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PORT SANITARY STATEMENTS.

ISSUANCE OF, TO VESSELS DEPARTING FROM UNITED STATES PORTS, BY MEDICAL OFFICERS OF THE UNITED STATES PUBLIC HEALTH SERVICE.

[1914. Department Circular No. 26, Bureau of Public Health Service.]

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, April 9, 1914.

*To Medical Officers of the U. S. Public Health Service,
Collectors of Customs, and others concerned:*

Form 1964, "Port sanitary statement," a copy of which is inclosed, will hereafter replace the form "Bill of health" heretofore used by collectors of customs for issuance to vessels departing from United States ports.

The duty of issuing the said port sanitary statements will in future be performed by medical officers of the United States Public Health Service, and should not be performed by collectors of customs, as heretofore, except as noted below.

At ports where Public Health Service officers are not available the collectors of customs should issue the port sanitary statement, as heretofore.

A supply of these forms may be obtained upon letter requisition, pending the usual formal requisitions for stationery and supplies.

W. G. McADOO, *Secretary.*

STATE HEALTH ADMINISTRATION.

THE STATE CONTROL OF DISEASE IN MINNESOTA.

On page 1045 of this issue will be found copies of regulations promulgated by the Minnesota State Board of Health November 19, 1913. These regulations have several features of interest.

Physicians in all parts of the State are required to notify immediately the division of epidemiology of the State department of health

by telegraph or telephone whenever they discover cases or suspected cases of the following-named diseases:

Actinomycosis.

Anthrax.

Dengue.

Asiatic cholera.

Dysentery:

(a) Amebic.

(b) Bacillary.

Glanders.

Hookworm disease.

Leprosy.

Malaria.

Paragonimiasis.

Paratyphoid fever.

Pellagra.

Plague.

Rabies (human cases and exposed persons).

Rocky Mountain spotted (or tick) fever.

Trichinosis.

Typhus fever.

Yellow fever.

The use of the telegraph and telephone permits the information to reach the division of epidemiology without delay and makes it possible for the State department of health to send immediately an epidemiologist to investigate the case and to see that such precautions are taken that other individuals will not be endangered. The diseases required to be notified in this way are those which are communicable but not very common in the State. Requiring the notification of suspected cases, as well as those in which the diagnosis has been established, saves the physician considerable annoyance, as he does not need to delay making his report until he has been able to entirely satisfy himself as to the nature of the disease. It also enables the physician in case of doubt to secure in consultation the services of a State epidemiologist.

The following-named diseases are required to be reported to the local health officers by mail on post cards furnished for the purpose:

Poliomyelitis.

Cerebrospinal meningitis.

Chickenpox.

Diphtheria (laryngeal croup) (membranous croup).

Erysipelas.

Measles.

Ophthalmia neonatorum.

Rabies (person exposed to, etc.).

Scarlet fever (scarlatina, scarlet rash).

Smallpox.

Trachoma.

Tuberculosis.

Typhoid fever.

Whooping cough.

The control of these diseases is left ordinarily to the local health officers, who are governed by State regulations, and also in many instances by supplementary local ordinances. The State regulations require that whenever cases of any of the communicable diseases are reported to a local health officer, or when he learns of the existence of such cases by other means, or suspects their existence, he shall immediately ascertain the facts. He is also required to forward to the division of epidemiology of the State department of health a report of each such case occurring within his jurisdiction, together with a statement of the measures employed to prevent the spread of the disease and otherwise protect the public health.

REPORT OF SANITARY SURVEY, ST. JOSEPH, MO.

By J. H. WARR, Surgeon, United States Public Health Service.

The city of St. Joseph, with the exception of certain relatively small areas hereinafter discussed, lies on high, rolling ground on the eastern bank of the Missouri River, and is, excepting three small areas, naturally well drained. The soil is porous yellow clay underlain by limestone. The river flows eastward, then south, and then almost west again and the site of St. Joseph is along the crescent so formed.

The high area, were it not for surface wells and cisterns adjacent to cesspools and privy vaults, as elsewhere noted, could be broadly described as being in all respects fully abreast of the average American city. The low, flat bottom commencing at the foot of Prospect Hill about where Jule Street runs to the river gradually widens to about 300 yards at Atchison Street and to a half mile at Alabama Street in South St. Joseph, and this flat bottom land, naturally unfit for city building, is covered with wretched little "shacks" in much of its northern half and there is always a probability of a general mixing of the contents of cesspools and wells on any occasion of torrential rainfall in this bottom.

Through South St. Joseph runs Brown's Branch, carrying all the rainfall from the high hills around Hyde Park, and at times overflowing the southern section of South St. Joseph, known locally as "Skeeterville," and making it a fact beyond question that the contents of wells and cesspools get thoroughly mixed.

City Water Supply.

In company with Col. Joseph A. Corby, of the board of health, and Mr. Taylor, superintendent of the water company, I visited and inspected in detail the St. Joseph water works, which I will describe in the language of the report of the New York board of underwriters, whose exhaustive and accurate physical description I can not improve upon.

General outline of system.—The supply, taken from the Missouri River, about 3 miles north of the business center of the city, is raised by low-lift pumps to sedimentation basins and a tank, from which it flows to filters, and then to the clear-water basin and high-lift pumps. Distribution is practically in one service with large equalizing reservoir near the pumping station at elevation 308, and a standpipe, ordinarily kept full and reserved for serious fires at elevation 356. A second reservoir, located on a hill in the southern part of the city, with water at elevation 233, is kept full and reserved for fires, and near it a second standpipe, with top at elevation 310, filled at times of high consumption by a booster station, supplies a small area east of the hill.

Supply works—Source.—The Missouri River, with a watershed above the city covering 425,000 square miles, furnishes an inexhaustible supply.

Intake.—Two cast-iron pipes, 36 and 24 inches in diameter, and about 265 feet long, extend into the river and terminate in riveted steel pipes turned down. The pipes are supported by wooden piles and are equipped with gates and screen chambers. The shore above the intake is protected by rip-rap resting on mattresses.

The intake is located on the east bank of the river, opposite a large sand bar, which at low water forms an island. The channel from which the supply is taken has at times been kept open with difficulty. The company maintains a 7,000,000-gallon electrically-operated centrifugal pump for emergency use, which can be mounted on a scow and operated by electric power generated in an independent plant near the boiler house. Two thousand feet of 20-inch flexible steel pipe is on hand.

Sedimentation basins and filters.—Low-lift pumps raise the supply to two sedimentation basins located about 500 feet southwest of the filter house. These were built in 1898 and 1907, cover areas of 0.78 and 0.84 acres, are 12 and 14 feet deep, and have available capacities of 3,000,000 and 4,500,000 gallons, respectively. They have reinforced concrete walls backed by earth embankment and concrete bottoms, are divided into sections by wooden baffles, and are in good condition. From the sedimentation basins a part of the supply flows to eight rapid sand filters, constructed in 1913, each 12 by 17½ feet; combined capacity 4,800,000 gallons a day. The remainder of the supply is raised by low-lift pumps to a sedimentation tank 60 feet west of the filter house and erected in 1897, of riveted steel, 50 feet in diameter, 20 feet high and holding 293,000 gallons; this supplies fourteen 18-foot, wooden tank, Jewell, gravity filters installed in 1897; nominal capacity, 9,000,000 gallons a day.

Filter house.—A 2-story brick building, 170 by 54 feet, connecting with new addition on the south of same width and 64 feet long. Old section divided into about two equal portions by brick division wall to roof; openings in walls between the three sections unprotected. First floor of old section of concrete and wood; second is joisted; in new section, of concrete. Peaked, slate-covered roofs, on wooden sheathing, rafters, and trusses. Electric wiring defective.

Three small 1 and 2 story brick additions on east side of filter house are used for coagulating, lime and alum rooms; division wall openings, between these rooms and filter houses, are unprotected.

Clear-water basins.—Located 40 feet southeast of the filter house and constructed in 1897, of earth embankment paved with brick; bottom of concrete. Consists of one basin 100 by 90 feet on the bottom, 14 feet deep, with available capacity of 1,000,000 gallons.

Connected with the filters and pumping station by a single cast-iron pipe 30 and 36 inches in diameter.

The purification not touched upon in the above quotations, is accomplished as follows:

The raw river water is pumped into No. 1 settling basin, entering this basin over a spillway and the heavy mud precipitated at this point. From No. 1, the water flows by gravity to No. 2 basin. The water is treated with alum solution between No. 1 and No. 2. The amount of alum is of course governed wholly by the turbidity of the water. The maximum amount used during muddy stages is $2\frac{1}{2}$ grains per gallon, while during the fall and winter months very little alum is necessary to coagulate the water and the average used during these months is approximately $\frac{1}{10}$ grain per gallon of water.

After the water leaves No. 2, the alum basin, it flows through the filters and into a clear-water basin from which it is taken up by high service pumps, into the suction pipes, where the water is treated with a hypochlorite solution, one-eighth pound of the chemical per million gallons of water pumped being used. Lime is seldom used in connection with alum solution as the alkalinity of the raw river water is sufficient to neutralize the alum.

There are 28 filters, the combined capacity of same being $15\frac{1}{2}$ million gallons of water in 24 hours. Of the above filters, 14 are the Jewell type, with a capacity of 9,000,000 gallons per day, and 8 are of cement, recently built and with a capacity of 5,000,000 gallons per day. No. 1 settling basin has an area of 36,575 square feet, with a depth of water of 17 feet. No. 2 settling basin has an area of 31,300 square feet, with a depth of water of 14 feet.

The resultant water supply is fairly clear, though at times retaining some stain but no mud, and though hard on account of lime salts held in solution is a good potable water, in which bacterial incidence seldom exceeds 25.

Surface Drinking Water

An ordinance is in existence which provides ample authority for the board of health to inspect wells, cisterns, and springs, and when they find that such waters are unfit for drinking or cooking purposes, to condemn them and forbid their use, and if the board of health receives the proper backing in the enforcement of this ordinance it will be enforced and will go a long way toward compelling the general use of the city water supply, which is good.

I believe I am justified in saying that it would compel 90 per cent of the independent water users to take city water, and would meet with the approval of the majority of the people, most of whom now use wells and cisterns for drinking purposes, purely because they

can not get the city water, being tenants and unable to get their landlords to make connections.

A full test of all surface supply as rapidly as it can be made and the compelling of connections with city water mains should remove practically all criticism of the water supply of St. Joseph, and will also, in my opinion, reduce the typhoid morbidity to European levels, as the probability of milk convection is not great.

Milk.

General ordinance No. 1366, enacted in September, 1911, provides that all persons or firms selling milk shall obtain from the board of health a certificate of registration good for one year, but there is an unfortunate provision that part of this ordinance is not obligatory on persons selling milk from not more than two cows.

There is also provision that the tuberculin test is to be applied to all cows employed in the production of milk.

The ordinance demands full and proper precautions with regard to storing, cooling, and distribution of milk, and further for the labeling of sterilized and pasteurized milk, and enters into minute details as to what shall constitute a proper pasteurization, providing also for the temperature at which the milk is to be kept after such pasteurization.

There is a provision that no milk shall be sold which shall contain more than 300,000 bacteria per cubic centimeter.

It enters into the necessary minutiae, as to the care, feed, and housing of the cows themselves, and as to milkers and utensils, and is in every respect a thoroughly good ordinance with the exception named, that any one can keep two or less cows without being subject to any of the provisions of the ordinance except that applying to tuberculin test and to delivery at houses where contagious diseases exist, and I deem this unfortunate, though perhaps unavoidable at the present time.

Another possible source of criticism lies in the fact that although the United States Government score card is used for scoring dairies and milk depots the minimum score is not high enough and should be raised to 60 minimum.

The board earnestly endeavored to provide for certified milk, but could not, the demand for such milk at the necessary increase in price being insufficient to justify its production, but even without this, it is only fair to say that the strenuous efforts of the health board have resulted in good milk supply.

Food Inspection.

An ordinance provides for the inspection of food and drink and prohibits the sale of unwholesome products, but the ordinance does not provide for covering to prevent the contamination of articles of

food placed on sale, but section 4 of the food and drug act of the State of Missouri (H. B. 275) provides for this matter, and ordinance 1154 of the city gives authority to the clerk of the board of health to enforce all pure food and drug laws of the State, thus covering this hiatus.

The enforcement is fairly good and though some meat, grocery, vegetable, and fruit stands do not obey the law and some only in a perfunctory way, the fact remains that many do obey the law, and I am sure that the board will secure real obedience as soon as they can obtain the essential support of the law officers in punishing infractions of the code, and I believe present efficiency would be served by employing an additional inspector in this department.

Garbage and Waste.

Section 3 of General Ordinance No. 834 provides for the removal by private contract of all waste materials, including garbage and night soil, from all premises in the city, but unfortunately only inferentially orders the separation of these different characters of waste and does not specifically order their separation, which, as later shown, is most desirable.

This ordinance does not accomplish entirely the end for which it was framed, nor does there seem to be any reason to believe that anything short of the vesting of complete authority in the board of health to have this work done at the actual expense of the city can attain this end, and in my opinion a law which would provide for this would subserve both economy and efficiency.

Taking these matters in detail, we find the following conditions, which all show the imperative need of a full and complete separation of the different objectionable materials to be removed:

Ashes are in some instances separated, in others not separated, from other material. If separated they are susceptible of use as filling, and under such conditions offer no sanitary hazard. The same is true if mixed with ordinary trash, but not true when mixed with decomposing animal or vegetable matter, and it is unfortunately true that under existing conditions one may occasionally see dead rats and chickens mixed with trash, rags, garbage, horse manure, and ashes all in one pile. This is not by any means the rule, neither is it an entirely uncommon spectacle.

Stable manure is at present supposed to be carted to the city dump, and should always either be carted there and covered with a deep layer of earth as soon as possible, unless taken out to the farms, where it can be used, or incinerated, which last at present is not practicable.

Night soil, of which vaults and cesspools furnish a very considerable quantity, should be and is chuted through a special construction

into a sewer provided therefor at the dump, and thus handled adds neither more nor less of danger to the river than other sewage thrown in from the house drainage system.

Ordinary dry waste, such as tin cans, paper, small boxes, and the endless number of small articles daily thrown away, offer a purely mechanical problem in this latitude, and if not burned can safely be dumped into any place needing filling, and if covered there with earth offer no further problem.

Garbage.—Kansas City, Providence, Denver, Omaha, Colorado Springs, and other cities have their garbage fed to hogs, with the uniform result that the cost of removal is reduced to some extent to the city and that the contractor, according to his business capacity, is able to make more or less profit from the feed so obtained. There is no danger in this system under proper handling. Any supposed danger to the hogs can be prevented by prompt handling of garbage to prevent unnecessary fermentation, and by use of hog cholera serum to prevent disease. The proper cleaning of the pens, if in the city, eliminates any danger to man.

The system in use at Providence for the past 20 years is entirely simple, the hogs simply running at large on a farm outside the city, and doing handsomely without any precaution of any kind, their ordure being broadcasted over several hundred acres.

The board recommends this system, and I heartily concur with them that it offers the best available solution of the garbage problem.

The separation of garbage is, of course, absolutely essential to putting into effect the system proposed.

The dump, although unsightly, need not be and is not insanitary, provided garbage and night soil are cared for as suggested under the heading above, for the reason that the dump will then be reduced simply to dry waste material and stable manure, and if all were covered with a heavy coating of earth or of sand thrown up from the river, the whole transaction being behind cribwork, the net result would be the accumulation at that point of valuable land without any sanitary risk.

Dead animals are disposed of in a thoroughly satisfactory manner by contract with a rendering establishment.

Regulations of Privy Vaults and Cesspools.

City ordinance No. 1426 compels connection with sewers in the limited area between Main, Jule, Twelfth, and Lafayette, known as the sanitary district, and this is very thoroughly done.

Elsewhere it is unlawful to build cesspools and vaults and use the same except by special permit, and under certain conditions as to method of construction, which method, while in the main indicating

good water-tight construction, does not guarantee that this water tightness will continue and that soil pollution may not supervene at any time.

From time to time the board of health has discovered *B. coli* in some of the surface wells, and it is easy to see that it could hardly be otherwise in shallow wells and cisterns close to cesspools and privy vaults and separated therefrom only by a few feet of porous yellow clay and a thin and easily cracked wall of brick and cement and in many instances of cement alone applied direct to the sides of the cistern, cesspool, or vault with no pretense of brick wall.

There is a very large percentage of such conditions (juxtaposition of privy and well) all over the city outside the sanitary district of about 88 blocks above remarked upon.

The removal of night soil from privies is done in ordinary dump carts to the sewer chute at the dump, the material being too solid for odorless excavators.

While about 90 per cent or perhaps more of the better class of residences in the city are connected with sewers, there remains in cases of the less well-to-do householders more than 50 per cent unconnected and having to depend upon these cesspools and vaults, and this in view of the fact that wells to supply drinking water are as above stated dotted all over the city, is an insanitary condition urgently calling for correction and fully appreciated by the board of health.

I have suggested to the board of health the use of Uranine A. to test whether or no the privies pollute the wells or cisterns in any locality, as the vivid physical proof given in this test is beyond controversy (the most convincing argument ever put before the laity) and such proof as will assist the board in compelling immediate water and sewer connections in all such cases.

Sewers and Drains.

The city is provided with six main sewers of large dimensions and three of moderate size, all discharging into the Missouri River direct. All of these in turn receive the effluent from many smaller laterals.

The system is practically coextensive with the city limits except in that part of South St. Joseph which is known as Hyde Park and the other portion of South St. Joseph below Alabama Street, derisively known as "Skeeterville," and a small portion northwest of the railway tracks and north of South St. Joseph known as Florence. It is probable that these three sections will be sewerred in the near future and there will no longer be any reason for failure on the part of the property owners to make sewer connections.

As indicated by the course of the main sewers, the natural drainage of the city of St. Joseph is, with the exception of the flats along

the river in the upper part of the town and the whole flat area between South St. Joseph and the packing houses below the city, as good as one could possibly desire, the high hills rolling into long sloping valleys, making this natural drainage over all parts of the city having an altitude of more than 25 feet above the river exceptionally good, and the city has provided a sewer system which in all of its ramifications covers a distance of over 100 miles, and is under most conditions of sufficient caliber to carry off both storm water and sewage, the system being a general one in which these two factors are not divorced, as they always should be. The necessity of divorcement for sewer and storm drains is most patent in South St. Joseph, in parts of which the ground is so flat that at times when the sewers are surcharged with vast volumes of muddy water coming down from the higher districts on the hills it is impossible for the house drainage to find egress and sewer gas if not worse is forced back, making an exceedingly undesirable situation.

Another matter worthy of consideration, but not in any sense a criticism of the sewers themselves, is that the sewers are used for house connections to such a limited extent as to nullify a large part of their usefulness, and despite the earnest endeavors of the board of health the only section in which there is complete water and sewer connection is the relatively small area bounded on the north by Jule, east by Twelfth, south by Lafayette, and west by the river and Main Street, an area which does not stand for more than one-tenth of the total area of the city, and as a consequence of this lack of connection the whole city, including some of the best residence sections, is dotted over with cesspools and privies, many of which are in very bad condition; and this situation is the more to be deplored when it is remembered that in hundreds of premises surface wells furnish the water supply and the soil is sufficiently porous to permit easy access of foul matter from vaults into wells.

In this connection I can conceive of no one idea which put into execution would do more to correct this difficult and dangerous situation than the extension of the sanitary district before mentioned to cover as much of the central portion of the city as may be possible at this time. This I deem an immediate need second to none save the proper disposal of garbage, with which question this is inextricably interlocked.

Care of Contagion.

The board has an unusually good pesthouse for smallpox, but, as is too frequently true, little or no provision for isolation of suspects at any time, and since the withdrawal by the police of authority to use isolation quarters over the police station, they have no provision whatever for isolation of suspects from smallpox or any other infectious or contagious disease pending definite diagnosis.

The St. Joseph's Hospital in contracting for the care of city patients should provide for suspects and even for the care in toto of everything except smallpox, as is done as a matter of course elsewhere, and to which there can be no reasonable objection if an isolation ward or wards are provided, and it would seem that such an arrangement would not only be satisfactory from a sanitary standpoint, but would be mutually profitable.

The system in use by the board for collecting information of the existence of infectious disease is the post-card notice supplemented by telephone call, first as to occurrence of case, second as to disappearance of symptoms and readiness for disinfection.

The board uses a warning notice to physicians who fail to report, and this notice removes all question of ignorance of the law.

This system is very simple and complete and in connection with a fortnightly bulletin issued to the profession makes up one of the most easily handled and easily searched records I have seen.

Pollution of Public Places.

Spitting in public places and on the sidewalks is forbidden by ordinance and the enforcement of this is excellent.

Despite the fact that alleys are occasionally dirty, the streets of the city are in the main clean and in the sanitary district very clean.

Common Use of Cups, Towels, Etc.

The State law forbidding the use of common drinking cups and towels is by order of the board of health in force here and very effectively executed.

Public Convenience Stations.

Three places are provided for women's emergency use and serve an excellent and very real sanitary purpose. There is no such place for men, who are therefore compelled to resort to barrooms or the like.

The Social Welfare Board.

The social welfare board is a new board created by act of legislature of 1913, was organized in June of the same year, and secured for executive secretary a trained social worker to assume office April 1, 1914.

This board comes in first contact with much of the infectious disease work of the city, as it is the official body which cares for the dependent sick.

It is made the duty of this board to transfer to the board of health all such cases as soon as the diagnosis is established. These boards cooperate fully.

The law says that the welfare board shall have power to protect the general welfare of the poor by sanitary reformations and specifically mentions insanitary housing.

This board, therefore, has the opportunity to do much fundamental work along the lines of preventive medicine, and the indications are that it appreciates this fact and will act upon it.

The fact that this board consists of public-spirited citizens and is headed by Dr. Daniel Morton, who has at all times manifested a profound interest in public welfare, giving freely with his fellows of his time and work without any remuneration whatever, is a guaranty that the work of this board will be very effective

Summary and Recommendations.

The city board of health as now organized consists of three members, one of whom is president and executive officer, and all of whom take an active personal interest in the administrative functions of the board. No one of these gentlemen receives a dollar of compensation and therefore the city stands in the light of receiving charity from its own public-spirited citizens, or else getting a pretense instead of real service. It happens that this board renders real and most efficient service and therefore that this very wealthy city stands in the unenviable light of not paying some of its most efficient officers for faithful effort to keep the city in sanitary condition with an entirely too small allotment of funds.

That good work can continue under such a system is beyond belief, and there is only one possible way to provide the city with a surely and continuously good health system, viz:

The provision of a budget of not less than 50 cents per capita of population for the board of health and the employment of a commissioner of public health with compensation sufficient to justify the giving of his whole time to the services of the city.

The commissioner of health should give his whole time to the work in order that no detail of any matters named in this report and recommendation may escape his notice and that the smallest as well as the greatest of the city's sanitary interests shall have prompt and effective attention.

Such attention will take every moment of his time and not permit to him any practice of medicine or surgery, either public or private.

The board of health under these conditions can then give the city the benefit as now of their mature judgment, but would have no administrative work thrust on them as now happens.

It is perhaps superfluous to state that full time salaries are paid by many cities smaller than St. Joseph and less wealthy, but this is done

by Savannah, Ga., which with less than 75,000 people pays its health officer \$3,600 per annum, and an even smaller community, North Yakima, Wash., which pays its health officer \$4,000.

