by such municipality, to transfer and carry forward an amount not exceeding the said sum of \$1,000 of any unexpended balance or balances of taxes that have been levied in any such municipality for any purpose during any previous fiscal year, and appropriate the same to the purpose of supporting and maintaining such indigent persons residents of such municipality as may be sent by order of any overseer of the poor or other proper authority of such municipality, to any hospital duly incorporated under the laws of this State, and located in such municipality or in any other municipality in the same or an adjoining county.

3. The moneys so raised or appropriated shall be kept as a separate fund known as the hospital fund, and shall not be used for any other purpose whatever, and such municipality shall have power to regulate the mode of sending such patients to such hospital or hospitals and also the mode and terms of paying for the care and maintenance of such patients so sent to such hospital or hospitals.

County Physicians—Appointment of Substitutes. (Act Apr. 9, 1913.)

1. In case the county physician of any county shall be sick, or from any cause shall be unable to attend and make view and inquiry of any dead body or perform any services required by the act of which this is a supplement, it shall be lawful for him to nominate and appoint, in writing, under his hand, any other licensed physician of said county to perform such specific services as he may be unable to perform; and the physicians so appointed shall, in that behalf, possess all the powers of the said county physician, and all fees and charges of said physician so appointed, for such services rendered while acting under such appointment, shall be paid by said county physician.

OREGON.

Marriage—Certificate of Health Required. (Chap. 187, Act Feb. 26, 1913.)

SECTION 1. That before any county clerk in this State shall issue a marriage license the applicant therefor shall file with the clerk from whom such license is sought, a certificate from a physician duly authorized to practice medicine within the State, made under oath, within 10 days from the date of filing the same, showing that the male person thus seeking to enter the marriage relation is free from contagious or infectious venereal disease.

SEC. 2. Any physician who shall knowingly and willfully make any false statement in any certificate issued, as herein provided, shall be punished by the revocation of his license to practice his profession within the State.

SEC. 3. All fees and charges for any physician making the necessary examination of and issuing the necessary certificate to any one party, as herein provided, shall not exceed the sum of \$2.50.

SEC. 4. The county physicians of the several counties shall, upon request, make the necessary examination and issue such certificate, if the same can properly be issued, without charge to the applicant, if indigent.

Tuberculosis—Notification of Cases—Control of. (Chap. 115, Act Feb. 25, 1913.)

SECTION 1. That every physician or other person practicing the art of healing shall file with the State board of health a written report giving the names and addresses of all persons afflicted with pulmonary tuberculosis (consumption), concerning which he or she may be consulted as soon as the nature of the disease is determined.

SEC. 2. That any representative of a religious denomination, or any householder, or any nurse, parent, guardian, or other person attending or in any way having knowledge of the existence of a case of pulmonary tuberculosis (including the person afflicted therewith) must immediately report the same to the State board of health.

SEC. 3. The names and addresses of all persons afflicted with pulmonary tuberculosis shall be recorded in the State board of health, and it shall be unlawful for any person suffering from this disease to change his or her residence or to be removed therefrom until the State board of health has been notified, so that the vacated residence may be fumigated.

SEC. 4. It shall be the duty of any physician or any representative of a religious denomination, or any householder, nurse, parent, guardian, or other person having knowledge of a change of residence of any person afflicted with pulmonary tuberculosis to report the same to the State board of health.

SEC. 5. No furniture, bedding, or other material used by a person afflicted with pulmonary tuberculosis shall be sold, delivered, or used by any other person until such furniture, bedding, or material has been fumigated. Fumigation or disinfection shall be in accordance with rules prescribed by the State board of health.

SEC. 6. Any person owning a house rented to or occupied by a person afflicted by tuberculosis shall fumigate or disinfect the same forthwith upon the leaving of the house by such person.

SEC. 7. No books shall be loaned from a public library to any person afflicted with pulmonary tuberculosis or to any person living in a residence where a case of pulmonary tuberculosis exists.

SEC. 8. Any person violating any of the provisions of this act shall, upon conviction thereof, be fined not more than \$300 for each offense or be imprisoned in the county jail not more than one year, or be punished by both such fine and imprisonment, in the discretion of the court.

Wayward Girls—Institutions Caring for, and Receiving State Aid, Placed Under State Board of Health. (Chap. 362, Act Mar. 1, 1913.)

SECTION 1. There is hereby appropriated \$10,000 annually out of any funds in the hands of the State treasurer not otherwise appropriated for the support of wayward girls between the ages of 12 and 18 years now being cared for or who may be hereafter cared for by charitable or corrective institutions in this State.

