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POLIOMYELITIS (INFANTILE PARALYSIS).

THE ACCURACY OF DIAGNOSIS UNDER EPIDEMIC CONDITIONS.

In a recent number of the bulletin of the New York City department of health it is stated that of the 9,418 cases which were reported during the epidemic of poliomyelitis in New York City this year, 4,474 were treated in the health department hospitals. Of these 4,474 cases sent to the hospitals, 96 of the patients were found after observation not to have any serious illness. Of the remaining 4,378 patients, 49 turned out to have diseases other than poliomyelitis.

This shows that of the cases and suspected cases sent to the hospitals the diagnoses were correct in approximately 97 per cent and that in only 3 per cent was the illness from which the patients suffered not poliomyelitis. This is a better result than might have been expected under the circumstances. With the prevailing epidemic conditions and the intense public interest it would be but natural that the practicing physicians and parents should have constantly in mind the possibility that any acute illness might be poliomyelitis and that there would be a tendency to err in erroneously calling many cases of illness infantile paralysis.

The diseases affecting the 49 cases not having poliomyelitis were varied. There were 2 cases of hysteria, 8 of tuberculous meningitis, 4 of broncho-pneumonia, 2 with diphtheritic paralysis, and 3 with cerebrospinal meningitis.

RELATIONSHIP OF MILK SUPPLIES TO TYPHOID FEVER.¹

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The general nature of the relationship between milk supplies and the dissemination of typhoid fever is so well understood that, especially before this association, a detailed discussion of the avenues through which milk may become infected, or of the principles and method of safeguarding milk supplies from this danger, would be superfluous. There are, however, certain important particulars in which our present

¹ Presented before American Association of Medical Milk Commissions, Cincinnati, Ohio, June 10, 1916.

knowledge of the relationship between milk supplies and the prevalence of typhoid fever is deficient; and it is the intention in this paper to invite attention to this lacking information, with only a brief preliminary review of well-known facts and established principles.

FACTORS DETERMINING INFLUENCE OF MILK SUPPLIES IN DISSEMINATION OF TYPHOID FEVER.

Milk may become infected with typhoid bacilli through essentially the same channels as other foods and beverages, and is probably not more exposed to such infection than are various other foods; certainly it is less exposed than many vegetables in common use, and much less exposed than surface waters. Milk differs from the other usual vehicles of typhoid infection, however, in that it affords an excellent medium for the multiplication of typhoid bacilli; whereas in the other most common vehicles of transmission typhoid bacilli tend under usual conditions to decrease very rapidly. The control of milk supplies, therefore, constitutes a special problem in typhoid prophylaxis, chiefly because it must take account of this ever-present danger of multiplication of infective material once introduced. This likelihood of multiplication, together with the extensive use of unheated milk, makes it imperative that milk supplies be safeguarded with more rigid precautions than are required in the protection of any other food.

The influence of a milk supply in disseminating typhoid fever would appear to be determined by the following simple factors:

- (1) The sources of infection to which the milk is exposed.
- (2) The opportunities afforded for infective material to be introduced into the milk from these sources, or per contra, the precautions taken to safeguard against the introduction of infective material.
- (3) Circumstances affecting the potentiality of the milk supply in disseminating infection after infective material has once been introduced.

Sources of Infection.

Milk supplies are, in general, exposed to typhoid infection in proportion as they are exposed to contamination with human discharges, and in proportion as these discharges are likely to contain typhoid bacilli. Other things being equal, the likelihood that typhoid bacilli may be present in some of the discharges with which a milk supply may become contaminated is proportionate to the number of persons in dangerous contact with the milk supply. We may consider as in dangerous contact not only those persons who actually handle the milk, but all whose discharges might in any way infect the supply. Again, given a certain number of persons in such contact with a milk

supply, the probability that some of these persons may be infected with typhoid is of course proportionate to the past and present prevalence of this disease among them. These principles are commonly recognized and applied in the control of milk supplies in measures taken to reduce the number of persons handling milk, and more especially in the measures taken to secure prompt reports of all cases of suspected illness among the milk handlers. It is recognized, however, that such measures can never afford perfect protection, since a considerable number of people must inevitably come into more or less intimate contact with any milk supply, and, even with the most efficient system of reporting and isolating all suspicious cases of illness, there still remains the danger of infection from chronic bacillus carriers and from atypical or incipient cases of fever.

Precautions in Handling.

Given a certain number of *sources* of infection to which a milk supply is exposed, the safety of the supply depends next upon the precautions exercised to prevent the introduction of infective material from these sources. Among such precautions may be classed the observance of rigid personal cleanliness by milk handlers; the protection of milk from "dirt" of all kinds; protection from flies by screening, and the sterilization of all vessels, for protection against the introduction of infection in wash water or in containers returned from customers' homes. In brief, the points upon which a dairy is ordinarily scored are chiefly measures of precaution to prevent the introduction of infective material. Again, however, it is fully recognized that even with the utmost care, these precautions can never be perfect, so that there still remains a not inconsiderable danger of occasional disastrous infection.

Potentiality of Infected Supply.

The next consideration to be taken into account is the extent of damage, that is, the number of cases of typhoid fever likely to result when infective material has once been introduced into a milk supply. In this connection the opportunities afforded for multiplication of typhoid bacilli are of prime importance, and presumably these depend largely upon the time elapsing before distribution and the temperature at which the milk is held, matters receiving attention in every well regulated system of milk control. Because of the ever-present possibility that typhoid bacilli introduced into milk may multiply, large supplies made up of many contributions from various sources, mixed before distribution, are especially dangerous, since under these circumstances contamination of even a small portion may infect the whole supply. A few gallons of milk from a single farm which, if distributed directly would have gone to only a few score consumers,

may, by mixing, infect the whole of a large supply distributed to hundreds, thus multiplying the possibilities of infection among the consumers. Under equivalent conditions of control large assembled milk supplies are consequently more dangerous than small supplies distributed directly from the producers.

The extent of the damage which may result from an infected milk supply may be limited, to a considerable extent, by intelligent control of typhoid fever in the community in which the milk is consumed, provided that this control is based upon such careful and immediate study of cases as will enable the prompt recognition of any milk-borne epidemic and the inauguration of measures to prevent further infection from that supply. However, such measures, even when taken promptly, are necessarily belated, since a milk-borne epidemic can hardly be recognized, at the earliest, less than 10 days after the infection of the supply at fault.

Undoubtedly the most efficient single safeguard against disaster from a milk supply which has become accidentally infected is efficient pasteurization as the last step before delivery to the consumer, with due precaution to avoid all possibility of infection subsequent to pasteurization. From the standpoint of the prevention of typhoid fever and other infectious diseases, pasteurization may well be considered an essential adjunct to all other safeguards, since, in all the other defenses against infection, there are numerous breaks which can be guarded against only by this final measure of destroying such infectious material as may have slipped past the first lines of defense.

QUANTITATIVE RELATION OF MILK SUPPLIES TO TOTAL INCIDENCE OF TYPHOID FEVER.

The foregoing principles are well recognized and generally applied in the control of milk supplies, and it is well known that according to the efficiency with which they are carried out the indicated measures reduce or, with thoroughly efficient universal pasteurization, probably eliminate the dangers of typhoid infection from milk. It is not known, however, to what extent, under actual conditions of control, as found in modern cities, milk-borne infection contributes to the total prevalence of typhoid fever. It may be questioned whether it is of real importance to determine with any precision the extent of this influence of milk supplies, so long as its existence is recognized; but in fact the importance of such knowledge is not open to question. The best possible argument in any propaganda for better supervision of milk supplies is a well-proven statement of the consequences of neglect, enabling a contrasting statement of the extent of protection afforded by efficient control in terms of cases of disease and deaths prevented. The public is fairly well able to distinguish between the logical statement of results based on satisfac-

tory demonstration and rash, sweeping claims based merely on enthusiastic conviction. The proper control of milk supplies accomplishes much more than the prevention of milk-borne typhoid fever; but, since the prevention of typhoid is one of the most readily demonstrable and measurable results, it is especially deserving of such careful quantitative study as will yield this definite information.

Epidemic Outbreaks.

The effect most definitely attributable to milk in contributing to the prevalence of typhoid fever is in the causation of distinct, clearly marked epidemic outbreaks readily traceable to milk supplies. It is beside the question to discuss the distinctive epidemiologic features of milk-borne outbreaks. It is sufficient to state the generally accepted fact that the recognition of any considerable epidemic of typhoid fever due to the infection of a single milk supply is one of the simplest of all problems in epidemiology. The first indication or suspicion of such an outbreak is based ordinarily upon the occurrence of a disproportionate number of cases among the consumers of a single milk supply; and to recognize such a disproportionate incidence it is necessary only to have, on the one hand, full and prompt reports of all cases of typhoid fever, giving reliable information as to the use of milk and sources of supply of each patient, and, on the other hand, a knowledge of the amount of milk sold by each dealer. With these data available, as they should be in every health department, the recognition of milk-borne epidemics is primarily a matter of book-keeping, each case of typhoid being charged against the dealer upon whose route it occurs, with prompt investigation of every suspected supply. The problem is indeed so simple that failure to recognize promptly any considerable outbreak due to the infection of one among the many milk supplies of a city is utterly inexcusable, attributable either to gross negligence or utter incompetence on the part of local health authorities.

Because of the simple epidemiology involved, it is probable that milk-borne epidemics are recognized in greater proportion than epidemics due to any other cause, and the literature of recent years is full of reports of such epidemics in all parts of the civilized world. Trask¹ has collected reports of 179 such epidemics of typhoid fever, and this number could now be greatly increased by a review of more recent literature. But, though milk-borne epidemics of typhoid fever are so common and so frequently reported in the literature, there has apparently been but little if any effort made to ascertain for any large population for a considerable period of years what proportion the cases occurring in such epidemics contribute to the

¹ Trask, J. W. Milk as a Cause of Epidemics of Typhoid Fever, Scarlet Fever, and Diphtheria. Hyg. Lab. Bull. No. 41, U. S. Pub. Health and Marine Hosp. Service, Washington, 1908.

total of typhoid incidence. In the preparation of this paper no opportunity has been afforded for an extensive search for statistics on this point, but the following more or less scattered observations may be cited as illustrating the probable magnitude of milk-borne epidemics as a factor in the total incidence of typhoid fever in cities of the United States.

In connection with studies of the consequences of stream pollution, under the writer's direction, sanitary surveys have been made of all cities of more than 10,000 inhabitants on the Ohio River watershed, with special reference to the prevalence and causes of typhoid fever. Among other data, information was collected as to the number, extent, and causes of recent epidemics in each city visited. Excluding Pittsburgh, Cincinnati, and Louisville, our records refer to 25 cities of over 25,000 inhabitants each, located on the Ohio watershed, having an aggregate average population during the period from 1910 to 1914, inclusive, of slightly more than 1,600,000. The control of milk supplies in these cities is very irregular, but probably represents a fair average of that exercised in other American cities of comparable size. For instance, it is reported that approximately 50 per cent of the milk sold in 20 of these cities was pasteurized at the time of the survey, about 40 per cent by the "holding" system, and about 10 per cent by the so-called "flash" methods. In 10 of the 25 cities there was, in 1915, when our survey was made, no systematic study of typhoid fever, hence milk-borne outbreaks, unless very extensive, would almost certainly have been overlooked. In the remaining cities the reporting and studying of cases of typhoid fever were more or less irregular, but sufficient to justify the expectation that distinct epidemics would be recognized and investigated.

During the 5 years 1910 to 1914, inclusive, distinct milk-borne outbreaks of typhoid fever, totaling 446 cases, were reported in 7 of these cities. The total number of cases of typhoid fever reported in all 25 cities during that period was 8,260; therefore the cases attributable to distinct milk-borne epidemics constituted approximately 5.4 per cent of all reported cases. The morbidity reports in many of these cities were, however, very deficient; and, judging from the number of typhoid deaths reported, it is probable that the number of cases of typhoid actually occurring in these cities during this period was much in excess of those reported, probably about 24,000. Estimated on this basis the cases attributed to milk-borne outbreaks constitute approximately 2 per cent of the total cases of typhoid. This figure, however, is probably an underestimate, since, as has been already noted, the investigation of typhoid cases in some of these cities has not been sufficiently careful to insure the recognition of all distinct milk-borne epidemics.

More reliable figures, though applied to a smaller population, have been collected by the commission of the Public Health Service which, during a period of four years, 1906 to 1909, made a careful study of the prevalence and causes of typhoid fever in the District of Columbia. It is stated in the final report of this commission¹ that during each of the four years of their investigation one or more distinct milk-borne epidemics of typhoid fever were recognized, and that the cases occurring in such outbreaks during the years 1906, 1907, and 1908 constituted about 10 per cent of all the cases originating in the District of Columbia and investigated during the summer period (May 1 to Nov. 1) of these years. During the next year, 1909, one milk-borne outbreak was recognized, including 13 cases, or about 2.3 per cent, of the cases investigated during that year.

On the other hand, in Richmond, Va., where typhoid fever has been studied very closely since June, 1907, the city health officer, Dr. Levy,² states that during this period of seven and one-half years in the study of about 2,300 cases of typhoid no distinct epidemic attributable to infection of the milk supply has been recognized, and undoubtedly had such an outbreak occurred it would have been recognized. As a further instance of the proportion which cases occurring in distinct milk-borne epidemics bear to the total cases of typhoid fever, Dr. Allen W. Freeman, formerly assistant commissioner of health of Virginia, states³ that during the six years when he was intimately associated with the investigation of every epidemic of typhoid reported in the State, only two milk-borne epidemics, totaling about 100 cases, were observed in Virginia cities, in a total incidence of approximately 12,000 cases of typhoid fever. Milk-borne epidemics therefore contributed only about 0.8 per cent of these cases. During that time every epidemic attracting local attention was reported to the State board of health and thoroughly investigated, and any other considerable milk-borne outbreaks would undoubtedly have been reported and recognized as such.

The population groups included in Washington and in Richmond and Virginia cities as a whole are too small to warrant general conclusions as to the proportion which cases occurring in milk-borne outbreaks contribute generally to the total incidence of typhoid fever, and the data cited for cities on the Ohio watershed, though covering a larger population, are not based on sufficiently careful and uniform studies. The percentages above cited must therefore be considered as merely illustrative, not representative or average figures.

¹ Lumsden, L. L., and Anderson, John F., Report No. 4 on The Origin and Prevalence of Typhoid Fever in the District of Columbia. Hyg. Lab. Bull. No. 78, U. S. Pub. Health and Mar. Hosp. Serv., Washington, 1911.

² Ann. Rept. of Health Dept. of the City of Richmond, Va., for the year ending Dec. 31, 1914.
Personal communication.

Endemic or Perennial Typhoid.

Epidemic outbreaks such as have been discussed represent, however, only the peaks of the influence of milk in the causation of typhoid fever; they afford no proper measure of its total effect, which is much more difficult to estimate. Undoubtedly, in addition to causing distinctly recognizable epidemic outbreaks, infection of milk supplies is responsible for more or less numerous scattered cases of typhoid fever, not sufficiently grouped to be readily recognizable as epidemics and traceable to their source. As to what constitutes a "recognizable epidemic" no general rule can be given; it depends upon a number of factors—the absolute and relative size of the milk supply in question, the usual rate of typhoid prevalence in the community, the sequence and grouping as well as the number of cases, and the collateral evidence afforded by attendant circumstances. In large cities, with individual milk supplies distributed to thousands of consumers, and especially where their distribution is largely at wholesale, to hotels, restaurants, and drug stores, a very considerable number of cases actually due to infection of a large milk supply may occur without being definitely evidenced as an epidemic. The total of such scattered or "sporadic" cases due to infection conveyed in milk may, in a period of years, be equal to, greater, or less than the sum total of cases definitely traceable to milk supplies in epidemics. Information on this point is exceedingly scanty, hardly warranting a guess.

In this connection an instance cited by Hill¹ is exceptionally instructive. Having occasion to investigate an epidemic of 10 cases of typhoid fever occurring in a Minnesota village of some 700 to 800 inhabitants, he found that not only these 10 epidemic cases, but all the cases of typhoid fever occurring in that community during the previous five years were among the customers of a single milk dealer; and as the result of his investigation he reached the justified conclusion that all the cases of typhoid fever occurring in that community during five years had been caused by infection of this one milk supply. The source of infection was evidently a typhoid-bacillus carrier on the dairy farm, whose only connection with the handling of the milk was in washing the cans. During the five years preceding the occurrence of the epidemic of 10 cases which occasioned Dr. Hill's investigation, 11 other cases attributed to infection of this milk supply had occurred "in small, scattered numbers, at considerable and irregular intervals." This extraordinary instance, while not warranting any general conclusions, affords a clear-cut demonstration of the possibility that an infected milk supply may cause scattered cases at intervals throughout a period of years before giving rise to a distinct epidemic outbreak; and it is significant that the total of these scat-

¹ Hill, H. W., All the Typhoid of a Community for Five Years from a Carrier through Milk, *Am. Jour. Pub. Health*, Vol. IV, No. 8, Aug., 1914.

tered cases in this instance exceeded the number of cases occurring in the final discrete epidemic.

As regards the other factors of prime importance in the causation of typhoid fever, chiefly polluted water and the improper disposal of human excreta, resulting in exposure of discharges to flies and other carriers, our knowledge of their relative importance in the sum total of agencies contributing to the perennial or endemic prevalence of typhoid is fairly definite, at least much more so than our present knowledge of the rôle of milk supplies. This may be ascribed to two main reasons—that these are relatively large, often predominating, factors, and that in more or less numerous instances abrupt changes in conditions have served to demonstrate the extent of their previous effect.

There are on record many instances where a highly polluted water supply, used by the whole population of a city, has been abruptly abandoned for a pure or far less polluted supply obtained by efficient purification or from another source. The decrease in the prevalence of typhoid fever following such a radical change in quality of water supply has been so striking, prompt, and consistent in the many instances on record as to fully warrant the conclusion that the decrease in typhoid was the result of improvement in the quality of water supply. The extent of this decrease has therefore afforded at least an index, if not a measure, of the previous effect of the polluted water supply in contributing to the prevalence of this disease. Judging by the reduction in prevalence following installation of a pure water supply, the use of polluted water appears to have been responsible in many cities for the greater part of the total typhoid incidence, sometimes as much as 80 per cent, or even more.

In recent years a smaller number of similar demonstrations have served to indicate the rôle played by general food contamination resulting from the disposal of human excreta in privies and vaults exposed to flies and other carriers, two of the most notable demonstrations having been made in Richmond, Va., and Jacksonville, Fla. In both these cities the energetic action of efficient local health departments has resulted in abolishing or at least properly regulating open privies and vaults, and in both cities a striking reduction in typhoid prevalence followed immediately upon the effective inauguration of these measures. A close study of the circumstances makes it evident that these reductions in typhoid prevalence must be attributed largely to the abolishing and safeguarding of privies, and thus the magnitude of their previous influence has been indicated.

The influence of these two major factors in the causation of typhoid fever has therefore been demonstrated by radical and abrupt changes in conditions in such manner as to enable a rough quantitative estimate of the previous net effect of the conditions changed. A

proportion has thus been established between these and all other factors in the general prevalence of typhoid fever in the communities where the demonstrations have been made, and fairly definite conclusions have been justified as to the probable effect of similar conditions in other communities. However, even with such abrupt and sweeping changes as have been made in the quality of water supplies and conditions of sewage disposal, the influence of these factors could not have been so clearly discerned had it not been relatively *large*, sufficient to make an unmistakable reduction in the total prevalence of typhoid following these changes.