Such an appropriation as I have suggested would provide for the additional inspectors needed, as well as for the pay of the commissioner of health.

Finally, I can not too strongly emphasize the necessity for support of the most real and active sort by the law officers to the health officers.

The administration of public health may have been of slight importance in villages in years gone by, but in the modern city of to-day lapses caused by ignorance, indifference, or inability to enforce a law, may have calamitous results. Unchecked use of polluted milk or water might easily cost St. Joseph a thousand lives and two thousand times that many dollars.

This is the responsibility which the people of any city must face and is a distinct possibility always in the absence of a strong health organization.

Water.—The supply furnished by the water works company is good potable water and is used by approximately 75 per cent of the people. The remainder use water from wells and cisterns, many of which are of exceedingly doubtful character. The proper and only solution of this question is prompt and vigorous action by the law officers of the city to enforce the ordinance closing polluted wells and cisterns.

Milk.—The milk supply of the city on the whole is good, and great care is exercised by the board to maintain the quality. No comment is required here beyond the suggestion that the score-card minimum be raised to 60 in a possible 100.

Food products are inspected under State law and the condition, while not ideal, is as good as could be obtained without a greater inspection force. Betterment can be obtained by employment of an additional food inspector and vigorous enforcement of the State laws.

Sewers are as good as the conjoint system of sewer and storm drain can ordinarily be and are fairly sufficient in extent and are being extended all the time.

Privies and cesspools are far too numerous and constitute, like garbage, one of the most serious problems confronting the board.

No effort should be spared toward enforcing sewer connection and it is the manifest plain duty of the city common council to extend the sanitary district and to do so at once.

Garbage and waste present one of the most serious problems which the board has to face, and conditions here, through no fault of the board, are undeniably bad and need correction.

The remedy is separation into—

Ashes, to be used as filling or dumped.

Trash, to be used as filling or dumped.

Manure, to be carted to farms or dumped.

Garbage, to be fed to hogs, collection being made by the city through its own agencies.

Table of percentages of conditions in the less sanitary districts.

Locality.	Using city water.	Using wells.	Using cisterns.	Having sewer connections.	Disposal of—	
					Garbage and manure.	Trash.
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
St. Joseph proper.....	90	3	7	40	70	75
South St. Joseph.....	55	35	1	1	47	57
Skooterville, Florence, and Hyde Park....	48	27	1	.....	48	52

Night soil is very well disposed of if it must exist, but should be eliminated entirely by a complete connection of premises and sewers.

ROCKY MOUNTAIN SPOTTED FEVER.

SOME INVESTIGATIONS MADE DURING 1912 BY PASSED ASST. SURG. T. B. McCLINTIC.

Prepared for publication by L. D. FRICKS, Surgeon, United States Public Health Service.

During the summer of 1912, from April 11 to July 30, Passed Asst. Surg. T. B. McClintic carried on his second series of investigations of Rocky Mountain spotted fever in the Bitter Root Valley at Victor, Mont.

Early in August, just at the close of a successful season's work, Dr. McClintic himself contracted the disease in the Bitter Root Valley and died August 13 at Washington, D. C. He was thus denied the satisfaction of reporting the valuable observations made by him during his last season's work, which included (a) the first systematic determination of the percentage of infective ticks from different localities in the Bitter Root Valley, (b) the discovery of immune and, therefore, presumably previously infected ground squirrels (*Citellus columbianus*) in nature, (c) studies on the susceptibility of the woodchuck (*Marmota flaviventer*), the rock squirrel (*Callospermophilus lateralis cinerascens*), and the mountain goat (*Oreamnos montanus*) to Rocky Mountain spotted fever, and (d) studies on the efficiency of different dipping solutions used for the destruction of adult ticks on live stock.

Because of the importance of these observations in the further study of Rocky Mountain spotted fever it has been deemed advisable

to carefully review Dr. McClintic's notes of his work during the season of 1912 and prepare them for publication and future preservation. While the notes were found quite complete up to the last week in July, they recorded only the bare experiments conducted; and in order that these may be better understood, explanations of the methods of procedure and a summary of the results obtained are here included with Dr. McClintic's work. Nothing further than this will be attempted.

Infective Ticks in Nature.

Infective ticks in nature have been reported by Ricketts¹ in 1902—one tick out of 293 experimented with—and by Maver² in 1911—two ticks out of 402. The exact source of these ticks was not definitely given by the experimenters, but the majority of them, if not all, were collected somewhere in the Lo Lo Valley.

In 1912 McClintic collected nearly 2,000 ticks from different localities in the Bitter Root Valley and from Bannock County, Idaho. These ticks were used in his experiments by being placed in groups on susceptible guinea pigs, and there allowed to feed until completely engorged, whenever they would do so. Of the total number of ticks collected, 1,570 were actually employed in these experiments and 1,282 were known to have fed a sufficient length of time to infect their hosts; 288 ticks either made no attempt to feed or were destroyed by the guinea pigs before their attachment was noted.

Except where noted, the ticks from the Bitter Root Valley were unfed *Dermacentor andersoni* (Stiles) collected from the grass and bushes in the localities named and those from Idaho were *Dermacentor modestus* (Banks).

The ticks were collected from 14 different localities and arranged in 55 groups which varied greatly in the number of ticks they contained. The irregular grouping was a matter of convenience or necessity occasioned by the interrupted manner in which the ticks were collected.

The grouping of ticks adopted in these and similar experiments is a matter of economy in time, labor and guinea pigs employed, made necessary by the very small percentage of infective ticks found in nature by this method. The experiments, therefore, are not conclusive as to the exact number of infective ticks, since there may have been more than one such tick in the groups reported positive. This seems quite probable in the case of the ticks collected from goat No. 5.

¹ J. A. M. A., 1907, vol. 49, p. 24.

² J. Infec. Diseases, 1911, vol. 8, p. 327.

The experiments noted by Dr. McClintic are shown in the following table, in which F. indicates female, M. male, + positive, and - negative:

	Date.	Number ticks employed.	Number ticks attached.	Where collected.	Result.	Remarks.
G. P. 400....	1912. Apr. 11	24; 13 F., 11 M....	23	Bear Creek.....	-	G. P. 400 died of peritonitis Apr. 20.
G. P. 401....	Apr. 13	31; 16 F., 15 M....	26	Bates, Payne, and Williams ranches	-	
G. P. 407....	Apr. 16	40; 19 F., 21 M....	30	Payne and Williams ranches.	-	Mountain goat killed at head of Bear Creek Apr. 13.
G. P. 408....	do.....	15; 5 F., 10 M....	10	Goat No. 1.....	(?)	
G. P. 409....	Apr. 17	5.....	3	do.....	-	<i>Dermacentor albipictus</i> .
G. P. 410....	do.....	16; 12 F., 4 M....	11	do.....	-	
G. P. 412....	Apr. 21	21; 4 F., 17 M....	15	do.....	-	Do.
G. P. 413....	do.....	13; 4 F., 9 M....	7	do.....	-	Do.
G. P. 414....	do.....	6; 3 F., 3 M....	6	do.....	-	
G. P. 415....	do.....	41; 25 F., 16 M....	35	Payne and Williams ranches.	+	4 F. albipictus, 3 andersoni attached.
G. P. 416....	do.....	16; 12 F., 4 M....	9	Bear Creek.....	-	
G. P. 421....	Apr. 26	10; 6 F., 4 M....	7	Goat No. 1.....	-	
G. P. 422....	do.....	35; 24 F., 11 M....	29	Bear Creek.....	-	Mixed ticks, Bear Creek to Sweat-house.
G. P. 423....	Apr. 30	26; 16 F., 10 M....	25	Gash Creek.....	-	
G. P. 425....	May 3	32; 20 F., 12 M....	30	Mixed ticks, Bear Creek to Sweat-house.	+	Gash Creek and Sweat-house.
G. P. 427....	May 5	67; 38 F., 29 M....	62	Gash Creek and Sweat-house.	-	
G. P. 445....	May 10	60; 23 F., 17 M....	40	School section, Florence.	-	School section, Florence.
G. P. 446....	do.....	19; 10 F., 9 M....	19	do.....	-	
G. P. 447....	do.....	10; 5 F., 5 M....	10	do.....	-	West of Hamilton.
G. P. 448....	do.....	23; 13 F., 10 M....	12	do.....	-	
G. P. 463....	May 13	15; 8 F., 7 M....	14	West of Stevensville.....	-	Bear Creek.....
G. P. 464....	do.....	26; 16 F., 10 M....	20	do.....	+	
G. P. 466....	May 15	22; 8 F., 14 M....	22	Bass Ranch, west of Stevensville.	-	School section, Florence.
G. P. 467....	May 16	54; 25 F., 29 M....	39	do.....	-	
G. P. 485....	May 18	27; 11 F., 16 M....	23	From a brown bear caught west of Victor.	-	Stock on Eddy Ranch, Victor.
G. P. 486....	do.....	16; 9 F., 7 M....	13	do.....	-	
G. P. 487....	do.....	35; 21 F., 14 M....	29	Gash Creek.....	-	East side of valley.....
G. P. 488....	May 19	86; 50 F., 39 M....	72	do.....	-	
G. P. 538....	May 25	35; 21 F., 14 M....	34	West of Darby.....	-	do.....
G. P. 539....	do.....	30; 11 F., 19 M....	26	do.....	-	
G. P. 541....	May 27	10; 8 F., 2 M....	10	West of Hamilton, between Blodgett and Canyon Creek.	-	From a brown bear caught west of Victor.
G. P. 542....	May 28	29.....	20	do.....	-	
G. P. 545....	May 30	11; 5 F., 6 M....	11	West of Florence vat....	-	do.....
G. P. 546....	do.....	20; 14 F., 6 M....	19	do.....	-	
G. P. 555....	June 1	12; 6 F., 6 M....	11	Goat No. 2.....	-	Mountain goat killed at head of Sweat-house Canyon May 30; 422 ticks collected from goat.
G. P. 556....	do.....	24; 12 F., 12 M....	19	Goat No. 3.....	-	
G. P. 557....	do.....	12; 4 F., 8 M....	10	do.....	-	Do.
G. P. 582....	June 5	22; 15 F., 6 M....	8	Goat No. 4.....	-	
G. P. 583....	do.....	29; 11 F., 18 M....	26	Goat No. 5.....	(?)	Mountain goat killed at head of Bear Creek May 30.
G. P. 584....	do.....	30; 11 F., 19 M....	26	Goat No. 6.....	-	

	Date.	Number ticks employed.	Number ticks attached.	Where collected.	Result.	Remarks.
	1912.					
G. P. 585....	June 5	38: 9 F., 29 M....	33	Ten-Mile Springs, Idaho.	-	
G. P. 586....	..do.....	33: 17 F., 16 M....	26	..do.....	-	
G. P. 587....	..do.....	26: 14 F., 12 M....	15	Soda Springs, Idaho....	-	
G. P. 588....	June 8	48: 24 F., 24 M....	40	Goat No. 2.....	-	
G. P. 589....	June 8	42: 12 F., 30 M....	35	Goat No. 3.....	-	
G. P. 593....	June 9	42: 12 F., 30 M....	35	Goat No. 3.....	-	
G. P. 595....	..do.....	60: 30 F., 30 M....	54	Goat No. 6.....	-	
G. P. 600....	June 12	25: 15 F., 10 M....	18	Ten-Mile Springs, Idaho.	-	
G. P. 601....	June 13	30: 24 F., 6 M....	27	..do.....	-	
G. P. 602....	..do.....	25: 20 F., 5 M....	22	West of vat, Florence....	-	
G. P. 603....	..do.....	39: 21 F., 18 M....	35	Goat No. 2.....	-	
G. P. 604....	June 15	26: 16 F., 10 M....	25	..do.....	-	
G. P. 605....	..do.....	31: 17 F., 14 M....	14	Goat No. 5.....	+	
G. P. 606....	..do.....	46: 33 F., 14 M....	36	Goat No. 6.....	(?)	
G. P. 608....	June 21	25: 15 F., 10 M....	24	Goat No. 5.....	+	
G. P. 609....	..do.....	27: 16 F., 11 M....	27	..do.....	+	

The final test of all negative guinea pigs was the inoculation, intraperitoneally, of 0.5 cubic centimeter heart blood from an infected spotted-fever pig, designated in these experiments as "old virus," "virus T," "virus G," according to the strain employed, within two weeks of the time the ticks were removed. In the case of positive pigs, transfers of heart blood were made to other guinea pigs and spotted fever was reproduced in them.

Of the localities from which the ticks used in these experiments were collected, the following are in the foothills west of Victor: Bear Creek Canyon, Bates, Payne and Williams Ranches, Gash Creek Canyon, and Sweathouse Canyon.

Mountain goats Nos. 5 and 6 were noted as having been killed at the same place halfway up Bear Creek Canyon, while goats Nos. 1 and 4 were killed farther back at the head of the same canyon. This is probably an insignificant fact, since the goats range in small bands over great distances around the head of the different canyons.

In the case of guinea pig No. 408, on which 15 ticks from goat No. 1 were placed April 16, the result was given as doubtful because the pig never ran a temperature; but the usual immunity test of 0.5 cubic centimeter spotted-fever virus "T," given May 6, and in addition 0.5 cubic centimeter spotted-fever virus "old," given May 15, both failed to infect the pig. We can only conclude that pig No. 408 had a natural immunity to spotted fever, which is extremely improbable, that it received a very mild infection with immunization from the ticks, or that it was immunized without being infected by the ticks. Among the thousands of guinea pigs experimented with, no pig naturally immune to spotted fever has been recorded.

With guinea pig 583, on which 29 ticks from goat No. 5 were placed June 5 the result was the same as that in pig No. 408. There was no clinical evidence of spotted fever following the tick bites, nor was this pig's blood infective; but immunity tests with 0.5 cubic

centimeter virus "T" given June 23 and July 5 failed to develop spotted fever.

Guinea pig No. 606, on which 7 ticks from goat No. 6 were placed June 15, showed no evidence of spotted fever, but was immune to 0.5 cubic centimeter virus "G" injected June 29.

The relative high percentage of infective ticks collected from goat No. 5 may be accounted for by its having acquired the majority of its 337 ticks from the same brood of infective ticks. There is no evidence to support the belief that the mountain goat can acquire or transmit Rocky Mountain spotted fever infection. Two guinea pigs (Nos. 580 and 581) were inoculated June 5 each with 1 cubic centimeter heart blood of goat No. 5 plus 2 cubic centimeters normal salt solution. One pig died a few hours after inoculation; the other was negative to the inoculation and positive to an immunity test given June 29.

Discovery of Immune Ground Squirrels (*C. columbianus*).

The susceptibility of certain wild mammals in the Bitter Root Valley to infection with spotted fever and the possibility of their acquiring immunity thereto having been proved, the importance of locating naturally infected animals among these species was pointed out by Ricketts,¹ and attention was redirected to the subject by McClintic² and Rucker.³ Both emphasized the difficulties attending such a search, which are due mainly to the facts that the susceptible mammals (ground squirrels, wood chucks, rock squirrels, chipmunks, wood rats, weasels, and badgers) present no constant pathological change, symptomatology, nor temperature index which are certainly characteristic of spotted fever. For these reasons it is necessary to resort to indirect methods by inoculation into guinea pigs in order to determine whether the susceptible mammals have been infected with spotted fever.

In a report of the unfinished experiments of Dr. Ricketts on Rocky Mountain spotted fever by B. F. Davis⁴ it is stated that the investigation of the presence of infected or immune animals in nature was outlined for the season of 1910, but unfortunately the experiments could not be carried out.

In 1911 McClintic and Rucker began a search for evidence of infection among the smaller mammals of the Bitter Root Valley (a) by furnishing their trappers with clinical thermometers and directing them to take the temperatures of all live animals captured, (b) by the inoculation of guinea pigs with blood from the freshly captured animals, and (c) by a study of the immunity of mammals captured

¹ Journ. A. M. A., 1907, vol. 49, p. 24.

² Public Health Reports, vol. 27, No. 20, May 17, 1912.

³ Military Surgeon, vol. 29, No. 6, Dec., 1911.

⁴ Contributions to Medical Science by Howard Taylor Ricketts, Univ. Chicago Press, p. 411.

in infected districts as determined by inoculating them with heart blood from infected guinea pigs and transferring after proper intervals into other susceptible guinea pigs.

The taking of temperatures was found inadequate for the reason given above and shortly abandoned.

During the season of 1911, blood from 21 ground squirrels captured west of Victor was injected into a corresponding number of guinea pigs with negative results. This method of search, because of its limitations, was then abandoned for the more complicated determination of the immunity of captured mammals to spotted-fever infection. The reason the first method was abandoned was the difference in the extent of the information conveyed by the two methods of experimentation. The first or direct inoculation into a guinea pig of blood taken from an animal at the time of its capture shows only the actual condition of the animal at the time of its capture, as to whether it then has or does not have spotted fever, while the information derived from the inoculation of susceptible wild animals and the later transfer of their blood to guinea pigs is much broader, covering at least many months of the life of the animal.

McClintic and Rucker began the search for immune animals among ground squirrels (*C. columbianus*) because of their great abundance and the suspicion which has been attached to them since Wilson and Chowning in 1902 suggested that they might be the animal host of the disease, and of the possibility of their being in some way intimately associated with the perpetuation of the Rocky Mountain spotted-fever virus. The method employed was described by McClintic as follows:¹

"The ground squirrels were caught and kept in captivity until they had recovered from the injuries caused by the traps. They were then inoculated intraperitoneally with the virus of spotted fever" (0.5 to 1 cubic centimeter of fifth-day blood from an infected guinea pig in normal salt solution). "Their temperatures were taken each day, and at the end of definite periods inoculations of their blood" (0.5 to 2 cubic centimeters in salt solution) "were made intraperitoneally into guinea pigs." If this transfer, made on the fifth day, of blood from a previously inoculated ground squirrel produced spotted fever in the guinea pigs the squirrel clearly could not have been at that time immune to the disease, and it was therefore concluded that it had not been naturally infected for at least many months previous to the time of inoculation. On the other hand, if the transfer made on the fifth day was not followed by spotted fever in the guinea pig and the latter, when afterwards given the immunity test (0.5 cubic centimeter blood from a pig known to be infected with spotted fever), developed spotted fever, it was concluded that the ground squirrel,

¹ Public Health Reports, vol. 27, No. 20, May 17, 1912.

since incapable of transmitting the disease, was immune and therefore had been naturally infected.

In 1911 McClintic and Rucker experimented with 25 ground squirrels collected from districts supposed to have been badly infected with spotted fever and failed to find one immune squirrel among that number. In 1912 McClintic continued the search with a much greater number of ground squirrels, 194 in all, collected from different localities, and found 40 immune and therefore presumably previously infected ground squirrels, which had acquired their infection naturally either through bites of infective ticks or possibly by inheritance through a mother infected in this manner. Of the 194 ground squirrels which were trapped and used in these experiments, one group of 11 squirrels (Nos. 207 to 217, inclusive) caught on the forest reserve west of Victor, although noted by Dr. McClintic as "positive," were also recorded as "discarded." Apparently Dr. McClintic was not satisfied that the technique of this experiment had been above suspicion. For this reason these squirrels are not included in his final results. In two other groups of 11 squirrels each, one from Sweat-house Canyon and one from the river bottom east of Victor, the results of the transfers were not noted. These were the last squirrels experimented with, and it is probable that the transfers were never made.

The experiments and the results in the 161 ground squirrels as noted by Dr. McClintic are given below:

Ground squirrel.	Where collected.	Inoculated.	Transfer.	Result.	Remarks.
		0.5 c. c. "OLD VIRUS."	0.5 c. c. BLOOD +2 c. c. NORMAL SALT SOLUTION. May 6.		
71 F.....	Payne and Bates ranches, Apr. 10-12.	May 1, 1912....	G. P. 428.....	+	G. P. 428 died May 20, spotted fever.
72 M.....	do.....	do.....	G. P. 429.....	+	G. P. 429 died May 14, spotted fever.
73 M.....	do.....	do.....	G. P. 430.....	+	G. P. 430 died May 12, accident.
74 M.....	do.....	do.....	G. P. 431.....	-	Immunity test May 20; 0.5 c. c. "Old virus," G. P. 431, positive.
75 M.....	do.....	do.....	G. P. 432.....	+	G. P. 432 died May 16, spotted fever.
76 M.....	do.....	do.....	G. P. 433.....	+	G. P. 433 died May 20, spotted fever.
77 F.....	do.....	do.....	G. P. 434.....	+	G. P. 434 died May 21, spotted fever.
78 M.....	do.....	do.....	G. P. 435.....	-	G. P. 435 immunity test May 20, 0.5 c. c. "Old virus," positive.
78 M.....	do.....	do.....	G. P. 462.....	-	Immunity test June 4, 0.5 c. c. "Old virus" G. P. 462, positive.
79 F.....	do.....	do.....	G. P. 436.....	+	G. P. 436 died Apr. 20, spotted fever
80 F.....	do.....	do.....	G. P. 437.....	+	G. P. 437 died Apr. 19, spotted fever.
81 F.....	do.....	do.....	G. P. 438.....	+	G. P. 438 killed for virus Apr. 11.
82 M.....	do.....	do.....	G. P. 439.....	+	G. P. 439 killed for virus Apr. 11.
83 M.....	do.....	do.....	G. P. 440.....	+	G. P. 440, spotted fever, recovered.
84 M.....	do.....	do.....	G. P. 441.....	+	G. P. 441 died Apr. 19, spotted fever.
85 M.....	do.....	do.....	G. P. 442.....	+	G. P. 442, spotted fever, recovered.
86.....	do.....	do.....	G. P. 443.....	+	G. P. 443 died Apr. 21, spotted fever.
87.....	do.....	do.....	G. P. 444.....	+	G. P. 444 died Apr. 21, spotted fever.