SEC. 2. Any charitable or corrective institution in this State wishing to secure State aid under this act shall make application therefor to the State board of health, in and by which application such institution shall show how many girls of the class mentioned in section 1 it cared for during each month of the preceding calendar year, and shall state how long it has been engaged in this State in caring for girls of said class, and shall declare its willingness to submit to any reasonable health and sanitary rules and regulations prescribed by said State board of health. Upon receiving such application the State board of health shall investigate the affairs of and methods of and conditions surrounding such institution, and shall, if it finds such institution is properly conducted and worthy of State aid, give it a certificate to that effect and file and send a duplicate of such certificate to the secretary of state.

SEC. 3. The State board of health is hereby given visitatorial powers over all institutions which receive State aid under this act; and each such institution shall, on or before the 15th day of January of each year file with the secretary of the State board of

health a financial and statistical report and statement for the preceding calendar year in such form as may be prescribed by said State board of health, and each such institution shall submit to and abide by any reasonable health and sanitary rules and regulations that may be prescribed by said State board of health; and if any such institution fails to comply with any of the provisions of this section said State board of health shall notify the secretary of state of such refusal and such institution shall not thereafter be entitled to any benefits or payments under this act until such failure has ceased.

SEC. 4. Each institution which has received from the State board of health a certificate provided for in section 2 of this act shall be entitled to receive from and out of the appropriation made by section 1 of this act State aid at the rate of \$8 per month for each girl of the class mentioned in said section. All sums to which any such institution becomes entitled under this act shall be paid quarter yearly, to wit: For the quarters ending on the last days of March and June and September and December of each year. Each institution shall present to the secretary of state an itemized statement showing the names and ages of the different girls kept and maintained by it during the quarter and the length of time each girl was so kept and maintained and the amount to which it is entitled for each such girl and the gross amount it is entitled to for the quarter, but before being presented to the secretary of state, said statement must have been presented to and approved by the secretary of the State board of health. Upon receipt of said statement so approved the secretary of state shall issue a warrant upon the State treasurer in favor of said institution for the amount to which it is entitled for the quarter covered by said statement.

SEC. 5. No institution which receives from the State of Oregon any direct and specific appropriation of money shall be entitled to receive any State aid under this act for any period covered by such appropriation; and no institution shall be entitled to any State aid under this act until it has had an actual bona fide existence of at least six months; and no institution which has less than 10 bona fide inmates of the class mentioned in section 1 of this act shall be entitled to any State aid under this act; and no girl for whose specific support any sum is paid to any institution by any person whatever shall, for any part of the period for which such sum is paid, be deemed a wayward girl within the meaning of this act.

SEC. 6. Sections 4401, 4402, 4403, 4404, and 4405 of Lord's Oregon Laws, and all acts or parts of acts in conflict herewith are hereby repealed.

WISCONSIN.

Communicable Diseases—Morbidity Reports—Quarantine—Disinfection. (Reg. Bd. of H., Oct. 9, 1913.)

List of dangerous, contagious diseases.—In conformity to the requirements of the law relating to its duties and powers, the State Board of Health of Wisconsin hereby publishes and declares the following as "dangerous and contagious diseases:"

Asiatic cholera (cholerae), yellow fever, smallpox, typhus fever, leprosy, bubonic plague, diphtheria (for all sanitary purposes membranous croup must be considered and treated as diphtheria), scarlet fever (scarlatina), typhoid fever, measles (including r6theln), whooping cough, cerebrospinal meningitis, acute anterior poliomyelitis, ophthalmia neonatorum, gonorrhoea, and syphilis. (All cases of gonorrhoea and syphilis are to be reported direct to the State board of health, as provided by chapter 516, Laws of 1913.)

The State board of health does hereby adopt and publish the following rules to be of general application throughout the State:

RULE 1. Exclusion from school, etc.—No person suffering from Asiatic cholera (cholerae), yellow fever, smallpox, typhus fever, bubonic plague, diphtheria (mem-

branous croup), scarlet fever (scarlatina), measles (including r otheln), whooping cough, cerebrospinal meningitis, or acute anterior poliomyelitis shall be admitted into any public, parochial, or private school, college, or Sunday school, or shall enter any assemblage, or railway car, street car, vessel or steamer, or other public conveyance. (Also see Rule 17¹ which prohibits the attendance at school of children who have chicken pox or mumps.)