As compared to our knowledge and appreciation of the importance of water supplies and faulty sewage disposal in typhoid causation, our conception of the rôle played by city milk supplies is far less definite, and for obvious reasons. In the first place, changes in the efficiency of the control exercised over city milk supplies have generally been gradual rather than abrupt. Unlike the abrupt change from a highly polluted to a pure water supply, which for a whole city may be dated almost to a day, the change from a poorly controlled to a well safeguarded milk supply is usually gradual, associated with the coincident development of other measures tending to produce similar results, and thus to obscure the effects achieved by improvement in the milk supply. To a large extent radical improvement in the control of a milk supply must necessarily be achieved slowly, involving as it does the education of dealers and distributors, and extensive improvements in the plants of individual dairymen.

Practically the only radical change which can be made universally effective for a whole city's milk supply within a brief period is prohibition of the sale of raw milk, requiring universal pasteurization. Such a change has recently been made in this city (Cincinnati, Ohio). An ordinance requiring the pasteurization of all market milk excepting the small amounts sold as "certified" and "inspected" went into effect July 1, 1914, and, according to the health officer of the city, Dr. Landis, pasteurization became generally effective by January 1, 1915. It is to be hoped and expected that close studies of typhoid fever in this and other cities will serve to indicate clearly just what reduction in prevalence of this disease is actually effected by such change in the milk supply.

Another reason why the influence of milk in the causation of typhoid fever has not been so well established as, for instance, the effect of water, is that in all probability milk supplies generally play a less prominent rôle. It is quite within the range of possibility, by a close continued epidemiologic study of the endemic typhoid in a city, to arrive at well justified and fairly definite estimates of the relative importance of the several more prominent agencies con-

tributing to the prevalence of this disease. However, any such conclusion must be based upon evidence which is purely circumstantial, indirect, and inexact; evidence which does not justify singling out each of the many factors entering into the causation of typhoid fever in the community and assigning to each a definite weight and importance. It is possible, by such a study, only to distinguish the probable relative importance of various factors, to determine which are the major and which the minor. Only to the major factors, whose influence is predominating, can anything like a reasonably accurate quantitative influence be ascribed. For example, after a careful study it might be possible to estimate fairly accurately that the substitution of a pure for a polluted water supply or the abolition of privies and vaults would eliminate a certain proportion of the typhoid in a community. It might be certain, too, that a further reduction would be effected by improvement of the milk supply, but the extent of this could not be estimated with the same degree of precision.

It is understood, of course, that the relative prominence of the milk supply as a factor in typhoid prevalence doubtless differs in different communities. In general, other things being equal, the milk supply is probably a relatively more important factor in communities where other factors have been most successfully controlled. It hardly seems probable that the milk supplies of large cities can, without universal pasteurization, be controlled as effectively as their water supplies, and it is probable that in large cities where the water supply and other agencies in the causation of endemic typhoid fever have already been well controlled, the proportion of typhoid contributed by the milk supply is relatively larger, although the actual incidence per unit of population may be smaller than in cities with less effective general typhoid prophylaxis.

To review briefly the foregoing discussion: The dangers of milk as a vehicle for the dissemination of typhoid fever are quite fully and commonly understood, and the principles of control measures, based upon this knowledge, are well established, though more or less inefficiently applied in actual practice. However, having as yet no very definite quantitative idea of the extent of the effect of uncontrolled milk supplies in typhoid prevalence, we can have no better idea of the efficiency of such control as is actually exercised in various cities, or of the net reduction in typhoid prevalence which might with assurance be expected to result from more efficient control. Definite knowledge on these points is of far more than academic interest. It is of the utmost importance, not only as giving a better and much needed index of relative values in various phases of typhoid prophylaxis, but also as affording the best and most convincing kind of evidence upon which to base a plea for popular support of any movement for more efficient control of milk supplies.

Further Studies Required.

Considering the importance of this lacking information, it is rather surprising that so little systematic, organized effort has been made to collect it, and it would appear that comprehensive studies with this object in view promise fruitful results.

The relative importance of milk-borne epidemic outbreaks in contributing to the total prevalence of typhoid fever could be estimated with fair accuracy from a compilation of the statistics available in the records of a number of large cities where typhoid fever has, for a period of years, been studied with sufficient care to enable the recognition of such outbreaks. To be of value, such statistics must include a sufficient number of cities for a sufficient period of years, to enable subdivisions of the data into groups according to nature and efficiency of the local measures of control.

The most favorable opportunities for studies of the total effect of milk in contributing to the prevalence of typhoid fever are probably afforded in cities where the influence of other agencies in the causation of this disease has been reduced to a minimum, as is the case in a number of our larger cities. Intensive studies of the prevalence and causes of typhoid fever similar to that conducted in Washington, D. C., should be carried on in every city, including special studies with reference to the influence of milk; and the results of such studies should be made more generally available than is now the case.

Finally, perhaps the best of all opportunities for estimating the influence of milk supplies will be found in cities where an abrupt change is made in the efficiency of control by ordinances or regulations requiring universal pasteurization. With the constantly growing sentiment in favor of pasteurization as a necessary safeguard for municipal milk supplies, it may be confidently expected that the next few years will witness this requirement in a considerable number of cities. While the chief object of this action, when taken, will be to afford protection to the public, it may at least be hoped that, when the change is made, the opportunity afforded for acquiring much needed information will not be overlooked. In order that the influence of universal pasteurization in reducing typhoid prevalence should be clearly defined, it will, of course, be necessary primarily that the pasteurization be actually efficient, carried out with such thoroughness as to virtually eliminate milk-borne typhoid infection, since any conclusions drawn from inefficient pasteurization will be worse than useless. And, from the standpoint of instructiveness, it is desirable that the change from an unpasteurized to a pasteurized supply be made within a short period; also that it be preceded as well as followed by proper epidemiologic studies of endemic typhoid fever in the community.

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.

UNITED STATES.

RECIPROCAL NOTIFICATION.

Minnesota.

Cases of communicable diseases referred during October, 1916, to other State health departments by department of health of the State of Minnesota.

Disease and locality of notification.	Referred to health authority of—	Why referred.
Diphtheria: Minneapolis health department, Hennepin County.	Great Falls, Cascade County, Mont.	Montana representative of M. L. & T. Co. arrived in Minneapolis with sore throat which proved to be diphtheria.
Smallpox: St. Paul health department, Ramsey County. Minneapolis health department, Hennepin County.	Baker, Custer County, Mont.... Stirum, Sargent County, N. Dak.	Worked at Baker, Mont., 2 weeks before taken sick. Came from Stirum, N. Dak., Oct. 1; taken sick in Minneapolis Oct. 10.
Tuberculosis: Mayo Clinic, Rochester, Olmsted County. Thomas Hospital, Minneapolis, Hennepin County. Pokegama Sanatorium, Pine County. St. Paul health department, Ramsey County.	Camp Verde, Yavapsi County, Ariz.; Manderson, Bighorn County, Wyo. Husley, Story County, Iowa; Lake Mills, Winnobago County, Iowa. Circle, Dawson County, Mont.; Fargo, Cass County, N. Dak.. Hudson, St. Croix County, Wis..	1 advanced and 1 incipient case left Mayo Clinic for Arizona and Wyoming. 1 incipient and 1 deceased case discharged from Mayo Clinic. 1 deceased and 1 arrested case discharged from Pokegama Sanatorium. Open case from Wisconsin consulted St. Paul physician.
Typhoid fever: Backus, Cass County..... Mayo Clinic, Rochester, Olmsted County. Detroit, Becker County..... Minneapolis City Hospital, Hennepin County; Swedish Hospital, Minneapolis, Hennepin County. St. Paul, Ramsey County.....	Grinnell, Poweshiek County, Iowa. Boone, Boone County, Iowa.... McGregor, Williams County, N. Dak. Andover, Day County, S. Dak. (6 cases). Lemon, Perkins County, S. Dak.; Morristown, Corson County, S. Dak.; McIntosh, Corson County, S. Dak.; Ft. Yeates; Leola, McPherson County, S. Dak.; Aberdeen, Brown County, S. Dak.	Attended school in Iowa 3 weeks before taken sick. Typhoid "carrier" resident of Iowa; consulted Mayo Clinic. Employed in North Dakota 3 weeks previous to first symptoms. Employed at Andover, S. Dak., 3 weeks previous to first symptoms.
Ortonville, Bigstone County.....	Milbank, Grant County, S. Dak.	Living at Milbank, S. Dak., 3 weeks previous to first symptoms.
Minneapolis City Hospital, Hennepin County.	Weirton, Hancock County, W. Va.	Worked in Weirton, W. Va., 3 weeks previous to first symptoms.
St. Mary's Hospital, Duluth, St. Louis County.	Superior, Douglas County, Wis..	Attended school in Superior, Wis., 3 weeks previous to first symptoms.
Minneapolis City Hospital, Hennepin County.	Richardson, Polk County, Wis..	Working at Richardson, Wis., 3 weeks previous to first symptoms.

ANTHRAX.

State Reports for October, 1916.

During the month of October, 1916, two cases of anthrax were reported in California and two cases in the State of New York.

CEREBROSPINAL MENINGITIS.

State Reports for October, 1916.

Place.	New cases reported.	Place.	New cases reported.
California:		Minnesota—Continued.	
Orange County—		St. Louis County—	
Ahancim.....	1	Duluth.....	3
San Bernardino County—		Stearns County—	
Redlands.....	1	St. Cloud (part).....	1
Santa Barbara County—		Total.....	6
Lompoc.....	1		
Total.....	3	Mississippi:	
Connecticut:		Hinds County.....	1
Hartford County—		Itawamba County.....	1
East Hartford.....	1	Tate County.....	1
New Britain.....	1	Total.....	3
New Haven County—			
New Haven.....	1	New York:	
Waterbury.....	1	Cattaraugus County.....	1
Total.....	4	Eric County.....	2
Indiana:		Orleans County.....	1
Jefferson County.....	1	Washington County.....	1
Kosciusko County.....	1	New York City.....	23
Wabash County.....	1	Total.....	28
Wayne County.....	2		
Total.....	5	Ohio:	
Iowa:		Cuyahoga County—	
Cedar County.....	1	Cleveland.....	3
Marion County.....	1	Hamilton County—	
Polk County.....	1	Cincinnati.....	1
Total.....	3	Lorain County—	
Louisiana:		Elyria.....	1
Calcasieu Parish.....	2	Mahoning County.....	1
Orleans Parish.....	1	Montgomery County—	
Total.....	3	Dayton.....	2
Minnesota:		Total.....	8
Hennepin County—		South Carolina:	
Minneapolis.....	1	Spartanburg County.....	1
Ramsey County—		West Virginia:	
St. Paul.....	1	Wood County.....	1
		Wyoming:	
		Big Horn County.....	1

Arkansas Report for September, 1916.

During the month of September, 1916, one case of cerebrospinal meningitis was reported in Jackson County, Ark.

City Reports for Week Ended Nov. 11, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Boston, Mass.....		1	Los Angeles, Cal.....	1	1
Buffalo, N. Y.....	1		Lynn, Mass.....		1
Chicago, Ill.....		1	Milwaukee, Wis.....	1	1
Cleveland, Ohio.....	1		Nashville, Tenn.....	1	
Columbus, Ohio.....	1		New York, N. Y.....	2	
Detroit, Mich.....	2		Philadelphia, Pa.....	1	
Fall River, Mass.....	1		Portland, Oreg.....	1	1
Fitchburg, Mass.....	1		St. Louis, Mo.....	1	
Lexington, Ky.....		1	Seattle, Wash.....		1

DIPHTHERIA.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 3325.

ERYSIPELAS.

City Reports for Week Ended Nov. 11, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Alameda, Cal.	1		Newark, N. J.	1	1
Ann Arbor, Mich.	1		New Bedford, Mass.		3
Binghamton, N. Y.	3		New London, Conn.		1
Birmingham, Ala.		1	New York, N. Y.		1
Braddock, Pa.	1		Omaha, Nebr.	2	
Bridgeport, Conn.	1		Philadelphia, Pa.	2	
Brockton, Mass.	1		Pittsburgh, Pa.	6	1
Buffalo, N. Y.	4	2	Portland, Oreg.	2	
Chicago, Ill.	19	2	Richmond, Va.		1
Cincinnati, Ohio.	1		St. Louis, Mo.	8	1
Cleveland, Ohio.	5	2	St. Paul, Minn.	2	
Concord, N. H.		1	San Francisco, Cal.	5	
Detroit, Mich.	7	1	Seattle, Wash.	2	
Kalamazoo, Mich.	1		Stockton, Cal.	1	
Milwaukee, Wis.	2		Tacoma, Wash.	1	
Muscatine, Iowa.	1		Toledo, Ohio.	1	
Nanticoke, Pa.	1				

LEPROSY.

City Report for Week Ended Nov. 11, 1916.

During the week ended November 11, 1916, one case of leprosy was reported in Los Angeles, Cal.

MALARIA.

State Reports for October, 1916.

Place.	New cases reported.	Place.	New cases reported.
California:		California—Continued.	
Amador County	3	Yolo County	15
Butte County	10	Total	105
Colusa County	3		
Colusa	8	Louisiana:	
Contra Costa County—		Acadia Parish	3
Concord	1	Allen Parish	1
Fresno County	7	Beauregard Parish	2
Clovis	1	Caddo Parish	10
Firebaugh	5	Calcasieu Parish	4
Glenn County—		Concordia Parish	5
Orland	4	De Soto Parish	4
Kings County—		Evangeline Parish	1
Lemoore	1	Iberia Parish	4
Los Angeles County—		Jefferson Parish	1
Long Beach	1	Jefferson Davis Parish	1
Los Angeles	3	Plaquemines Parish	2
Merced County	5	St. John Parish	6
Merced	3	St. Landry Parish	7
Nevada County	3	St. Mary Parish	2
Placer County	1	St. Tammany Parish	30
Rocklin	3	Tangipahoa Parish	3
Sacramento County—		Vermilion Parish	2
Sacramento	5	Vernon Parish	8
San Francisco	2	Total	96
San Joaquin County—		Minnesota:	
Stockton	3	Goodhue County—	
Siskiyou County	1	Red Wing	2
Solano County	4		
Stanislaus County	2		
Oakdale	1		
Tulare County	2		
Visalia	8		

MALARIA—Continued.

State Reports for October, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
Mississippi:		Mississippi—Continued.	
Adams County	220	Octibbeha County	119
Alcorn County	126	Panola County	264
Amite County	94	Pearl River County	84
Attala County	143	Perry County	690
Benton County	50	Pike County	109
Bolivar County	1,144	Pontotoc County	60
Calhoun County	87	Prentiss County	106
Carroll County	150	Quitman County	94
Chicasaw County	63	Rankin County	86
Choctaw County	185	Scott County	152
Claiborne County	134	Sharkey County	151
Clarke County	98	Simpson County	112
Clay County	82	Smith County	83
Coahoma County	963	Sunflower County	666
Copiah County	278	Tallahatchie County	333
Covington County	232	Tate County	269
De Soto County	97	Tippah County	60
Forest County	281	Tishomingo County	140
Franklin County	132	Tunica County	420
George County	97	Union County	90
Greene County	267	Warren County	348
Grenada	100	Washington County	642
Hancock County	229	Wayne County	145
Harrison County	335	Webster County	46
Hinds County	623	Wilkerson County	74
Holmes County	717	Winston County	193
Issaquena County	91	Yalobusha County	98
Ittawamba County	106	Yazoo County	751
Jackson County	135	Stone County	37
Jasper County	135	Walthall County	27
Jefferson County	239		
Jefferson Davis County	49	Total	17,650
Jones County	367		
Kemper County	111	Ohio:	
Lafayette County	156	Cuyahoga County—	
Lamar County	99	Cleveland	2
Lauderdale County	280	Scioto County	3
Lawrence County	78	Total	5
Leake County	142		
Lee County	161	South Carolina:	
Leflore County	672	Aiken County	1
Lincoln County	87	Beaufort County	21
Lowndes County	72	Hampton County	2
Madison County	162	Laurens County	4
Marion County	275	Marion County	31
Marshall County	251	Richland County	3
Monroe County	89	Union County	22
Montgomery County	129	York County	37
Neshoba County	247	Total	121
Newton County	70		
Noxubee County	71		

City Reports for Week Ended Nov. 11, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Berkeley, Cal.	1	.....	New Orleans, La.	5	.....
Charleston, S. C. ....	.....	2	Passaic, N. J.	1	.....
Fall River, Mass.	1	.....	San Francisco, Cal.	1	.....
Mobile, Ala. ....	.....	1			

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 3325.

PELLAGRA.

State Reports for October, 1916.

Place.	New cases reported.	Place.	New cases reported.
Connecticut:		Mississippi—Continued.	
New Haven County—		Lincoln County.....	9
Naugatuck.....	1	Lowndes County.....	3
Louisiana:		Madison County.....	8
Concordia Parish.....	1	Marion County.....	6
De Soto Parish.....	1	Marshall County.....	18
East Baton Rouge Parish.....	1	Monroe County.....	12
East Carroll Parish.....	1	Neshoba County.....	5
Orleans Parish.....	4	Noxubee County.....	9
Tangipahoa Parish.....	1	Oktibbeha County.....	5
Tensas Parish.....	1	Panola County.....	1
Total.....	10	Perry County.....	7
		Pike County.....	6
Mississippi:		Prentiss County.....	2
Adams County.....	6	Scott County.....	7
Alcorn County.....	3	Sharkey County.....	2
Amite County.....	2	Simpson County.....	5
Attala County.....	2	Sunflower County.....	11
Bolivar County.....	39	Tallahatchie County.....	14
Carroll County.....	2	Tate County.....	2
Chickasaw County.....	2	Tippah County.....	3
Claiborne County.....	1	Tishomingo County.....	8
Clarke County.....	2	Tunica County.....	6
Clay County.....	5	Union County.....	1
Coahoma County.....	30	Warren County.....	2
Copiah County.....	6	Washington County.....	12
Covington County.....	12	Wayne County.....	1
De Soto County.....	10	Webster County.....	2
Forrest County.....	14	Winston County.....	3
George County.....	2	Yazoo County.....	13
Hancock County.....	3	Stone County.....	2
Harrison County.....	7	Walthall County.....	1
Hinds County.....	21	Total.....	410
Holmes County.....	7	South Carolina:	
Itawamba County.....	8	Anderson County.....	1
Jasper County.....	2	Cherokee County.....	1
Jefferson County.....	1	Greenville County.....	1
Jones County.....	10	Greenwood County.....	1
Kemper County.....	3	Hampton County.....	1
Lafayette County.....	1	Marion County.....	1
Lamar County.....	6	Spartanburg County.....	3
Lauderdale County.....	4	Union County.....	1
Lawrence County.....	2	York County.....	6
Leake County.....	4	Total.....	16
Lee County.....	5		
Leflore County.....	2		

City Reports for Week Ended Nov. 11, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Austin, Tex.....		1	Richmond, Va.....		1
Charleston, S. C.....		4	Roanoke, Va.....	1	1
New Orleans, La.....	1	1	Worcester, Mass.....	1	1

PLAGUE.