Ground squirrel.	Where collected.	Inoculated.	Transfer.	Result.	Remarks.
		0.5 c. c. VIRUS "T."	0.5 c. c. BLOOD +2 c. c. NOR- MAL SALT SO- LUTION.		
			May 11.		
88 M.	Payne and Wil- hams ranches.	May 6, 1912.	G. P. 449.	+	G. P. 449, spotted fever, recovered.
89 M.	do.	do.	G. P. 450.	-	G. P. 450 immunity test May 29; killed for virus June 4.
90 F.	do.	do.	G. P. 451.	+	G. P. 451 died May 26, spotted fever.
91 M.	do.	do.	G. P. 452.	-	G. P. 452, immunity test May 29; killed for virus June 4.
92 F.	do.	do.	G. P. 453.	-	G. P. 453, immunity test June 17; killed for virus.
93 F.	do.	do.	G. P. 454.	+	G. P. 454 died May 19, spotted fever.
94 M.	do.	do.	G. P. 455.	-	G. P. 455, immunity test May 29; followed by spotted fever.
95 M.	Bear Creek.	do.	G. P. 456.	+	G. P. 456, spotted fever, recovery.
96 F.	do.	do.	G. P. 457.	+	G. P. 457 died May 19, spotted fever.
97 M.	do.	do.	G. P. 458.	+	G. P. 458 died May 26, spotted fever.
98 F.	do.	do.	G. P. 459.	+	G. P. 459 died May 18, spotted fever.
99 M.	do.	do.	G. P. 460.	-	G. P. 460, immunity test May 25, killed for virus.
100 F.	do.	do.	G. P. 461.	+	G. P. 461 died May 24, spotted fever.
		0.5 c. c. "OLD VIRUS."			
101 M.	Foothills, Ham- ilton to Grants- dale.	May 12, 1912	G. P. 468.	+	G. P. 468 died May 29, spotted fever.
102 M.	do.	do.	G. P. 469.	+	G. P. 469 died May 30, spotted fever.
103 M.	do.	do.	G. P. 470.	Void.	G. P. 470 died May 20, third day, greatly emaciated.
104 M.	do.	do.	G. P. 471.	+	G. P. 471 died May 30, spotted fever.
105 M.	do.	do.	G. P. 472.	+	G. P. 472 died May 23. Inoculation into G. P. 523 caused spotted fever.
106 M.	do.	do.	G. P. 473.	+	G. P. 473, spotted fever, recovery.
107 M.	do.	do.	G. P. 474.	+	G. P. 474, spotted fever, recovery. Killed because of inflammation of scrotum.
108 M.	do.	do.	G. P. 475.	+	G. P. 475 died May 27, spotted fever.
109 M.	do.	do.	G. P. 476.	+	G. P. 476 died May 23, spotted fever.
110 F.	do.	do.	G. P. 477.	+	G. P. 477 died May 30, spotted fever.
111 M.	Florence school, sec. 16.	do.	G. P. 478.	+	G. P. 478, spotted fever, recovery.
112 F.	do.	do.	G. P. 479.	-	G. P. 479, immunity test June 17; followed by spotted fever.
113.	Duffy ranch.	do.	G. P. 480.	+	G. P. 480 died May 27, spotted fever.
114 M.	Florence school, sec. 16.	do.	G. P. 481.	-	G. P. 481, immunity test June 4; followed by spotted fever.
115 F.	do.	do.	G. P. 482.	-	G. P. 482, immunity test June 4; followed by spotted fever.
116 M.	do.	do.	G. P. 483.	+	G. P. 483 died May 27, spotted fever.
117 M.	do.	do.	G. P. 484.	-	G. P. 484, immunity test June 4; followed by spotted fever.
			May 20.		
118 M.	Florence school, sec. 16.	May 15, 1912.	G. P. 490.	-	G. P. 490, immunity test June 4; spotted fever.
119 F.	do.	do.	G. P. 491.	+	G. P. 491, spotted fever, recovery.
120 F.	do.	do.	G. P. 492.	-	G. P. 492, immunity test June 6; followed by spotted fever.
121 M.	Foothills, Ham- ilton to Grants- dale.	do.	G. P. 493.	+	G. P. 493 died May 20, spotted fever.
122 M.	do.	do.	G. P. 494.	+	G. P. 494, spotted fever, recovery.
123 F.	do.	do.	G. P. 495.	+	G. P. 495 died May 20, spotted fever.
124 F.	do.	do.	G. P. 496.	-	G. P. 496, immunity test June 4; fol- lowed by spotted fever; died.
125 F.	do.	do.	G. P. 497.	+	G. P. 497 died June 1, spotted fever.
126 F.	do.	do.	G. P. 498.	+	G. P. 498, spotted fever, recovery.
127 M.	do.	do.	G. P. 499.	+	G. P. 499 died June 3, spotted fever.
128 F.	Bear Creek.	do.	G. P. 500.	+	G. P. 500, spotted fever, recovery.
129 F.	do.	do.	G. P. 501.	+	G. P. 501 died June 1, spotted fever.
130 F.	do.	do.	G. P. 502.	+	G. P. 502 died May 29, spotted fever.
131 F.	do.	do.	G. P. 503.	-	
132 F.	do.	do.	G. P. 504.	+	G. P. 504 died June 2, spotted fever.
133 F.	do.	do.	G. P. 505.	+	G. P. 505 died May 29, spotted fever.
134 F.	do.	do.	G. P. 506.	+	G. P. 506 died May 30, spotted fever.

Ground squirrel.	Where collected.	Inoculated.	Transfer.	Result.	Remarks.
		O. S. C. C. "Old Virus."	O. S. C. C. BLOOD + 2 C. C. NORMAL SALT SOLUTION.		
			May 20—Con.		
126 M.....	Gash Creek and Hackets.	May 12, 1912..	G. P. 507.....	+	G. P. 507 died June 2, spotted fever.
126 M.....	do.	do.	G. P. 508.....	+	G. P. 508, spotted fever, recovery.
127 F.....	do.	do.	G. P. 509.....	+	G. P. 509 died May 20, spotted fever.
128 M.....	do.	do.	G. P. 510.....	+	G. P. 510 died June 2, spotted fever.
129 M.....	do.	do.	G. P. 511.....	-	G. P. 511, immunity test June 4; killed for virus.
			May 25.		
140 M.....	Darby, May 14..	May 20, 1912..	G. P. 529.....	+	G. P. 529 died June 2, spotted fever.
141 M.....	do.	do.	G. P. 530.....	+	G. P. 530 died June 9, spotted fever.
142 M.....	do.	do.	G. P. 531.....	+	G. P. 531 died June 14, spotted fever.
143 M.....	do.	do.	G. P. 532.....	+	G. P. 532, spotted fever, recovery.
144 M.....	do.	do.	G. P. 533.....	+	G. P. 533, spotted fever, recovery.
145 F.....	do.	do.	G. P. 534.....	+	G. P. 534, spotted fever, recovery.
146 F.....	do.	do.	G. P. 535.....	-	G. P. 535, immunity test June 7; followed by spotted fever.
147 F.....	do.	do.	G. P. 536.....	+	G. P. 536, spotted fever, recovery.
148 F.....	do.	do.	G. P. 537.....	+	G. P. 537, spotted fever, recovery.
			May 30.		
149 F.....	Landon Ranch, Stevensville.	May 25, 1912..	G. P. 548.....	-	G. P. 548, immunity test June 23; followed by spotted fever.
150 M.....	do.	do.	G. P. 549.....	-	G. P. 549, immunity test June 14; followed by spotted fever.
151 F.....	do.	do.	G. P. 550.....	+	G. P. 550, spotted fever, recovery.
152 M.....	do.	do.	G. P. 551.....	+	G. P. 551, spotted fever, recovery.
153 M.....	do.	do.	G. P. 552.....	+	G. P. 552 died June 10, spotted fever.
			June 4.		
154 F.....	Williams Ranch.	May 30, 1912..	G. P. 570.....	-	G. P. 570, immunity test June 17, negative; July 5, followed by spotted fever.
155 F.....	do.	do.	G. P. 571.....	+	G. P. 571, spotted fever, recovery.
156 F.....	do.	do.	G. P. 572.....	+	G. P. 572 died June 18, spotted fever.
157 M.....	do.	do.	G. P. 573.....	+	G. P. 573, spotted fever, recovery.
158 F.....	do.	do.	G. P. 574.....	+	G. P. 574 died June 10, spotted fever.
159 F.....	do.	do.	G. P. 575.....	-	G. P. 575, immunity test June 18; followed by spotted fever.
160 F.....	do.	do.	G. P. 576.....	-	G. P. 576, immunity test June 18, negative; July 5, negative.
161 F.....	do.	do.	G. P. 577.....	+	G. P. 577, spotted fever, recovery.
			1 C. C. BLOOD + 2 C. C. NORMAL SALT SOLUTION.		
			June 25.		
162 F.....	Foothills west of Hamilton.	June 17, 1912..	G. P. 619.....	+	G. P. 619 died July 2, spotted fever.
163 F.....	do.	do.	G. P. 620.....	-	G. P. 620, immunity test July 10; killed for virus.
164 F.....	do.	do.	G. P. 621.....	+	G. P. 621, spotted fever, recovery.
165 F.....	do.	do.	G. P. 622.....	+	G. P. 622, spotted fever, recovery.
166 F.....	do.	do.	G. P. 623.....	+	G. P. 623, spotted fever, recovery.
167 F.....	do.	do.	G. P. 624.....	+	G. P. 624, spotted fever, recovery.
168 M.....	do.	do.	G. P. 625.....	+	G. P. 625 died July 2, spotted fever.
169 F.....	do.	do.	G. P. 626.....	-	G. P. 626, immunity test July 20; killed for virus.
170 F.....	do.	do.	G. P. 627.....	+	G. P. 627, spotted fever, recovery.
171 F.....	do.	do.	G. P. 628.....	+	G. P. 628 died July 7, spotted fever.
172 F.....	do.	do.	G. P. 629.....	+	G. P. 629 died July 4, spotted fever.
173 F.....	do.	do.	G. P. 630.....	+	G. P. 630, spotted fever, recovery.
			June 25.		
174 F.....	Mouth of Big Creek Canyon.	June 23, 1912..	G. P. 645.....	+	G. P. 645 died July 10, spotted fever.
175 F.....	do.	do.	G. P. 646.....	+	G. P. 646 died July 11, spotted fever.
176 M.....	do.	do.	G. P. 647.....	+	G. P. 647 died July 7, spotted fever.
177 M.....	do.	do.	G. P. 648.....	+	G. P. 648 died July 11, spotted fever.

Ground squirrel.	Where collected.	Inoculated.	Transfer.	Result.	Remarks.
		1 C. C. Virus.	1 C. C. BLOOD + 3 C. C. NORMAL SALT SOLUTION.		
			June 23—Con.		
178 F.....	Mouth of Big Creek Canyon.	June 23, 1912..	G. P. 649.....	+	G. P. 649, spotted fever, recovery.
179 M.....	do.....	do.....	G. P. 650.....	+	G. P. 650 died July 10, spotted fever.
180 M.....	Near Darby.....	do.....	G. P. 651.....	+	G. P. 651 died July 9, spotted fever.
181 M.....	do.....	do.....	G. P. 652.....	+	G. P. 652 died July 17, spotted fever.
182 F.....	do.....	do.....	G. P. 653.....	+	G. P. 653 died July 9, spotted fever.
183 F.....	do.....	do.....	G. P. 654.....	+	G. P. 654 died July 7, spotted fever.
184 F.....	do.....	do.....	G. P. 655.....	+	G. P. 655 died July 17, spotted fever.
185 F.....	do.....	do.....	G. P. 656.....	+	G. P. 656 died July 8, spotted fever.
186 F.....	do.....	do.....	G. P. 657.....	+	G. P. 657, spotted fever, recovery.
187 F.....	do.....	do.....	G. P. 658.....	+	G. P. 658, spotted fever, recovery.
188 F.....	do.....	do.....	G. P. 659.....	+	G. P. 659, spotted fever, recovery.
			July 4.		
189 F.....	Anderson's Lo Lo.	June 29, 1912..	G. P. 673.....	-	
190 F.....	do.....	do.....	G. P. 674.....	-	G. P. 674, immunity test July 15; killed for virus.
191 F.....	do.....	do.....	G. P. 675.....	+	G. P. 675 died July 17, spotted fever.
			July 15.		
192 M.....	Anderson's Lo Lo.	July 10, 1912..	G. P. 680.....	-	
193 F.....	do.....	do.....	G. P. 681.....	-	
194 F.....	do.....	do.....	G. P. 682.....	-	
195 F.....	do.....	do.....	G. P. 683.....	+	G. P. 683 died July 27, spotted fever.
196 F.....	do.....	do.....	G. P. 684.....	+	G. P. 684 died July 23, spotted fever.
197 F.....	do.....	do.....	G. P. 685.....	+	
198 M.....	do.....	do.....	G. P. 686.....	+	
199 M.....	do.....	do.....	G. P. 687.....	+	
200 M.....	do.....	do.....	G. P. 688.....	+	
201 M.....	do.....	do.....	G. P. 689.....	+	
202 F.....	do.....	do.....	G. P. 690.....	+	
203 M.....	do.....	do.....	G. P. 691.....	+	
204 M.....	do.....	do.....	G. P. 692.....	+	G. P. 692 died Aug. 1, spotted fever.
205 F.....	do.....	do.....	G. P. 693.....	+	G. P. 693 died Aug. 1, spotted fever.
206 F.....	do.....	do.....	G. P. 694.....	+	
218 F.....	West of vat, Florence.	do.....	G. P. 706.....	+	
			July 20.		
219 F.....	West of vat, Florence.	July 15, 1912..	G. P. 728.....	-	
220 M.....	do.....	do.....	G. P. 729.....	+	
221 M.....	do.....	do.....	G. P. 730.....	+	
222 M.....	do.....	do.....	G. P. 731.....	+	
223 M.....	Lo Lo.....	do.....	G. P. 732.....	+	
224 M.....	do.....	do.....	G. P. 733.....	+	G. P. 733 died July 31, spotted fever.
225 M.....	do.....	do.....	G. P. 734.....	+	
226 F.....	do.....	do.....	G. P. 735.....	+	
227 M.....	do.....	do.....	G. P. 736.....	+	G. P. 736 died July 26, spotted fever.
228 F.....	do.....	do.....	G. P. 737.....	+	G. P. 737 died July 30, spotted fever.
			July 25.		
229 M.....	Lo Lo.....	July 20, 1912..	G. P. 747.....	+	
230 M.....	do.....	do.....	G. P. 748.....	+	
231 M.....	do.....	do.....	G. P. 749.....	-	
232 F.....	do.....	do.....	G. P. 750.....	+	
233 F.....	do.....	do.....	G. P. 751.....	+	
234 M.....	do.....	do.....	G. P. 752.....	+	
235 F.....	West of Florence vat.	do.....	G. P. 753.....	+	
236 M.....	do.....	do.....	G. P. 754.....	-	
237 M.....	do.....	do.....	G. P. 755.....	+	
238 M.....	do.....	do.....	G. P. 756.....	+	
239 M.....	do.....	do.....	G. P. 757.....	-	
240.....	do.....	do.....	G. P. 758.....	+	
241 M.....	do.....	do.....	G. P. 759.....	+	
242 F.....	do.....	do.....	G. P. 760.....	+	

REINOCULATIONS AND TRANSFERS.

Ground squirrel.	Previous transfer.	Reinoculation.	Transfer.	Result.	Remarks.
75 M.....	May 6 to G. P. 432 +	1912 May 30	June 4 to G. P. 564..	-	G. P. 564 immunity test June 22, followed by spotted fever, recovery.
81 F.....	May 6 to G. P. 438 +	...do....	June 4 to G. P. 565..	-	G. P. 565 immunity test July 10, killed for virus.
92 F.....	May 11 to G. P. 453 +	...do....	June 4 to G. P. 566..	-	G. P. 566 immunity test June 22, followed by spotted fever, recovery.
99 M.....	May 11 to G. P. 460 -	...do....	June 4 to G. P. 567..	+	G. P. 567, spotted fever, recovery.
120 F.....	May 20 to G. P. 492 -	...do....	June 4 to G. P. 568..	-	G. P. 568, immunity test June 22, followed by spotted fever, recovery.
139 M.....	May 20 to G. P. 511 -	...do....	June 4 to G. P. 569..	-	G. P. 569, immunity test June 22, followed by spotted fever, recovery.
146 M.....	May 25 to G. P. 535 -	June 17	June 22 to G. P. 631.	-	G. P. 632, immunity test July 15, killed for virus.
150 M.....	May 30 to G. P. 549 -	June 27	June 22 to G. P. 632.	-	

The experiment with ground squirrel 103 was noted as "void," guinea pig 470 which was inoculated from the squirrel having died on the third day. There remain, then, 160 ground squirrels, among which 40 were found incapable of transmitting spotted fever to guinea pigs by means of blood inoculations taken on the fifth day after injection of a known spotted-fever virus.

Grouping of the ground squirrels according to the localities from which they were collected is of interest in that it shows a higher percentage of immune squirrels from those localities believed to contain the greatest amount of spotted-fever infection.

Localities.	Positive susceptible.	Negative immune.	Total.
Victor:			
Payne and Bates ranch.....	9	6	15
Bear Creek.....	20	2	22
Williams ranch.....	5	3	8
Gash Creek and Hacketts.....	4	1	5
Bis Creek.....	6	0	6
Foothills:			
Hamilton and Grantsdale.....	25	3	28
Darby.....	17	1	18
Steve isville.....	3	2	5
West of vat:			
Florence.....	13	10	23
Lo Lo.....	18	12	30
Total.....	120	40	160

As noted above, 8 ground squirrels (3 formerly positive and 5 negative) were reinoculated and transfers again made in from three to six weeks following the first experiment.

The three squirrels which had previously given positive transfers, after the reinoculation, were negative, showing that they had acquired an immunity from the first inoculation. Of the five ground squirrels which failed to transfer the spotted-fever infection in the first instance,

four continued immune, while No. 99 did transmit the virus to guinea pig 567. We can only conclude either that there was some fault in the technique of the first experiment or that the ground squirrel lost its immunity sometime between May 11 and June 4.

In these experiments Dr. McClintic, for the first time, definitely established the existence of immune, and therefore presumably naturally infected, ground squirrels on the west side of the Bitter Root Valley. He also discovered a difference in the percentage of immune squirrels from different localities which appears to bear a close relation to the degree of Rocky Mountain spotted fever believed to exist in those localities.

It is unfortunate that the results obtained with his control experiments on ground squirrels collected from the river bottom east of Victor and from high up in the Bitter Root were not completed. This will be done during the ensuing season.

Susceptibility and Immunity Experiments with Woodchucks (*Marmota flaviventris*).

Ricketts found that woodchucks were susceptible to infection with Rocky Mountain spotted fever, both by inoculation and through the bites of infective ticks.¹

During 1912 McClintic conducted a series of experiments with 15 woodchucks similar to those performed with ground squirrels as reported above. The woodchucks were inoculated with a known spotted-fever virus and transfers of heart blood were made from them after definite intervals into susceptible guinea pigs. These experiments, and the results obtained, were noted as follows by Dr. McClintic:

Woodchuck No.	Transfers to—	Result.	Remarks.
1	G. P. 543, May 28, 2 c. c. blood.....	—	Immunity test June 7, followed by spotted fever.
1	G. P. 544, May 28, 0.5 c. c. blood.....	—	Do.
2	G. P. 553, May 30, 0.5 c. c. blood, fifth day...	—	Do.
2	G. P. 554, May 30, 0.5 c. c. blood, fifth day...	+	Immunity test June 23, negative.
2	G. P. 560, June 2, 0.5 c. c. blood, eighth day..	—	Immunity test June 22, followed by spotted fever.
2	G. P. 561, June 2, 0.5 c. c. blood, eighth day..	+	G. P. 561, spotted fever, died June 15.
3	G. P. 562, June 3, 0.75 c. c. blood, fourth day.	—	Immunity test June 22, followed by spotted fever.
3	G. P. 563, June 3, 2 c. c. blood, fourth day....	+	Spotted fever, recovery.
3	G. P. 589, June 7, 1 c. c. blood, eighth day...	—	G. P. 589 later had spotted fever.
4	G. P. 611, June 22, 0.75 c. c. blood, fifth day..	+	Spotted fever, recovery.
5	G. P. 614, June 22, 1.25 c. c. blood, fifth day..	+	Do.
5	G. P. 662, June 29, 1 c. c. blood, twelfth day.	—	Do.
6	G. P. 615, June 22, 1.25 c. c. blood, fifth day..	+	Do.
6	G. P. 616, June 22, 1.25 c. c. blood, fifth day..	+	Do.
6	G. P. 663, June 29, 1 c. c. blood, twelfth day.	—	Immunity test July 15, followed by spotted fever.
7	G. P. 617, June 22, 0.75 c. c. blood, fifth day..	+	G. P. 617 died of spotted fever June 24.
7	G. P. 618, June 22, 1.25 c. c. blood, fifth day..	+	Spotted fever, recovery.
7	G. P. 664, June 29, 1 c. c. blood, twelfth day.	+	G. P. 664 died of spotted fever July 12.
7	G. P. 669, July 4, 1 c. c. blood, seventeenth day.	—	Immunity test July 15, followed by spotted fever.

¹ Med. Record, 1909, vol. 76, p. 842.

Woodchuck No.	Transfers to—	Result.	Remarks.
8	G. P. 663, June 24, 1 c. c. blood, fifth day.....	+	G. P. 633 died of spotted fever July 1.
9	G. P. 634, June 24, 0.1 c. c. blood, fifth day...	+	Spotted fever, recovery.
9	G. P. 641, June 27, 1 c. c. blood, eighth day...	+	G. P. 641 died of spotted fever July 17.
10	G. P. 635, June 24, 0.75 c. c. blood, fifth day...	-	Later had spotted fever.
10	G. P. 636, June 24, 1.25 c. c. blood, fifth day..	-	Immunity test July 5, followed by spotted fever.
10	G. P. 642, June 27, 1 c. c. blood, eighth day..	-	
11	G. P. 637, June 24, 0.75 c. c. blood, fifth day..	-	
11	G. P. 638, June 24, 1.25 c. c. blood, fifth day..	-	Immunity test July 10, followed by spotted fever.
11	G. P. 643, June 27, 1 c. c. blood, eighth day..	-	Immunity test July 23, followed by typhus fever.
12	G. P. 639, June 24, 1 c. c. blood, fifth day...	+	Spotted fever, recovery.
12	G. P. 644, June 24, 1 c. c. blood, eighth day..	+	G. P. 644 died of spotted fever July 7.
12	G. P. 667, July 3, 1 c. c. blood, fourteenth day.	+	G. P. 667 died of spotted fever July 17.
13	G. P. 660, June 23, 0.75 c. c. blood, fifth day..	+	Spotted fever, recovery.
13	G. P. 661, June 23, 1.25 c. c. blood, fifth day..	+	Do.
13	G. P. 671, July 4, 1 c. c. blood, fifth day.....	+	Do.
14	G. P. 672, July 4, 1 c. c. blood, fifth day.....	+	Spotted fever; killed for virus.
15	G. P. 708, July 15, 1 c. c. blood, fifth day....	+	G. P. 708 died of spotted fever July 28.

Of the 15 woodchucks injected with spotted-fever virus in this series of experiments, 11 were shown to be susceptible to infection with the virus, while 3 animals—Nos. 1, 10, and 11—were not infected in this manner. These 3 animals may have derived their immunity from a previous infection acquired in nature through the bites of infective ticks.

It is noticeable that woodchucks Nos. 2 and 3 did not transmit the infection to all the guinea pigs injected from them.

Woodchucks Nos. 5, 6, and 7, while positive on the fifth day following inoculation, were negative on the twelfth day, while woodchuck No. 12 retained its infectivity up to the fourteenth day. This seems to indicate that a tick attaching itself to this woodchuck any time within a period of 11 days would have become infected.

In a series of experiments with rock squirrels (*Callospermophilus lateralis cinerascens*) Dr. McClintic injected 11 of these animals with Rocky Mountain spotted fever virus. Four were noted as having transmitted the infection to guinea pigs by the inoculation of 0.75 cubic centimeter of heart blood on the fifth day, and the remaining experiments were not completed.

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.

Indiana—Evansville.

Surg. Oakley, of the Public Health Service, reported by telegraph that during the week ended April 18, 1914, 13 cases of smallpox had been notified in Evansville, Ind.

Maryland—Arlington.

The State Board of Health of Maryland reported by telegraph April 21, 1914, that 1 case of smallpox had been notified at Arlington, Baltimore County, Md.

Maryland—Baltimore.