RULE 2. Disease in family.—No person shall be admitted to any public, parochial, or private school or college, or Sunday school, from any family in which Asiatic cholera (cholera), yellow fever, smallpox, typhus fever, bubonic plague, diphtheria (membranous croup), scarlet fever (scarlatina), measles (including r otheln), cerebrospinal meningitis, or acute anterior poliomyelitis exists.

RULE 3. Duty of parents.—No parent, guardian, or other person having charge or control of any child or children shall allow or permit such child or children to go to school from any family in which a case of Asiatic cholera (cholera), yellow fever, smallpox, typhus fever, bubonic plague, diphtheria (membranous croup), scarlet fever (scarlatina), measles, cerebrospinal meningitis or acute anterior poliomyelitis has recently occurred without a permit from the board of health or its proper officer. (Also see rule 17.¹)

RULE 4. Physicians to report.—It shall be the duty of every physician called to attend a person sick, or supposed to be sick, with any of the diseases declared to be dangerous and contagious diseases by the State board of health, within 24 hours thereafter to report, in writing, the name and residence of such person to the board of health, or its proper officer, within whose jurisdiction such person is found; and where a person is taken sick with any of the aforesaid-named diseases as are declared dangerous and contagious by the State board of health, and a physician is not called, it shall in like manner be the duty of the owner or agent of the building in which such person resides, lives, or is staying, or of the head of the family in which such disease occurs, to report, in writing, the name and residence of the patient to the local board of health or its proper officer.

RULE 5. Quarantine.—It shall be the duty of the health officer of every local board of health in this State, when a case of Asiatic cholera (cholera), yellow fever, smallpox, typhus fever, bubonic plague, diphtheria (membranous croup), scarlet fever (scarlatina), cerebrospinal meningitis or acute anterior poliomyelitis is reported within his jurisdiction to at once quarantine the house, tenement room, or other building as provided by section 1416-15 of the statutes (chap. 444, Laws of 1913²).

And it shall be the duty of said health officer to report immediately by telegram or letter to the secretary of the State board of health an outbreak of Asiatic cholera (cholera), yellow fever, smallpox, scarlet fever (scarlatina), typhoid fever, cerebrospinal meningitis, diphtheria (membranous croup), measles, whooping cough, tuberculosis, acute anterior poliomyelitis or ophthalmia neonatorum, and to report from week to week thereafter, on blanks furnished for the purpose, until such disease shall cease to exist.

RULE 6. Care in preventing spread.—Every physician attending a person affected with any of the aforesaid named diseases shall use every possible precaution to prevent communication of the disease to others. To this end the board recommends that a cap and gown or some other sufficient cover for the clothing be worn by physicians while in the presence of dangerous contagious diseases. The face and hands should be washed with soap and water or some disinfecting solution after caring for a patient afflicted with a dangerous, contagious, or communicable disease.

RULE 7. Disinfection.—Any house or building, and its contents, in which a case of Asiatic cholera (cholera), yellow fever, smallpox, typhus fever, bubonic plague, diphtheria (membranous croup), scarlet fever (scarlatina), cerebrospinal meningitis, tuberculosis, and acute anterior poliomyelitis has occurred shall be fumigated and

¹ Public Health Reports, Dec. 5, 1913, p. 2662.

² Public Health Reports, Dec. 5, 1913, p. 2658.

disinfected under the supervision of the board of health, or its proper officer, in the manner recommended by the State board of health. Disinfection without fumigation shall be required where a case of ophthalmia neonatorum, measles, or whooping cough has occurred.

Disinfection is defined to be the washing of all woodwork, doors, casings, and other articles which may be infected, with a proper solution of bichloride of mercury, carbolic acid, corrosive sublimate, formaldehyde, or other approved disinfectant containing the phenol coefficient as determined by the Marine Hospital laboratory. (The material used for disinfection can be left at the home by the health officer with instructions for properly doing the work.)

Fumigation is defined to be the liberation in the room of formaldehyde gas in sufficient quantities and under proper conditions to accomplish satisfactory aerial disinfection. This work must always be done by the health officer or some competent person employed by the board of health for that purpose. For fumigating, liberate in the room, by means of a generator, a 40 per cent solution of formaldehyde, using not less than 10 ounces of formaldehyde for every 1,000 cubic feet of air space; or place in a large deep vessel $6\frac{1}{2}$ ounces of permanganate of potash, to which add 1 pint of a 40 per cent solution of formaldehyde. Use the permanganate and formaldehyde in the proportions stated for every 1,000 cubic feet of air space.