Louisiana—New Orleans—Plague-Infected Rat Found.

Passed Asst. Surg. Simpson reported that a rat captured October 14, 1916, at No. 3817 Marais Street, New Orleans, La., was proved positive for plague infection November 13, 1916.

PLAGUE—Continued.

Louisiana—St. Bernard Parish—Plague-Infected Rat Found.

Passed Asst. Surg. Simpson reported that a rat captured October 25, 1916, in Rice's Feed Pen, St. Bernard Parish, La., was proved positive for plague infection November 15, 1916.

PNEUMONIA.

City Reports for Week Ended Nov. 11, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Auburn, N. Y.	3	.....	Los Angeles, Cal.	5	2
Beaver Falls, Pa.	3	.....	Manchester, N. H.	5	5
Binghamton, N. Y.	6	1	Newark, N. J.	22	5
Birmingham, Ala.	1	8	New Castle, Pa.	3	.....
Butte, Mont.	1	1	Pasadena, Cal.	4	1
Canton, Ohio	1	2	Philadelphia, Pa.	41	26
Chicago, Ill.	124	59	Pittsburgh, Pa.	22	23
Cleveland, Ohio	17	13	Reading, Pa.	3	3
Detroit, Mich.	3	15	Sandusky, Ohio	1	.....
Dubuque, Iowa	3	3	San Francisco, Cal.	8	7
Flint, Mich.	2	.....	Schenectady, N. Y.	1	.....
Kalamazoo, Mich.	1	.....	Stockton, Cal.	3	2
Kansas City, Mo.	2	4	Toledo, Ohio	1	4
Lexington, Ky.	1	1	York, Pa.	1	.....

POLIOMYELITIS (INFANTILE PARALYSIS).

Cases Reported by States.

The following tabular statement shows the number of cases of poliomyelitis reported to the United States Public Health Service by State health authorities during the periods shown:

	Total cases reported.		Total cases reported.
Alabama:		Connecticut:	
July 1 to 31.....	77	July 1 to 31.....	165
Aug. 1 to 31.....	62	Aug. 1 to 31.....	367
Sept. 1 to 25.....	12	Sept. 1 to 30.....	274
Arizona:	151	Oct. 1 to 31.....	91
July 1 to 31.....	2	Nov. 1 to 25.....	17
Aug. 1 to 31.....	2	Delaware:	914
Sept. 1 to 25.....	2	July 1 to 31.....	1
Arkansas:	6	Aug. 1 to 31.....	11
July 1 to 31.....	5	Sept. 1 to 30.....	36
Aug. 1 to 31.....	1	Oct. 1 to Nov. 18.....	25
Sept. 1 to 30.....	5	District of Columbia:	73
California:	11	July 1 to 31.....	8
July 1 to 31.....	12	Aug. 1 to 31.....	18
Aug. 1 to 31.....	18	Sept. 1 to 30.....	6
Sept. 1 to 30.....	13	Oct. 1 to 31.....	4
Oct. 1 to 31.....	21	Nov. 1 to 30.....	0
Nov. 1 to 25.....	20	Florida:	36
Colorado:	84	July 1 to 31.....	4
July 1 to 31.....	1	Aug. 1 to 31.....	3
Aug. 1 to 31.....	2	Sept. 1 to 25.....	1
Sept. 1 to 30.....	4	Georgia.....	8
Oct. 1 to Nov. 4.....	5		(1)
	12		

¹ Disease present, but the number of cases is not known.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

Cases Reported by States—Continued.

	Total cases reported.		Total cases reported.
Idaho:		Mississippi:	
Aug. 1 to 31.....	4	July 1 to 31.....	57
Sept. 1 to 30.....	3	Aug. 1 to 31.....	31
Oct. 1 to 31.....	2	Sept. 1 to 30.....	14
Nov. 1 to 10.....	1	Oct. 1 to 31.....	10
	10		112
Illinois:		Missouri:	
July 1 to 31.....	76	July 1 to 31.....	4
Aug. 1 to 31.....	339	Aug. 1 to 31.....	3
Sept. 1 to 30.....	257	Sept. 1 to 25.....	4
Oct. 1 to Nov. 25.....	151		11
	823	Montana:	
Indiana:		July 1 to 31.....	11
July 1 to 31.....	27	Aug. 1 to 31.....	28
Aug. 1 to 31.....	38	Sept. 1 to 30.....	33
Sept. 1 to 30.....	67	Oct. 1 to Nov. 25.....	14
Oct. 1 to 31.....	157		86
	189	Nebraska:	
Iowa:		July 1 to 31.....	1
July 1 to 31.....	30	Aug. 1 to 31.....	7
Aug. 1 to 31.....	82	Sept. 1 to 23.....	6
Sept. 1 to 30.....	66		14
Oct. 1 to 31.....	31	Nevada:	
Nov. 1 to 11.....	11	July 1 to Sept. 24.....	0
	220	New Hampshire:	
Kansas:		July 1 to 31.....	7
July 1 to 31.....	14	Aug. 1 to 31.....	16
Aug. 1 to 31.....	31	Sept. 1 to 30.....	133
Sept. 1 to 30.....	19	Oct. 1 to 31.....	5
Oct. 1 to Nov. 4.....	23		61
	87	New Jersey:	
Kentucky:		July 1 to 31.....	640
July 1 to 31.....	15	Aug. 1 to 31.....	2,114
Aug. 1 to 31.....	19	Sept. 1 to 30.....	957
Sept. 1 to 28.....	1	Oct. 1 to 31.....	254
	35	Nov. 1 to 4.....	3
Louisiana:			3,968
July 1 to 31.....	19	New Mexico:	
Aug. 1 to 31.....	6	July 1 to Sept. 25.....	0
Sept. 1 to 30.....	5	New York (exclusive of New York City):	
Oct. 1 to 31.....	3	July 1 to 31.....	517
Nov. 1 to 25.....	4	Aug. 1 to 31.....	1,527
	37	Sept. 1 to 30.....	1,064
Maine:		Oct. 1 to 31.....	1,334
July 1 to 31.....	0		3,442
Aug. 1 to 31.....	26	North Carolina.....	(3)
Sept. 1 to 30.....	46	North Dakota:	
Oct. 1 to Nov. 18.....	46	July 1 to 31.....	0
	118	Aug. 1 to 31.....	2
Maryland:		Sept. 1 to 30.....	16
July 1 to 31.....	10		18
Aug. 1 to 31.....	64	Ohio:	
Sept. 1 to 30.....	100	July 1 to 31.....	94
Oct. 1 to 31.....	120	Aug. 1 to 31.....	168
Nov. 1 to 29.....	40	Sept. 1 to 30.....	138
	334	Oct. 1 to 31.....	56
Massachusetts:			456
July 1 to 31.....	107	Oklahoma:	
Aug. 1 to 31.....	252	July 1 to 31.....	12
Sept. 1 to 30.....	623	Aug. 1 to 31.....	10
Oct. 1 to 31.....	702	Sept. 1 to Nov. 15.....	13
Nov. 1 to 29.....	179		35
	1,863	Oregon:	
Michigan:		Sept. 1 to 30.....	3
July 1 to 31.....	51	Oct. 1 to 31.....	28
Aug. 1 to 31.....	163	Nov. 1 to 4.....	2
Sept. 1 to 30.....	166		33
Oct. 1 to 31.....	97	Pennsylvania:	
Nov. 12 to 25.....	14	July 1 to 31.....	107
	491	Aug. 1 to 31.....	711
Minnesota:		Sept. 1 to 30.....	743
July 1 to 31.....	142	Oct. 8 to 31.....	250
Aug. 1 to 31.....	377	Nov. 1 to 25.....	71
Sept. 1 to 30.....	199		1,882
Oct. 1 to 31.....	148		
Nov. 1 to 25.....	40		
	906		

¹ Corrected figures. Later report than figures previously published.

² Not including cases on Crow Reservation.

³ Disease present, but the number of cases is not known.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

City Reports—August 27 to November 25, 1916—Continued.

City.	Cases reported for week ended—												
	Sept. 2.	Sept. 9.	Sept. 16.	Sept. 23.	Sept. 30.	Oct. 7.	Oct. 14.	Oct. 21.	Oct. 28.	Nov. 4.	Nov. 11.	Nov. 18.	Nov. 25.
Lynn, Mass.	2	2	2	1	2	3	6	8	6	3	4	1	.....
Malden Mass.			2	6	10	3	4	4	6	2	4	1	.....
Manchester, N. H.	3	5	1	5								1	.....
Minneapolis, Minn.	12	4	5		3		2		2				.....
Newark, N. J.	89	45	38	30	12	17	9	1	1	1	3		.....
Newburyport, Mass.	2	5	1	7	2	1	3						1
New Haven, Conn.	6	4	7	1	1		1			1	1		.....
New York, N. Y.	441	352	252	156	142	96	72	43	37	19	14	4	9
Orange, N. J.	15	4	1	2	1								.....
Philadelphia, Pa.	120	125	85	70	47	59	27	26	24	7	8	6	2
Pittsburgh, Pa.	5	5	2	1	1	1	1		1		1		.....
Pittsfield, Mass.	2	10	8	6	4	4	5	8	4				.....
Plainfield, N. J.	1	6	4	2	3	1	3						.....
Portland, Oreg.			1	1	1	3	4	5	1	1	1		.....
Providence, R. I.	10	7	10	17	9	9	7	3	1	8	3	5	2
Quincy, Mass.			4	5	4								.....
St. Paul, Minn.	8	7	2	3	2	4		1		1			.....
Somerville, Mass.	2	1	1			5	3	4	5	3	2		.....
Springfield, Mass.	5	9	12	8	9	5	3	4	2	3	4	5	.....
Syracuse, N. Y.	33	49	29	20	12	11	5		4		2		.....
Toledo, Ohio.	7	11	1	2	3	1	2	1	1	1			.....
Trenton, N. J.	7	11	14	23	34	20	8	12	4	1	1		.....
Waltham, Mass.			2			8	2	9	2	2		1	1
Wilmington, Del.	3	3	2	3	8	7	6	3	5	1	1		1

State Reports for October, 1916.

Place.	New cases reported.	Place.	New cases reported.
California:		Connecticut—Continued.	
Alameda County—		Hartford County—Continued.	
Oakland.	1	Southington.	7
San Leandro.	1	Suffield.	1
Amador County.	1	Wethersfield.	1
Butte County—		Windsor.	1
Chico.	1	Litchfield County—	
Los Angeles County.	1	New Milford.	1
Lordsburg.	1	Watertown.	1
Long Beach.	2	Winchester.	2
Pomona.	1	Middlesex County—	
San Francisco.	6	Haddam.	1
San Luis Obispo County—		Killingworth.	1
Arroyo Grande.	1	Middletown.	1
Santa Barbara County.	2	Westbrook.	1
Santa Barbara.	1	New Haven County—	
Tehama County—		Ansonia.	1
Corning.	1	Meriden (city).	2
Red Bluff.	1	New Haven.	1
Total.	21	Orange.	1
Connecticut:		Wallingford.	6
Fairfield County—		Waterbury.	5
Bridgeport.	3	New London County—	
Danbury (city).	2	Colebrook.	1
Danbury (town).	1	Lisbon.	1
Greenwich.	4	New London.	3
New Fairfield.	1	Norwich.	1
Stamford (city).	4	Stonington.	1
Stamford (town).	3	Tolland County—	
Stratford.	1	Somers.	1
Hartford County—		Windham County—	
Berlin.	1	Brooklyn.	1
East Windsor.	1	Eastford.	1
Hartford.	11	Killingly.	1
Manchester.	1	Putnam.	1
New Britain.	9	Willimantic.	1
Newington.	1	Total.	91
Simsbury.	1		

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

State Reports for October, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
Indiana:		Michigan—Continued.	
Allen County.....	1	Gratiot County—	
Cass County.....	1	Alma.....	1
Dearborn County.....	1	Hillsdale County—	
Hamilton County.....	1	Somerset Township.....	1
Howard County.....	1	Hillsdale.....	1
Kosciusko County.....	1	Ingham County—	
Lake County.....	1	Delhi Township.....	1
Laporte County.....	3	Lansing.....	4
Lawrence County.....	2	Jackson County—	
Madison County.....	1	Leoni Township.....	7
Marion County.....	26	Jackson.....	5
Martin County.....	1	Kalamazoo County—	
Miami County.....	1	Kalamazoo.....	3
Noble County.....	1	Kent County—	
Owen County.....	1	Plainfield Township.....	1
St. Joseph County.....	5	Wyoming Township.....	2
Sullivan County.....	1	Grand Rapids.....	4
Tipton County.....	2	Livingston County—	
Vanderburg County.....	4	Handy Township.....	1
Vigo County.....	1	Unadilla Township.....	1
Whitley County.....	1	Midland County—	
Total.....	57	Hope Township.....	1
		Monroe County—	
Iowa:		Monroe.....	1
Allamakee County.....	1	Oakland County—	
Audubon County.....	2	Pontiac.....	1
Blackhawk County.....	1	Saginaw County—	
Boone County.....	1	Jonesfield Township.....	1
Des Moines County.....	1	Saginaw.....	5
Franklin County.....	1	Sanilac County—	
Guthrie County.....	1	Moore Township.....	1
Hamilton County.....	1	Sandusky.....	1
Jasper County.....	2	Washtenaw County—	
Johnson County.....	2	Lyndon Township.....	1
Keokuk County.....	3	Sharon Township.....	1
Lee County.....	1	Chelsea.....	1
Linn County.....	1	Ann Arbor.....	1
Louisa County.....	2	Wayne County—	
Lyon County.....	1	Ecorse.....	2
Marion County.....	1	Highland Park.....	2
Palo Alto County.....	1	River Rouge.....	1
Pocahontas County.....	1	Detroit.....	6
Polk County.....	3	Total.....	97
Union County.....	1		
Wright County.....	3	Minnesota:	
Total.....	31	Becker County—	
		Frazee.....	1
Louisiana:		Two Inlets Township.....	1
Ascension Parish.....	1	Town 37 R. 142.....	1
Calcasieu Parish.....	1	Blue Earth County—	
Jefferson Davis Parish.....	1	Amboy.....	1
Total.....	3	Garden City Township.....	1
		Mankato Township.....	1
Michigan:		Brown County—	
Berrien County—		Comfrey.....	1
Niles.....	2	Sleepy Eye.....	2
Branch County—		Albin Township.....	1
Batavia Township.....	1	Stark Township.....	1
Calhoun County—		Carver County—	
Homer.....	1	Young America Township.....	1
Washington Heights.....	1	Cass County—	
Albion.....	3	Boy Lake Township.....	1
Battle Creek.....	18	Sylvan Township.....	1
Cass County—		Clay County—	
Mason Township.....	1	Moorhead.....	2
Charlevoix County—		Egton Township.....	1
Chandler Township.....	2	Skree Township.....	1
Boyne Falls.....	1	Cottonwood County—	
Eaton County—		Rose Hill Township.....	1
Brookfield Township.....	1	Crow Wing Township—	
Genesee County—		Brainerd.....	4
Fenton.....	1	Bay Lake Township.....	1
Flint.....	6	Garrison Township.....	10
Gladwin County—		Maple Grove Township.....	2
Beaverton.....	1	Nokay Lake Township.....	2

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

State Reports for October, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
Minnesota—Continued.		Minnesota—Continued.	
Dakota County—		Redwood County—	
Farmington.....	1	Delhi.....	3
Empire Township.....	1	Lucan.....	2
Eureka Township.....	1	Kintire Township.....	1
Marshan Township.....	1	Renville County—	
Douglas County—		Sacred Heart Township.....	1
Alexandria.....	1	Rice County—	
Ida Township.....	2	Northfield.....	1
Spruce Hill Township.....	2	St. Louis County—	
Goodhue County—		Duluth.....	3
Goodhue.....	1	Scott County—	
Hennepin County—		Savage.....	1
Minneapolis.....	12	Cedar Lake Township.....	1
Minnetonka Township.....	1	Sibley County—	
Houston County—		Bismarek Township.....	1
Houston Township.....	1	Stearns County—	
La Crescent Township.....	1	Melrose.....	1
Hubbard County—		St. Cloud (part).....	3
Park Rapids.....	1	Avon Township.....	1
Isanti County—		Millwood Township.....	2
Cambridge.....	1	Steele County—	
Lac qui Parle County—		Summit Township.....	1
Lake Shore Township.....	1	Stevens County—	
Lesueur County—		Darnen Township.....	1
Elysian Township.....	1	Donnelly Township.....	1
Lyon County—		Webasha County—	
Cottonwood.....	1	Chester Towns. ip.....	1
Marshall.....	7	Pepin Township.....	1
Tracy.....	1	Wadena County—	
Fairview Township.....	2	Wadena.....	2
Island Lake Township.....	2	Waseca County—	
Lake Marshall Township.....	2	Wilton Township.....	1
Sodus Township.....	5	Washington County—	
Vallers Township.....	2	Stillwater.....	2
McLeod County—		Winona County—	
Glencoe.....	1	Winona.....	2
Mahnomen County—		Hart Township.....	3
La Garde Township.....	2	Pleasant Hill Township.....	3
Marshall County—		Whitewater Township.....	4
Holt Township.....	1	Wright County—	
Meeker County—		Annandale.....	1
Cosmos Township.....	1	Frankfort Township.....	1
Mille Lacs County—		Otsego Townshp.....	1
Hayland Township.....	1	Yellow Medicine County—	
Morrison County—		Florida Township.....	1
Swanville Township.....	1	Total.....	1 165
Mower County—		Mississippi:	
Grand Meadow.....	1	Attala County.....	1
Windom Township.....	1	Bolivar County.....	1
Murray County—		Choctaw County.....	1
Des Moines River Township.....	1	Hancock County.....	1
Fenton Township.....	1	Hinds County.....	1
Holly Township.....	1	Issaquana County.....	1
Shetek Township.....	1	Leflore County.....	1
Skandia Township.....	1	Washington County.....	2
Nicollet County—		Webster County.....	1
St. Peter.....	1	Total.....	10
Nobles County—		New York:	
Lorain Township.....	1	Albany County.....	12
Olmsted County—		Boone County.....	1
Rochester.....	2	Cayuga County.....	7
Ottertail County—		Chautauqua County.....	1
Fergus Falls.....	1	Chemung County.....	2
Butler Township.....	1	Chenango County.....	3
Gorman Township.....	2	Columbia County.....	1
Otto Township.....	1	Courtland County.....	3
Polk County—		Delaware County.....	1
Godfrey Township.....	1	Dutchess County.....	3
Pope County—		Erie County.....	2
Gilchrist Township.....	1	Essex County.....	1
Lake Johanna Township.....	1		
Leven Township.....	1		
Ramsey County—			
St. Paul City.....	2		