Senior Surg. Carter of the Public Health Service, reported by telegraph that during the period from April 11 to 18, 1914, 13 cases of smallpox had been notified in Baltimore, Md., making a total of 283 cases reported since January 11, 1914.

Texas—Galveston.

Surg. Bahrenburg, of the Public Health Service, reported by telegraph that during the week ended April 17, 1914, 3 cases of smallpox had been notified in Galveston, Tex.

State Reports for March, 1914.

Places.	Number of new cases reported during month.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
District of Columbia.....	27	.....	14	3	20	.....
Maryland, exclusive of Baltimore City:						
Allegany County—						
Cumberland.....	1	.....	.....	.....	1	.....
Cumberland R. F. D.....	2	.....	.....	.....	2	.....
Anne Arundel County—						
Curtis Bay.....	3	.....	.....	.....	3	.....
Linthicum Heights.....	1	.....	.....	.....	1	.....
Fairfield.....	1	.....	.....	.....	1	.....

¹ Successfully vaccinated after exposure to smallpox.

SMALLPOX—Continued.

State Reports for March, 1914—Continued.

Places.	Number of new cases reported during month.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Maryland, exclusive of Baltimore City—Continued.						
Baltimore County—						
Hillsdale.....	7				7	
Garrison.....	1				1	
Towson.....	1				1	
Warren.....	3				3	
Mount Winans.....	2				2	
Sparrows Point.....	1				1	
Carroll County—						
Taneytown R. F. D.....	1				1	
Harford County—						
Havre de Grace.....	1				1	
Howard County—						
Ilchester.....	16			1	15	
Ellicott City.....	1				1	
Kent County—						
Chestertown.....	1			1		
Montgomery County—						
Near Poolesville.....	2				2	
Near Sellman.....	4	1			4	
Colesville.....	7				7	
Prince Georges County—						
Berwyn.....	6				6	
Bladensburg.....	2				2	
Queen Annes County—						
Centerville R. F. D.....	6				6	
Talbot County—						
Bellview.....	1				1	
Wittman.....	5				5	
Total.....	76	1		2	74	
Massachusetts:						
Bristol County—						
Easton.....	3				3	
Plymouth County—						
Brockton.....	1			1		
Suffolk County—						
Boston.....	2				2	
Worcester County—						
Winchendon.....	1	1			1	
Total.....	7	1		1	6	
Michigan:						
Bay County—						
Portsmouth Township..	2					2
Berrien County—						
Benton Township.....	3				3	
Hagar Township.....	1					1
Benton Harbor.....	3				3	
Calhoun County—						
Marshall Township.....	1				1	
Battle Creek.....	8				8	
Marshall.....	1				1	
Chippewa County—						
Sault Ste. Marie.....	8			1	8	
Clinton County—						
St. Johns.....	5			1	4	
Delta County—						
Cornell Township.....	1					1
Dickinson County—						
Iron Mountain.....	2			1		1
Eaton County—						
Bellevue.....	3				3	
Gratiot County—						
Wheeler Township.....	12				12	
Ingham County—						
Lansing.....	7				7	

SMALLPOX—Continued.

State Reports for March, 1914—Continued.

Place.	Number of new cases reported during month.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Michigan—Continued.						
Ionian County—						
Orleans Township.....	1				1	
Jackson County—						
Concord Township.....	1					1
Kalamazoo County—						
Kalamazoo.....	2				2	
Kent County—						
Walker Township.....	1				1	
Mackinac County—						
Newton Township.....	4				4	
St. Ignace.....	4				4	
Macomb County—						
Harrison Township.....	9				9	
Lake Township.....	2				2	
Mount Clamens.....	8				8	
Marquette County—						
Marquette.....	1					1
Menominee County—						
Spalding Township.....	1					1
Menominee.....	2					2
Midland County—						
Greendale Township.....	4				2	2
Monroe County—						
London Township.....	1				1	
Muskegon County—						
Muskegon.....	1				1	
Oakland County—						
Royal Oak Township.....	1				1	
Ottawa County—						
Jamestown Township.....	1				1	
St. Clair County—						
Kenockee Township.....	7				7	
St. Joseph County—						
Leonidas Township.....	1					1
Washtenaw County—						
Ypsilanti.....	10				3	7
Wayne County—						
Hamtramck Township.....	1				1	
Highland Park.....	2			1		1
Northville.....	7			1	4	2
Detroit.....	44				32	12
Total.....	173			4	134	35
Wisconsin:						
Barron County.....	4				3	1
Bayfield County.....	12					12
Brown County.....	2				1	1
Buffalo County.....	2				2	
Calumet County.....	2					2
Clark County.....	8		1		3	4
Columbia County.....	5			1	3	1
Dane County.....	19			9		10
Dodge County.....	1					1
Door County.....	1					1
Douglas County.....	4					4
Forest County.....	1					1
Iron County.....	1					1
Jefferson County.....	27					27
Kenosha County.....	1			1		
Kewaunee County.....	1			1		
La Crosse County.....	9				2	7
Lafayette County.....	1		1			
Lincoln County.....	3			3		
Manitowoc County.....	4				3	1
Marathon County.....	1			1		
Marquette County.....	5					5
Milwaukee County.....	195					195
Oconto County.....	11		1	2	8	

SMALLPOX—Continued.

State Reports for March, 1914—Continued.

Places.	Number of new cases reported during month.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Wisconsin—Continued.						
Oneida County.....	1		1			
Outagamie County.....	50		1	1	10	38
Racine County.....	8				3	5
Rock County.....	18		1		17	
Sauk County.....	3					3
Sawyer County.....	1					1
Trempealeau County.....	20				20	
Washington County.....	8				7	1
Waukesha County.....	11				11	
Waupaca County.....	7		4		2	1
Total.....	447		10	19	95	323

Miscellaneous State Reports.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Indiana (Mar. 1-31):			New Jersey (Mar. 1-31):		
Counties—			Counties—		
Benton.....	5		Bergen.....	1	
Brown.....	10		Monmouth.....	1	
Cass.....	4		Passaic.....	1	
Clark.....	12		Salem.....	2	
Crawford.....	4		Total.....	5	
Decatur.....	1		Mississippi (Mar. 1-31):		
Delaware.....	12		Counties—		
Gibson.....	11		Alcorn.....	2	
Greene.....	25		Bolivar.....	2	
Hancock.....	83		Clay.....	2	
Harrison.....	4		Coahoma.....	5	
Hendricks.....	1		Copiah.....	2	
Henry.....	5		Holmes.....	1	
Howard.....	1		Jasper.....	3	
Huntington.....	11		Jones.....	3	
Jay.....	3		Lauderdale.....	24	
Jefferson.....	3		Leflore.....	12	
Johnson.....	3		Lincoln.....	20	
Knox.....	1		Lowndes.....	12	
Kosciusko.....	1		Madison.....	3	
Lake.....	1		Marshall.....	1	
Lawrence.....	53		Neshoba.....	14	
Madison.....	1		Newton.....	4	
Marion.....	216		Noxubee.....	6	
Montgomery.....	1		Panola.....	1	
Morgan.....	1		Pike.....	1	
Orange.....	2		Simpson.....	1	
Parke.....	6		Smith.....	2	
Posey.....	17		Tate.....	11	
Rush.....	7		Total.....	132	
Shelby.....	54		South Carolina (Mar. 1-31):		
Spencer.....	41		Counties—		
Sullivan.....	8		Beaufort.....	1	
Tippacanoe.....	2		Berkeley.....	4	
Vanderburg.....	60		Charleston.....	2	
Vigo.....	5		Chester.....	4	
Wabash.....	1		Chesterfield.....	1	
Washington.....	2		Claarendon.....	10	
Wayne.....	1		Florence.....	8	
Wells.....	1				
Total.....	680				

SMALLPOX—Continued.

Miscellaneous State Reports—Continued.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
South Carolina (Mar. 1-31)—Continued.			Washington (Mar. 1-31):		
Counties—Continued.			Counties—		
Greenville.....	29	.....	Clallam.....	3	.....
Greenwood.....	3	.....	Ferry.....	1	.....
Kershaw.....	3	.....	King.....	20	.....
Laurens.....	1	.....	Klickitat.....	4	.....
Lee.....	2	.....	Pierce.....	2	.....
Lexington.....	8	.....	Spokane.....	26	.....
Marion.....	3	.....	Thurston.....	5	.....
Orangeburg.....	13	.....	Walla Walla.....	13	.....
Richland.....	4	.....	Whatcom.....	6	.....
Spartanburg.....	8	.....	Whitman.....	3	.....
Sumter.....	2	.....	Yakima.....	7	.....
Union.....	13	.....	Total.....	90	.....
York.....	4	.....		
Total.....	123	.....		

City Reports for Week Ended Apr. 4, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Altoona, Pa.....	1	.....	Nashville, Tenn.....	15	.....
Austin, Tex.....	2	.....	New Orleans, La.....	3	.....
Baltimore, Md.....	16	.....	Newport, Ky.....	1	.....
Brockton, Mass.....	3	.....	Portland, Oreg.....	2	.....
Butte, Mont.....	10	.....	Portsmouth, Va.....	2	.....
Chicago, Ill.....	2	.....	Racine, Wis.....	1	.....
Cincinnati, Ohio.....	3	.....	Richmond, Va.....	1	.....
Columbus, Ohio.....	7	.....	Roanoke, Va.....	1	.....
Detroit, Mich.....	3	.....	Rutland, Vt.....	1	.....
Evansville, Ind.....	14	.....	Saginaw, Mich.....	1	.....
Kansas City, Kans.....	13	.....	St. Louis, Mo.....	2	.....
Kansas City, Mo.....	42	.....	San Diego, Cal.....	1	.....
Lexington, Ky.....	1	.....	San Francisco, Cal.....	4	.....
Little Rock, Ark.....	2	.....	Spokane, Wash.....	2	.....
Lynchburg, Va.....	1	.....	Superior, Wis.....	1	.....
Milwaukee, Wis.....	29	.....	Toledo, Ohio.....	15	.....
Moline, Ill.....	1	.....	Washington, D. C.....	3	.....
Muncie, Ind.....	2	.....		

TYPHOID FEVER.

State Reports for March, 1914.

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
District of Columbia.....	13	Indiana—Continued.	
Indiana:		Fulton County.....	1
Adams County.....	19	Hancock County.....	2
Bartholomew County.....	1	Harrison County.....	2
Cass County.....	33	Huntington County.....	1
Clark County.....	4	Jackson County.....	1
Clinton County.....	1	Jefferson County.....	1
Decatur County.....	2	Johnson County.....	3
Dekalb County.....	1	Knox County.....	1
Delaware County.....	1	Kosciusko County.....	4
Elkhart County.....	2	Lagrange County.....	1
Fayette County.....	1	Lake County.....	10
Floyd County.....	5	Marion County.....	11
		Martin County.....	1

TYPHOID FEVER—Continued.

State Reports for March, 1914—Continued.

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
Indiana—Continued.		Massachusetts—Continued.	
Miami County.....	1	Essex County—	
Pike County.....	1	Amesbury.....	1
Posey County.....	1	Beverly.....	10
Pulaski County.....	1	Gloucester.....	4
Putnam County.....	1	Haverhill.....	1
Randolph County.....	2	Lawrence.....	2
Ripley County.....	3	Lynn.....	12
St. Joseph County.....	4	Newburyport.....	1
Switzerland County.....	1	Peabody.....	1
Tippecanoe County.....	2	Salem.....	1
Vanderburg County.....	3	Swampscott.....	1
Vermillion County.....	2	Hampden County—	
Vigo County.....	1	Chicopee.....	4
Wabash County.....	1	Holyoke.....	1
		Springfield.....	1
Total.....	133	Middlesex County—	
Maryland, exclusive of Baltimore City:		Arlington.....	1
Alegany County—		Cambridge.....	3
Alegany Hospital.....	1	Lowell.....	7
Westernport.....	12	Medford.....	1
Mount Savage.....	1	Melrose.....	1
Luke.....	2	Newton.....	1
Moscow Mills.....	1	Somerville.....	2
Eckhart Mines.....	1	Waltham.....	2
Lonaconing.....	1	Watertown.....	4
Midland.....	1	Winchester.....	1
Anne Arundel County—		Woburn.....	11
Annapolis.....	2	Norfolk County—	
Gwyn Oak Uplands.....	1	Quincy.....	1
Roland Park.....	1	Weymouth.....	2
Mount Washington.....	1	Plymouth County—	
Pikesville.....	1	Brockton.....	1
Dorchester County—		Suffolk County—	
Hoopersville.....	2	Boston.....	22
Hudson.....	1	Worcester County—	
Lloyds.....	1	Fitchburg.....	2
Cambridge.....	2	Worcester.....	1
Frederick County—		Total.....	117
Frederick.....	1	Michigan:	
Garrett County—		Alegan County—	
Oakland.....	1	Otsego.....	1
Bloomington.....	6	Alpena County—	
Harford County—		Alpena.....	18
Ferryman.....	1	Bay County—	
Bel Air R. F. D.....	1	Bay City.....	10
Aberdeen.....	1	Cass County—	
Montgomery County—		Edwardsburg.....	1
Rockville.....	2	Charlevoix County—	
Queen Annes County—		Melrose Township.....	1
Millington R. F. D.....	1	Boyne Valley Township.....	3
Somerset County—		Chippewa County—	
Crisfield.....	2	Bruce Township.....	2
Princess Anne R. F. D.....	1	Sault Ste. Marie.....	1
Princess Anne.....	1	Crawford County—	
Upper Fairmount.....	1	Beaver Creek Township.....	1
Washington County—		Genesee County—	
Bakersville.....	3	Flint.....	11
Keedysville.....	1	Gladwin County—	
Hagerstown.....	1	Beaverton Township.....	1
Fair Play.....	1	Beaverton.....	1
Smithburg.....	1	Hillsdale County—	
Total.....	58	Hillsdale.....	1
Massachusetts:		Ingham County—	
Berkshire County—		Leslie.....	2
North Adams.....	1	Kalamazoo County—	
Pittsfield.....	3	Kalamazoo.....	1
Bristol County—		Kent County—	
Fall River.....	10	Walker Township.....	2
		Grand Rapids.....	17

TYPHOID FEVER—Continued.

State Reports for March, 1914—Continued.

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
Michigan—Continued.		Mississippi—Continued.	
Leelanau County—		Winston County.....	1
Solon Township.....	1	Yalobusha County.....	2
Livingston County—		Yazoo County.....	2
Conway Township.....	2	Total.....	123
Manistee County—		New Jersey:	
Copemish.....	1	Atlantic County.....	1
Marquette County—		Bergen County.....	3
Marquette.....	1	Burlington County.....	3
Negaunee.....	1	Camden County.....	5
Monroe County—		Cumberland County.....	2
Monroe.....	1	Essex County.....	6
Montcalm County—		Hudson County.....	5
Douglass Township.....	1	Hunterdon County.....	2
Oakland County—		Mercer County.....	10
Pontiac.....	1	Middlesex County.....	5
Saginaw County—		Morris County.....	4
Buena Vista Township.....	2	Ocean County.....	1
Saginaw.....	8	Passaic County.....	2
St. Clair County—		Salem County.....	1
Marine City.....	3	Sussex County.....	1
Port Huron.....	15	Union County.....	3
Van Buren County—		Total.....	54
South Haven.....	2	South Carolina:	
Wayne County—		Aiken County.....	2
Trenton.....	4	Beaufort County.....	1
Detroit.....	39	Charleston County.....	7
Wyandotte.....	2	Clarendon County.....	2
Total.....	158	Dorchester County.....	2
Mississippi:		Greenwood County.....	1
Amite County.....	6	Kershaw County.....	1
Attala County.....	8	Lee County.....	2
Benton County.....	2	Lexington County.....	2
Bolivar County.....	3	Marion County.....	3
Chickasaw County.....	21	Orangeburg County.....	1
Clarke County.....	2	Spartanburg County.....	1
Clay County.....	1	Sumter County.....	1
Coahoma County.....	1	Williamsburg County.....	13
Copiah County.....	3	Total.....	39
Covington County.....	2	Washington:	
De Soto County.....	1	Chelan County.....	2
Forrest County.....	3	King County—	
Greene County.....	3	Seattle.....	4
Holmes County.....	1	Lewis County.....	2
Jackson County.....	1	Spokane County.....	1
Jasper County.....	1	Spokane.....	3
Jones County.....	5	Walla Walla County.....	2
Kemper County.....	2	Yakima County.....	1
Lafayette County.....	2	Total.....	15
Lamar County.....	1	Wisconsin:	
Lauderdale County.....	5	Dodge County.....	1
Lawrence County.....	1	Dunn County.....	1
Lee County.....	3	Fond du Lac County.....	4
Leflore County.....	1	La Crosse County.....	1
Lincoln County.....	2	Manitowoc County.....	2
Lowndes County.....	2	Milwaukee County.....	8
Marion County.....	5	Oneida County.....	6
Marshall County.....	1	Outagamie County.....	1
Montgomery County.....	1	Pierce County.....	1
Panola County.....	3	Sheboygan County.....	1
Pearl River County.....	5	Washburn County.....	1
Perry County.....	2	Washington County.....	2
Pontotoc County.....	3	Winnebago County.....	2
Quitman County.....	2	Wood County.....	1
Scott County.....	1	Total.....	32
Simpson County.....	2		
Tallahatchie County.....	4		
Tate County.....	2		
Tunica County.....	2		
Union County.....	1		
Wayne County.....	1		

TYPHOID FEVER—Continued.

City Reports for Week Ended Apr. 4, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Ann Arbor, Mich.	1		Moline, Ill.	1	
Baltimore, Md.	2	1	Montclair, N. J.	1	
Binghamton, N. Y.	1		Morristown, N. J.	1	
Boston, Mass.	4	2	Nashville, Tenn.	1	
Bradock, Pa.	1		Newark, N. J.	3	
Brockton, Mass.	1		Newburyport, Mass.	1	
Buffalo, N. Y.	6		New Castle, Pa.	1	
Cambridge, Mass.	1		New Orleans, La.	1	
Camden, N. J.	1		Norristown, Pa.	1	
Chicago, Ill.	21	4	Oakland, Cal.	2	
Cincinnati, Ohio.		1	Philadelphia, Pa.	10	5
Cleveland, Ohio	1	4	Pittsburgh, Pa.	7	1
Coffeyville, Kans.	1		Pottstown, Pa.	1	4
Columbus, Ind.	1	1	Providence, R. I.	4	2
Columbus, Ohio	1		Reading, Pa.	2	
Dunkirk, N. J.	3		Richmond, Va.	1	
Evansville, Ind.	1		Saginaw, Mich.	5	
Fall River, Mass.	4	1	St. Louis, Mo.	3	1
Grand Rapids, Mich.	2	1	San Francisco, Cal.	3	1
Hoboken, N. J.	1		Spokane, Wash.	1	1
Jersey City, N. J.	1		Washington, D. C.	4	1
Kansas City, Mo.	3	2	Wheeling, W. Va.		2
Los Angeles, Cal.	4		Wilkes-Barre, Pa.	1	
Lowell, Mass.	2		Worcester, Mass.		1
Lynn, Mass.	1		York, Pa.	2	
Milwaukee, Wis.	6	3			

CEREBROSPINAL MENINGITIS.

State Reports for March, 1914.

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
District of Columbia	1	Mississippi:	
Indiana:		Bolivar County	1
Benton County	2	Kemper County	2
Fulton County	1	Warren County	3
Hendricks County	2	Total	6
Marion County	4	South Carolina:	
Orange County	1	Charleston County	1
Porter County	1	Cherokee County	4
Pulaski County	1	Richland County	1
Switzerland County	1	Spartanburg County	1
Vigo County	1	Total	7
Total	14	Washington:	
Maryland, exclusive of Baltimore city:		King County—	
Kent County		Seattle	1
Chestertown, R. F. D.	1	Wisconsin:	
Massachusetts:		Buffalo County	1
Bristol County—		Dane County	2
New Bedford	1	Dunn County	1
Essex County—		Marinette County	1
Lawrence	2	Milwaukee County	1
Methuen	1	Sheboygan County	1
Salem	1	Trempealeau County	1
Middlesex County—		Winnebago County	2
Lowell	1	Total	10
Westford	1		
Suffolk County—			
Boston	5		
Worcester County—			
Worcester	1		
Total	13		

CEREBROSPINAL MENINGITIS—Continued.**City Reports for Week Ended Apr. 4, 1914.**

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Auburn, N. Y.....	1	1	Kansas City, Mo.....	3	3
Boston, Mass.....		1	Los Angeles, Cal.....	2	
Bridgeport, Conn.....		2	Lowell, Mass.....	1	
Butte, Mont.....		3	Malden, Mass.....	1	1
Chicago, Ill.....	2		Nashville, Tenn.....	1	
Cincinnati, Ohio.....	3	1	New Orleans, La.....	2	2
Cleveland, Ohio.....	4	2	Philadelphia, Pa.....		1
Danville, Ill.....		1	Pittsfield, Mass.....		1
Dayton, Ohio.....		1	Rochester, N. Y.....		1
Fall River, Mass.....	1		West Hoboken, N. J.....	1	1
Jersey City, N. J.....	1		Wheeling, W. Va.....		1
Kansas City, Kans.....	1		Worcester, Mass.....	1	1

POLIOMYELITIS (INFANTILE PARALYSIS).**State Reports for March, 1914.**

Places.	Number of new cases reported during month.	Places.	Number of new cases reported during month.
Indiana:		Massachusetts—Continued.	
Fulton County.....	1	Worcester County—	
Hamilton County.....	1	Worcester.....	1
Jennings County.....	1	Total.....	8
Marion County.....	1	Michigan:	
St. Joseph County.....	1	Gratiot County—	
Vigo County.....	1	Arcada Township.....	1
Total.....	6	Mississippi:	
Maryland, exclusive of Baltimore city:		Atala County.....	1
Calvert County—		Lafayette County.....	1
Bowens.....	1	Marion County.....	1
Massachusetts:		Total.....	3
Bristol County—		South Carolina:	
Fall River.....		Charleston County.....	1
Essex County—	1	Lexington County.....	1
Beverly.....		Richland County.....	1
Middlesex County—	1	York County.....	2
Cambridge.....		Total.....	5
Malden.....	1	New Jersey:	
Somerville.....	1	Essex County.....	1
Norfolk County—	1	Mercer County.....	1
Quincy.....		Total.....	2
Suffolk County—	1		
Boston.....	1		

City Reports for Week Ended Apr. 4, 1914.

During the week ended April 4, 1914, 1 case of poliomyelitis was notified at Chicago, Ill., and 1 at Morristown, N. J.

ERYSIPELAS.

City Reports for Week Ended Apr. 4, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Binghamton, N. Y.....	1		Los Angeles, Cal.....	4	
Boston, Mass.....		1	Milwaukee, Wis.....	3	
Bridgeport, Conn.....	1		Newark, N. J.....		1
Brockton, Mass.....	3		Niagara Falls, N. Y.....	1	
Buffalo, N. Y.....	5		Passaic, N. J.....	1	1
Chicago, Ill.....	25	5	Philadelphia, Pa.....	19	4
Cincinnati, Ohio.....	7	2	Pittsburgh, Pa.....	7	1
Cleveland, Ohio.....	5	2	Portland, Oreg.....	1	
Dayton, Ohio.....	1	1	Providence, R. I.....		1
Detroit, Mich.....		2	Reading, Pa.....	1	
Erie, Pa.....	2		Rochester, N. Y.....	9	2
Harrisburg, Pa.....	2		South Bethlehem, Pa.....	2	
Jersey City, N. J.....	1		St. Joseph, Mo.....	2	
Lancaster, Pa.....	1		St. Louis, Mo.....	7	2
Lexington, Ky.....		1			

PELLAGRA.