Sulphur and solidified formaldehyde are not to be used for disinfecting purposes after death or recovery from any dangerous or contagious disease without the indorsement and approval of the State board of health.

All rooms to be fumigated must contain plenty of moisture and be heated to a temperature above 72° F. When the material for fumigating is placed in the room all openings should be closed or covered with strips of paper saturated with a strong disinfecting solution and the room left closed for from 4 to 6 hours, after which all windows and doors should be opened to allow the free circulation of air. Follow the fumigating with a thorough cleaning of the premises, wash all woodwork, doors, floors, casings, etc., with an acid solution of bichloride of mercury, 2 drams (one-fourth ounce) to a gallon of water, or 6 ounces of carbolic acid to a gallon of water. This cleansing process is as important as fumigation.

All persons sick with typhoid fever should be kept isolated and screened from flies as much as possible, and no one should be allowed to visit the sick room except the immediate attendants. All excreta leaving the patient in the discharges from the bowels, kidneys, throat, or nose must be disinfected at once, using 2 drams (one-fourth ounce) of bichloride of mercury to 1 gallon of water, or 6 ounces of carbolic acid to the gallon of water, or the milk of lime (water from freshly slaked lime), using 6 parts of water to 10 parts of lime. The material to be disinfected should remain standing in vessel with disinfecting solution some hours before emptying. Flies should never be allowed to come in contact with excreta of any kind.

The clothing, bed linen, and any materials which have in any way come in contact with the patient must be thoroughly disinfected, either by boiling, fumigating, or immersing in a solution consisting of 2 drams (one-fourth ounce) of bichloride of mercury or 6 ounces of carbolic acid to a gallon of water.

The sale or use of milk or dairy products from a place where one of the quarantinable diseases is present, or where typhoid fever is present, is strictly forbidden unless the milk is handled, cans and pails washed, and stock cared for by persons entirely disassociated with the afflicted family.

RULE 8. Duration of quarantine.—The isolation of patients and duration of quarantine in dangerous contagious diseases shall be as follows:

Asiatic cholera (cholerae), yellow fever.—For the patient: Quarantine until after complete recovery, and disinfection of the premises.

For the exposed person: Quarantine for five days from the date of last exposure.

Smallpox.—For the patient: Quarantine until after all crusts or scales have fallen off or been removed, and the disinfection of the patient and premises.

For exposed persons: Quarantine for 14 days from date of last exposure, unless successfully vaccinated or protected by a previous attack of the disease, and person and clothing disinfected.

Typhus fever.—For the patient: Quarantine until after complete recovery and disinfection of the premises.

For exposed persons: Quarantine for 21 days from date of last exposure.

Bubonic plague.—For the patient: Quarantine until after recovery, and disinfection of the premises.

For exposed persons: Quarantine for eight days from date of last exposure.

Diphtheria.—For the patient: Quarantine for 14 days after the beginning of the disease.

For persons associated with or in the family with the patient: Quarantine until after death or recovery of the patient, and disinfection of the person, clothing, and premises. Every person convalescent from diphtheria must remain isolated until two successive cultures from the throat, made three days apart, show the absence of diphtheria bacilli.

Scarlet fever (scarlatina).—Quarantine of the patient for at least 21 days from the beginning of the disease and as much longer as the severity of the case may demand, that is, until complete desquamation or scaling of the skin of the patient and disinfection of the patient and premises. Quarantine of all adults living in the family with or in any way exposed to the patient while the house remains quarantined, unless said adults submit to thorough disinfection of their person and clothing and take up their residence in some other building during the time that said quarantine is maintained. Children in a family associated with a case of scarlet fever may be removed to a separate building after disinfection of their person and clothing and must be kept in isolation for a period of 10 days or until the symptoms of scarlet fever develop.

When a patient suffering from scarlet fever is removed to an isolation hospital, the premises from which such patient is taken must be thoroughly disinfected, and all children in the same household must be kept in isolation for a period of 10 days from the date on which the afflicted patient was removed from the home.

Isolation of patient and children associated with the patient for 10 days after the removal of quarantine and disinfection of premises. Children convalescing from scarlet fever must not attend school for at least six weeks from the beginning of the disease. Children who have been associated with the patient suffering from scarlet fever shall not attend school for 10 days after disinfection of premises and removal of quarantine in quarantined home.

Cerebrospinal meningitis.—For the patient: Isolation from the rest of the family and quarantine for at least 14 days after the first appearance of the disease.