1 This total includes 4 August cases and 13 September cases not reported until October.

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

State Reports for October, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
New York—Continued.		Ohio—Continued.	
Franklin County.....	1	Franklin County.....	1
Genesee County.....	1	Geauga County.....	3
Herkimer County.....	4	Hamilton County.....	13
Jefferson County.....	13	Hancock County.....	1
Lewis County.....	8	Henry County.....	1
Madison County.....	5	Lawrence County.....	1
Monroe County.....	6	Licking County—	
Montgomery County.....	3	Newark.....	1
Nassau County.....	4	Lucas County—	
Niagara County.....	2	Toledo.....	5
Oneida County.....	13	Mahoning County.....	3
Onondaga County.....	33	Marion County.....	2
Ontario County.....	2	Monroe County.....	1
Orange County.....	12	Montgomery County—	
Orleans County.....	1	Dayton.....	1
Oswego County.....	33	Richland County.....	3
Otsego County.....	6	Summit County.....	3
Putnam County.....	3	Williams County.....	1
Rensselaer County.....	12	Wood County.....	3
Rockland County.....	2		
St. Lawrence County.....	11	Total.....	56
Saratoga County.....	4		
Schenectady County.....	1	South Carolina:	
Schoharie County.....	1	Anderson County.....	1
Seneca County.....	1	Chester County.....	1
Steuben County.....	3	Darlington County.....	1
Suffolk County.....	20	Marlboro County.....	1
Sullivan County.....	3	Orangeburg County.....	4
Tioga County.....	3	Richland County.....	3
Tompkins County.....	14	Spartanburg County.....	1
Ulster County.....	20	Sumter County.....	1
Warren County.....	5	Total.....	13
Washington County.....	3		
Wayne County.....	3	West Virginia:	
Westchester County.....	41	Berkeley County.....	3
New York City.....	258	Braxton County.....	1
Total.....	592	Calhoun County.....	1
		Fayette County.....	1
Ohio:		Kanawha County.....	1
Ashland County—		Mineral County.....	1
Ashland.....	1	Pleasants County.....	3
Columbiana County—		Raleigh County.....	4
Wellsville.....	1	Tucker County.....	1
Cuyahoga County.....	6	Wetzel County.....	1
Darke County.....	1	Wood County.....	1
Defiance County.....	1	Total.....	13
Erie County.....	1		
Fulton County.....	2		

Arkansas Report for September, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Drew County.....	1	Pulaski County.....	1
Lafayette County.....	1		
Miller County.....	1	Total.....	5
Mississippi County.....	1		

POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

City Reports for Week Ended Nov. 11, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Baltimore, Md.....	3	.....	Newark, N. J.....	3	.....
Boston, Mass.....	15	5	New Haven, Conn.....	1	.....
Bridgeport, Conn.....	2	1	New York, N. Y.....	14	7
Brookline, Mass.....	1	.....	Norristown, Pa.....	1	1
Chelsea, Mass.....	1	.....	Northampton, Mass.....	1	.....
Chicago, Ill.....	.....	1	Philadelphia, Pa.....	8	.....
Chicopee, Mass.....	1	.....	Pittsburgh, Pa.....	1	1
Detroit, Mich.....	.....	2	Portland, Oreg.....	1	.....
East Orange, N. J.....	1	.....	Providence, R. I.....	3	1
Everett, Mass.....	1	.....	Quincy, Mass.....	.....	1
Fitchburg, Mass.....	1	.....	Reading, Pa.....	1	.....
Grand Rapids, Mich.....	1	1	San Francisco, Cal.....	1	.....
Hartford, Conn.....	3	.....	Somerville, Mass.....	2	.....
Indianapolis, Ind.....	1	.....	South Bend, Ind.....	1	.....
Kalamazoo, Mich.....	2	.....	Springfield, Mass.....	4	1
Kenosha, Wis.....	1	.....	Syracuse, N. Y.....	2	2
Lowell, Mass.....	.....	1	Toledo, Ohio.....	.....	1
Lynn, Mass.....	4	1	Trenton, N. J.....	1	1
Malden, Mass.....	4	.....	Wilmington, Del.....	1	.....
Montclair, N. J.....	1	.....	Worcester, Mass.....	1	.....

. RABIES IN ANIMALS.

City Report for Week Ended Nov. 11, 1916.

During the week ended November 11, 1916, five cases of rabies in animals were reported in Buffalo, N. Y.

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 3325.

SMALLPOX.

Connecticut.

Collaborating Epidemiologist Black reported that cases of smallpox have been notified in Connecticut as follows: During the month of October, 1916, Waterbury 11, Torrington 11, Harrington 5, Prospect 2, East Haven 1; during the week ended November 4, 1916, Waterbury 4; during the week ended November 11, Waterbury 1; week ended November 18, Waterbury 15, Naugatuck 3, and during the week ended November 25, Waterbury 4, New London 1, making a total of 58 cases reported since October 1, 1916.

Minnesota.

Collaborating Epidemiologist Bracken reported that during the week ended November 25, 1916, 6 new foci of smallpox infection were reported in Minnesota, cases of the disease having been notified as follows: Freeborn County, Bath Township 4; Itasca County, Coleraine 1; Millelacs County, Milaca 2, Millelacs Township 1, Milo Township 2; Yellow Medicine County, Hazel Run Township 1.

SMALLPOX—Continued.

Texas—El Paso.

Acting Asst. Surg. Tappan reported that during the week ended November 18, 1916, one new case of smallpox was notified at El Paso, Tex., making a total of 19 cases reported since July 1, 1916.

State Reports for October, 1916.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within seven years preceding attack.	Number last vaccinated more than seven years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
California:						
Alameda County.....	4				4	
Humboldt County—						
Eureka.....	1					1
Riverside County—						
Banning.....	1				1	
Total.....	6				5	1
Michigan:						
Alpena County—						
Alpena.....	1				1	
Calhoun County—						
Lee Township.....	1		1			
Eaton County—						
Kalamo Township.....	1					1
Genesee County—						
Mundy Township.....	3				3	
Flint.....	8				8	
Grand Traverse County—						
Blair Township.....	6			3	3	
Long Lake Township.....	2				2	
Traverse City.....	44			2	42	
Grafton County—						
Wheeler Township.....	2				2	
St. Louis.....	2				2	
Ingham County—						
Lansing.....	3				3	
Lenawee County—						
Woodstock Township.....	2		2			
Monroe County—						
Bedford Township.....	1				1	
Presque Isle County—						
Pulaski Township.....	1				1	
Posen.....	2			1	1	
St. Clair County—						
Casco Township.....	1				1	
Wales Township.....	5				5	
St. Joseph County—						
White Pigeon.....	2				2	
Shiawassee County—						
Owosso.....	10				10	
Wayne County—						
Highland Park.....	1				1	
Detroit.....	9		1	3	5	
Total.....	107		4	9	93	1
Minnesota:						
Clay County—						
Hawley.....	3				3	
Dodge County—						
Kasson.....	1				1	
Hennepin County—						
Minneapolis.....	2				1	1
Morrison County—						
Little Falls.....	2				2	
Ottertail County—						
Fergus Falls.....	1				1	

SMALLPOX—Continued.

State Reports for October, 1916—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within seven years preceding attack.	Number last vaccinated more than seven years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Minnesota—Continued.						
Pope County—						
Westport Township.....	1				1	
Ramsey County—						
St. Paul.....	2				2	
St. Louis County—						
Duluth.....	3		1		2	
Sherburne County—						
Big Lake.....	1			1		
Stearns County—						
Albany.....	1				1	
Swift County—						
Appleton.....	1					1
Total.....	13		1	1	14	2
New York:						
Westchester.....	1					1
Ohio:						
Ashtabula County.....	14		1	3	4	6
Brown County.....	1					1
Cuyahoga County—						
Cleveland.....	92					92
Darke County.....	12				10	2
Erie County.....	1					1
Fulton County.....	1					1
Hamilton County—						
Cincinnati.....	1				1	
Hancock County—						
Findlay.....	1			1		
Knox County.....	1					1
Lake County.....	3				3	
Logan County.....	10					10
Lucas County—						
Toledo.....	19					19
Mahoning County—						
Youngstown.....	3			1	1	1
Paulding County.....	4					4
Shelby County.....	4		1		3	
Trumbull County—						
Niles.....	25					25
Total.....	192		2	5	22	163

Miscellaneous State Reports.

Place	Cases.	Deaths.	Place.	Cases.	Deaths.
Arkansas (Sept. 1-30):			Indiana (Oct. 1-31):		
Johnson County.....	3		Dubois County.....	2	
Connecticut (Oct. 1-31):			Grant County.....	1	
Litchfield County—			Jay County.....	1	
Harwinton.....	5		Johnson County.....	1	
Torrington.....	11		Knox County.....	6	
New Haven County—			Lake County.....	1	
East Haven.....	1		Randolph County.....	11	
Prospect.....	2		Tipton County.....	10	
Waterbury.....	11		Union County.....	2	
Total.....	30		Vigo County.....	3	
			Total.....	33	

SMALLPOX—Continued.

Miscellaneous State Reports—Continued.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Iowa (Oct. 1-31):			Mississippi (Oct. 1-31):		
Cedar County.....	1	.....	Grenada County.....	1	.....
Dickinson County.....	3	.....	Holmes County.....	2	.....
Linn County.....	2	.....	Jasper County.....	1	.....
Monroe County.....	3	.....	Jefferson County.....	1	.....
Muscatine County.....	1	.....	Jones County.....	6	.....
Polk County.....	1	.....	Octibbeha County.....	1	.....
Sioux County.....	2	.....	Perry County.....	7	.....
Taylor County.....	1	.....	Quitman County.....	8	.....
Webster County.....	2	.....	Tippah County.....	10	.....
Woodbury County.....	1	.....	Total.....	37	.....
Total.....	17	.....	South Carolina (Oct. 1-31):		
Louisiana (Oct 1-31):			Abbeville County.....		
Allen Parish.....	1	.....		1	.....
Calcasieu Parish.....	4	.....		
Jefferson Davis Parish.....	1	.....		
Orleans Parish.....	11	.....		
St. John Parish.....	1	.....		
Total.....	18	.....		

City Reports for Week Ended Nov. 11, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Canton, Ohio.....	1	.....	Omaha, Nebr.....	2	.....
Charleston, S. C.....	1	.....	Pittsburgh, Pa.....	1	.....
Chicago, Ill.....	2	.....	St. Joseph, Mo.....	1	.....
Cleveland, Ohio.....	20	.....	St. Paul, Minn.....	1	.....
Danville, Ill.....	4	.....	Salt Lake City, Utah.....	3	.....
Detroit, Mich.....	3	.....	San Francisco, Cal.....	1	.....
El Paso, Tex.....	2	1	Seattle, Wash.....	1	.....
Flint, Mich.....	3	.....	Springfield, Ill.....	1	.....
Indianapolis, Ind.....	1	.....	Toledo, Ohio.....	1	.....
Minneapolis, Minn.....	1	.....		

TETANUS.

City Reports for Week Ended Nov. 11, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Charleston, S. C.....		1	North Adams, Mass.....	1	1
Chicago, Ill.....		2	Worcester, Mass.....	1	.....

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 3325.

TYPHOID FEVER.

State Reports for October, 1916.

Place.	New cases reported.	Place.	New cases reported.
California:		California—Continued.	
Alameda County.....	1	Butte County.....	6
Berkeley.....	1	Chico.....	1
Oakland.....	5	Contra Costa County—	
Amador County.....	1	Richmond.....	2

TYPHOID FEVER—Continued.

State Reports for October, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
California—Continued.		Connecticut—Continued.	
Fresno County—		Tolland County—	
Reedley.....	1	Mansfield.....	1
Imperial County.....	1	Rockville.....	1
Kern County—		Stafford.....	1
Taft.....	1	Windham County—	
Kings County—		Thompson.....	1
Hanford.....	2	Total.....	85
Lake County.....	1		
Los Angeles County.....	5	Indiana:	
Los Angeles.....	6	Adams County.....	1
Pasadena.....	1	Allen County.....	20
Mendocino County—		Blackford County.....	1
Ukiah.....	1	Brown County.....	1
Monterey County—		Carroll County.....	1
Monterey.....	1	Cass County.....	2
Orange County.....	4	Clark County.....	2
Fullerton.....	1	Clinton County.....	3
Riverside County.....	4	Dearborn County.....	3
Sacramento County—		Decatur County.....	5
Sacramento.....	1	DeKalb County.....	11
San Diego County—		Delaware County.....	16
San Diego.....	2	Dubois County.....	7
San Francisco.....	17	Elkhart County.....	5
San Joaquin County.....	3	Floyd County.....	2
Santa Barbara County—		Fountain County.....	1
Lompoc.....	1	Fulton County.....	1
Santa Clara County—		Gibson County.....	5
Mountain View.....	1	Grant County.....	3
San Jose.....	1	Hamilton County.....	3
Shasta County—		Harrison County.....	2
Redding.....	2	Hendricks County.....	3
Siskiyou County.....	2	Howard County.....	5
Sonoma County.....	1	Huntington County.....	6
Sutter County—		Jackson County.....	13
Yuba City.....	1	Jasper County.....	1
Tehama County.....	2	Jay County.....	1
Red Bluff.....	1	Jefferson County.....	1
Yolo County.....	3	Jennings County.....	8
Total.....	84	Johnson County.....	6
		Knox County.....	3
Connecticut:		Kosciusko County.....	3
Fairfield County—		Lake County.....	17
Bridgeport.....	4	Laporte County.....	3
Danbury (city).....	2	Lawrence County.....	10
Fairfield.....	1	Madison County.....	8
Greenwich.....	1	Marion County.....	61
Newtown.....	1	Miami County.....	1
Norwalk.....	2	Monroe County.....	1
Wilton.....	1	Montgomery County.....	6
Hartford County—		Ohio County.....	1
Bristol.....	2	Orange County.....	3
Canton.....	1	Owen County.....	8
East Hartford.....	1	Parke County.....	2
Glastonbury.....	1	Perry County.....	1
Hartford.....	6	Porter County.....	3
Manchester.....	7	Posey County.....	5
New Britain.....	1	Pulaski County.....	1
West Hartford.....	12	Putnam County.....	3
Litchfield County—		Randolph County.....	5
Canaan.....	1	Ripley County.....	1
Salisbury.....	1	Starke County.....	3
Winchester.....	1	St. Joseph County.....	16
New Haven County—		Sullivan County.....	1
Guilford.....	2	Tippecanoe County.....	3
Hamden.....	1	Vanderburg County.....	6
Millford.....	3	Vermillion County.....	2
New Haven.....	16	Vigo County.....	4
Wallingford.....	2	Warrick County.....	1
Waterbury.....	5	Washington County.....	8
New London County—		Wayne County.....	7
East Lyme.....	3	White County.....	2
Groton (town).....	1	Whitley County.....	1
New London.....	2	Total.....	339

TYPHOID FEVER—Continued.

State Reports for October, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
Louisiana:		Michigan—Continued.	
Allen Parish.....	1	Ingham County—	
Ascension Parish.....	3	Meridan Township.....	17
Caddo Parish.....	4	Lansing.....	
Calcasieu Parish.....	2	Ionia County—	
Claiborne Parish.....	2	Muir.....	1
Concordia Parish.....	2	Iosco County—	
East Baton Rouge Parish.....	5	East Tawas.....	1
East Carroll Parish.....	4	Isabella County—	
Evangeline Parish.....	1	Shepherd.....	2
Jefferson Davis Parish.....	5	Mount Pleasant.....	1
Orleans Parish.....	89	Jackson County—	
Plaquemines Parish.....	1	Jackson.....	2
Pointe Coupee Parish.....	2	Kalamazoo County—	
Rapides Parish.....	3	Charleston Township.....	3
Red River Parish.....	2	Kalamazoo.....	10
Sabine Parish.....	1	Kent County—	
St. Landry Parish.....	1	Alpine Township.....	1
St. Martin Parish.....	5	Sparta.....	2
St. Mary Parish.....	5	Grand Rapids.....	6
St. Tammany Parish.....	1	Lapeer County—	
Union Parish.....	1	Burlington Township.....	1
Vermilion Parish.....	4	North Branch Township.....	1
Vernon Parish.....	1	Lapeer.....	2
Winn Parish.....	2	Lenawee County—	
Total.....	147	Madison Township.....	3
		Blissfield.....	2
Michigan:		Livingston County—	
Alcona County—		Deerfield Township.....	5
Caledonia Township.....	1	Green Oak Township.....	1
Alpena County—		Handy Township.....	1
Alpena.....	2	Howell Township.....	1
Bay County—		Macomb County—	
Portsmouth Township.....	2	Mount Clemens.....	3
Bay City.....	71	Manistee County—	
Benzie County—		Manistee.....	1
Thompsonville.....	5	Marquette County—	
Berrien County—		Marquette.....	2
Bertrand Township.....	1	Negaunee.....	9
St. Joseph Township.....	1	Meosota County—	
Coloma.....	1	Big Rapids.....	1
Branch County—		Midland County—	
Alganssee Township.....	1	Midland Township.....	1
Girard Township.....	1	Midland.....	3
Calhoun County—		Missaukee County—	
Battle Creek.....	2	Holland Township.....	1
Cass County—		Monroe County—	
Jefferson Township.....	1	Monroe.....	1
Charlevoix County—		Montcalm County—	
East Jordan.....	1	Greenville.....	4
Chippewa County—		Montmorency County—	
Sault Ste Marie.....	4	Avery Township.....	1
Clare County—		Briley Township.....	2
Hatton Township.....	1	Muskegon County—	
Delta County—		Muskegon.....	1
Escanaba.....	1	Newaygo County—	
Eaton County—		Fremont.....	1
Brookfield Township.....	1	Oakland County—	
Mulliken.....	1	Holly.....	1
Charlotte.....	1	Pontiac.....	2
Emmett County—		Ottawa County—	
Petoskey.....	1	Holland Township.....	1
Genesee County—		Saginaw County—	
Flint Township.....	1	St. Charles Township.....	1
Forest Township.....	1	Saginaw.....	7
Mount Morris Township.....	1	St. Clair County—	
Flint.....	26	Kimball Township.....	1
Gladwin County—		Wales Township.....	1
Gladwin Township.....	5	Port Huron.....	2
Gogebic County—		St. Joseph County—	
Ironwood.....	1	Colon.....	1
Gratiot County—		Sanilac County—	
Breckenridge.....	1	Marion Township.....	2
Huron County—		Schoolcraft County—	
Winsor Township.....	1	Manistique.....	1
Caseville.....	2	Tuscola County—	
Pigeon.....	1	Reese.....	1

TYPHOID FEVER—Continued.