Maine—Norway and Vicinity.

Dr. H. L. Bartlett, of Norway, Me., reports that he has seen four cases of pellagra in the vicinity of Norway in the past three years. Two of the cases recovered, one terminated fatally, and one is still under treatment. Three of the cases occurred in town and one in the country. Of the town cases the first was seen in August, 1911, the second in June, 1913, and the third has recently come to notice.

PLAGUE.

Washington—Seattle—Plague-Infected Rat Found.

Surg. Lloyd, of the Public Health Service, reported by telegraph, April 20, 1914, the finding of a plague-infected rat at Seattle, Wash.

PNEUMONIA.

City Reports for Week Ended Apr. 4, 1914.

Places.	Cases.	Deaths.	Places.	Cases.	Deaths.
Auburn, N. Y.....	4	2	Newport, Ky.....	2	2
Beaver Falls, Pa.....	1		Norristown, Pa.....	1	1
Binghamton, N. Y.....	7	2	Philadelphia, Pa.....	69	103
Braddock, Pa.....	1		Pittsburgh, Pa.....	32	31
Chicago, Ill.....	227	156	Reading, Pa.....	1	3
Cleveland, Ohio.....	43	25	Rochester, N. Y.....	6	5
Coffeyville, Kans.....	1	1	Sacramento, Cal.....	1	
Dunkirk, N. Y.....	4	3	San Diego, Cal.....	1	1
Elmira, N. Y.....	1	2	San Francisco, Cal.....	12	10
Erie, Pa.....	1		Saratoga Springs, N. Y.....	1	2
Galesburg, Ill.....	4	4	Schenectady, N. Y.....	5	3
Kansas City, Kans.....	3	7	South Bethlehem, Pa.....	2	2
Lancaster, Pa.....	2		South Omaha, Nebr.....	4	
Los Angeles, Cal.....	12	5	Wilkes-Barre, Pa.....	1	3
Manchester, N. H.....	2	2	Wilkesburg, Pa.....	2	2
New Castle, Pa.....	1		Wilmington, N. C.....	5	2

RABIES.**California—Alameda, Oakland, and San Francisco—Rabies in Animals.**

Surg. Long, of the Public Health Service, reported by telegraph that during the week ended April 18, 1914, rabies in dogs had been reported as follows: One case each in Alameda, Oakland, and San Francisco, Cal.

New Jersey—East Orange—Rabies in Animals.

A fatal case of rabies in a dog was notified at East Orange, N. J., during the week ended April 4, 1914.

Washington—Seattle—Rabies in Animals.

Surg. Lloyd, of the Public Health Service, reported by telegraph that during the week ended April 18, 1914, two cases of rabies in dogs had been reported in Seattle, Wash.

ROCKY MOUNTAIN SPOTTED (OR TICK) FEVER.**Montana—Bitter Root Valley.**

Surg. Fricks, of the Public Health Service, reported the occurrence of a case of Rocky Mountain spotted fever near Hamilton, Mont., on April 7, 1914, and during the last week in March 3 fatal cases in the Bitter Root Valley.

TETANUS.

During the week ended April 4, 1914, tetanus was notified by cities as follows: Harrisburg, Pa., 1 case with 1 death; New Orleans, La., 1 death.

SCARLET FEVER, MEASLES, DIPHTHERIA, AND TUBERCULOSIS.**Memphis, Tenn.—Measles.**

Surg. Kalloch, of the Public Health Service, reported by telegraph that during the period from April 13 to 20, 1914, 84 cases of measles had been notified in Memphis, Tenn., making a total of 424 cases reported since April 1, 1914.

State Reports for March, 1914.

States.	Cases reported.		
	Scarlet fever.	Measles.	Diphtheria.
District of Columbia.....	60	247	44
Maryland, exclusive of Baltimore city.....	171	461	51
Massachusetts.....	1,711	1,509	594
New Jersey.....	1,016	.....	481
Washington.....	59	659	37
Wisconsin.....	513	1,496	315

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

City Reports for Week Ended Apr. 4, 1914.

Cities.	Population, United States census 1910.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.	558,485	204	7	2	37		25	2	20	2
Boston, Mass.	670,585	286	48	5	84	2	138	2	39	2
Chicago, Ill.	2,185,283	785	107	10	135	2	80	6	269	9
Cleveland, Ohio.	560,663	179	18	2	36	1	14		32	1
Philadelphia, Pa.	1,549,006	650	54	4	448	1	67	1	116	5
Pittsburgh, Pa.	533,905	170	22	5	20		85	2	39	1
St. Louis, Mo.	687,029	268	39	2	125	4	30	2	44	2
From 300,000 to 500,000 inhabitants:										
Buffalo, N. Y.	423,715	117	11	1	23		21	1	27	1
Cincinnati, Ohio.	364,463	139	19	2	4		14	1	19	1
Detroit, Mich.	465,766	195	38	3			19		15	1
Los Angeles, Cal.	319,198	102	5		11		20		41	2
Milwaukee, Wis.	373,857	124	17	3	82	2	33	5	34	1
Newark, N. J.	347,469	114	17	1	211		69		52	1
New Orleans, La.	339,075	158	17	2	53	4	4		35	2
San Francisco, Cal.	416,912	144	8		63		5		31	2
Washington, D. C.	331,069	134	19		22		4		27	1
From 200,000 to 300,000 inhabitants:										
Jersey City, N. J.	267,779	75	23		30		21		24	1
Kansas City, Mo.	248,381	66	5	1	12		4		3	5
Portland, Oreg.	207,214		1		71		5		8	
Providence, R. I.	224,326	78	16	1	12		5			7
Rochester, N. Y.	218,149	74	3	2	108		18	1	7	3
From 100,000 to 200,000 inhabitants:										
Bridgeport, Conn.	102,054	35	7		9	3	3	1	6	4
Cambridge, Mass.	104,839	38	4		32		15		8	6
Columbus, Ohio.	181,548	58	3		95				16	1
Dayton, Ohio.	116,577	47	10	2	32		11		2	4
Fall River, Mass.	119,295	53	3	1	1		3	1	5	6
Grand Rapids, Mich.	112,571	27	3	1	34		8	1	1	
Lowell, Mass.	106,294	48	4	1	25	1			1	3
Nashville, Tenn.	110,364	40	1		10		4		4	3
Oakland, Cal.	150,174	50	2		17		7		2	1
Richmond, Va.	127,628	55			29		9		3	3
Spokane, Wash.	104,402				48		5		2	2
Toledo, Ohio.	168,497	75	1		6		10			14
Worcester, Mass.	145,986	63	4		17		5		1	2
From 50,000 to 100,000 inhabitants:										
Altoona, Pa.	52,127	13	2		4		4			3
Bayonne, N. J.	55,545				5		2		14	
Brockton, Mass.	56,878	20			11		8			1
Camden, N. J.	94,538		2		6		2		5	
Erie, Pa.	66,525	29	4		11		3		3	
Evansville, Ind.	69,647	20	1		5		2			
Harrisburg, Pa.	64,186	18	4		49		6		5	2
Hoboken, N. J.	70,324	7	5	1	23		4		25	6
Johnstown, Pa.	55,482	19	10		7		3			2
Kansas City, Kans.	82,331		2		1		4		2	
Lawrence, Mass.	85,892		2				4		1	
Lynn, Mass.	89,336	30	7	2			9		4	1
Manchester, N. H.	70,063	23	4		5		10		4	4
New Bedford, Mass.	96,652	51	2				17		10	4
Passaic, N. J.	54,773	13			3		1		1	
Pawtucket, R. I.	51,622		1				1		1	
Reading, Pa.	96,071	35	4		2		14			3
Saginaw, Mich.	50,510	16					1			
St. Joseph, Mo.	77,403	23			1				5	4
Schenectady, N. Y.	72,826	22	2		6		8			1
South Bend, Ind.	53,684	15			6					1
Springfield, Mass.	88,926	23			1		4		5	2
Trenton, N. J.	96,815	45			4		27		11	3
Wilkes-Barre, Pa.	67,105	21	4	1	92		14		7	1
From 25,000 to 50,000 inhabitants:										
Atlantic City, N. J.	46,150	10	2		2		14			2
Auburn, N. Y.	34,668	14	1		13				2	
Aurora, Ill.	29,807	12					2			2
Austin, Tex.	29,860	29	1				1			2
Binghamton, N. Y.	48,443	20			55		4		5	3
Brookline, Mass.	27,792	6	5		12		2			
Butte, Mont.	39,165	31	2		4		5		2	8
Chelsea, Mass.	32,452	20	3	2	18		7		2	2

IN INSULAR POSSESSIONS.

HAWAII

Examination of Rats and Mongoose.

Rats and mongoose have been examined in Hawaii for plague infection as follows: Honolulu, week ended March 28, 1914, 366; Hilo, week ended March 21, 1914, 2,281; week ended March 28, 1914, 2,275. No plague-infected animal was found.

Diphtheria—Honolulu.

Diphtheria has been present in the district of Honolulu for several weeks. To March 28, 1914, there were notified 219 cases with 2 deaths. The infecting organism has been determined to be morphologically and culturally identical with the Klebs-Loeffler bacillus. It seems to be of very low virulence. Many of the notified cases have been in bacillus carriers who showed no clinical symptoms.

Plague at Kukuihaele.

A fatal case of plague was notified April 18, 1914, at Kukuihaele, Hawaii.

PORTO RICO.

Examination of Rats and Mongoose.

During the week ended April 3, 1914, 670 rats, 284 mice, and 1 mongoose were examined in Porto Rico for plague infection. No plague-infected animal was found.

FOREIGN REPORTS.

CHILE.

Plague—Santiago.

A death from plague was notified at Santiago, Chile, April 14, 1914, and 1 on April 15, 1914.

CHINA.

Plague—Amoy.

Plague was reported present at Amoy March 9, 1914.

Plague—Plague-Infected Rats—Hongkong.

During the week ended March 7, 1914, 29 cases of plague with 24 deaths were notified in Hongkong. During the same period 2,298 rats were examined for plague infection. Eight plague-infected rats were found.

During the week ended April 16, 1914, 139 cases of plague were notified at Hongkong, and during the week ended April 21, 1914, 116 cases.

Plague—Shanghai.

A case of plague was notified at Shanghai April 22, 1914.

Plague—Swatow—Tah-tau-po.

Plague was reported present March 14, 1914, at Swatow and Tah-tau-po, China.

Typhus Fever—Mukden.

Typhus fever was reported present at Mukden, Manchuria, March 15, 1914.

CUBA.

Plague—Habana.

Plague has been notified in Cuba as follows: In Habana to April 17, 9 cases. At Habana, April 18, 1914, 1 case in the outer part of the city; April 22, 1 case in a new focus; and April 23, 1 case in the same focus. At Artemisa, a town situated 35 miles from Habana, April 22, 1 case. The total number of cases notified in Cuba to April 23, 1914, was 13, of which 12 were in Habana.

JAPAN.

Plague—Typhus Fever—Tokyo.

Five cases of plague were notified in the vicinity of Tokyo April 18, 1914. From March 20 to April 17, 1914, 2,384 cases of typhus fever were notified in Tokyo.

ROUMANIA.

Measures Against Importation of Cholera.

On March 24, 1914, the ministry of the interior of Roumania declared Constantinople to be infected with cholera, and ordered sanitary measures to be taken with regard to travelers and merchandise coming from that city.

VENEZUELA.

Plague—Caracas.

A case of plague was notified at Caracas, Venezuela, April 12, 1914.

ZANZIBAR.

Plague-Infected Rats—Zanzibar.

During the three weeks ended March 7, 1914, 2,770 rats were examined at Zanzibar for plague infection. Fifteen plague-infected rats were found.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX.

Reports Received During Week Ended Apr. 24, 1914.

CHOLERA.

Places.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein.....	Feb. 8-28.....	13	11	
Calcutta.....	Mar. 1-7.....		106	
Negapatam.....	Feb. 8-28.....	59	59	
Straits Settlements:				
Singapore.....	Mar. 1-7.....	1	1	

YELLOW FEVER.

Brazil:				
Bahia.....	Mar. 8-21.....	5	6	
Trinidad:				
Brighton.....	.....			Mar. 26, 1 case, 3½ miles distant.

PLAGUE.

Brazil:				
Bahia.....	Mar. 8-21.....	1	6	
Ceylon:				
Colombo.....	Mar. 1-14.....	35	24	
Chile:				
Santiago.....	Mar. 11-15.....		2	

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

Reports Received During Week Ended Apr. 24, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China.....				Mar. 14, present in Ampo and Tab-tau-po.
Hongkong.....	Mar. 1-7.....	29	24	
Shanghai.....	Apr. 22.....	1		
Cuba:				Total Mar. 5-Apr. 23: Cases, 12; deaths, 2.
Artemisa.....	Apr. 22.....	1		
Habana.....	Apr. 18-23.....	3		
Hawaii:				
Kukuihaele.....	Apr. 18.....		1	
India:				
Bassein.....	Feb. 1-28.....	78	72	
Calcutta.....	Mar. 1-7.....		9	
Nagapatam.....	Feb. 1-28.....	32	32	
Indo-China:				
Saigon.....	Mar. 3-9.....	5		
Japan:				
Taiwan—				
Kagi.....	Mar. 1-14.....	21	16	Apr. 18, 5 cases in the vicinity.
Tokyo.....				
Venezuela:				
Caracas.....	Apr. 12.....	1		

SMALLPOX.

Austria-Hungary:				
Krain.....	Mar. 8-14.....	2		
Brazil:				
Bahia.....	Mar. 8-21.....	3		
Para.....	Mar. 22-28.....		7	
Rio de Janeiro.....	Mar. 1-14.....	50	12	
Canada:				
Cornwall.....	Feb. 26-Apr. 4.....	1		
Montreal.....	Mar. 29-Apr. 11.....	8		
Ottawa.....	Mar. 29-Apr. 4.....	1		
Winnipeg.....	do.....	6		
China:				
Dairen.....	Feb. 22-Mar. 14.....	9	1	
Hongkong.....	Mar. 1-7.....	3	1	
Mukden.....	Mar. 9-15.....	3	1	
France:				
Marseille.....	Jan. 1-31.....		1	
Paris.....	Mar. 15-21.....	1		
Greece:				
Achaia and Elis, district.....	Mar. 8-14.....	7	5	
Grenada:				
St. Georges.....	Mar. 22-28.....	4		
India:				
Calcutta.....	Feb. 15-Mar. 7.....		65	
Karachi.....	Mar. 1-14.....	16	4	
Madras.....	Mar. 1-21.....	21	5	
Japan:				
Nagasaki.....	Mar. 16-22.....	2	1	
Mexico:				
Acapulco.....	Mar. 8-14.....		1	
Chihuahua.....	Mar. 31-Apr. 6.....		1	
Manzanillo.....	Mar. 21-27.....	2		
Mexico.....	Dec. 28-Jan. 17.....	35	13	
Russia:				
Moscow.....	Mar. 8-21.....	21	9	
Riga.....	Jan. 1-31.....	30	4	
Do.....	Mar. 22-28.....	11		
St. Petersburg.....	Mar. 15-21.....	8	4	
Warsaw.....	do.....	5	3	
Servia:				
Belgrade.....	Mar. 8-28.....	6	1	

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

Reports Received from Dec. 27, 1913, to Apr. 17, 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. 20-Nov. 19.....	9	2	
Croatia-Slavonia—				
Pozenga.....	Nov. 18-Dec. 1.....	2		
Syrmien—				
Adasevci.....	do.....	6	2	
Semlin.....	do.....	1	1	
Vitrovia—				
Dobrovic.....	do.....	2	2	
Hungary.....				
Total, Sept. 1-Dec. 29: Cases, 729; deaths, 372; Dec. 29, free.				
Bacs-Bodrog, district.....	Nov. 9-Dec. 29.....	52	31	
Jasz-Nagy - Kun - Szolnok—				
Szolnok.....	Nov. 9-15.....	2	2	
Maramaros.....	Nov. 30-Dec. 6.....	1	1	
Pest Pilis—				
Soroksar.....	Nov. 9-22.....	2	1	
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-Jan. 17.....	33	19	
China:				
Hongkong.....	Nov. 9-Feb. 14.....	5	1	
Dutch East Indies:				
Java—				
Batavia and Tanjong.....	do.....	47	35	
Priok.....				
Do.....	Jan. 18-24.....	1	1	
Samarang.....	Nov. 30-Dec. 27.....	47	25	
Sumatra—				
Padang.....	Dec. 1-Jan. 24.....	136	101	
India:				
Bassein.....	Feb. 1-7.....	1	1	
Bombay.....	Nov. 10-Feb. 21.....	20	9	
Calcutta.....	Nov. 9-Feb. 28.....		783	
Madras.....	Nov. 16-Mar. 7.....	14	5	
Negapatam.....	Jan. 4-Feb. 7.....	47	28	
Rangoon.....	Nov. 1-Dec. 31.....	5	1	
Do.....	Jan. 1-31.....	2	1	Feb. 1-4: 11 cases with 8 deaths.
Indo-China:				
Laos (Shan States).....	Jan. 1-10.....	10		Along the upper Mekong River.
Saigon.....	Jan. 13-Feb. 23.....	3		
Philippine Islands:				
Manila.....	Nov. 9-Mar. 14.....	86	56	Total, Aug. 23-Jan. 24: Cases, 186; deaths, 124. Third quarter, 1913: Cases, 14; deaths, 6. Jan. 3, 1 fatal case on s. s. Sigismund from Rabal, New Guinea. At the necropsy pathological lesions of cholera and beriberi were found.
Provinces.....				
Total, Aug. 23-Dec. 27: Cases, 148; deaths, 94.				
Bulacan—				
Bulacan.....	Dec. 14-20.....			Present in vicinity.
Meycauyan.....	do.....			Present.
Capiz.....				
Total, Dec. 17-23: Cases, 26; deaths, 18. Feb. 21, still present.				
Banga.....	Dec. 17-20.....			Present.
Capiz.....	Jan. 28.....			Do.
Calivo.....	Dec. 17-Jan. 24.....			1 death daily.
New Washington.....	do.....			Present.

CHOLERA, YELLOW FEVER, PLAGUE, AND SMALLPOX—Continued.**Reports Received from Dec. 27, 1913, to Apr. 17, 1914—Continued.****CHOLERA—Continued.**

Places.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands—Continued.				
Provinces—Continued.				
Cavite—				
Santa Cruz.....	Nov. 13-19.....			Present.
Cebu—				
Cebu.....	do.....			Do.
Opon.....	Nov. 19.....	1		On Mactan Island.
Pampanga.....	Dec. 7-Jan. 28.....			Present in Guagua, Macabebe, San Fernando, and other places.
				Present in Dagupan, Lingayen, San Carlos, and Urdaneta.
Pangasinan				
	Dec. 19-29.....			
Rizal—				
Las Pinas.....	do.....	1		
Pasig.....	Nov. 19.....			Present.
Pateros.....	Jan. 28.....			Do.
Rizal.....	do.....			Do.
Roumania.....				Total, Nov. 14 to Dec. 7: Cases, 18; deaths, 15.
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-Feb. 21.....		115	
Straits Settlements:				
Singapore.....	do.....	21	19	
Turkey in Asia:				
Aivali.....	Jan. 10-23.....	9	6	
Beirut.....	Dec. 23.....	2	1	From among troops on the s. s. Bahr Amer from Rodosto.
Smyrna.....	Dec. 16-Jan. 8....	11	4	
Trebizond.....	Dec. 9-Jan. 24.....	22	16	Dec. 9-16: 6 cases among troops from s. s. Guldjemal. Jan. 17, 1 case in the city.
Turkey in Europe:				
Adrianople.....	Feb. 28-Mar. 28....	99	38	Among the military.
Constantinople.....	Nov. 25-Feb. 15....	141	56	Total, Aug. 2-Feb. 15: Cases, 216; deaths, 96. Mar. 24, 1 fatal case.
Dardanelles.....	Jan. 9-20.....	10	9	
Gallipoli.....	Jan. 1-3.....	2	2	
Pera.....	Jan. 3-10.....	5		
Rodosto.....	Dec. 21-Jan. 9.....	22		

YELLOW FEVER.

Brazil:				
Bahia.....	Nov. 23-Mar. 7....	13	15	
Ceara.....	Nov. 1-30.....		2	
Ecuador:				
Guayaquil.....	Nov. 1-Dec. 31....	9	6	
Do.....	Jan. 1-Feb. 15....	12	3	
Milagro.....	Jan. 1-Feb. 28....	6	4	
Naranjito.....	Jan. 1-31.....	3	2	
Mexico:				
Merida.....	Dec. 10-11.....	1	1	From Campeche.
Do.....	Jan. 4-10.....	1	1	Do.
Southern Nigeria:				
Lagos.....	Oct. 20-Dec. 28....	5	1	Among Europeans from a vessel. Feb. 26, present.
Do.....	Feb. 13-14.....	2		
Omitsha.....	Jan. 24.....	1		
Togo:				
Lome.....	Sept. 12.....	1		
Trinidad:				
Brighton.....	Dec. 30.....	1		Total, Nov. 22-Dec. 30: Cases, 10; deaths, 3, including previous reports.
Labrea.....	Mar. 27.....	1		
Venezuela:				
Caracas.....				Feb. 28, 1 case.

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

Reports Received from Dec. 27, 1913, to Apr. 17, 1914—Continued.

PLAGUE.