Persons living in a house where the disease is present must be quarantined for at least 14 days and until patient and premises have been properly fumigated and disinfected.

Anterior poliomyelitis.—It shall be the duty of the health officer of every board of health in this State, where a case of anterior poliomyelitis is found to exist, or supposed to exist, to establish and maintain quarantine for at least three weeks from the beginning of the disease and until patient and premises have been thoroughly fumigated and disinfected as provided for in section 1416-17¹ of the statutes. (The room or bed and all excreta from the patient should be carefully screened from flies. Flies carry the contagion.)

RULE 9. Burial of bodies.—The bodies of persons who have died of Asiatic cholera (cholerae), yellow fever, smallpox, typhus fever, bubonic plague, diphtheria (membranous croup), scarlet fever (scarlatina), epidemic cerebrospinal meningitis or acute

¹ Public Health Reports, Dec. 5, 1913, p. 2659.

anterior poliomyelitis shall be wrapped in a sheet saturated with a solution of bichloride of mercury (1 ounce to a gallon of water) or some other efficacious disinfectant and shall be buried or incinerated within 36 hours after death. The removal of bodies for burial or incineration from place of death of those who have died of Asiatic cholera (cholera), yellow fever, smallpox, or bubonic plague shall take place between the hours of 9 p. m. and 5 a. m.

RULE 10. Public funerals.—No public or church funeral shall be held in connection with the burial of a person who has died of Asiatic cholera (cholera), bubonic plague, smallpox, yellow fever, typhus fever, diphtheria (membranous croup), scarlet fever (scarlatina), measles, epidemic cerebrospinal meningitis or acute anterior poliomyelitis, nor shall bodies of such persons be taken into any church, chapel, or other public place.

RULE 11. School and library books.—School books or books from public or circulating libraries shall not be taken into any house where Asiatic cholera (cholera), bubonic plague, smallpox, typhus fever, diphtheria (membranous croup), scarlet fever (scarlatina), measles, typhoid fever, pulmonary tuberculosis, epidemic cerebrospinal meningitis or acute anterior poliomyelitis exists, and if school books or library books have already been taken into such house they should be destroyed by the owner or library authorities.

RULE 12. Tuberculosis in schools.—No person suffering from pulmonary tuberculosis or believed to be suffering from pulmonary tuberculosis, when reported to the health officer as provided for in section 1416-3¹ and 1416-4 of the laws of 1907, shall be permitted to attend or frequent public parochial or private schools, except open-air schools especially equipped for such pupils in this State in the capacity of pupil or teacher until the health officer or one of his deputies of the township, incorporated village or city, where the school is located, furnishes a written certificate stating that the individual believed to have pulmonary tuberculosis or suspected of having pulmonary tuberculosis is free from the disease. (Section 1416-3, Laws of 1907.¹)

RULE 13. Milk and dairy products.—The sale or use of milk or dairy products from a place where Asiatic cholera, smallpox, typhus fever, bubonic plague, diphtheria, scarlet fever, epidemic cerebrospinal meningitis, acute anterior poliomyelitis or typhoid fever is found to exist is strictly forbidden unless the milk is handled, milk utensils washed, and stock cared for and product transported by persons entirely disassociated with the quarantined family.

RULE 14. Infantile blindness.—Any physician, midwife, nurse, or other person in attendance on a confinement case, shall, within two hours after the birth of a child, use one of the following prophylactic treatments for the prevention of infantile blindness or ophthalmia neonatorum.

1. Two drops of a 1 per cent fresh solution of nitrate of silver to be dropped in each eye after the eyelids have been opened.

2. Two drops of a 25 per cent solution of argyrol or two drops of a 5 per cent solution of protorgal should be dropped in each eye in the same manner as when silver nitrate is used. (Nitrate of silver is to be preferred in all cases. When argyrol or protorgal are used the solution must be absolutely fresh.)

Quarantinable diseases.—Asiatic cholera (cholera), yellow fever, smallpox, typhus fever, bubonic plague, diphtheria, scarlet fever (scarlatina), cerebrospinal meningitis and acute anterior poliomyelitis.

Diseases which must be placarded but not quarantined.—Typhoid fever, measles, including rotheln, and whooping cough.

Reportable diseases which should not be quarantined or placarded.—Tuberculosis, chicken pox, mumps, ophthalmia neonatorum, gonorrhoea, and syphilis.

¹ Public Health Reports, Dec. 5, 1913, p. 2658.