State Reports for October, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
Michigan—Continued.		Minnesota—Continued.	
Van Buren County—		Stearns County—	
Bloomingdale Township.....	3	St. Cloud.....	2
Columbia Township.....	1	Holding Township.....	1
Decatur.....	1	Wabasha County—	
Washtenaw County—		Minneiska.....	1
Ann Arbor.....	4	Watonwan County—	
Wayne County—		Butterfield.....	1
Ecorse Township.....	1	Winona County—	
Highland Park.....	4	Winona.....	1
St. Clair Heights.....	1		
Detroit.....	65	Total.....	97
Wyandotte.....	1		
Wexford County—		Mississippi:	
Cadillac.....	1	Adams County.....	9
Total.....	338	Aloern County.....	17
Minnesota:		Amite County.....	6
Becker County—		Benton County.....	3
Detroit.....	1	Bolivar County.....	24
Frazee.....	3	Calhoun County.....	4
Beltrami County—		Carroll County.....	2
Bemidji.....	2	Choctaw County.....	5
Spooner.....	1	Claiborne County.....	2
Carlton County—		Clay County.....	3
Cloquet.....	3	Coahoma County.....	13
Cass County—		Copiah County.....	8
Backus.....	1	Covington County.....	7
Cottonwood County—		De Soto County.....	6
Springfield Township.....	1	Forest County.....	3
Faribault County—		Hancock County.....	7
Dunbar Township.....	1	Harrison County.....	5
Hennepin County—		Hinds County.....	17
Minneapolis.....	27	Holmes County.....	10
Osseo.....	1	Itawamba County.....	3
Jackson County—		Jackson County.....	8
Delafield Township.....	1	Jasper County.....	3
Lac qui Parle County—		Jefferson Davis County.....	6
Arena Township.....	1	Jones County.....	22
Lake County—		Kemper County.....	7
Two Harbors.....	1	Lafayette County.....	13
Fall Lake Township.....	1	Lamar County.....	4
Lincoln County—		Lauderdale County.....	8
Hendricks.....	1	Leake County.....	10
Marshall County—		Lee County.....	8
Stephen.....	1	Leflore County.....	1
Mower County—		Lincoln County.....	4
Lyle.....	1	Lowndes County.....	3
Nicollet County—		Madison County.....	18
St. Peter.....	2	Marion County.....	4
Norman County—		Marshall County.....	14
Hendrum.....	1	Monroe County.....	6
Olmsted County—		Montgomery County.....	6
Rochester.....	1	Neshoba County.....	4
Ottertail County—		Noxubee County.....	7
Pelican Rapids.....	1	Octibbeha County.....	2
Pine County—		Panola County.....	3
Finlayson.....	1	Pearl River County.....	2
Polk County—		Perry County.....	4
McIntosh.....	1	Pike County.....	8
Ramsey County—		Scott County.....	6
St. Paul.....	3	Simpson County.....	5
Redwood County—		Smith County.....	6
Morgan Township.....	1	Stone County.....	7
Renville County—		Sunflower County.....	11
Renville.....	1	Tallahatchie County.....	4
Rice County—		Tate County.....	14
Faribault.....	2	Tippah County.....	1
Roseau County—		Tishomingo County.....	24
Warroad.....	1	Tunica County.....	3
St. Louis County—		Warren County.....	1
Aurora.....	3	Washington County.....	12
Duluth.....	10	Wayne County.....	2
Ely.....	3	Webster County.....	7
Elveeth.....	1	Winston County.....	6
Hibbing.....	1	Yalobusha County.....	13
Virginia.....	3	Walthall County.....	3
Missabe Mountain Township.....	3		
Stuntz Township.....	5	Total.....	454

TYPHOID FEVER—Continued.

State Reports for October, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
New York:		Ohio—Continued.	
Albany County.....	11	Erie County.....	1
Allegany County.....	5	Fairfield County.....	3
Broome County.....	2	Fayette County—	
Cattaraugus County.....	3	Washington Courthouse.....	4
Cayuga County.....	3	Franklin County.....	25
Chatauga County.....	5	Fulton County.....	3
Chemung County.....	13	Gallia County.....	9
Clinton County.....	2	Geauga County.....	1
Columbia County.....	2	Greene County.....	1
Cortland County.....	1	Guernsey County.....	13
Delaware County.....	6	Hamilton County.....	17
Dutchess County.....	13	Hancock County.....	3
Erie County.....	54	Hardin County.....	2
Essex County.....	1	Harrison County.....	3
Franklin County.....	1	Highland County.....	4
Fulton County.....	1	Hocking County.....	2
Greene County.....	2	Holmes County.....	1
Herkimer County.....	3	Huron County—	
Jefferson County.....	7	Norwalk.....	2
Lewis County.....	1	Jackson County.....	9
Monroe County.....	7	Jefferson County.....	12
Montgomery County.....	2	Knox County.....	2
Nassau County.....	4	Lake County.....	3
Niagara County.....	15	Lawrence County.....	6
Oneida County.....	4	Licking County.....	25
Onondaga County.....	8	Logan County.....	6
Ontario Co nty.....	4	Lorain County.....	9
Orange County.....	3	Lucas County—	
Orleans County.....	2	Toledo.....	46
Oswego County.....	6	Madison County.....	3
Otsego County.....	6	Mahoning County.....	21
Rensselaer County.....	5	Marion County.....	14
St. Lawrence County.....	11	Medina County.....	3
Saratoga County.....	4	Meigs County.....	3
Schenectady County.....	6	Miami County.....	12
Schoharie County.....	1	Monroe County.....	3
Seneca County.....	1	Montgomery County.....	27
Steuken County.....	8	Morgan County.....	4
Suffolk County.....	8	Morrow County.....	1
Sullivan County.....	1	Muskingum County.....	11
Tioga County.....	1	Noble County.....	1
Ulster County.....	5	Ottawa County.....	6
Washington County.....	3	Paulding County.....	1
Wayne County.....	5	Perry County.....	6
Westchester County.....	8	Pickaway County.....	1
Wyoming County.....	3	Pike County.....	2
Yates County.....	1	Portage County—	
New York City.....	223	Ravenna.....	1
Total.....	491	Preble County.....	9
		Putnam County.....	1
Ohio:		Richland County.....	11
Adams County.....	1	Ross County.....	12
Allen County.....	11	Sandusky County.....	9
Ashland County—		Scioto County.....	13
Ashland.....	3	Seneca County.....	3
Ashtabula County.....	8	Shelby County.....	4
Athens County.....	16	Stark County.....	20
Auglaize County.....	2	Summit County.....	22
Belmont County.....	2	Trumbull County.....	12
Brown County.....	2	Tuscarawas County.....	16
Butler County.....	7	Union County.....	2
Carroll County.....	2	Van Wert County.....	6
Champaign County.....	2	Vinton County.....	2
Clark County.....	16	Warren County.....	3
Clermont County.....	2	Washington County.....	4
Clinton County.....	3	Wayne County.....	12
Columbiana County.....	9	Williams County.....	5
Coshocton County.....	7	Woods County.....	4
Crawford County—		Wyandot County.....	2
Bucyrus.....	7	Total.....	718
Galion.....	1		
Cuyahoga County.....	32	South Carolina:	
Darke County.....	66	Abbeville County.....	6
Defiance County.....	3	Charleston County.....	12
Delaware County—		Chester County.....	1
Delaware.....	12	Florence County.....	2

TYPHOID FEVER—Continued.
State Reports for October, 1916—Continued.

Place.	New cases reported.	Place.	New cases reported.
South Carolina—Continued.		West Virginia—Continued.	
Greenville County.....	25	Lewis County.....	40
Horry County.....	1	McDowell County.....	3
Laurens County.....	2	Marshall County.....	12
Lexington County.....	1	Marion County.....	4
Marion County.....	2	Mineral County.....	3
Newberry County.....	1	Mingo County.....	3
Oconee County.....	1	Monongalia County.....	4
Orangeburg County.....	1	Monroe County.....	1
Richland County.....	9	Ohio County—	
Saluda County.....	1	Wheeling.....	3
Spartanburg County.....	6	Pendleton County.....	4
Union County.....	1	Putnam County.....	12
York County.....	8	Raleigh County.....	11
		Randolph County.....	2
Total.....	80	Ritchie County.....	9
		Roane County.....	8
West Virginia:		Taylor County.....	1
Barbour County.....	2	Tucker County.....	3
Berkeley County.....	9	Wayne County.....	4
Boone County.....	1	Webster County.....	1
Braxton County.....	2	Wetzel County.....	2
Brooke County—		Wood County—	
Wellsburg.....	2	Parkersburg.....	3
Calhoun County.....	8	Wyoming County.....	4
Grant County.....	11		
Greenbrier County.....	5	Total.....	202
Hancock County.....	2		
Hardy County.....	4	Wyoming:	
Harris County—		Natrona County.....	1
Clarksburg.....	2	Goshen County.....	2
Jackson County.....	1		
Jefferson County.....	5	Total.....	3
Kanawha County.....	11		

Arkansas Report for September, 1916.

Place.	New cases reported.	Place.	New cases reported.
Arkansas:		Arkansas—Continued.	
Bradley County.....	2	Phillips County.....	4
Carroll County.....	5	Polk County.....	10
Clay County.....	1	Pope County.....	2
Dallas County.....	1	Pulaski County.....	14
Faulkner County.....	3	Saline County.....	6
Garland County.....	4	Scott County.....	2
Greene County.....	6	Sevier County.....	11
Hempstead County.....	3	Sharp County.....	1
Hot Spring County.....	7	St. Francis County.....	1
Jackson County.....	4	Stone County.....	4
Johnson County.....	10	Union County.....	6
Lafayette County.....	2	Washington County.....	11
Logan County.....	1	White County.....	9
Mississippi County.....	11		
Newton County.....	2	Total.....	144
Perry County.....	1		

TYPHOID FEVER—Continued.

City Reports for Week Ended Nov. 11, 1916.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Ann Arbor, Mich.	1		Milwaukee, Wis.	2	1
Atlantic City, N. J.	2		Morristown, N. J.	1	
Auburn, N. Y.		1	Nashville, Tenn.	3	1
Baltimore, Md.	10	2	Newark, N. J.	2	2
Beaver Falls, Pa.	2		New Bedford, Mass.	1	
Birmingham, Ala.	1		New Castle, Pa.	4	
Boston, Mass.	5		New Orleans, La.	10	4
Braddock, Pa.		1	Newton, Mass.	1	
Buffalo, N. Y.	4	2	New York, N. Y.	43	3
Butler, Pa.	2	1	Norfolk, Va.	3	
Camden, N. J.	1		Norristown, Pa.	2	1
Charleston, S. C.	1		North Adams, Mass.	1	
Chelsea, Mass.	1		Omaha, Neb.		1
Chicago, Ill.	20	2	Perth Amboy, N. J.	1	
Cincinnati, Ohio.	4	1	Philadelphia, Pa.	5	1
Cleveland, Ohio.	4		Pittsburgh, Pa.	5	2
Columbus, Ohio.	6	1	Portland, Me.	4	
Cumberland, Md.	3		Providence, R. I.	4	
Denver, Colo.	1		Reading, Pa.	1	1
Detroit, Mich.	9	3	Richmond, Va.	1	
Duluth, Minn.	1		Roanoke, Va.	2	
East Chicago, Ind.	3		Rock Island, Ill.	1	
El Paso, Tex.	1	1	Saginaw, Mich.	2	
Evansville, Ind.	1		St. Louis, Mo.	16	1
Fall River, Mass.	6		Sandusky, Ohio.	1	
Flint, Mich.	7		San Francisco, Cal.	1	
Galesburg, Ill.	1		South Bend, Ind.	1	
Galveston, Tex.	3		Springfield, Mass.	1	
Grand Rapids, Mich.	1		Steelton, Pa.	3	
Harrisburg, Pa.	4	3	Stockton, Cal.	1	1
Hartford, Conn.		1	Superior, Wis.		1
Indianapolis, Ind.	8		Syracuse, N. Y.	1	
Johnstown, Pa.	2	2	Toledo, Ohio.	14	
Kalamazoo, Mich.	1		Trenton, N. J.	3	1
Kansas City, Mo.	2	2	Troy, N. Y.	1	
Kokomo, Ind.	2	1	Washington, D. C.	8	1
Lima, Ohio.		1	Watertown, N. Y.	1	
Lincoln, Neb.	1	1	Wilkes-Barre, Pa.	1	
Little Rock, Ark.	1		Wilksburg, Pa.	1	
Los Angeles, Cal.	4	1	Wilmington, Del.	1	
Lowell, Mass.	4		Worcester, Mass.	2	
Lynchburg, Va.	1		York, Pa.	1	
Lynn, Mass.	1				

TYPHUS FEVER.

Texas—El Paso.

Acting Asst. Surg. Tappan reported that during the week ended November 18, 1916, 2 cases of typhus fever were notified in El Paso, Tex., making a total of 32 cases reported since July 1, 1916.

City Reports for Week Ended Nov. 11, 1916.

During the week ended November 11, 1916, 4 cases of typhus fever were reported in El Paso, Tex., with 1 death, and 1 case was reported in Los Angeles, Cal.

PREVENTABLE DISEASES.

Massachusetts Report for Week Ended November 18, 1916.

	Cases reported.		Cases reported.
Cerebrospinal meningitis.....	2	Scarlet fever.....	88
Chickon pox.....	63	Septic sore throat.....	3
Diphtheria.....	163	Smallpox.....	1
Dysentery.....	1	Tetanus.....	1
German measles.....	10	Trachoma.....	1
Malaria.....	2	Trichinosis.....	11
Measles.....	184	Tuberculosis (pulmonary).....	115
Mumps.....	46	Tuberculosis (other forms).....	11
Ophthalmia neonatorum.....	34	Typhoid fever.....	26
Pellagra.....	3	Whooping cough.....	75
Poliomyelitis (infantile paralysis).....	36		

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for October, 1916.

State.	Cases reported.			State.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
California.....	159	196	529	Mississippi.....	213	48	131
Connecticut.....	167	67	67	New York.....	1,212	392	447
Indiana.....	617	252	410	Ohio.....	1,090	545	813
Iowa.....	82	.....	79	South Carolina.....	274	50	112
Louisiana.....	115	190	31	West Virginia.....	214	256	97
Michigan.....	704	293	415	Wyoming.....	5	25	9
Minnesota.....	252	44	235				

Arkansas Report for September, 1916.

During the month of September, 1916, 31 cases of diphtheria, 7 cases of measles, and 26 cases of scarlet fever were reported in Arkansas.

City Reports for Week Ended Nov. 11, 1916.

City.	Popula- tion as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md.....	584,605	160	25	1	2	.....	6	.....	32	27
Boston, Mass.....	745,139	255	32	4	10	1	18	.....	37	15
Chicago, Ill.....	2,447,045	617	238	16	36	1	129	1	184	52
Cleveland, Ohio.....	656,975	189	67	3	23	.....	9	1	31	17
Detroit, Mich.....	554,717	196	120	3	3	.....	53	3	29	12
New York, N. Y.....	5,468,190	1,315	156	12	27	.....	46	1	340	158
Philadelphia, Pa.....	1,683,664	459	51	3	4	.....	23	.....	114	75
Pittsburgh, Pa.....	571,984	177	39	2	33	1	13	.....	23	19
St. Louis, Mo.....	745,988	187	84	3	19	.....	42	.....	41	16
From 300,000 to 500,000 inhabi- tants:										
Buffalo, N. Y.....	461,335	134	23	2	4	1	13	.....	.....	17
Cincinnati, Ohio.....	406,706	110	55	2	1	.....	11	.....	17	14
Jersey City, N. J.....	300,133	82	.....	.....	.....	.....	1	.....	.....	9
Los Angeles, Cal.....	465,367	.....	4	.....	5	.....	9	.....	44	13
Milwaukee, Wis.....	428,062	104	23	2	2	.....	47	.....	16	4

DIPHThERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Con.

City Reports for Week Ended Nov. 11, 1916—Continued.

City.	Popula- tion as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 300,000 to 500,000 inhabit- ants—Continued.										
Minneapolis, Minn.....	353,460		14		1		11			
Newark, N. J.....	399,000		21		3		9		63	12
New Orleans, La.....	366,484		5		111		10		34	19
San Francisco, Cal.....	1 416,912	121	22	2	14		15		22	13
Seattle, Wash.....	330,834	39	4		9		6		10	5
Washington, D. C.....	358,679	126	23	2			13		16	17
From 200,000 to 300,000 inhabit- ants:										
Columbus, Ohio.....	209,722	69	27	1	5	2	6		9	4
Denver, Colo.....	253,161	47	5		1		2			13
Indianapolis, Ind.....	265,578		38		4		12		27	
Kansas City, Mo.....	289,879	70	10	1			9		14	7
Portland, Oreg.....	272,833	47	6		28		9		1	5
Providence, R. I.....	259,025	83	17	2			12		1	9
St. Paul, Minn.....	241,999	40	3		2		9		13	5
From 100,000 to 200,000 inhabit- ants:										
Birmingham, Ala.....	174,108	51	4	2	1		3	1	4	6
Bridgeport, Conn.....	118,434	31	10		1		2		2	5
Cambridge, Mass.....	111,669	22	9		1		3		3	2
Camden, N. J.....	104,349		3				1		2	
Fall River, Mass.....	126,904		1		12		1		7	3
Grand Rapids, Mich.....	125,759	28	3		1		19	1	7	2
Hartford, Conn.....	108,969	43	3		1		5		2	1
Lowell, Mass.....	112,124	41	10	1	12		5		3	7
Lynn, Mass.....	103,316	26	5	1	1		1		5	2
Nashville, Tenn.....	115,978	38	12	1	46		5		8	4
New Bedford, Mass.....	114,691	39	2		12		2		2	6
New Haven, Conn.....	147,095		5				2		6	1
Oakland, Cal.....	190,803		2		2		8		5	2
Omaha, Neb.....	135,455	42	2		3		3		2	3
Reading, Pa.....	105,094	36	2	1					1	4
Richmond, Va.....	154,674	47	15	1			6		5	4
Salt Lake City, Utah.....	113,567	28			173		24			
Springfield, Mass.....	103,216	32	2		1		9		7	1
Syracuse, N. Y.....	152,534	43	4	1	2		1		5	1
Tacoma, Wash.....	108,094	19			179					
Toledo, Ohio.....	187,840	40	6	1			40		4	5
Trenton, N. J.....	109,212	43	6		1		1		4	3
Worcester, Mass.....	160,523	46	8		6		8		5	2
From 50,000 to 100,000 inhabit- ants:										
Atlantic City, N. J.....	55,806		1		1				5	
Bayonne, N. J.....	67,582								1	
Berkeley, Cal.....	54,879	10	1				4			1
Binghamton, N. Y.....	53,082	18	15				1		3	2
Brockton, Mass.....	65,746		1		1				1	
Canton, Ohio.....	59,139	20	4	1			4		1	
Charleston, S. C.....	60,427	42	3							6
Covington, Ky.....	56,520	12	5						1	
Duluth, Minn.....	91,913		8						3	
El Paso, Tex.....	51,936	34	6				3			5
Erie, Pa.....	73,798		2				2		4	14
Evansville, Ind.....	72,125	23	8	2			3		4	3
Flint Mich.....	52,159	6	4						1	1
Fort Worth, Tex.....	99,528	19	1							
Harrisburg, Pa.....	70,754	18	5		2		1		6	1
Hoboken, N. J.....	76,104	21	2				1		4	
Johnstown, Pa.....	66,585	16	1		1		3		1	
Lancaster, Pa.....	50,269				1					
Lawrence, Mass.....	98,197	15	4		1		1	1	4	1
Little Rock, Ark.....	55,158	14	1		1					
Malden, Mass.....	50,067	10	2	1	2		1		1	
Manchester, N. H.....	76,959	22	1		1					
Mobile, Ala.....	56,536	19	1							5
New Britain, Conn.....	52,203								1	1
Norfolk, Va.....	88,076		1				1			5
Oklahoma, Okla.....	88,158	9	4				6			
Passaic, N. J.....	69,010	15							1	1
Pawtucket, R. I.....	58,156	12	5							1
Portland, Me.....	63,014	18	5				1			

¹ Population Apr. 15, 1910; no estimate made.

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

City Reports for Week Ended Nov. 11, 1916—Continued.