Places.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Debal	Mar. 7			Present.
Australia:				
Thursday Island Quarantine Station.	May 21	5		Pestis minor from s. s. Taynan from Hongkong to Townville.
Azores:				
Terceira—				
Angra-Heroismo	Dec. 21		1	
Brazil:				
Bahia	Nov. 23-Mar. 7	25	11	
Pernambuco	Dec. 16-31		1	
Do	Jan. 1-15		1	
Rio de Janeiro	Nov. 16-22	1	1	
British East Africa:				
Kisumu	Sept. 12-Oct. 13	2		Jan. 14-Nov. 15, 1913: Cases, 20; deaths, 22.
Mombasa	Sept. 12-Dec. 15	31	16	Feb. 6-Dec. 15: Cases, 200; deaths, 173, including previous reports.
Nairobi	Sept. 12-Nov. 15	3	3	
Ceylon:				
Colombo	Jan. 25-Feb. 28	21	21	
Kandy	Jan. 25-Feb. 7	1		From Colombo.
Chile:				
Iquique	Nov. 9-Jan. 31	18	9	
Do	Jan. 11-Feb. 28	14	9	
China:				
Amoy	Feb. 18		5	Present in the island. Mar. 7, still present in Amoy.
Hongkong	Nov. 2-Feb. 28	111	99	Apr. 9-16: Cases, 139. Apr. 17-21 cases, 116.
Shanghai	Oct. 1-7	1		
Cuba:				
Habana	Mar. 5-Apr. 14	9	2	
Dutch East Indies:				
Java				Total in East Java, year 1913: Cases, 11,218; deaths, 10,556.
Provinces—				
Kediri	Nov. 1-Dec. 31	547	481	
Do	Jan. 1-31	208	192	
Madioen	Nov. 1-Dec. 31	151	140	
Do	Jan. 1-31	130	115	
Malang	Nov. 1-Dec. 31	1,550	1,463	
Do	Jan. 1-31	766	657	
Surabaya	Nov. 1-Dec. 31	93	93	
Do	Jan. 1-31	42	41	
Ecuador:				
Babahoyo	Nov. 1-Dec. 31	1		
Duran	Dec. 1-31	1		
Do	Jan. 1-31	1	1	
Guayaquil	Nov. 1-Dec. 31	349	157	
Do	Jan. 1-Feb. 28	71	32	
Manta	Dec. 1-31	8		
Milagro	Nov. 1-Dec. 31	2	1	
Naranjito .....	.....do.....	3	1	
Yaguachi	Nov. 1-30	2	2	
Do	Jan. 1-31	1	1	
Egypt.				Jan. 1-Dec. 24, 1913: Cases, 654; deaths, 304. Jan. 1-Feb. 18: Cases, 15; deaths, 7.
Alexandria	Feb. 19	1	1	
Cairo	Feb. 13-22	2		
Port Said	Feb. 10	2	2	
Provinces—				
Assiout	Jan. 5	1	1	
Assouan	Dec. 10	1		
Do	Jan. 5	1	1	
Fayoum	Feb. 10	1		
Garbleh	Dec. 11	1		
Do	Jan. 15-17	7	2	
Minieh	Dec. 9-24	3	1	
Do	Jan. 8-29	2	2	
German East Africa: ¹				
Dar es Salaam	Mar. 13	1	1	Pneumonic.
India				Total Jan. 1, 1913-Jan. 3, 1914: Cases, 238,198; deaths, 198,875. Jan. 4-31: Cases, 34,714; deaths, 28,061.

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

Reports Received from Dec. 27, 1913, to Apr. 17, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
India—Continued.				
Bassein.....	Jan. 4-31.....	52	37	Total, Jan. 1, 1913-Jan. 3, 1914: Cases, 304; deaths, 283.
Bombay.....	Nov. 9-Mar. 7.....	300	253	
Calcutta.....	Nov. 2-Feb. 28.....		32	
Karachi.....	Nov. 9-Mar. 7.....	332	312	
Madras.....	Nov. 16-Feb. 14.....	5	3	
Moulmine.....	Jan. 4-24.....		18	Jan. 1, 1913-Jan. 3, 1914: Cases, 574; deaths, 576.
Rangoon.....	Oct. 26-Dec. 31.....	74	68	
Do.....	Jan. 1-Feb. 14.....	202	196	
Indo-China.....				
Saigon.....	Nov. 11-Feb. 23.....	19		Total Jan. 1-Dec. 31: Cases, 3,961; deaths, 3,742.
Japan.....				
Kobe.....	Dec. 1-7.....	1		Total Jan. 1-Dec. 31: Cases, 27; deaths, 20; exclusive of Taiwan.
Taiwan—				
Kagi.....	Feb. 1-28.....	32	28	
Yokohama.....	Jan. 4-10.....	1	1	Total Sept. 19-Jan. 10: Cases, 22; deaths, 18.
Mauritius.....	Jan. 1-Mar. 29.....	20	10	Total year 1913: Cases, 305; deaths, 183.
Morocco:				
Casablanca.....	Jan. 7.....	1	1	
El-Araish (Larache).....	Sept. 17.....	1		Among the military.
Fedala.....	Mar. 16.....	2	1	
New Caledonia:				
Bourail.....	Sept. 1-Oct. 14.....	8	2	In a school of the tribe of the Azaren. Deaths not reported.
Peru.....				
Ancachs—				
Casma.....	Feb. 9-15.....	2		Dec. 1-Feb. 8, present.
Nepena.....	Nov. 1-Jan. 18.....			Do.
Arequipa—				
Mollendo.....	Dec. 1-Feb. 22.....	14		Feb. 8, present.
Cajamarca—				
Contumaza.....	Jan. 19-24.....	12		
Callao—				
Callao.....	Jan. 19-Feb. 22.....	7		
Lambayeque—				
Chiclayo.....	Dec. 1-Feb. 15.....	72		
Ferreñaje.....	Dec. 1-Feb. 8.....	18		
Guadalupe.....	Dec. 1-Feb. 22.....	21		Dec. 1-Feb. 8, present.
Pacasmayo.....	Jan. 25-Feb. 15.....	5		
Libertad—				
San Pedro.....	Dec. 1-Feb. 8.....	34		
Salaverry.....	Feb. 16-22.....	3		Mar. 2-10: Cases, 2.
Trujillo.....	Dec. 1-Feb. 22.....	73		
Lima.....				
Lima.....	Dec. 1-Jan. 18.....	6		
Lima.....	Dec. 1-Feb. 22.....	48		
Pisco.....	Dec. 1-Jan. 18.....	2		
Monsefu.....				
do.....		2		
Piura—				
Catacaos.....	Dec. 1-Feb. 15.....	13		
Piura.....	Dec. 1-Jan. 24.....	10		Feb. 8, present.
Philippine Islands:				
Manila.....	Nov. 23-Mar. 14.....	12	11	Third quarter, 1913: Cases, 2; deaths, 1.
Russia:				
Saratov.....	Feb. 11.....	1		
Ural, territory.....				
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		
Sarbas.....	Nov. 8-10.....	13	7	
Kaziljar district.....	Nov. 5-10.....	39	24	In Assaukurt, Baitchurek, Bis-kuduk, and Djamankuduk.
Lbstchensky district—				
Issum Tube.....	Oct. 20-Nov. 10.....	138	127	
Kalmikov.....	Nov. 4-10.....	6	6	
Siam:				
Bangkok.....	Nov. 2-Feb. 21.....		20	

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

Reports Received from Dec. 27, 1913, to Apr. 17, 1914—Continued.

PLAGUE—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Tripoli:				
Bengazi.....	Jan. 31.....			Present.
Turkey in Asia:				
Beirut.....	Dec. 10-23.....	2	2	
Jiddah.....	Feb. 2-Mar. 11.....	5	2	
Zanzibar.....	Dec. 31-Jan. 21.....	5	3	On s. s. President from Dar-es-Salaam.

SMALLPOX.

Algeria:				
Departments—				
Algiers.....	Sept. 1-Dec. 31..	10		
Constantine.....	Oct. 1-Dec. 31..	15		
Oran.....	Sept. 1-Nov. 30..	216		Feb. 1-28: Cases, 5; deaths, 4.
Arabia:				
Aden.....	Nov. 25-Mar. 9...	6	6	
Maskat.....	Nov. 30-Dec. 6...	10		Dec. 20, present.
Matarah.....	Dec. 23-Jan. 10...	9		Nov. 30, present; Mar. 7, still present.
Argentina:				
Buenos Aires.....	Nov. 1-30.....		1	
Rosario.....	Dec. 1-31.....	1		
Australia:				
New South Wales.....				Total July 1, 1913-Jan. 31, 1914, Cases, 1,078.
Sydney, metropolitan area.....				July 1, 1913-Jan. 8, 1914: Cases 1,032. Feb. 1-24, 10 cases in the metropolitan area of Sydney and 6 cases at Singleton.
Western Australia—				
Freemantle.....				Dec. 2: 1 fatal case on R. M. S. Malwa, from London via Port Said, Aden, and Colombo.
Victoria—				
Melbourne.....				At Point Napean quarantine station, Jan. 19, 1 case from F. M. S. Caledonian from Noumea via Sydney.
Austria-Hungary:				
Coastland—				
Trieste.....	Jan. 25-31.....	3		
Galicia.....	Feb. 15-21.....	1		
Krain.....	Mar. 1-7.....	2		
Lower Austria—				
Vienna.....	Jan. 4-24.....	6		
Moravia.....	Jan. 18-Feb. 21.....	5		
Silesia.....	Feb. 15-18.....	1		
Tyrol and Vorarlberg.....	Nov. 23-Feb. 21.....	6		
Upper Austria.....	Dec. 14-Feb. 21.....	20		
Belgium:				
Liege.....	Mar. 1-7.....		6	
Brazil:				
Bahia.....	Nov. 23-Mar. 7...	30		
Para.....	Dec. 1-Mar. 7...	80	70	
Pernambuco.....	Nov. 1-Feb. 15...		76	
Rio de Janeiro.....	Nov. 9-Feb. 15...	456	83	
Canada:				
Manitoba—				
Winnipeg.....	Feb. 14-Mar. 21...	15		
Ontario—				
Fort William.....	Feb. 24-Mar. 2...	1		
Hamilton.....	Jan. 1-Mar. 31...	30		
Ottawa.....	Dec. 7-Mar. 7...	22		
Toronto.....	Dec. 7-Mar. 28...	12	1	
Quebec—				
Montreal.....	Dec. 7-Mar. 28...	75		
Quebec.....	Jan. 24-31.....	1		
Canal Zone:				
Panama.....				Nov. 1-30: Santo Tomas hospital, 1 case from a vessel from Callao.
Ceylon:				
Colombo.....	Nov. 30-Dec. 6...	1		

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

Reports Received from Dec. 27, 1913, to Apr. 17, 1914—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
China:				
Amoy.....	Dec. 14-Jan. 10.			Present.
Antung.....	Jan. 4-Mar. 15.	5	1	
Chefoo.....	Feb. 22-Mar. 7.	2	1	
Dairen.....	Dec. 7-Feb. 14.	10	3	
Hankow.....	Nov. 2-Feb. 28.	14	1	
Hongkong.....	Dec. 14-Feb. 28.	12	10	
Mukden.....	Mar. 8.			Do.
Nanking.....	Jan. 24.			Do.
Shanghai.....	Dec. 8-Mar. 15.	14	18	Deaths among natives.
Tientsin.....	Nov. 9-15.		1	
Ting Chow.....	Jan. 5.			Epidemic, 130 miles from Amoy.
Tsing Tau.....	Jan. 15-31.	2		
Tong An.....	Dec. 27.			Present, 20 miles from Amoy.
Cuba:				
Sagua la Grande.....	Feb. 1-28.	1	1	
Dutch East Indies:				
Java.....				Dec. 13-Feb. 21: 322 cases with 91 deaths in the western part, and 100 cases with 63 deaths in the interior.
Batavia.....	Nov. 27-Jan. 11.	66	69	
Besoeki.....	Oct. 19-29.	227	47	
Madfoen.....	Oct. 19-28.	36	12	
Surabaya.....	Oct. 28-Jan. 31.	6		
Surakarta.....	Oct. 19-Dec. 6.	481	91	
Sumatra—				
Padang.....	Jan. 1-31.			Present.
Egypt:				
Alexandria.....	Nov. 26-Mar. 25.	29	13	
Cairo.....	Nov. 19-Mar. 11.	160	84	
Port Said.....	Dec. 3-Mar. 4.	7	1	
France:				
Bordeaux.....	Mar. 8-14.		1	
Marseille.....	Nov. 1-Feb. 28.		113	
Nantes.....	Feb. 1-Mar. 28.	5	2	
Nice.....	Nov. 1-Dec. 31.	2		
Paris.....	Nov. 23-Mar. 14.	39		
St. Etienne.....	Nov. 16-Mar. 14.	12	4	
Germany.....				Dec. 7-Mar. 28: Cases, 26.
Berlin.....	Feb. 8-14.	2		
Bremen.....	do.	1		
Breslau.....	do.	1		
Hamburg.....	Dec. 11-25.	4		
Kehl.....	Jan. 1-31.		1	
Lubec.....	Feb. 15-21.	1		
Gibraltar.....	Dec. 1-Mar. 22.	6		
Great Britain:				
Aberdeen.....	Feb. 22-Mar. 21.	6	1	
Cardiff.....	Feb. 16-21.	1		
Edinburgh.....	Mar. 1-7.		1	
Liverpool.....	Mar. 15-21.	1		From a vessel.
London.....	Jan. 18-Mar. 22.	6		
Nottingham.....	Dec. 21-27.	28		
Southampton.....	Feb. 2-28.	1		
Greece.....				Jan. 28-Feb. 12: Present in the barracks at Athens and at the surrounding country.
Achala and Elis, Province.....	Jan. 29.			Present.
Piraeus.....	Jan. 18-Feb. 12.	19	11	
Grenada.....	Mar. 18.	3		In St. Andrews Parish, 20 miles from St. Georges.
Guadeloupe:				
Pointe a Pitre quarantine station, Islet a Cosson.....	Feb. 16-23.	10	1	From among returned troops from s. s. Perou from Havre, via Bordeaux and Santander.
India:				
Bombay.....	Nov. 23-Feb. 28.	78	35	
Calcutta.....	Nov. 2-Feb. 14.		77	
Karachi.....	Nov. 2-Feb. 28.	9	1	
Madras.....	Nov. 2-Jan. 31.	32	11	
Indo-China:				
Saigon.....	Nov. 11-24.	1	1	
Italy:				
Genoa.....	Mar. 1-15.	1	1	
Leghorn.....	Dec. 21-27.	1		
Naples.....	Jan. 3.	1		
Turin.....	Dec. 22-28.	1		

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

Reports Received from Dec. 27, 1913, to Apr. 17, 1914—Continued.

SMALLPOX—Continued.

Places.	Date.	Cases.	Deaths.	Remarks.
Japan.....				Total Jan. 1—Dec. 31: Cases, 108; deaths, 39, exclusive of Taiwan.
Fukuoka ken.....	Dec. 1-31.....	2		
Nagasaki.....	Jan. 1-31.....	1		Feb. 1—Mar. 8: 15 cases, 2 deaths.
Tokyo.....	Nov. 1—Mar. 7.....	10		
Yokohama.....	Jan. 6-12.....	1	1	
Mauritius.....	Oct. 2-25.....	60	4	
Mexico:				
Acapulco.....	Dec. 6—Feb. 7.....		2	
Agascalientes.....	Dec. 1—Mar. 29.....		112	
Chihuahua.....	Dec. 29—Mar. 29.....		14	
Cruz.....	Apr. 2.....			Epidemic in vicinity.
Durango.....	Apr. 1—May 31.....		77	
Guadalajara.....	Jan. 11—Feb. 14.....	89	46	
Imuris.....	Dec. 29—Jan. 4.....	5		
Juarez.....	Feb. 15-28.....		4	
Llano.....	Jan. 17.....	8		
La Paz.....	Jan. 16-22.....	3	1	
Mexico.....	Oct. 26—Dec. 27.....	94	27	
Monterrey.....	Nov. 17—Mar. 14.....	5	4	
Salina Cruz.....	Jan. 18-24.....	1	1	
San Luis Potosi.....	Nov. 2—Jan. 24.....	4	7	
Tampico.....	Dec. 24—Mar. 10.....	200	58	Feb. 1-24, 22 cases with 16 deaths.
Vera Cruz.....	Dec. 6—Mar. 28.....	57	26	
Morocco:				
Casablanca.....	Mar. 7.....			Present.
Netherlands, The.....	Feb. 8-14.....	1	1	
New Zealand.....				Apr. 8, 1913, to Jan. 7, 1914: Cases, 2,000, including report, p. 2863, vol. 28.
Norway:				
Trondhjem.....	Nov. 1—Feb. 28.....	19		
Peru:				
Callao.....	Jan. 26.....			Still epidemic, Mar. 7, improving.
Lima.....	do.....			Do.
Philippine Islands:				
Manila.....				Third quarter, 1913: Cases, 15.
Portugal:				
Lisbon.....	Nov. 16—Feb. 28.....	19		
Russia:				
Moscow.....	Dec. 14—Mar. 7.....	46	9	
Odessa.....	Nov. 16—Mar. 14.....	40	2	
Riga.....	Feb. 23-28.....	7		
St. Petersburg.....	Nov. 23—Mar. 14.....	76	20	
Vladivostok.....	Dec. 22—Jan. 28.....	5		
Warsaw.....	Oct. 5—Dec. 20.....	59	35	
Servia:				
Belgrade.....	Nov. 7—Mar. 7.....	136	49	
Siam:				
Bangkok.....	Jan. 25—Feb. 21.....		3	
Spain:				
Almeria.....	Nov. 1—Jan. 31.....		9	
Barcelona.....	Nov. 30—Mar. 14.....		101	
Madrid.....	Nov. 1—Feb. 28.....		98	
Seville.....	do.....		2	
Valencia.....	Dec. 1—Mar. 14.....	13		
Straits Settlements:				
Penang.....	Nov. 2—Dec. 6.....	13	1	
Singapore.....	Nov. 2-22.....	2		
Switzerland:				
Canton—				
Basel.....	Nov. 23—Mar. 7.....	115		
Genoa.....	Nov. 23-29.....	3	1	
Turkey in Asia:				
Adana.....	Jan. 10-24.....	2		Dec. 28, epidemic.
Beirut.....	Nov. 23—Mar. 21.....	318	137	
Jaffa.....	Dec. 6—Feb. 28.....	25	6	
Jerusalem.....	Feb. 1-28.....	1		
Mersina.....	Jan. 4—Mar. 7.....	3	3	
Smyrna.....	Nov. 16—Mar. 14.....	3	176	
Tarsus.....	Dec. 28—Feb. 8.....			Still present.
Trebizond.....	Jan. 11-24.....			Present.
Tripoli.....	Jan. 25—Mar. 14.....	93	6	
Turkey in Europe:				
Constantinople.....	Nov. 20—Mar. 21.....		19	
Saloniki.....	Dec. 1—Mar. 14.....		90	

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

MINNESOTA.

Morbidity Reports—Quarantine—Disinfection. (Reg. Bd. of H., Nov. 19, 1913.)

Pursuant to the Revised Laws of 1905 and special laws the following diseases are hereby declared by the Minnesota State board of health to be "communicable diseases," and regulations having the force of law have been adopted for the control of these diseases among humans, as follows:

REGULATIONS OF GENERAL APPLICATION TO COMMUNICABLE DISEASES.

300. Immediate notification by telegram or telephone shall be given by the attending physician to the division of epidemiology of the State board of health (University Campus, Minneapolis), when called to a case or suspected case of—

Actinomycosis.	Paragonimiasis.
Anthrax (also see chap. 21, Laws 1913 ¹).	Paratyphoid fever.
Dengue.	Pellagra.
Asiatic cholera.	Plague.
Dysentery:	Rabies (human cases and exposed persons)
(a) Amebic.	(also see chap. 541, Laws 1913 ¹).
(b) Bacillary.	Rocky Mountain spotted fever or tick fever.
Glanders.	Trichinosis.
Hookworm disease.	Typhus fever.
Leprosy.	Yellow fever.
Malaria.	

Or when a death occurs from any of these diseases.

NOTE.—Since these are rare diseases in Minnesota, no other regulations have been adopted (except for rabies), but every case will be investigated by the State board of health and necessary orders concerning the control of the disease will be issued to the local health authorities by the executive officer of the State board of health.

301. Immediate notification by the regular reporting post card or special blank provided shall be made by the attending physician (or other person as specified) to the local health officer in cities and villages and to the chairman of the board of supervisors in townships of each case or suspected case of—

Anterior poliomyelitis.	Rabies ² (person exposed to, etc.).
Cerebrospinal meningitis.	Scarlet fever (scarlatina, scarlet rash).
Chickenpox.	Smallpox.
Diphtheria (laryngeal croup, membranous croup).	Trachoma.
Erysipelas.	Tuberculosis.
Measles.	Typhoid fever.
Ophthalmia neonatorum.	Whooping cough.

NOTE.—These diseases are under the control of the local health officer, who is governed by the regulations of the State board of health and by local ordinance.

¹ Public Health Reports, Nov. 28, 1913, p. 2580.

² See also chap. 541, Laws of 1913, re control of rabies in animals and regulation 300, re telegraphic reports of human cases.

302. The superintendent of each State institution shall report every case of communicable disease occurring among the inmates or employees of the institution to the division of epidemiology of the State board of health (University Campus, Minneapolis) as well as to the health officer of the district, within 24 hours after the disease is discovered. The rules of the State board of health relative to communicable diseases shall govern the superintendent in his methods of procedure.

303. Whenever a local health officer is informed, or has reason to suspect, that there is a case of one of the communicable diseases in the territory over which he has jurisdiction, he shall investigate immediately and employ the quarantine or sanitary measures directed by the Minnesota State Board of Health in dealing with such cases.

A report of each case and of the sanitary measures employed and of the release of quarantine shall be made by the local health officer to the division of epidemiology, State board of health (University Campus, Minneapolis).

304. No person or persons shall alter, deface, remove, destroy, or tear down any posted notice relating to a communicable disease. The occupant or person having possession or control of a building upon which such a notice has been posted shall be held responsible for the unauthorized removal of such notice, and shall, within 24 hours after the destruction or unauthorized removal of such notice, notify the sanitary officer of the district of such removal or destruction.

305. Any person who is infected with diphtheria, scarlet fever, smallpox, trachoma, tuberculosis, or typhoid fever and is residing in a common lodging house, boarding house, or hotel, shall be removed therefrom under the supervision of the local health officer to a suitable hospital or place of quarantine, if necessary in order to prevent exposure of other persons to infection. In such cases, if an infected person can not be removed without danger to his or her health, the local health officer shall make provisions for the care of such individual in the house where he or she may be found and may cause other persons in the house to be removed therefrom after having been submitted to the necessary disinfection.

306. No house, building, vessel, or vehicle, or any part thereof occupied by a person ill with a communicable disease, and no article that has been exposed to infection through contact with such persons or their discharges, shall be used by other persons until adequate cleansing of same has been carried out under the direction of the local health officer.

307. When furniture, bedding, clothing, or other articles that have been exposed to infection through contact with infected persons, can not be disinfected, such articles may be destroyed by order of the local board of health at the expense of the sanitary district concerned.

308. Whenever the order or direction of the local health officer requiring disinfection or cleansing of articles, premises, or apartments shall not be complied with, he shall cause a placard in words and form as follows, to be placed upon the door of such apartments or premises, to wit:

NOTICE.

— is a communicable disease.

These apartments have been occupied by a ——— patient and may be infected. They must not be occupied until the order of the health officer directing their renovation and disinfection has been complied with.

This notice must not be removed under penalty of law except by the health officer or an authorized officer.

309. Upon notification of the case, the health officer shall inquire whether there are any library books or books owned by a school in a house where diphtheria, scarlet fever, smallpox, typhoid fever, pulmonary or glandular tuberculosis in the infectious stage exists. If so, he shall notify the library or school authorities, who shall cause such books to be burned at the termination of the disease.

Library or school books must not be loaned to persons residing in a house where diphtheria, scarlet fever, smallpox, typhoid fever, pulmonary or glandular tuberculosis in the infectious stage exists.

310. The bodily discharges of any person affected with a communicable disease shall not be disposed of in such a way as to cause offense or danger to other persons.

311. It shall be the duty of a person affected with a communicable disease, or having charge of a patient affected with a communicable disease:

(A) To properly disinfect any infectious bodily discharge;

(B) To prevent access to the patient or to infectious material, of flies, insects, or vermin by screening or other measures, according to the direction of the health officer.

(C) To destroy any flies, insects, or any other such possible carriers of infection discovered in the sick room.

Dogs, cats, and other household pets shall be kept out of a room where a communicable disease is under isolation.