City.	Popula- tion as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabitants—Continued.										
Rockford, Ill.	53,761	9					1			
Sacramento, Cal.	64,806	23	1				4			1
Saginaw, Mich.	54,815	23	3				1	1		
St. Joseph, Mo.	83,974	18	2	2			1			
San Diego, Cal.	51,115	16					2			3
Schenectady, N. Y.	95,265	14	5	1	4		1			1
Somerville, Mass.	85,460	20	2	1					1	3
South Bend, Ind.	67,030	15	1				2			1
Springfield, Ill.	59,468	13	4				11			
Troy, N. Y.	77,738		3		1		4		2	7
Wilkes-Barre, Pa.	75,218	20	2		1		5		3	1
Wilmington, Del.	93,161	28					2			
York, Pa.	50,543								2	
From 25,000 to 50,000 inhabitants:										
Alameda, Cal.	27,031	5							1	
Auburn, N. Y.	36,917	9			1		1		1	1
Austin, Tex.	34,016	3	4				4			
Bellingham, Wash.	31,009				1					
Brookline, Mass.	31,934	9								
Butler, Pa.	26,587	9	2				1			
Butte, Mont.	42,918	14	3	1					3	2
Chelsea, Mass.	32,452	14	1		2				1	
Chicopee, Mass.	28,688	4	1	2					2	
Cumberland, Md.	25,564	1	5		1		1		2	
Danville, Ill.	31,554	6							1	
Dubuque, Iowa	39,150				1				2	
East Chicago, Ind.	27,200						1			
East Orange, N. J.	41,155	5	1				3		1	1
Elgin, Ill.	27,844	8					1			
Everett, Mass.	38,307	11	2				2		2	1
Fitchburg, Mass.	41,144	10	6	3					4	
Galveston, Tex.	41,076	12	4				2			1
Haverhill, Mass.	47,774	18	2				2		1	
Jackson, Miss.	28,372	9	2				2	1		
Kalamazoo, Mich.	47,364	11			1		1		1	
Kenosha, Wis.	30,319	6			1	1	1			1
La Crosse, Wis.	31,522	10	1							
Lexington, Ky.	39,705	16	12		1		2			3
Lima, Ohio	34,644	8	5							
Lincoln, Nebr.	46,028	9	7				3			
Long Beach, Cal.	26,012	9			1		1			
Lorain, Ohio	35,662		1		1		6			
Lynchburg, Va.	32,385	7	2		7		1		1	
Madison, Wis.	30,084	1					5			
Medford, Mass.	25,737	6					1		1	
Montclair, N. J.	25,550	4	1						2	2
New Castle, Pa.	40,351		1						1	
Newport, Ky.	31,722	3	1							
Newport, R. I.	29,631	4	5							
Newton, Mass.	43,085	12	1						1	
Norristown, Pa.	30,833	13	3	1						
Ogden, Utah	30,466	5	1		3		1			
Orange, N. J.	32,524	9					1			
Pasadena, Cal.	43,859	12			1				5	1
Perth Amboy, N. J.	39,725		2						2	
Pittsfield, Mass.	37,580	11							1	
Portsmouth, Va.	38,610	10	6		2					
Quincy, Ill.	36,764	10	1							2
Quincy, Mass.	37,251	12								
Racine, Wis.	45,507	9	4				1			
Roanoke, Va.	41,929	9	1		4				1	
Rock Island, Ill.	27,961	6					2			
San Jose, Cal.	37,994		1						3	
Stuebenville, Ohio	26,631	10					1			1
Stockton, Cal.	34,508	21	2		10		4		1	1
Superior, Wis.	45,285	9	3		2					2
Taunton, Mass.	35,957	13	1	1					3	
Waltham, Mass.	30,129	2								1
Watertown, N. Y.	29,384	11								1
West Hoboken, N. J.	41,893	1	1							
Wheeling, W. Va.	43,097	20								
Williamsport, Pa.	33,495		8				2			
Zanesville, Ohio	30,406	7							4	

1 Population April 15, 1910; no estimate made.

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

City Reports for Week Ended Nov. 11, 1916—Continued.

City.	Popula- tion as of July 1, 1915 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 10,000 to 25,000 inhabitants:										
Ann Arbor, Mich.....	14,979	14	4							
Beaver Falls, Pa.....	13,316		1						1	
Braddock, Pa.....	21,310	8				1				
Cairo, Ill.....	15,593	5	1							
Clinton, Mass.....	¹ 13,075	5								
Concord, N. H.....	22,480	12	4	1			1			3
Galesburg, Ill.....	23,923	9								
Kokomo, Ind.....	20,312	3	2		17		1		3	
Long Branch, N. J.....	15,057	1	1							
Morristown, N. J.....	13,158	4	2	1	2					
Nanticoke, Pa.....	22,441	6	2							
Newburyport, Mass.....	15,195	5					1			
New London, Conn.....	20,771						2			
North Adams, Mass.....	¹ 22,019	11			3		2		2	1
Northampton, Mass.....	19,846	10	1		3		1		1	
Plainfield, N. J.....	23,280	4					1		1	
Portsmouth, N. H.....	11,602				13					
Rutland, Vt.....	14,624	2			6		1			
Sandusky, Ohio.....	20,160				5					
Saratoga Springs, N. Y.....	12,842	4							1	1
Steelton, Pa.....	15,337	2	1						2	
Wilkinsburg, Pa.....	22,361	6					5			
Woburn, Mass.....	15,862	2								

¹ Population April 15, 1910; no estimate made.

FOREIGN.

CHINA.

Examination of Rats—Shanghai.

During the four weeks ended October 14, 1916, 971 rats were examined at Shanghai. No plague infection was found.

The last plague-infected rat at Shanghai was reported found during the week ended May 6, 1916.

CUBA.

Communicable Diseases—Habana and Regla.

Communicable diseases have been notified at Habana and the suburb of Regla as follows:

Disease.	Nov. 1-10, 1916.		Remain- ing under treatment Nov. 10, 1916.
	New cases.	Deaths.	
Diphtheria.....	1		
Leprosy.....		1	247
Malaria.....	16	1	32
Measles.....	4		10
Paratyphoid fever.....	1		7
Scarlet fever.....	1		1
Typhoid fever.....	11	2	40

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER.

Reports Received During Week Ended Dec. 1, 1916.¹

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Canton.....	Sept. 11-20.....		2	
India:				
Calcutta.....	Sept. 17-23.....		5	
Karachi.....	Sept. 24-30.....	94	80	
Rangoon.....	do.....	1	1	
Japan:				
Kobe.....	Oct. 9-22.....	37	34	Aug. 14-Oct. 22, 1916: Cases, 433; deaths, 183.
Nagasaki.....	Oct. 9-15 ²	2	4	
Osaka.....				Aug. 13-Oct. 22, 1916: Cases, 879; deaths, 456.
Yokohama.....	Oct. 9-22.....	22	11	
Districts.....	do.....	12	8	
Persia:				
Argue.....	Sept. 27.....	1		
Teheran.....	Oct. 1-3.....	11	7	Including vicinity.

¹ From medical officers of the Public Health Service, American consuls, and other sources.
² Received out of date.

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

Reports Received During Week Ended Dec. 1, 1916—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.	
Philippine Islands:					
Manila.....	Oct. 1-21.....	60	33	Not previously reported, Oct. 1-21; Cases, 30. Oct. 1-21, 1916: Cases, 1,503 deaths, 936.	
Provinces.....	do.....				
Albay.....	do.....	107	61		
Bataan.....	do.....	60	43		
Batangas.....	do.....	31	27		
Bulacan.....	do.....	55	34		
Camarines.....	do.....	87	53		
Capiz.....	do.....	15	10		
Cavite.....	do.....	40	26		
Cebu.....	Oct. 8-14.....	3	3		
Iloilo.....	Oct. 1-21.....	459	273		
Laguna.....	do.....	6	5		
Mindoro.....	Oct. 15-21.....	8	3		
Negros Occidental.....	Oct. 1-21.....	481	296		
Pampanga.....	do.....	13	12		
Rizal.....	do.....	74	43		
Samar.....	Oct. 1-7.....	33	28		
Sorsogon.....	Oct. 8-21.....	9	4		
Tayabas.....	Oct. 1-7.....	1	1		
Zambales.....	Oct. 1-21.....	21	14		
Turkey in Europe:					
Constantinople.....	Sept. 7-13.....	5	1		Sept. 7-15, 1916: Cases, 146; deaths, 86.
Turkey in Asia:					
Adana.....	Sept. 8-10.....	5	3		
Bagdad.....	Sept. 8-12.....	9	4		
Trebizond.....	Oct. 1-7.....	6	3		

PLAGUE.

Azores:				
Terceira, island.....	Nov. 24.....			Present.
Brazil:				
Bahia.....	Oct. 15-28.....	2	2	
British East Africa:				
Nairobi.....	Oct. 8.....	4		
Uganda—				
Kampala.....	Oct. 12.....	3		
Ceylon:				
Colombo.....	Sept. 10-23.....	8	7	
China:				
Amoy.....	Sept. 17-Oct. 2.....			Present.
India:				Sept. 17-30, 1916: Cases, 10,554; deaths, 7,808.
Bassein.....	Sept. 17-23.....		3	
Bombay.....	Oct. 1-7.....	8	8	
Madras.....	Sept. 24-30.....	4	2	
Madras Presidency.....	do.....	450	278	
Moulmein.....	Sept. 10-23.....		3	
Pakkoku.....	Sept. 10-16.....		1	
Prome.....	Sept. 10-23.....		12	
Rangoon.....	Sept. 17-30.....	36	35	
T'oungoo.....	Sept. 10-23.....		7	
Indo-China:				
Saigon.....	Sept. 5-17.....	1		July 1-Aug. 25, 1916: Cases, 45; deaths, 43.
Java:				
Residencies—				
Kediri.....	July 1-Aug. 25.....	10	10	
Madioen.....	do.....	2	2	
Paseroean.....	do.....	5	5	
Surabaya.....	do.....	28	26	
Straits Settlements:				
Singapore.....	Sept. 17-23.....	1	1	

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

Reports Received During Week Ended Dec. 1, 1916—Continued.

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Australia:				
New South Wales.....				Sept. 15-28, 1916: Cases, 5.
Walgett.....	Sept. 16-28.....	5		
Austria-Hungary:				
Hungary—				
Budapest.....	Oct. 1-7.....	1		
Brazil:				
Bahia.....	Oct. 15-28.....	5	1	
China:				
Amoy.....	Sept. 2-30.....			Present in vicinity.
Chungking.....	Oct. 1-7.....			Do.
Dairen.....	Oct. 8-14.....	1		
Foochow.....	Sept. 9-16.....			Do.
Hongkong.....	Oct. 1-7.....	5	3	
Hawaii:				
Honolulu.....	Nov. 23.....	1		From s. s. Shinyomaru from Yokohama.
India:				
Madras.....	Sept. 24-30.....	2	1	
Rangoon.....	do.....	3		
Mexico:				
Mexico City.....	Oct. 15-Nov. 4....	18		
Straits Settlements:				
Singapore.....	Sept. 9-16.....	1		

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Egypt:				
Alexandria.....	Sept. 24-Oct. 7....	7	4	
Great Britain:				
Liverpool.....	Oct. 29-Nov. 4....	1	1	
Greece:				
Saloniki.....	Sept. 26-Oct. 2....		9	
Mexico:				
Mexico City.....	Oct. 15-Nov. 4....	861		
Switzerland:				
St. Gall.....	Oct. 15-21.....	1		

YELLOW FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Barbados.....	Nov. 25.....			Present.

Reports Received from July 1 to Nov. 24, 1916.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary.....				Mar. 12-May 6, 1916: Cases, 425; deaths, 155.
Austria.....	Mar. 26-Apr. 8....	2		
Do.....	July 9-15.....	1		
Bosnia-Herzegovina.....	Mar. 12-May 20....	398	147	
Do.....	July 1-Aug. 15....	33	7	
Croatia-Slavonia.....	Sept. 4-11.....	4	2	
Hungary.....	Mar. 20-Apr. 2....	2		
Do.....	July 9-15.....	1		
Ceylon:				
Colombo.....	June 25-July 1....	1	1	
China:				
Canton.....	Aug. 11-31.....		13	On s. s. Taihei Maru from Hongkong and Chefoo.
Dairen.....	Aug. 6-12.....	1		
Hongkong.....	Aug. 19-Sept. 2....	9	9	
Macao.....	Aug. 17.....			Present.
Shanghai.....	Aug. 20-26.....		2	Chinese.
Egypt:				
Suez.....	May 18-20.....	5	2	From s. s. Pei-ho from Bombay.
Tor, quarantine station.....	May 22-June 3....	112	42	Do.
Germany:				
Hanover.....	Aug. 28-Sept. 2....		1	
Greece:				
Moschopolis.....	July 25-31.....	15	8	

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

Reports Received from July 1 to Nov. 24, 1916—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.	
India:					
Akyab.....	June 11-July 8.....	.....	2	
Bassein.....	Apr. 23-June 10.....	.....	3	
Bombay.....	May 14-July 1.....	21	9		
Do.....	July 2-Sept. 30.....	159	105		
Calcutta.....	May 7-July 1.....	.....	259	
Do.....	July 2-Sept. 16.....	.....	101	
Henzada.....	Apr. 23-July 22.....	.....	7	
Karachi.....	Aug. 28-Sept. 23.....	56	49		
Madras.....	June 25-July 1.....	1	1		
Do.....	July 2-22.....	5	3		
Madura District.....	Aug. 28-Sept. 9.....	.....	2	
Mandalay.....	July 23-29.....	.....	1	
Pakokku.....	July 2-8.....	.....	1	
Pegu.....	June 4-10.....	.....	1	
Rangoon.....	May 24-July 29.....	13	9		
Do.....	July 1-Aug. 26.....	2	1		
Indo-China:					
Provinces—					
Anam.....	Dec. 1-31.....	493	388	Dec. 1-31, 1915: Cases, 510; deaths, 395. Jan. 1-Mar. 31, 1916: Cases, 2,018; deaths, 1,100.	
Do.....	Jan. 1-Mar. 31.....	1,753	1,024		
Cambodia.....	Jan. 1-Feb. 29.....	11	10		
Cochin-China.....	Jan. 1-Mar. 31.....	10	4		
Tonkin.....	Dec. 1-31.....	17	7		
Do.....	Jan. 1-Mar. 31.....	244	62		
Saigon.....	May 1-July 2.....	162	74		
Do.....	July 3-Sept. 2.....	69	45		
Japan:					
Keelung.....	Sept. 24-Oct. 7.....		Present.
Kobe.....	Aug. 30-Oct. 8.....	375	135	Since Aug. 11, 1916: Cases, 375; deaths, 162.	
Nagasaki.....	Aug. 8-Oct. 22.....	328	160		
Osaka.....	Aug. 30-Sept. 30.....	779	246	Since Aug. 13, 1916: Cases, 821; deaths, 392.	
Taiwan Island.....	Sept. 24-Oct. 7.....	15	1		
Yokohama.....	Aug. 15.....	6	5	55 cases, with 9 deaths in quarantine, from s. s. Hawaii Maru from Hongkong via ports.	
Do.....	Sept. 4-Oct. 8.....	46	34	Total to Oct. 1, 1916: Cases, 63; deaths, 46.	
Suburbs of city.....	Aug. 14-20.....	8	4		
Districts.....	Sept. 4-Oct. 8.....	74	48	Total to Oct. 1, 1916: Cases, 125; deaths, 85.	
Java:					
Batavia.....	Apr. 13-June 29.....	.....	89	East Java, Apr. 8-June 30, 1916: Cases, 50; deaths, 35. July 1-
Do.....	July 7-13.....	16	12	Aug. 4: Cases, 13; deaths, 8.	
Malang.....	Apr. 8-14.....	2	2	Mid Java, June 3-30, 1916:	
Malang and Djombang.....	Apr. 28-May 5.....	2	2	Cases, 30; deaths, 26. July 1-	
				Aug. 4: Cases, 78; deaths, 65.	
				West Java, Apr. 3-June 29,	
				1916: Cases, 661; deaths, 409.	
				July 7-Aug. 17: Cases, 562;	
				deaths, 364.	
Surabaya residency.....	May 6-19.....	5	2	Including Malang, 2 cases, and Sidoarjo and Malang, 3 cases, with 2 deaths.	
Korea:					
Chemulpo.....	Sept. 18.....	2	.....	Sept. 23, 1916: In southern and central Korea, 108 cases. Aug.
Fusan.....	Aug. 1-Sept. 2.....	2	1	1-Oct. 8: Cases, 893.	
Persia:					
Asterabad.....	June 10.....	.....	.....	Present, with 4 or 5 deaths daily.
Enzeli.....	July 1-Aug. 31.....	7	5		
Foumen.....	May 9.....	3	2	Previously erroneously included in cases at Recht.	
Ghazien.....	June 13.....	2	1		
Kazvin.....	July 1-Sept. 30.....	28	34		
Kereige.....	Sept. 1-30.....	4	4		
Mohammerah.....	June 12.....	.....	.....	Present.
Recht.....	July 1-Aug. 31.....	19	11		
Tabriz.....	Aug. 1-31.....	.....	12	
Teheran.....	Aug. 1-Sept. 30.....	25	13		
Urumiah.....	July 1-31.....	25	.....	
Philippine Islands:					
Manila.....	May 14-July 1.....	36	25	Not previously reported: Cases, 72; deaths, 6.	
Do.....	Aug. 6-Sept. 30.....	568	301		
Provinces.....					
Albay.....	July 2-Sept. 30.....	412	211	July 16-Sept. 16, 1916: Cases, 3,204; deaths, 1,911.	
Antique.....	Sept. 17-30.....	5	4		
Bataan.....	July 2-Sept. 30.....	81	64		

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

Reports Received from July 1 to Nov. 24, 1916—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands—Continued.				
Provinces—Continued.				
Batangas.....	July 30-Sept. 30...	57	37	
Bulacan.....	June 18-July 1....	17	4	
Do.....	July 2-Sept. 30....	867	477	
Cagayan.....	June 25-July 1....	2	1	
Do.....	July 2-8.....	2	2	
Camarines.....	June 18-July 1....	69	32	
Do.....	July 2-Sept. 30....	969	607	
Cavite.....	June 11-July 1....	14	11	
Do.....	July 2-Sept. 30....	49	40	
Iloilo.....	Aug. 20-Sept. 30..	2,217	811	
Laguna.....	May 21-July 1....	31	20	
Do.....	July 2-Sept. 30....	161	118	
Lanao.....	May 28-June 3....	110	88	
Mindanao.....	July 16-Aug. 5....	19	11	
Mindoro.....	May 21-27.....	7	7	
Do.....	Sept. 3-16.....	6	4	
Misamis.....	July 16-Sept. 16..	218	119	
Negros Occidental.....	Sept. 3-23.....	73	52	
Nueva Ecija.....	Sept. 10-23.....	3	2	
Pampanga.....	July 9-Sept. 30....	179	154	
Rizal.....	May 21-July 1....	11	9	
Do.....	July 2-Sept. 30....	451	256	
Romblon.....	June 18-July 1....	68	39	
Do.....	July 9-Sept. 30....	24	20	
Samar.....	Aug. 23-Sept. 23..	12	9	
Tayabas.....	June 10-24.....	11	8	
Do.....	Aug. 6-Sept. 9....	2	1	
Zambales.....	Aug. 20-Sept. 30..	79	18	
Siam:				
Bangkok.....	May 15-27.....	22	21	
Do.....	July 16-Aug. 12...	5	5	
Straits Settlements:				
Singapore.....	May 27-June 24....	8	3	
Do.....	Aug. 13-19.....	1	1	
Turkey in Europe:				
Constantinople.....	May 19-Aug. 28....	161	79	Present among soldiers June 14.
Turkey in Asia:				
Adana.....	June 16-Sept. 3....	140	71	July-Sept. 7, 1916: Cases, 1,064;
Aleppo.....	June 15-25.....	47	16	deaths, 1,092. Total, June 1-
Do.....	July 13-Sept. 3....	30	11	Sept. 7, 1916: Cases, 9,009;
Bagdad.....	June 15-July 5....	78	18	deaths, 4,651.
Do.....	July 12-Sept. 1....	13	2	
Beirut.....	July 14-Aug. 4....	47	25	
Damascus.....	June 16-July 3....	77	50	
Jaffa.....	June 17-25.....	67	39	
Do.....	July 1-29.....	151	63	
Mersina.....	Aug. 6-Sept. 9....	7	2	
Smyrna.....	June 15-28.....	22	13	Epidemic. Estimated number
Do.....	July 17-Aug. 5....	5	5	cases daily, 50.
Trebizond.....	Aug. 6-Sept. 30..	55	13	
At sea:				
Steamship Hong-Kheng....	Apr. 27-May 9....	17	14	En route from Haifong, Indo-
Steamship Pei-ho.....	Apr. 19-30.....	1	1	China, to Colombo.
Do.....	May 5-17.....	8	8	From Saigon, Indo-China, for Co-
				lombo.
				From Colombo for Suez.

PLAGUE.

Brazil:				
Pernambuco, State.....	Jan. 1-Mar. 31....			Several cases.
Ceylon:				
Colombo.....	Apr. 30-July 1....	49	46	
Do.....	July 2-Sept. 9....	67	63	
Chile:				
Mejillones.....	May 28-June 3....	1		
Antofagasta.....	June 4-July 22....	2		
China:				
Amoy.....	July 16-Aug. 19....			Present.
Canton.....	Aug. 1-10.....		3	
Hongkong.....	May 28-June 30..	7	7	Mar. 19-25: Cases, 2; deaths, 2.
Do.....	July 23-Sept. 30..	7	5	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued.
Reports Received from July 1 to Nov. 24, 1916—Continued.
PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Ecuador:				
Ambato.....	May 1-31.....			Epidemic.
Bahia.....	do.....			Country district, vicinity of
Paule.....	June 1-30.....	4	2	Bahia.
Guayaquil.....	May 1-June 30.....	10	3	
Do.....	July 1-Aug. 31.....	25	9	
Manta.....	May 1-31.....			
Santa Rosa.....	Aug. 1-31.....	1		Country district, vicinity of
Egypt:				
Alexandria.....	May 25-Sept. 23.....	48	28	
Cairo.....	July 10-Oct. 4.....	2		
Port Said.....	May 7-June 28.....	11	10	
Do.....	July 20-Aug. 3.....	5	4	Imported.
Provinces—				
Assiout.....	May 27-June 29.....	9	8	
Beni Souef.....	May 26-June 25.....	34	15	
Do.....	July 1-10.....	2	1	
Fayoum.....	May 26-June 30.....	112	45	
Do.....	July 1-Aug. 3.....	9	2	
Galioubeh.....	June 7.....	1		
Girgeh.....	June 9-21.....	3	1	
Do.....	July 7-10.....	7	7	
Menoufieh.....	June 12-30.....	9	4	
Do.....	July 1-31.....	5	3	
Minieh.....	May 29-June 30.....	37	14	
Do.....	July 3-10.....	5	2	
Great Britain:				
Bristol.....	Aug. 18-31.....	3		
Hull.....	Aug. 19-31.....	2	1	
Liverpool.....	Sept. 22-Oct. 6.....	6	3	
Greece:				
Island of Chios—				
Mitylene.....	Sept. 29.....			Present.
Volo.....	do.....			Slight epidemic. Epidemic de-
India:				
Bassein.....	Apr. 23-Sept. 9.....		252	declared extinct Nov. 1, 1916.
Bombay.....	May 14-July 1.....	290	264	May 7-Sept. 16, 1916: Cases,
Do.....	July 2-Sept. 30.....	150	117	30,758; deaths, 21,873. ¹
Calcutta.....	May 7-July 1.....		14	
Benazada.....	Apr. 23-July 1.....		14	
Do.....	July 9-Aug. 5.....		5	
Karachi.....	May 14-July 1.....	72	61	
Do.....	July 2-Sept. 23.....	11	12	
Madras.....	Oct. 1-7.....	3	2	
Madras Presidency.....	May 14-June 24.....	139	94	
Do.....	July 9-Oct. 7.....	2,162	1,429	
Mandalay.....	May 14-June 3.....		1	
Do.....	Sept. 3-9.....		1	
Moulmein.....	Apr. 23-June 10.....		37	
Do.....	July 2-Sept. 2.....		76	
Pegu.....	June 11-July 15.....		3	
Prome.....	Apr. 23-May 20.....		1	
Do.....	July 2-Sept. 9.....		76	
Rangoon.....	Apr. 23-July 1.....	467	440	Apr. 16-22, 1916: Cases, 54;
Do.....	July 2-Sept. 16.....	279	255	deaths, 52.
Toungoo.....	June 25-July 1.....		2	
Do.....	July 9-Sept. 9.....		17	
Indo-China:				
Provinces—				
Anam.....	Dec. 1-31.....	36	20	Dec. 1-31, 1915: Cases, 90; deaths,
Do.....	Jan. 1-Mar. 31.....	131	93	70. Jan. 1-Mar. 31, 1916: Cases,
Cambodia.....	Dec. 1-31.....	27	36	290; deaths, 191.
Do.....	Jan. 1-Feb. 29.....	77	71	
Cochin-China.....	Dec. 1-31.....	4	1	
Do.....	Jan. 1-Mar. 31.....	82	27	
Tonkin.....	Dec. 1-31.....	23	23	
Saigon.....	May 15-July 2.....	55	30	
Do.....	July 24-Sept. 2.....	16	7	
Java:				
Residences—				
Kediri.....	Apr. 9-May 19.....	18	18	
Do.....	July 22-28.....	2	2	
Paseroean.....	Apr. 9-June 30.....	13	12	
Do.....	July 1-28.....	4	4	

¹ Reports for weeks ended May 20 and 27, 1916, not received.

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

Reports Received from July 1 to Nov. 24, 1916—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Java—Continued.				
Residences—Continued.				
Surabaya.....	Apr. 9-June 30....	28	25	
Do.....	July 1-Aug. 4....	14	13	
Surakarta.....	Apr. 9-June 30....	15	24	
Japan:				
Taiwan—				
Tamsui.....	July 15-Sept. 23...	3	3	17 miles from capital city. Present.
Yokkaichi.....	Oct. 19.....			
Mauritius.....	Apr. 15-June 21....	6	8	
Persia:				
Recht.....	May 2-19.....	20	14	
Siam:				
Bangkok.....	Apr. 30-July 1....	66	59	
Do.....	July 2-Sept. 18....	46	39	
Straits Settlements:				
Singapore.....	Apr. 30-July 1....	5	1	
Do.....	July 2-Sept. 2....	2	4	
Union of South Africa:				
Orange Free State.....	Jan. 23-Mar. 26....	36	23	

SMALLPOX.

Australia:					
New South Wales.....					
Angledool.....	July 21-Aug. 3....	1		Aug. 4-Sept. 15, 1916: Cases, 11.	
Burren Junction.....	Sept. 1-15.....	1			
Guildford.....	June 9-22.....	2			
Lake Macquarie.....	Aug. 4-17.....	2			
Narrabri.....	May 26-June 7....	8			
Do.....	July 7-Aug. 31....	26			
Swansea.....	Aug. 4-10.....	1			
Sydney.....	June 23-30.....	1			
Do.....	July 1-Aug. 3....	4			
Tamworth.....	June 9-22.....	1			
Do.....	July 7-20.....	1			
Walgett.....	July 21-Aug. 3....	6			
Austria-Hungary:					
Austria.....					
Galicia, Province.....	Apr. 23-July 1....	495		Feb. 13-July 1, 1916: Cases, 2,241; July 2-22, 1916: Cases, 175. Other Provinces, same period: Cases, 35. Other Provinces, same period: Cases, 87.	
Do.....	July 2-22.....	88			
Prague.....	July 2-Sept. 9....	6	2		
Vienna.....	May 27-July 1....	4	1		
Do.....	July 9-Aug. 5....	3			
Hungary—					
Budapest.....	May 21-July 1....	38	15		
Do.....	July 2-Sept. 9....	1	1		
Brazil:					
Bahia.....	July 2-Oct. 14....	20	18		
Para.....	July 2-8.....		4		
Rio de Janeiro.....	Apr. 9-June 17....	94	18		
Do.....	July 9-Sept. 30....	142	31		
Santos.....	May 8-14.....		1		
British East Africa:					
Mombassa.....	Apr. 24-May 31....	4	2		
Do.....	July 1-31.....		1		
Canada:					
Ontario—					
Fort William and Port Arthur.....	July 9-15.....	1			
Niagara Falls.....	July 2-8.....	1			
Toronto.....	June 25-July 29...	3			
Ceylon:					
Colombo.....	May 7-June 3....	4			
China:					
Amoy.....	Aug. 13-19.....			Present in vicinity.	
Antung.....	May 22-June 18....	2	1		
Canton.....	Aug. 1-10.....		1		
Chunking.....	May 7-June 24....				
Do.....	July 2-Sept. 23....				
Dairen.....	May 21-July 1....	2	1	Present. Do.	
Do.....	July 16-Aug. 26....	3	2		

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

Reports Received from July 1 to Nov. 24, 1916—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
China—Continued.				
Foochow.....	May 7-27.....	.....	.....	Do.
Do.....	July 2-Aug. 5.....	.....	.....	Do.
Harbin.....	May 2-June 18.....	3	1	
Do.....	July 9-Sept. 10.....	5	2	
Hongkong.....	May 7-June 24.....	68	50	Mar. 19-25: Cases, 16; deaths, 13.
Do.....	July 28-Sept. 30.....	30	27	
Nanking.....	June 11-Aug. 19.....	.....	.....	Do.
Tientsin.....	May 14-July 1.....	45	11	
Do.....	July 2-Sept. 9.....	4	1	
Cuba:				
Cienfuegos.....	Sept. 24-30.....	2	.....
Egypt:				
Alexandria.....	May 28-June 17.....	4	2	
Cairo.....	Jan. 22-June 10.....	206	74	
Port Said.....	Mar. 12-June 3.....	7	7	
France:				
Paris.....	May 14-July 1.....	9	.....
Do.....	July 2-8.....	1	.....
Germany:				
Breslau.....	May 21-27.....	1	.....
Hamburg.....	June 11-17.....	1	.....
Königsberg.....	July 2-Sept. 2.....	4	.....
Schleswig, district	Sept. 24-30.....	2	.....	Allenstein, 1; Meldorf, 1.
Great Britain:				
Cardiff.....	June 4-17.....	1	1	
London.....	do.....	1	.....
Southampton.....	July 31-Aug. 5.....	1	.....
Greece:				
Athens.....	Apr. 1-June 13.....	178	37	
Do.....	July 9-23.....	.....	.....	Present. Estimated occurrence, 10 cases weekly.
India:				
Bassein.....	May 7-June 10.....	.....	2	
Bombay.....	May 14-July 1.....	153	79	
Do.....	July 2-Sept. 30.....	59	37	
Calcutta.....	May 7-June 3.....	.....	3	
Do.....	July 2-Aug. 5.....	.....	2	
Karachi.....	Aug. 6-Sept. 2.....	5	4	
Madras.....	May 14-July 1.....	139	42	
Do.....	July 2-Oct. 7.....	120	56	
Rangoon.....	Apr. 23-July 1.....	260	135	
Do.....	July 2-Sept. 16.....	17	6	
Indo-China.....				
Provinces—				
Anam.....	Dec. 1-31.....	48	.....	Dec. 1-31, 1915: Cases, 74; deaths, 14. Jan. 1-Mar. 31, 1916: Cases, 399; deaths, 27.
Do.....	Jan. 1-Mar. 31.....	68	5	
Cambodia.....	Dec. 1-31.....	19	13	
Do.....	Jan. 1-Mar. 31.....	38	14	
Cochin China.....	Dec. 1-31.....	1	1	
Do.....	Feb. 1-Mar. 31.....	23	2	
Tonkin.....	Dec. 1-31.....	6	6	
Do.....	Jan. 1-Mar. 31.....	270	.....
Saigon.....	July 24-Aug. 13.....	4	4	
Japan:				
Kobe.....	May 29-June 25.....	24	4	
Do.....	July 24-Sept. 3.....	11	2	
Nagasaki.....	June 26-July 2.....	1	.....
Java.....				
Batavia.....	Apr. 13-June 29.....	31	9	East Java, Apr. 8-June 30, 1916: Cases, 88; deaths, 11. July 1-Aug. 4: Cases, 42; death, 1.
Do.....	June 30-July 13.....	6	4	Mid-Java, Apr. 1-June 30, 1916: Cases, 233; deaths, 47. July 1-Aug. 4: Cases, 56; deaths, 14.
Samarang.....	May 13-19.....	2	.....	West Java, Apr. 13-June 29: Cases, 278; deaths, 59. June 30-Aug. 17: Cases, 253; deaths, 34.
Surabaya.....	May 9-June 16.....	2	1	
Malta.....				
.....	Apr. 1-30.....	7	1	
Mexico:				
Aguascalientes.....	June 12-July 2.....	.....	33	
Do.....	July 3-Oct. 1.....	.....	44	
Federal District.....	Oct. 15-21.....	8	.....
Frontera.....	May 28-June 10.....	4	1	
Guadalajara.....	June 11-17.....	35	9	

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

Reports Received from July 1 to Nov. 24, 1916—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
Laguna del Carmen	Oct. 10.....	30		
Mazatlan	May 31-June 6.....		4	
Mexico City	Aug. 28-Oct. 14.....	69		
Tenosique	June 14.....			175 miles south of Frontera: Epidemic among troops.
Vera Cruz	June 4-July 2.....		9	
Do.....	July 3-Sept. 3.....		4	
Netherlands:				
Amsterdam	May 23-June 3.....	1		
Philippine Islands:				
Manila .....	.....do.....	1		
Do.....	July 1-8.....	3		June 19-25, 1916: Cases, 33.
Porto Rico:				
Aguas Buenas	June 19-25.....	5		
Arecibo .....	.....do.....	2		
Do.....	Aug. 7-13.....	1		
Bayamon	June 19-July 2.....	2		
Naranjito	June 26-July 2.....	4		
Rio Piedras .....	.....do.....	1		
San Juan .....	.....do.....	24		
Toa Alta .....	.....do.....	12		
Portugal:				
Lisbon	May 21-July 1.....	15		
Do.....	July 9-Aug. 26.....	9		
Russia:				
Moscow	Apr. 30-July 1.....	222	59	
Do.....	July 2-Sept. 2.....	82	143	
Petrograd	Apr. 23-July 1.....	162	35	
Do.....	July 2-Sept. 28.....	77	18	
Riga	Apr. 6-May 31.....	1	1	
Do.....	July 1-22.....	2		Apr. 1-30, 1916: 1 case. June 1-30, 1916: 1 case.
Siam:				
Bangkok	May 24-30.....	2		
Spain:				
Cadiz	July 1-31.....		1	
Madrid	May 1-31.....		13	June 1-30, 1916: Cases, 10.
Do.....	July 1-Sept. 30.....		60	
Malaga	May 1-31.....		7	
Seville	May 1-June 30.....		5	
Do.....	Aug. 1-Sept. 30.....		19	
Valencia	May 21-July 1.....	12	4	
Do.....	July 8-Oct. 21.....	10		
Straits Settlements:				
Penang	May 14-20.....	3		
Singapore	Apr. 30-July 1.....	5	3	
Do.....	July 16-Aug. 26.....	5	2	
Switzerland:				
Basel	May 13-July 1.....	29		
Do.....	July 2-Sept. 30.....	14		
Turkey in Asia:				
Trebizond	Sept. 17-23.....	1		
Union of South Africa:				
Durban	June 1-30.....	1		
Johannesburg	May 28-July 1.....	3		
Do.....	July 2-Sept. 9.....	15		
Venezuela:				
Maracaibo	Sept. 2-22.....		3	
Zanzibar:				
Zanzibar	May 12.....	1		From s. s. Dilmara.
At sea:				
Steamship Katuna				Case of smallpox landed at Colombo, Ceylon, May 12, 1916. Vessel arrived May 27, at Fremantle, Australia, was ordered to quarantine, and proceeded to Melbourne direct for disinfection.