312. No milk, cream, butter, or other food or food products, liable to be eaten without being cooked after handling, shall be offered for sale or given to any party or delivered to any creamery, butter factory, store, shop, or market from a house where a case of diphtheria, scarlet fever, smallpox, or typhoid fever exists, nor shall any person, resident in such house, handle in any capacity, milk or milk products offered for sale. The sale of such food or food products is forbidden from farm premises where any of the diseases mentioned exist except under the following conditions:

Those having to do with the food or food products shall eat, sleep, and work wholly outside of the affected house or part of the house in which the patient is isolated, and shall in no way handle anything or person whatever coming from or connected with the quarantined house or part thereof, nor shall those under isolation in the house handle any person or thing connected with the food or food products or those working with the food or food products.

313. A local health officer receiving a complaint that regulation 310, 311, or 312 is being violated shall investigate, and if it appears that the violation is such as to cause offense or danger to any person he shall serve notice upon the offending party, reciting the alleged cause of offense or danger, and specifying how it shall be corrected.

314. The body of one dead of a communicable disease shall be prepared for burial by a licensed embalmer only.

315. A successful vaccination must be required of all officers and employees in State institutions when such individuals are brought into contact in any way whatever with the wards of the institution.

316. If smallpox prevails in a community, or if the disease appears in a school, all unvaccinated teachers and pupils must be excluded from school for a period of three weeks unless vaccinated within three days of first exposure. Failing to comply with this requirement the school must be closed for a period of three weeks.

317. If smallpox appears in any class in any college in Minnesota all unvaccinated teachers and students in the class must be excluded from school work for a period of three weeks unless vaccinated within three days of first exposure. Failing to comply with this requirement, the classes attended by such teachers or students must be discontinued for a period of three weeks.

318. Teachers in cities and villages shall refer to the head of the school at once any pupil who—

(a) Returns to school after an illness of unknown cause;

(b) Appears to be in ill health;

(c) Shows signs of a communicable disease (see lists under regulations 300 and 301);

(d) Or has lice or other vermin.

All such pupils shall be reported to the school physician for medical examination unless in the opinion of the head of the school the pupil's condition requires that he

or she be sent home immediately or as soon as a safe and proper conveyance can be found.

In such cases the pupil shall be sent home and the health officer of the sanitary district concerned shall be notified immediately by the head of the school.

319. Each school physician shall make a medical examination of all pupils referred to him under regulation 318, and such other examination of pupils, teachers, and janitors, and of school buildings, as, in his opinion, the protection of public health, the efficiency of the school, or the welfare of the individual may require, and shall report the results of such examinations to the local and to the State board of health.

320. A person having a communicable disease (see lists under regulations 300 and 301), or any other transmissible affection (influenza, tonsillitis, mumps, conjunctivitis, impetigo contagiosa, itch, ringworm, etc.) or a parasitic infection (lice or other vermin) or any person residing in a house in which any such disease exists, or has recently existed, shall be excluded from attending any public, private, parochial, church, or Sunday school, until the health officer of the sanitary district concerned shall have given his permission for such attendance.

321. No parent, master, or guardian of a child or minor, having the power and authority to prevent, shall permit any such child or minor to attempt to attend school in violation of the provisions of regulation 320.

322. A schoolhouse wherein a case of smallpox, scarlet fever, or diphtheria has been present shall be deemed infected and must be closed and not again used until it has been thoroughly cleaned under the supervision of the local health officer according to directions issued by the State board of health.

ANTERIOR POLIOMYELITIS.

Regulations 301, 302, 303, 304, 306, 307, 308, 310, 311, 313, 314, 318, 319, 320, 321, and the following, govern the control of anterior poliomyelitis.

400. The local health officer shall post in a conspicuous place upon the entrance to premises where anterior poliomyelitis exists, a notice in words and form as follows:

WARNING.

Anterior poliomyelitis exists on these premises.

(Date.) ———, 19— . Posted by order of ——— (health officer).

401. The patient shall be isolated for at least two weeks after the first symptoms appear. The patient's room shall be carefully screened throughout the course of the disease and during the convalescence if any flies or insects are about.

402. Nose, throat, and mouth discharges must be received on cloths and burned at once. Bowel and bladder discharges must be disinfected before being deposited in a sewer or cesspool. Where no sewer or cesspool exists, bowel and bladder discharges shall be disinfected and afterwards buried in such a manner as to prevent the access of flies or insects to them. All articles exposed to possible infection from the aforesaid discharges must be cleansed and disinfected according to the directions of the State board of health.

403. In case of death the funeral shall be strictly private.

404. Children in the house, and persons associated with the patient, shall be kept under observation for two weeks after last exposure. During this period the children shall not attend any public, private, parochial, church, or Sunday school, or any public or private gathering whatever. Residence, boarding or lodging in the house during the isolation of the case shall constitute exposure.

CEREBROSPINAL MENINGITIS.

Regulations 301, 302, 303, 304, 306, 307, 308, 310, 311, 313, 314, 318, 319, 320, 321, 401, 402, 403, 404, and the following govern the control of cerebrospinal meningitis.

500. The health officer shall post in a conspicuous place upon the entrance to premises where epidemic cerebrospinal meningitis exists, a notice in words and form as follows:

WARNING.

Cerebrospinal meningitis exists on these premises.
(Date: —, 19—. Posted by order of ——— (health officer).

501. Every doubtful case of cerebrospinal meningitis shall be classed as of epidemic type and cared for accordingly until proved to be otherwise.

CHICKEN POX.

Regulations 301, 302, 303, 304, 314, 319, 320, 321, and the following govern the control of chicken pox:

600. The health officer shall post in a conspicuous place upon the entrance to premises where chicken pox exists a notice in words and form as follows:

WARNING.

Chicken pox exists on these premises.
(Date: —, 19—. Posted by order of ——— (health officer).

601. All cases of reported chicken pox in persons of sixteen (16) years of age or over shall be examined by the local health officer, who shall record whether the patient has been successfully vaccinated against smallpox or not.

602. Children residing in the house who have had the disease previously may attend school upon receiving written permission from the health officer. Children who have not had the disease are forbidden to leave the premises and must not return to school until two weeks after all active symptoms of the disease in the last case have disappeared.

SMALLPOX.

Regulations 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 402, 403, and the following govern the control of smallpox:

1300. The local health officer shall post in a conspicuous place upon the entrance to premises where smallpox exists a notice in words and form as follows:

SMALLPOX

Exists on these premises.

Smallpox patients must not leave the house until after the removal of the warning card.

Every person exposed to smallpox, who can not give evidence of a recent successful vaccination or a recent attack of smallpox must be vaccinated within 3 days of first exposure or be isolated 21 days after last exposure.

Only those protected by vaccination are allowed to go into or from this house.

The occupants of this house will be held responsible for the unauthorized removal of this card.

(Date: — By order of ——— (health officer).

ERYSIPELAS.

Regulations 301, 302, 303, 304, 306, 308, 310, 311, 313, 314, 318, 319, 320, 321, and the following, govern the control of erysipelas:

800. The local health officer shall post in a conspicuous place upon the entrance to premises where erysipelas exists a notice in words and form as follows:

WARNING.

Erysipelas exists on these premises.
(Date: —, 19—. Posted by order of ——— (health officer).

801. Each case of erysipelas shall be isolated in a room used for no other purpose. All articles exposed to possible infection by contact with the patient or the patient's discharges (especially dressings, bedding, clothing, eating utensils, etc.) must be disinfected before they are removed from the room. Only the necessary attendants shall enter the room, and upon leaving the room they shall disinfect their clothing, hands, etc., which may have come in contact with the patient or anything used by or about

the patient. When mucous membranes of the patient's body are involved, all discharges from such membranes shall be received on cloths and burned at once.

802. No midwife having to do with nursing a case of erysipelas shall, during such times or within a period of two weeks thereafter, conduct a confinement or attend lying-in cases or care for very young children, nor shall any such person handle, in any capacity, milk, or milk products, offered for sale.

RABIES.

Regulations 300, 301, 314, and the following, govern the control of human cases of rabies and of persons exposed to rabies infection:

1100. When any person has been attacked by an animal suspected of being, or known to be, rabid, or where an attack occurs in a community in which rabies is known or supposed to exist, the facts shall be immediately reported by the physician in attendance or the health officer by telegram, telephone, or personally to the Pasteur Institute, State board of health (University Campus, Minneapolis), in order that the advisability of the said person receiving the Pasteur preventive treatment for rabies may be determined.

NOTE.—In Minnesota, rabies among animals is under the jurisdiction of the State live stock sanitary board. See chapter 541, Laws of 1913, entitled "An act to provide for the suppression and elimination of rabies; conferring power and authority on certain health officers to determine the fact of the existence of rabies in any town, city, or village, together with authority to such health officers to make proclamation of the fact of the existence of rabies therein, and by said proclamation to thereafter, for a specified period of time, prohibit dogs from being at large unless muzzled, and providing penalties for violation thereof."

MEASLES.

Regulations 301, 302, 303, 304, 310, 311, 313, 314, 318, 319, 320, 321, 402, 602, and the following, govern the control of measles.

900. The local health officer shall post in a conspicuous place upon the entrance to premises where measles exist a notice in words and form as follows:

MEASLES

Exists on these premises.

Children residing in this house are forbidden to leave the premises without the permission of the health officer.

The occupants of this house will be held responsible for the unauthorized removal of this card.
(Date:) ———. By order of ——— (health officer).

The placard must be kept on the house for at least 10 days after the appearance of the disease in the last case in the house.

WHOOPING COUGH.

Regulations 301, 302, 303, 304, 305, 306, 307, 308, 310, 311, 313, 314, 318, 319, 320, 321, 401, 402, 602, and the following, govern the control of whooping cough.

1700. The local health officer shall post in a conspicuous place upon the entrance to premises where whooping cough exists a notice in words and form as follows:

WARNING.

Whooping cough exists on these premises.

(Date:) ———, 19—. Posted by order of ——— (health officer).

OPHTHALMIA NEONATORUM.

Regulations 301, 302, 303, 306, 307, 308, 310, 311, 313, 314, 318, 319, 320, 321, and the following govern the control of ophthalmia neonatorum:

1000. It shall be the duty of any midwife, nurse, parent, or other person having charge of an infant whose eyes become inflamed, reddened, or diseased at any time within two weeks after birth to report the facts of such affection in writing to the local health officer within 12 hours after ascertaining the facts.

1001. Upon receipt of such report the health officer shall investigate, and unless the case is under the care of a competent physician he shall give specific written instructions for the immediate medical treatment of the disease and for the precautions to be taken to prevent its spread to other persons.

TRACHOMA.

Regulations 301, 302, 303, 304, 305, 306, 307, 308, 310, 311, 313, 314, 318, 319, 320, 321, and the following govern the control of trachoma:

1400. It shall be the duty of any school teacher, employer, superintendent, foreman, or person in charge of a lodging house or boarding camp to report to the local health officer any person under his or her supervision who has inflamed eyes or who complains of sore or roughened eyelids.

1401. Upon receipt of such report the health officer shall investigate the case, and if the disease is trachoma or suspected trachoma he shall give written directions for the continuous treatment of the disease and for the precautions to be taken to prevent its spread to other persons unless the case is under the care of a competent physician and adequate precautions are being taken.

DIPHTHERIA.

Regulations 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 318, 319, 320, 321, 322, 402, 403, and the following govern the control of diphtheria:

700. The local health officer shall post in a conspicuous place upon the entrance to premises where diphtheria exists a notice in words and form as follows:

DIPHTHERIA

Exists on these premises.

All persons except attending physicians are forbidden to go into or away from this house, or to carry anything away from the house without the permission of the health officer.

The occupant of this house will be held responsible for the unauthorized removal of this card.

(Date): _____. By order of _____ (health officer).

701. So-called laryngeal croup and membranous croup shall be classed, quarantined, and cared for as diphtheria.

702. In suspicious cases of sore throat the same notice shall be posted with the word "Suspected" placed above the word "Diphtheria."

703. The health officer, personally, or through the attending physician, shall take nose and throat cultures from such cases and submit them to the laboratory division of the State board of health for bacterial diagnosis.

If the laboratory diagnosis is "Reserved, send another specimen." No change shall be made in the notice.

If the laboratory diagnosis is "Diphtheria," the word "Suspected" alone shall be removed from the notice.

If the laboratory diagnosis is "No diphtheria bacilli found," and a clinical diagnosis of diphtheria still can not be made, the health officer may raise the quarantine.

704. In all cases diagnosed diphtheria, laryngeal croup, or membranous croup, upon clinical findings, or diphtheria upon laboratory findings, two successive negatives on separate nose and throat cultures are required before release of quarantine in cities and villages and in country districts within 2 miles of a city or village. Cultures should be sent at least once a week after patient recovers, but no case may be held in quarantine more than six weeks after all clinical symptoms have disappeared.

705. All members of a household where diphtheria exists shall be quarantined unless the patient is entirely isolated in a portion of the house used for no other purpose and is in charge of a reliable attendant.

If proper isolation obtains and the laboratory diagnosis on nose and throat cultures from members of the household employed at gainful occupations is "No diphtheria bacilli found," such persons may be released from quarantine, provided they make a declaration in writing to the health officer that they will not come in contact with the patient, the patient's room, or any thing or any person coming in contact with the patient or the patient's room. The health officer shall issue written permits of release which may be revoked if the above provisions are not complied with.

706. In all cases diagnosed diphtheria, laryngeal croup, or membranous croup upon clinical findings or diphtheria upon laboratory findings, quarantine may be released in country districts more than 2 miles from a city or village three weeks after all clinical symptoms have disappeared or earlier if two successive negatives on separate nose and throat cultures have been reported in accordance with regulation 710.

707. Patients released from quarantine upon the expiration of the prescribed quarantine period, whether in cities, villages, or country districts, shall not be permitted to attend any public, private, parochial, church, or Sunday school, or any public or private gathering until two successive negatives have been reported in accordance with regulation 710. In such cases the patients may go to their physician or health officer to have cultures taken.

708. Persons associated with a case and wishing to leave the premises before quarantine is raised shall be separated from the patient and shall have nose and throat cultures taken by the health officer or attending physician. If the laboratory diagnosis is "No diphtheria bacilli found," the clothing to be worn or taken away from the house shall be disinfected and the person shall take a full bath before being released.

After fatal cases, the members of the household shall not be released from quarantine until the above measures have been carried out.

709. The control of diphtheria in public institutions shall be governed entirely by laboratory examinations. Immediately after the appearance of diphtheria in an institution, the head of the institution shall notify the State board of health of the fact. Each person whose culture shows diphtheria bacilli shall be quarantined whether symptoms exist or not, until one negative report on separate nose and throat cultures has been made, after which the person shall be properly cleansed, the clothing properly disinfected, and the party removed from quarantine to detention quarters and kept there until two more successive negative reports on separate nose and throat cultures have been made, whereupon release may be permitted after proper disinfection.

710. All cultures must be taken by a physician or sanitary inspector, and cultures for release of quarantine shall be taken with at least 24 hours intervening. All cultures must be submitted to the laboratory division of the State board of health or to a laboratory having the official indorsement of said board. Reports on cultures examined elsewhere will not be officially recognized.

SCARLET FEVER.

Regulations 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 318, 319, 320, 321, 322, 402, 403, and the following govern the control of scarlet fever:

1200. The local health officer shall post in a conspicuous place upon the entrance to premises where scarlet fever exists a notice in words and form as follows:

SCARLET FEVER

Exists on these premises.

All persons except attending physicians are forbidden to go into or away from the house or to carry anything away from the house without the permission of the health officer.

The occupant of this house will be held responsible for the unauthorized removal of this card.

(Date:) _____ By order of _____ (health officer).

1201. In suspicious cases, the same notice shall be posted with the word "Suspected" in addition, placed above the words "Scarlet fever." If the clinical symptoms later justify the diagnosis of scarlet fever, the word "Suspected" shall be removed. If the facts in the case later exclude scarlet fever, quarantine may be removed by the health officer.

1202. Unless death occurs earlier, quarantine shall never be less than three weeks, and may be longer, after the date of the first symptoms of the last case in the house. No patient shall be released from quarantine until the health officer has found, upon examination, that the condition of the nose and throat and ears is normal and that evidence of danger of infection no longer exists.

1203. The patient shall not attend any public, private, parochial, church, or Sunday school or any public or private gathering whatever, until a second examination by the health officer or his authorized agent, made not less than one week after the release of quarantine, shall demonstrate a continuance of the normal condition of the nose and throat and ears. When ear discharge exists, the patient shall report weekly for examination by the health officer or his authorized agent, and shall carry out such precautions to prevent the spread of infection as he shall prescribe.

1204. All members of the household where scarlet fever exists shall be quarantined unless the patient is entirely isolated in a portion of the house used for no other purpose, and is in charge of a reliable attendant. If proper isolation obtains, members of the household employed at gainful occupations, except teaching or other work bringing them into contact with children, may be released from quarantine, provided they make a declaration in writing to the health officer that they will not come in contact with the patient, the patient's room, or anything or anybody coming in contact with the patient or the patient's room. The health officer shall issue written permits of release which may be revoked if the above provisions are not complied with.

1205. A nurse or other person under quarantine with a scarlet fever patient may be released before the quarantine is removed if found upon examination by the health officer to be free from symptoms of the disease and not liable to develop the same. Such persons must agree to report immediately to the local health officer of the sanitary district in which they may be should symptoms develop within 10 days after their release from quarantine. All clothing worn or taken away from the quarantined house must be disinfected and the person shall take a full bath before being released.

TUBERCULOSIS.¹

Regulations 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 318, 319, 320, 321, 402, and the following govern the control of tuberculosis:

1500. If proper precautions are not being taken by the patient, or those in charge of the patient, the local health officer shall post in a conspicuous place on the entrance to premises where a case of pulmonary or glandular tuberculosis in the infectious stage exists a notice in words and form as follows:

WARNING.

Tuberculosis exists on these premises.

(Date:) ——— 19——. Posted by order of ——— (health officer).

This notice is posted only when proper precautions are not being taken for the protection of the public health.

1501. No person affected with pulmonary or glandular tuberculosis in the infectious stage shall handle in any capacity, milk, cream, butter, other food or food products liable to be eaten without being cooked after handling, if such foods are to be offered for sale.

1502. The infectious stage of pulmonary or glandular tuberculosis, for the purpose of these regulations, shall be considered as the period or periods following a positive

¹ See chapter 434, Laws of 1913, Public Health Reports, July 11, 1913, p. 1465.

clinical diagnosis of tuberculosis or the demonstration of tubercle bacilli in the sputum or discharge, during which there is cough with expectoration, or during which there is a discharge through the mouth or externally from the affected glands.

TYPHOID FEVER.

Regulations 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 318, 319, 320, 321, 402, and the following govern the control of typhoid fever:

1600. The local health officer shall post in a conspicuous place upon the entrance to premises where typhoid fever exists a notice in words and form as follows:

WARNING.

Typhoid fever exists on these premises.

(Date:) ———, 19— . Posted by order of ——— (health officer).

1601. The patient's room shall be carefully screened throughout the course of the disease and during convalescence if any flies or insects are about.

1602. No person, convalescent from typhoid fever, or suffering from so-called walking typhoid shall be permitted to handle, in any capacity, milk, cream, butter, other food or food products, liable to be eaten without being cooked after handling, if such foods are to be offered for sale, until the local health officer shall state in writing that the circumstances indicate that danger of typhoid infection from such person no longer exists.

NOTE.—The absence of symptoms for several weeks after the patient has entirely recovered, or negative findings upon bacteriological examination of discharges, or both, may be taken as a basis for such a statement, although not conclusive evidence that the person may not be a "typhoid carrier."

1603. Whenever typhoid fever prevails in a locality, the local board of health shall appoint immediately a competent inspector or inspectors to patrol the city, village, or district involved. Such inspector or inspectors shall report to the local board of health all water-closets and privies which are not fly proof and all vaults and cess pools which are not water-tight, dark, and fly proof. Thereupon, the local board of health shall enter its proper order in the premises to the end that all such water-closets and privies shall be made fly proof and all such vaults and cesspools water-tight, dark, and fly proof.

1604. Any drinking-water supply shown to be a positive or probable source of typhoid fever or other disease shall be condemned either by the local board of health or by the State board of health, and when so condemned shall not be used again as a drinking-water supply until declared safe by the condemning party.

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

LINCOLN, NEBR.

Meat—Inspection. Ord. 1188, Sept. 15, 1913.

SECTION 1. No meat of any kind or character shall be sold or delivered, offered for sale or held with the intention of selling the same, or otherwise disposed of for human food in the city of Lincoln, Nebr., unless the animal furnishing the same shall have been examined by the health officer or agent of the board of health of the city of Lincoln, and the meat thereof stamped or labeled by the stamp or label of approval of the board of health of the city of Lincoln except such animals as have been examined, inspected, or exempted by the United States Government.

SEC. 2. Carcasses of animals killed upon farms or outside the limits of the city of Lincoln for the purpose of being sold for human food in the city of Lincoln, shall be offered for inspection at the place designated by the board of health of the city of Lincoln and such carcasses presented for inspection must have the head, heart, liver, and lungs held by their natural attachments and the health officer of the city of Lincoln shall be notified by the person or persons desiring said carcass or portion thereof inspected, so that opportunity shall be given to inspect the same by daylight, and it shall be the duty of the health officer or agent of the board of health of the city of Lincoln, to inspect the same, and if found to be free from disease and otherwise sound and healthful, said carcass or portions thereof, shall be passed and approved, and stamped or labeled, which stamp or label shall bear the words: "Approved, Board of Health, City of Lincoln." If such carcass or portion thereof shall be found diseased, unsound, unwholesome, or otherwise unfit for human food, they shall be condemned and destroyed for food purposes, and the agent of the board of health or health officer so deciding that any carcass or portion thereof is unfit for human food, shall destroy the same or determine the method of destroying the same.

SEC. 3. No mark, stamp, or label of the board of health, as provided herein, shall be placed upon or attached to any carcass or portion thereof of any animal to be used as human food except by the health officer or agent of the board of health of the city of Lincoln.

SEC. 4. No person, firm, or corporation shall offer for sale any cattle, calves, swine, sheep, goats, fish, fowl, or poultry or meat thereof, which has been condemned by the health officer, or agent of the board of health, or by the United States Government inspector.

SEC. 5. No animal shall be passed or approved by the health officer or agent of the board of health, as suitable for human food when it is suffering from any disease or injury which causes a feverish condition or an elevation of temperature or when it is badly bruised or injured, or shows tumors, abscesses, or suppurating sores or when it is too emaciated or weak to produce wholesome food, or the carcass of any unborn animal, or of any calf, weighing less than 50 pounds when dressed, or any carcass which after killing shows a greenish yellow discoloration, or the carcass of any animal which died from accident or disease, or which had not been properly killed and bled.

SEC. 6. Any person, authorized by the United States Government as an inspector, is hereby authorized to act as the agent of the board of health of the city of Lincoln and may be provided with stamp or label of approval of the board of health of the city of Lincoln.

SEC. 7. The person, firm, or corporation violating any of the provisions of this ordinance shall be fined in a sum of not more than \$100 for each offense and shall be committed to jail until such fine and costs are paid.

Milk and Milk Products—Production, Care, and Sale. (Ord. 1114, May 6, 1913.)

SECTION 1. No person shall bring into the city of Lincoln for sale, or sell or offer to sell, any milk or cream without a permit from the board of health.

SEC. 2. No person shall bring into the city of Lincoln for sale, or sell or offer for sale, any milk or cream which has been obtained from any milk dealer, dairyman, or other person not having a permit issued by the board of health to sell same for consumption within said city.

SEC. 3. Permits shall be renewed annually in January. The applicant must state his name, residence, post-office address, and the location of his business place or places, and the number of cows from which milk is obtained for sale, and the number of quarts (estimated) sold daily. If the applicant buys part or all of his milk supply, the names and addresses and numbers of permits of all persons from whom he obtains milk or cream, and the quantity (estimated), shall be stated. If the applicant be a shipper of milk or cream into the city, he shall in addition to the above state the route of his shipment.

SEC. 4. The board will not issue any permits unless it is satisfied, after inspection, with the cleanly and sanitary condition of the stables, cows, wagons, store, or place of business of the applicant therefor, and with all the utensils used by him from which his milk or cream is obtained; and that food given to the cows is pure and wholesome, and that all persons engaged in the care and handling of milk are free from any contagious disease, and that said persons use due cleanliness in their work.

SEC. 5. All applications for permits to sell milk or cream in the city of Lincoln shall be placed on file when received by the health officer, and as soon as possible within 60 days after the application is received, the health officer or some person duly authorized by the board of health, or the health officer, shall visit the dairy or place of business of such applicant and make such observation and gather such information as to enable the board to satisfy themselves of the sanitary condition of the dairy. Should the applicant live at such distance from the city of Lincoln as to make it impracticable for the health officer, or other person authorized by the board of health, to visit such dairy premises, the applicant shall furnish evidence to the board of the sanitary condition of his dairy.

SEC. 6. If after issuing a permit to sell milk or cream, the board of health shall become satisfied that the provisions of this ordinance are being violated, it will at once revoke the permit issued to such person, and no new permit shall be issued until all insanitary conditions have been rectified. The health officer shall have authority to suspend the permit of any person violating this ordinance until such time as the board of health shall take action.

SEC. 7. The fees charged for selling or producing milk or cream for sale in the city of Lincoln shall be as follows:

- (a) For each grocer, meat market, bakery, etc., \$1 per year.
- (b) For each wagon used in delivering milk, \$3 per year.
- (c) For each producer having 5 cows or less, 25 cents per year.
- (d) For each producer having 10 cows and more than 5 cows, 50 cents per year.
- (e) For each producer having more than 10 cows, \$1 per year.

SEC. 8. All permits must be posted in a conspicuous place in the grocery, meat market, bakery, or other place where milk or cream is sold.

SEC. 9. Nothing in this ordinance shall be construed as preventing hotels, restaurants, lunch rooms, etc., from serving milk or cream, when it is to be consumed on the premises, without a permit.

SEC. 10. All inspections of dairies or other places where milk or cream is produced, handled, prepared, or stored for sale or distribution in the city of Lincoln, shall be made and kept by the health officer on the score card used by the Dairy Division of the United States Government. Milk and cream from dairies falling below 50, in this rating, will be excluded from sale in Lincoln during the year 1913. Milk and cream falling below 60 will be excluded from sale in Lincoln during the year 1914 and thereafter.

SEC. 11. The milkers must thoroughly wash and wipe their hands and the cows' udders before they begin milking. They must not use pails, cans, strainers, etc., unless they have been thoroughly washed in hot water and soap, or hot water and soda, and afterwards sterilized with boiling water or steam. Care must be taken that the seams of the vessels are thoroughly cleaned with a brush.

SEC. 12. Immediately after milking, the milk shall be removed from the stable into the milk room, aerated, and cooled to at least 55° F. temperature and put into perfectly clean bottles and cans. The milk house or milk room must be screened from flies and other insects, and must not be attached by doorway to any other building, and must be at least 50 feet from any cesspool or vault; must be provided with a tight, nonabsorbing floor, laid so as to provide drainage, and must be kept clean at all times and free from any odor. No milk house or other place where milk or cream is stored or handled shall be used as sleeping quarters or for storing of any articles other than those used in the production and handling of milk. All toilet rooms shall be separate and apart from the milk room where milk or cream is stored or handled.

SEC. 13. No other foodstuffs except butter or cheese shall be kept in the same compartment of any ice box or refrigerator with milk or cream not in sealed containers, and such ice box or refrigerators shall be kept clean and free from odors at all times.

SEC. 14. All cans or bottles used in the distribution of milk shall be thoroughly cleaned either by hot water and soap or hot water and soda, or other alkali, rinsed, and sterilized by boiling water or steam before they are again used as receptacles for milk or cream. Milk cans must be washed and cleaned immediately after the milk or cream is emptied therefrom. No persons shall use a milk can or bottle for other than milk purposes.

SEC. 15. No person shall bring into the city of Lincoln for sale or shall sell or offer for sale any milk—

- (a) Containing less than 12 per cent of milk solids.
- (b) Containing more than 88 per cent of water and fluid.
- (c) Containing less than 3 per cent of butter fat.
- (d) Having a specific gravity of less than 1.029.
- (e) Containing any dirt, foreign matter, or sediment.
- (f) Containing any boracic or salicylic acid, formalin, or other foreign chemicals.
- (g) Containing any pathogenic bacteria.
- (h) Containing bacteria of any kind more than 100,000 per cubic centimeter.
- (i) Drawn from any cow having a communicable disease or showing clinical symptoms of tuberculosis or from a herd which contains any diseased cattle, or are afflicted with or have been exposed to any communicable disease.
- (j) Drawn from any cow within 15 days before or 12 days after parturition.
- (k) Drawn from any cow which has been fed on garbage, refuse, or any other unwholesome or improper food.
- (l) Having reached or been kept at a temperature higher than 55° F. at any time from one hour after being drawn from the cow until it reaches the consumer.

(m) Which has existed or has been kept under conditions contrary to the provisions of this ordinance.

(n) Drawn from any cow with inflamed or sore udders.

Provided that subdivisions (a), (b), (c), and (d) shall not apply to milk sold under the name of skimmed milk.

SEC. 16. No person shall bring into the city of Lincoln for sale, or sell, or offer for sale, milk from which the cream has been removed, either in part or in whole, or which contains less than 3 per cent butter fat, unless sold as skimmed milk and the container plainly marked as such.

SEC. 17. No one shall use any vehicle for the delivery of milk in the city of Lincoln which has not painted thereon in legible roman letters in a conspicuous place, on both sides of the vehicle, the name and location of his dairy and the number of his permit. All such delivery wagons shall at all times be kept in a cleanly condition and free from any substance which will contaminate or injure the purity of the milk, and shall have a covering of canvas or other material so arranged as to thoroughly protect the contents thereof from the rays and heat of the sun. No such delivery wagon shall be used for any other purpose than that of delivering milk or cream.

SEC. 18. No person or milk dealer shall sell, deliver, sell or offer to sell, or keep for sale in stores or other places any milk or cream in quantities less than 1 gallon, unless delivered or kept in the original package or container. All such original packages shall be filled and sealed at the place of production or the milk depot. The caps of all bottles shall have plainly printed or stamped the name of the milk dealer, with his permit number, and the day of the week on which the bottle was filled.

SEC. 19. Should scarlet fever, smallpox, diphtheria, typhoid fever, tuberculosis, or other dangerous or infectious diseases occur in the family of any dairyman, or among any of his employees, or in any house in which milk is kept for sale, or in the family or among the employees of any person who ships milk into the city of Lincoln for sale, such dairyman, vender, or shipper of milk shall immediately notify the health officer of the facts in the case and the health officer shall at once investigate and order the sale of such milk stopped or sold under such regulations as he thinks proper. Should any dairyman, vender, or shipper of milk fail to notify the health officer of any such contagious or infectious diseases, or, after such information is given, fail to obey his directions, the health officer shall seize and destroy all milk sent into the city by such persons, and he shall, when acting in good faith, be held harmless in damages therefor. In delivering milk to families in which there exists contagious or infectious diseases the dairyman shall not enter, neither shall he permit any of his milk bottles or vessels to be taken into such houses, but shall pour such milk as each family wishes into vessels furnished by such family.

SEC. 20. If persons offering milk or cream for sale use tickets as representation of value, these tickets must be in coupon form and must be destroyed after once using.

SEC. 21. The members of the board of health, the health officer, or any person authorized by him shall have authority to examine all dairy herds, utensils for handling milk, of all dairymen or other persons engaged in selling or shipping milk or cream for sale in the city of Lincoln. These inspectors shall have power to open any can, vessel, or package containing milk or cream, whether sealed (locked) or otherwise, and take samples of milk or cream for analysis, and if upon inspection the milk or cream is found to be filthy or the can or other containers are in an unclean condition, the said inspector may then and there condemn the milk or cream as deemed by him to be filthy, and pour the contents of such bottles, vessels, or packages upon the ground forthwith, and he shall, if done in good faith, be held harmless in damages therefor.

SEC. 22. No person shall bring into the city of Lincoln for sale or shall sell or offer for sale any cream unless such cream is produced from milk which conforms to all the requirements of this ordinance, nor unless such cream be kept at or below a tem-

perature of 55° F., free from foreign substances, and shall not contain more than 500,000 bacteria per cubic centimeter, and shall not contain less than 18 per cent butter fat.

SEC. 23. Any person, firm, or corporation convicted of any violation of any provision of the above ordinance, or obstructs or interferes [sic] with the execution thereof, shall be fined not to exceed \$100.

LIMA, OHIO.

Milk and Milk Products—Production, Care, and Sale. (Ord. Oct. 15, 1913.)

SECTION 1. No person shall bring into the city of Lima for sale or shall sell or offer for sale any milk or cream without a permit from the board of health.

SEC. 2. No person shall bring into the city of Lima for sale or shall sell or offer for sale any milk which has been obtained from any milk dealer, dairyman, or other person not having a permit issued by the board of health.

SEC. 3. A fee of \$1 shall be charged for each permit and the same to be credited to the general health fund.

SEC. 4. Permits shall be renewed annually in January. The applicant must state his name, residence, post-office address, and locations of his business place or places.

SEC. 5. That applicant must state the number of cows from which milk is obtained for sale and the number of quarts (estimated) sold daily.

SEC. 6. If the applicant buys a part or all of his milk supply, the names and addresses of all persons from whom he obtains milk or cream and the quantity (estimated) shall be stated.

SEC. 7. Any dairyman, milk dealer, or other person, upon application to the health office for a permit to sell or deliver milk shall file a sworn statement giving his name and address, the number of cows he owns or has charge of, the average amount of milk (estimated) which he sells each day, the names of all persons from whom he buys milk, the average amount of milk (estimated) which he buys from them each day.

SEC. 8. The board of health will not issue any permit unless it is satisfied, after inspection, with the cleanly and sanitary conditions of the stables, cows, wagons, store, or place of business of the applicant therefor, and with all the utensils used by him, from which his milk or cream is obtained, and that the food given the cows is pure and wholesome, and that all persons engaged in the care of handling of the milk are free from any contagious disease, and that said persons use due cleanliness in their work.

SEC. 9. All permits must be signed by the applicant and by the board of health, shall be placed on file and the name of such applicant shall be entered in a book of registration kept for such purposes. As soon as possible within 60 days after application is received at the health office for a permit to sell milk, the milk and housing inspector shall visit the dairy or place of business of such applicant and make such observation and gather such information as to enable the board to satisfy themselves of the sanitary conditions of his dairy. Should the applicant live at such distance from the city of Lima as to make it impracticable for the milk and housing inspector to visit such dairy premises, such applicant shall furnish evidence, satisfactory to the board of the sanitary condition of his dairy.

SEC. 10. If, after issuing a permit to sell milk or cream, the board of health shall become satisfied that the provisions of the sanitary code are being violated, it will at once revoke the permit issued to such person or persons and no new permit issued until all unsanitary conditions have been rectified and all other provisions of the sanitary code are complied with.

Anyone selling or handling milk or cream under a permit from the board of health who shall change location (this means changing producers or routes) without notifying

the health office or milk and housing inspector of such change, shall have such permit revoked at the option of the health board.

SEC. 11. *Milk tickets.*—If dairymen or other persons offering milk for sale use tickets as representations of value, these tickets must be in coupon form and must be destroyed after once using.

SEC. 12. *The stable and surroundings.*—The surroundings to the stable must be kept in a sanitary condition. Cows must not be allowed to stand in manure and filth. The cow stable should be painted or whitewashed at least once a year. It must be kept free from dirt, dust, cobwebs, and odor. Manure and urine must be removed from the stable at least once daily and if not taken to field daily must be removed at least 30 feet from stable and placed where cows can not get into it. If horses are kept in same stable, a tight partition should separate them from the cattle. No other animals or fowls will be allowed in the cow stable. Floors must be laid not less than 1 foot higher than outside surface level so that good drainage can be procured. Floors must be constructed of asphalt, concrete, brick, with surface flushed with cement, or of wood water-tight. They must be kept in good repair at all times and also constructed with a gutter not less than 12 inches wide and 6 inches deep; a 4-foot walk back of cows and not less than 20-inch manger in front. Ceilings must be dust tight and kept free from cobwebs.

Light.—The window area shall be at least 3 square feet per 500 cubic feet of air space and shall be uniformly distributed, if possible. If uniform distribution is impossible, sufficient additional window area must be provided so that all portions of the barn shall be adequately lighted. Windows must be left partly open if no other method of ventilation is provided for. Stable yard must be well drained and kept clean at all times.

SEC. 13. Cows must be kept clean. Manure, litter, etc., must not be allowed to become caked and dried on them; they must not be allowed to stand in nor wade through filth and manure. The bedding must be sufficient in quantity at all times to protect the animals from lying in filth.

SEC. 14. Any dairyman knowingly possessing or permitting a tubercular animal to remain in his herd, or in the same building with healthy herd, shall have his license or permit revoked by the board of health after proper proof of same.

SEC. 15. *Feed and water.*—Cows must be fed on clean dry feed, neither decayed, moldy, dusty, distillery waste nor starch waste. If malt is fed, it must not be fed when sour. Pure running spring water or city water or ordinary well water, free from contamination, pumped into clean tanks or troughs, must be provided.

SEC. 16. Milkers must thoroughly wash and wipe their hands and the cows' udders before they begin milking. They must not use pails, cans, strainers, etc., unless they have been thoroughly washed in hot water and soap or hot water and soda and afterwards sterilized with boiling water or steam. Care must be taken that the seams of the vessels are thoroughly cleaned with a brush. They must refrain from milking or handling milk in any way when in themselves or in their families there is even a suspicion of any contagious or infectious disease, such as smallpox, scarlet fever, diphtheria, typhoid fever, tuberculosis, or the like.

SEC. 17. *Handling the milk.*—Immediately after milking the milk shall be removed from the stable into a milk room, screened from flies and other insects, and cooled to at least 55° temperature and put into perfectly clean bottles or cans.

SEC. 18. The milk house or milk room must not be attached by doorway to any other building and must be at least 25 feet from any cesspool or vault. Must be provided with a tight floor, either concrete or wood, laid so as to provide drainage, and it must be kept clean at all times and free from odor.

SEC. 19. *Care of cans and bottles.*—All cans, bottles, or utensils used in the handling or distribution of milk must be thoroughly cleaned either by hot water and soap or

hot water and soda or other alkalis, rinsed and sterilized by boiling water or steam before they are again used as receptacles for milk. Milk cans must be washed and cleaned immediately after the milk or cream is emptied from them. No person shall use a milk bottle for any other purpose. Consumers shall return bottles in a thoroughly cleansed condition.

SEC. 20. No persons shall bring into the city of Lima for sale or shall sell or offer for sale any milk:

- (A) Containing less than 12 per cent of milk solids.
- (B) Containing more than 88 per cent of water or fluids.
- (C) Containing less than 3 per cent of milk fats.
- (D) From which any part of the cream has been removed.
- (E) Having a specific gravity of less than 1.029.
- (F) Containing any dirt, foreign matter, or sediment.
- (G) Containing any boracic or salicylic acid, formalin, or other foreign chemicals.
- (H) Containing any pathogenic bacteria.
- (I) Containing bacteria of any kind more than 500,000 per cubic centimeter.
- (J) Drawn from any cow having a communicable disease or showing clinical symptoms of tuberculosis or from a herd which contains any diseased cattle or are afflicted with or have been exposed to any communicable disease.
- (K) Drawn from any cow within 15 days before and 12 days after parturition.
- (L) Drawn from any cow which has been fed on garbage, refuse, swill, moist distillery waste, or other improper food.
- (M) Having a temperature or which has been kept at a temperature higher than 60° F.
- (N) Which has existed or has been kept under conditions contrary to the provisions of this code.
- (O) No milk shall be kept, sold, or offered for sale, drawn from cows suffering with sore or inflamed udders and teats or from cows diseased.

Provided that the subdivisions (A), (B), (C), and (D) of this section shall not apply to milk sold under the name of skimmed milk.

SEC. 21. *Retailers.*—All grocers, bakers, or other persons having or offering for sale milk or cream shall at all times keep the names and addresses of the dairymen from whom the milk on sale was obtained. If skimmed milk is kept or offered for sale, each and every container of such milk shall be plainly marked with the words "Skimmed milk" in letters not less than 1 inch in height.

SEC. 22. (A) No person shall bring into the city of Lima for sale or shall sell or offer for sale milk from which the cream has been removed, either in part or in whole, unless sold as skimmed milk and unless on two sides of the containers from which such milk is sold there appears in red letters, not less than 1 inch in height, the words "Skimmed milk."

(B) No person shall bring into the city of Lima for sale or shall sell or offer for sale any so-called skimmed milk containing less than $9\frac{1}{10}$ per cent of milk solids.

SEC. 23. (A) No person shall ship or store any milk in any basement, cellar, refrigerator, milk house, dairy, or other place unless such place have 1 square foot of window space to each 4 square feet of floor space, with a cement floor properly drained, and shall contain a vat made of nonabsorbent material large enough to store all milk. Windows and doors shall be provided from May 1 to October 1, inclusive, with sound screens of mesh sufficiently fine to keep out flies and other insects.

(B) No person shall store any milk in any basement, cellar, refrigerator, milk house, dairy, or other place which is within 15 feet of any water-closet or private vault or cesspool, or any horse or cow stable, or any chicken or poultry yard or coop, or any other objectionable condition.

SEC. 24. *Milk delivery wagons.*—No person shall use any vehicle for the delivery of milk in the city of Lima which has not painted thereon in legible Roman letters not

less than 3 inches in height and on both sides of the vehicle in a conspicuous place the name and location of his dairy and the number of his permit, and if such vender sells skimmed milk, each and every container of skimmed milk shall have the words "Skimmed milk" inscribed thereon in plain letters not less than 1 inch in height, plainly visible to the prospective purchaser.

SEC. 25. Every person using in the sale or distribution of milk a delivery wagon or other vehicle shall keep the same at all times in a cleanly condition and free from any substance liable to contaminate or injure the purity of the milk, and from May 1 to October 1 shall have and keep over such delivery wagon or vehicle a covering of canvas or other material so arranged as to thoroughly protect the contents thereof from the rays and heat of the sun.

(A) No person, firm, or corporation shall give, furnish, sell, or offer for sale, or deliver any milk, buttermilk, whey, sour milk, skimmed milk, or cream, in quantities less than one gallon, except in sanitary bottles, sealed with a suitable cap or stopper, and except where the milk is sold at the milk house or dairy, when the same may be dipped (and the dipped milk shall not be carried on any street in any other than a covered vessel).

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

(C) That it shall be unlawful for any person, firm, or corporation to sell or offer for sale within the city of Lima any milk or cream in bottles unless each of said bottles shall have indelibly indicated upon the top or cover thereof, in a legible and conspicuous manner, the name of the person, firm, or corporation bottling said milk or cream in such bottles.

SEC. 27. No person or milk dealer shall sell, deliver, or offer for sale any milk kept in a refrigerator or ice box, unless said refrigerator or ice box has milk compartment separated by an impervious water and odor-proof partition from all other compartments of said refrigerator or ice box; neither milk nor cream shall be kept in the same compartment with any other foodstuffs except butter and cheese.

SEC. 28. *Milk plants.*—(A) Construction. Floors must be made of asphalt, cement, or other smooth vitrified substance, laid so as to allow ready drainage; walls and ceilings shall be smooth, tight, and kept painted in some light color; window space shall be equivalent to 10 per cent floor space.

(B) Equipment must be arranged and constructed so it can be easily and efficiently cleaned; all piping used to convey milk must be of the sanitary taken down form. Windows and doors from May 1 to October 1 must be provided with sound screens of mesh sufficiently fine to keep out flies and other insects; buildings and equipment must be kept clean at all times and free from odors.

(C) *Handling milk.*—If milk is sold as pasteurized milk, same shall be pasteurized at the following temperatures: 140° F., uniform heating, 20 minutes; 150° F., uniform heating, 15 minutes; 155° F., uniform heating, 5 minutes; 160° F., uniform heating, 5 minutes; 165° F., uniform heating, 1 minute.

The time shall be calculated from the time the entire quantity reaches the required temperature. The milk shall be promptly cooled after pasteurization to a temperature of 50° F. or less and stored at a similar temperature.

SEC. 29. *Contagious diseases.*—Should scarlet fever, smallpox, diphtheria, typhoid fever, tuberculosis, or other dangerous or infectious disease occur in the family of any dairyman or among any of his employees or in any house in which milk is kept for sale, or in the family or among the employees of any person who ships milk into the city of Lima for sale, such dairyman, such venders or shippers of milk shall immedi-

ately notify the health board of the facts of the case, and the health board shall at once investigate and order the sale of such milk stopped, or sold under such regulations as they think proper. Should dairymen, venders or shippers of milk fail to notify the health board when contagious diseases exist in their families or in the families of their employees, or who, after such information is given the health board, fail to obey their directions, the milk and housing inspector shall seize and destroy all milk sent into the city by such persons, and he or she shall, when acting in good faith, be held harmless in damages therefor in any suit or demands made.

In delivering milk to families in which there exists any of the above-named contagious or infectious diseases, the dairyman shall not enter, neither shall he permit any of his milk bottles to be taken into, such houses, but pour such milk as each family wishes into vessels furnished by such family.

SEC. 30. *Milk inspectors.*—The milk and housing inspector, the health officer, or any person authorized by the board of health may examine all dairy herds, utensils for handling milk, of all dairymen or persons engaged in selling or shipping for sale milk or cream to the city of Lima. These inspectors shall have the power to open any can, vessel, or package containing milk or cream whether sealed (locked) or otherwise, or whether in transit or otherwise, and take samples of the milk or cream. If found to be filthy or the cans or other containers are in an unclean condition, the said inspector may then and there condemn the milk or cream as deemed by him to be filthy and confiscate same and he or she shall, if done in good faith, be held harmless in damages therefor in any suit or demand made.

SEC. 31. *Cream.*—No person shall bring into the city of Lima for sale or shall sell or offer for sale any cream unless such cream is produced from milk which must conform to all the rules and regulations of this code relating to milk, nor unless such cream be kept at or below 55° F., free from foreign substance, and shall not contain more than 1,000,000 bacteria per cubic centimeter, and shall not contain less than 16 per cent of milk fat.

SEC. 32. Any milk dealer or producer of milk who shall fail or neglect after proper notice to comply with each and every provision of this ordinance shall be subject to a fine of not less than \$5 nor more than \$200.