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

Reports Received from July 1 to Nov. 24, 1916—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Austria-Hungary:				
Austria:				Feb. 13-July 1, 1916: Cases, 2,473. July 2-22, 1916: Cases, 513.
Galicia, province	Apr. 22-July 1	1,457		
Do	July 2-22	419		
Vienna	July 2-15	3		
Bosnia-Herzegovina	June 18-30	21		
Do	July 1-7	4		
Hungary:				
Budapest	May 21-June 24	14	2	Feb. 21-Mar. 5, 1916: Cases, 35; deaths, 7.
Do	July 2-Sept. 16	7	1	
Belgium:				
Liege	Aug. 12-19		1	
Canada:				
New Brunswick—				
St. John	July 29	4		
Canary Islands:				
Santa Cruz de Tenerife	July 31-Aug. 5		1	
China:				
Antung	June 19-25	1	1	
Do	July 22-Sept. 10	4		
Harbin	May 2-8	1		
Do	July 3-16	1		
Tientsin	May 14-20		1	
Egypt:				
Alexandria	May 21-July 1	235	93	
Do	July 2-Sept. 23	163	71	
Cairo	Jan. 8-June 10	1,124	507	
Port Said	Mar. 18-June 10	52	26	
Germany:				
Aix la Chapelle				
Barmen	July 2-Oct. 7		3	
Berlin	Aug. 13-19		1	
Do	June 18-24		1	
Do	July 16-Oct. 30		15	
Bremen	July 16-Sept. 2	12	2	
Breslau	Aug. 15-Oct. 30	4		
Chemnitz	May 28-June 3		1	
Frankfort on the Main	June 11-17		1	
Do	Aug. 27-Sept. 2		1	
Hanover	May 7-27	4	1	
Do	July 1-Sept. 30	7	3	
Königsberg	June 4-10	1		
Do	July 9-Oct. 21	18	6	
Leipzig	June 4-10		1	
Stettin	July 16-Aug. 19		3	
Great Britain:				
Belfast	July 16-Sept. 9	12	4	
Dublin	Oct. 1-14	3		
Dundee	Oct. 8-14	1	1	
Glasgow	July 9-Oct. 21	10	7	
Greece:				
Athens	July 24-Aug. 21		2	
Saloniki	May 1-July 2		61	
Do	July 3-Sept. 28		168	
Italy:				
Palermo	June 29-July 5	1	1	
Jamaica:				
Port Antonio	Oct. 22-28	1	1	
Japan:				
Hakodate	July 16-22	2		
Tokyo	May 22-July 25	114		Jan. 1-July 25, 1916; Cases, 468.
Java:				
East Java, Apr. 8-June 30, 1916:				
Batavia	Apr. 13-June 29	46	13	Cases, 24; deaths, 9. July 22-
Do	July 7-27	24	4	Aug. 4: Case, 1. Mid-Java,
Samarang	Apr. 1-June 30	20	8	Apr. 1-June 30, 1916: Cases,
Surabaya	Apr. 8-May 12	6	6	76; deaths, 18. July 1-Aug. 4:
Do	July 1-7	1		Cases, 26; deaths, 4. West Java,
				Apr. 13-June 29, 1916: Cases,
				118; deaths, 18. July 7-Aug.
				17: Cases, 37; deaths, 7.
Mexico:				
Aguascalientes				
Do	June 12-July 2		32	
Chihuahua	July 3-Oct. 1		181	
Do	Sept. 7	40		Sept. 20: Estimated number of
Durango	Sept. 1			cases, 100. Oct. 31: Epidemic.
Federal District	Oct. 15-21	334		Present.
Juarez	Sept. 7-20	18		
Guadalajara	June 11-17	4	1	

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

Reports Received from July 1 to Nov. 24, 1916—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Mexico—Continued.				
Leon.....	Oct. 25.....			Present.
Mexico City.....	Aug. 28-Oct. 14.....	1,519		
Nuevo Larado.....	Oct. 28.....	1		In person from Guanajuato.
San Luis Potosi.....	Oct. 21.....			Epidemic.
Tampico.....	Oct. 11-30.....		1	
Torreón.....	Oct. 20.....			Present.
Vera Cruz.....	June 4-9.....		2	
Do.....	July 24-Oct. 15.....		9	
Zacatecas, State.....				Sept. 7-Oct. 25: Prevalent.
Netherlands:				
Rotterdam.....	July 30-Oct. 14.....		1	
Norway:				
Bergen.....	.....do.....		1	
Russia:				
Moscow.....	Apr. 30-July 1.....	909	52	
Do.....	July 9-Sept. 2.....	290	34	
Petrograd.....	Apr. 23-July 1.....	59	13	
Do.....	July 3-Sept. 9.....	35	6	
Riga.....				June 1-30, 1916: 1 case.
Spain:				
Madrid.....	Aug. 1-Sept. 30.....		2	
Sweden:				
Stockholm.....	June 21-27.....	1		
Do.....	July 9-Oct. 7.....	9		
Switzerland:				
Basel.....	July 24-Aug. 26.....	8		
Geneva.....	May 21-27.....	1		
Zürich.....	July 23-Sept. 2.....	5		
Turkey in Asia:				
Adana.....	May 13-June 25.....			Present.
Do.....	July 2-8.....			Do.
Bagdad.....	June 27.....			Do.
Haifa.....	Apr. 21-June 11.....	35	13	
Do.....	July 10-Sept. 17.....	93	41	
Jaffa.....	Apr. 23-June 25.....		47	Mar. 19-Apr. 1: Present.
Mersina.....	May 7-June 25.....	9		Apr. 2-8: Cases, 3.
Do.....	July 2-8.....			Do.
Tarsus.....	May 13-27.....			Present.
Do.....	July 2-8.....			Do.
Trebizond.....	Aug. 6-Sept. 30.....	3	3	

YELLOW FEVER.

Barbados.....	Sept. 17-30.....	6	5	
Ecuador:				
Babahoyo.....	June 1-30.....	2		
Guayaquil.....	May 1-June 30.....	76	51	
Do.....	July 1-Aug. 31.....	73	44	
Mitagro.....	June 1-30.....	1	1	
Do.....	July 1-Aug. 31.....	3	1	
Naranjito.....	Aug. 1-31.....	2	1	
Martinique:				
Fort de France.....	Oct. 22-28.....	1	1	
Mexico:				
Campeche.....	Sept. 15.....	1	1	
Merida.....	July 1-Oct. 28.....	30	9	
Progreso.....	Aug. 13-Oct. 21.....	2	1	
Tuxpan.....	Oct. 31.....			Present.

SANITARY LEGISLATION.

STATE LAWS AND REGULATIONS PERTAINING TO PUBLIC HEALTH.

CALIFORNIA.

Typhus Fever—Notification of Cases—Placarding—Quarantine—Delousing Procedure. (Reg. Bd. of H., Oct. 7, 1916.)

RULE 1. Notification.—Any person in attendance on a case of typhus fever, or a case suspected of being typhus fever, shall report the case immediately to the local health authority, who shall in turn report at once by telegraph, and later in the regular weekly report, to the State board of health all cases reported to him. In the absence of local rules permitting notification by telephone, the report to the local health authority shall be in writing.

Note 1.—Any physician in attendance on a case of typhus fever who fails to report the case promptly to the local health authority is guilty of a misdemeanor, punishable by a fine of not less than \$25 nor more than \$500, or by imprisonment for a term of not more than 90 days, or by both such fine and imprisonment. (See public health act, statutes of 1907, p. 893, secs. 16, 21.)

RULE 2. Diagnosis.—When the diagnosis is in doubt, the attending physician shall report the case as one of "suspected typhus fever." The health officer shall thereupon investigate with a view to establishing the diagnosis, and if unable to reach a decision, he shall report to the State board of health, so that they may carry on such field and laboratory investigations as may be necessary.

Note 1.—The following is a brief description of the symptoms of typhus fever:

The State board of health is indebted to Senior Surg. C. C. Pierce of the United States Public Health Service for this description of the symptoms of typhus fever.

Typhus fever is usually abrupt in onset, and the rise in temperature is always abrupt. Most patients will go to bed at once, although some stay up and around for a day or so. The fever reaches its height in about three days and remains up during the disease, but not at very high points; 103 or 104 is the usual temperature. The pulse increases with the temperature. Chills may occur at first, but not always.

Pain in the back and limbs is usually complained of, and intense headache is nearly always present, and persists during the course of the disease. At first the face is flushed. There is some congestion of the conjunctivæ, but no symptoms of coryza.

The tongue is coated, and usually gets very hard, brown, and cracked. When protruded a tremor is noticed.

The typhus rash comes out three to five days after the onset, and is first seen on the abdomen, from where it spreads to the chest, back, thighs, arms, forearms, and legs. It does not occur on the palms or soles, and seldom on the face. Within 24 to 36 hours after the rash is first seen, it is fully out, and remains out until the patient's temperature is normal, or death ensues, when it can be seen as a post-mortem lesion.

The rash will disappear on pressure during the early stages, but later on will not disappear, and may become petechial.

The typhus spots vary in size from one-twelfth to one-half inch in diameter and have irregular and indistinct outlines. The patient is nearly always constipated, and in every case there is some pulmonary involvement, either a bronchitis or what might be called a bronchopneumonia.

The patient is nearly always delirious at night, and is subject to considerable deafness. The patient is usually prostrated, mentally confused and nervous. There are, of course, mild cases in which many of the symptoms are not marked; in fact, the rash sometimes does not occur.

The rash, headache, bronchitis, mental confusion, dry coated tongue, nervous tremor, and continuous fever, without marked morning remissions, are the most dependable symptoms.

The disease terminates usually by crisis on the twelfth to fifteenth day of illness, but some cases recover by lysis covering two or three days. The mortality for cases over 40 years old is very high; for those younger very much less.

RULE 3. Precautions to be observed by the physician.—The physician in charge of a case of typhus fever, or a case suspected of being typhus fever, shall take such precautions as may be necessary to prevent infected body lice from gaining access to his person or clothing.

Note 1.—Typhus fever is transmitted from persons sick with the disease to susceptible individuals by the body louse (*Pediculus vestimenti*). Except for the possible occasional transmission by the head louse (*Pediculus capitis*) the disease is not known to be transmitted in any other way under natural conditions. The blood of persons sick with the disease contains the virus during the entire febrile stage and sometimes for 36 hours after the crisis. It is therefore probable that body lice may become freshly infected during that entire period.

Note 2.—There is danger to physicians working among those sick with typhus fever previous to the delousing procedures unless careful precautions are taken. Until the patient can be put under conditions which unquestionably eliminate the body louse from his environment, the physician and other attendants should wear in the sick room a washable outer garment which is snugly fastened at the elbows, the forearms being bare and oiled with kerosene. This garment should not be taken from the premises until disinfected by boiling. The shoes should be thoroughly oiled with kerosene.

RULE 4. Instructions to household.—It shall be the duty of a physician in attendance on a person having typhus fever, or suspected of having typhus fever, to instruct the patient and the other members of the household in precautionary measures for preventing the spread of typhus fever through the medium of the body louse. He shall also advise that the following required precautions be taken at once, unless the local health authority is in a position to take immediate charge:

1. The clothing of the patient shall be removed, placed in a wash boiler, or other receptacle, which has been rubbed on the inside with kerosene, and be immediately boiled in water, or soaked for at least two minutes in gasoline. The former method is preferable where applicable, owing to the great danger from explosion and fire from gasoline. Some fabrics, especially leather, are ruined by boiling, and therefore belts, shoes, etc., must be treated with gasoline.

2. The head and entire body of the patient shall be bathed with kerosene. It should be thoroughly rubbed into the hairy parts. This procedure should be followed by drying with a towel or by a warm bath with soap and water. In men it is usually best to clip the hair, and if this has been done, the above procedure is sufficient. If the hair is not clipped, it shall be wet thoroughly with kerosene and washed half an hour later with soap and water. Longer soaking may irritate the skin and should be avoided. This treatment will kill head lice (*Pediculi capitis*). The treatment of the hair should be repeated as often as necessary. If the nits persist, an application of vinegar alone should be applied to the hair, which should be wrapped up for a half hour. After the bath put on fresh, clean clothing.

3. The patient shall be removed to a hospital or to a separate bed in a vermin-free room or tent, but the delousing procedures specified in paragraphs 1 and 2 must be completed, and permission must be obtained from the local health authority before the patient is removed from the premises.

4. The room from which the patient was removed shall be freed from lice. Practically all the lice will be on recently used clothing, and bedding, and on people. Bedding and fabrics must be boiled, sterilized with steam or soaked in gasoline, except that mattresses, where steam sterilizing is not available, may be freed from lice by fumigating with sulphur dioxide, four pounds of sulphur being burned without added moisture for every 1,000 cubic feet of confined space. The exposure to the full strength of gas should be for at least six hours. Before returning any bedding or fabrics to the house, the floors and low woodwork shall be mopped with kerosene. As an additional protection to the attendants it is wise to give the floors a preliminary treatment with kerosene before working in the room.

5. All persons who have been in contact with the patient shall be similarly treated, and shall moreover be instructed to remain on the premises until the health authority has had opportunity to institute the official quarantine.

RULE 5. Investigation of cases.—Upon being notified of a case of typhus fever, or a case suspected of being typhus fever, the local health authority shall make an immediate investigation, and after finding that the case is, or may be, typhus fever, he shall require that all the delousing procedures specified under rule 4 be strictly carried out under the supervision of himself or some responsible representative.

Note 1.—It is highly important that full data should be obtained relative to the case, including date of onset, symptoms, and probable source of infection. The travels of the patient for at least a month before infection should be reported, with dates, to the State board of health. Data regarding contact with persons

recently in Mexico or with persons known or suspected to be infested with lice should be forwarded. Special attention should be given to any contact the patient may have had with Mexican laborers in railroad camps, as many cases of typhus fever have appeared in these camps. Examination for the presence of body lice and head lice should be made.

Note 2.—In camps or lodging places which have been found to be heavily infested with lice it is wise to repeat the procedures for delousing of the premises and inmates weekly, especially if there are new arrivals, until the persons and premises are found free on at least two successive weekly inspections.

RULE 6. Quarantine of patients and contacts.—If the local health authority, on investigation, is satisfied or suspects that the case is one of typhus fever, he shall establish a quarantine by affixing placards in conspicuous places at the principal entrances to the premises of the patient and those of persons who have been in contact with him. Until removal of the placards, by proper authority, no person shall enter or leave the premises or remove any article therefrom without the permission of the local health authority. The typhus patient shall be kept in quarantine until two days after return of his temperature to normal, and persons who have been exposed to typhus fever shall be kept in quarantine, or the modified quarantine described below, in note 3, until 12 days have elapsed after the completion of the delousing procedure specified in rule 4.

Note 1.—The placard specified in rule 6 shall be in the following form, in which the name of the disease shall be in letters not less than 2½ inches in height:

TYPHUS FEVER.

These premises are declared to be in a state of quarantine. All persons are forbidden to enter or leave these premises or to remove any articles therefrom without the permission of the local health authority.

Date:

.....
Local Health Authority.

Note 2.—Until such time as a positive diagnosis is made, in cases strongly suggestive of typhus fever the word "suspected" may precede the words "Typhus fever" on the placard specified in rule 6.

Note 3.—At the discretion of the health officer, the quarantine may be modified so as to permit adult "contacts" to work: *Provided*, That they shall be strictly prevented from coming in contact with persons outside the quarantine or with objects which may be infested with lice. Safety lies in protecting "contacts" from reinfestation until the average incubation period of 12 days has elapsed after the last possible exposure to lice which may have bitten a typhus patient.

Note 4.—No terminal disinfection is necessary when the quarantine is raised, as the premises have been freed from lice in the observation of rule 5.

RULE 7. Precautionary quarantine and delousing.—Inasmuch as typhus fever has been repeatedly introduced in California, and is now present, and will in all probability continue to be introduced from time to time in spite of all precautions, and inasmuch as there is great danger of the rapid spread of the disease in any community where body lice are present, the State board of health hereby declares that the body louse (*Pediculus vestimenti*) is a menace to health. Local health authorities shall quarantine any persons or premises known to be infested with body lice until the delousing procedures specified in rule 4 have been performed under the supervision of the health authority or his representative. The quarantine shall be established by affixing a placard in a conspicuous place at the principal entrance to the premises. When employees, lodging-house keepers, teachers, school nurses, or others have knowledge that certain persons or premises are infested with body lice, they shall report the fact to the local health authority.

Note 1.—When quarantine for infestation with body lice is established the premises shall be placarded as specified for quarantine for typhus fever in rule 6 and note 1, rule 6, except that the word "Pediculosis" shall be substituted for the words "Typhus fever" and the quarantine shall be discontinued as soon as delousing operations have been completed and have been found adequate by the local health authority.

Note 2.—At his discretion the health authority may substitute thorough bathing with soap and hot water for the kerosene and water bath, but the methods of treating clothing and bedding should not be changed.

RULE 8. *Precautions by the public.*—In communities in which typhus fever is present the local health authority shall instruct the public relative to precautionary measures.

Note 1.—The community can protect itself by delousing infested premises and persons and by removing conditions favorable to the body louse. Any part of the city is a menace where people are crowded together under housing conditions which make cleanliness of body and clothing difficult. Such places, if already infested with lice, should be deloused, under the direction of the local health authority, and the community should take steps to compel better living conditions. No community can afford to maintain a focus of squalor and filth.

Note 2.—The individual can protect himself and assist in protecting the community by frequently bathing and putting on clean underwear. When typhus fever is actually present in his community he can protect himself further by avoiding persons who neglect the care of their bodies and clothing and may therefore be louse infected.

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

COHOES, N. Y.

Communicable Diseases—Admission of Infected Persons or Articles into City— Library and School Books. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 14. No person or article liable to propagate a dangerous disease shall be brought within the limits of this municipality unless by the special permit and direction of the health officer, and anyone having knowledge that such person or article has been brought within such limits shall immediately notify the said health officer thereof.

SEC. 15. School books or books from a public or circulating library shall not be taken into the house where any communicable disease shall exist during the period of isolation and quarantine. In case school or library books have been taken into such house they shall not be returned to circulation but destroyed or disinfected to the satisfaction of the health officer of the municipality.

Spitting—Prohibited in Public Places—Spittoons. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 16. Spitting upon the sidewalk or crosswalk of any public street in the city of Cohoes, or upon the floor of any tenement house which is used in common by the tenants thereof, or upon the floor of any hall or lodging house which is used in common by the guests thereof, or upon the floor of any theater, schoolhouse, church, store, factory, or any building which is used in common by the public, or upon the floor of any depot or station, or upon the floor of any railroad car or any other public conveyance, or upon the station platform of any railroad or other common carrier is hereby forbidden.

Any person owning or having the management or control of any such building, store, factory, railroad car, or other conveyance, or any depot or station, station platform or common carrier is hereby required to keep posted in each of said places a sufficient number of notices forbidding spitting upon the floors and calling attention to the provisions of this section.

Any person owning or having the control or management of such buildings, stores, factories, depots, stations, station platforms, or other common carriers is hereby required to provide sufficient and proper receptacles for expectoration, and also to provide for the cleansing and disinfection of said receptacles at least once in every 24 hours.

Foodstuffs—Protection—Sale of Unwholesome, Prohibited. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 10. No butter, cheese, meat, fish, bird, fruit, or vegetables, or anything for human food, not being then fresh or properly preserved, sound, wholesome, and safe for such use; nor any flesh of any animal which died by disease, or which was at the time of its death in a sickly or unwholesome condition; nor the carcass or meat of any calf which was at the date of its death less than four weeks old, or of any lamb which was at the date of its death less than eight weeks old, or of any pig which was at the date of its death less than five weeks old shall be brought within the limits of this municipality, nor offered or held for sale as food therein.

* * * * *

SEC. 12. Any person or persons engaged in the selling or keeping for sale of any food supplies that are liable to contamination from dirt, dust, flies, insects, etc., such as all products made and sold in bakeries, meats, fish, and vegetables that are eaten without cooking, must provide a suitable covering to protect any such food products from dirt, dust, flies, insects, etc. Any of the above-named food supplies shall not be exposed less than 3 feet in height from the sidewalk, and when so exposed shall be covered as above provided.

Milk and Cream—Production, Care, and Sale. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 11. Producers and dealers in milk and cream must comply with the requirements of the sanitary code established by the public health council. All dairy farms where milk or cream is produced, to be sold at retail or wholesale in this municipality, shall score on the score card prescribed by the State commissioner of health not less than 23 per cent for equipment and not less than 37 per cent for methods. In all cases the udders must be cleaned with a moist cloth just before milking and the small-top milking pail used. All milk shall be removed immediately from stable without pouring from pail and cooled to 60° F. or below. Dealers storing, transporting, or delivering such milk or cream must keep the same cooled to 55° F. or below until delivered to the consumer. All raw milk must be delivered within 36 hours from the time of milking. All pasteurized milk or cream must be delivered within 24 hours after pasteurization. No "dip" milk shall be delivered or sold from any wagon or store. All milk shall be delivered to consumers in sealed or covered containers without breaking bulk.

Slaughterhouses and Markets—Sanitary Regulation. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 13. No person, without the consent of the board of health, shall build or use any slaughterhouse within the limits of this municipality, and the keeping and slaughtering of all cattle, sheep, and swine, and the preparation and keeping of all meat, fish, birds, or other animal food shall be in the manner best adopted to secure and continue their wholesomeness as food; and every butcher or other person leasing or occupying any place, room, or building wherein any cattle, sheep, or swine have been or are killed and dressed, and every person being the owner, lessee, or occupant of any room or stable wherein any animals are kept, or of any market, public or private, shall cause such place, room, stable, or market, and their yards and appurtenances, to be thoroughly cleansed and purified, and all offal, blood, fat, garbage, refuse and unwholesome and offensive matter to be removed therefrom at least once in every 24 hours after the use thereof for any of the purposes herein referred to, and shall also at all times keep all woodwork, save floors and counters, in any building, place, or premises aforesaid, thoroughly painted or whitewashed; and the floors of such building, place, and premises shall be so constructed as to prevent blood and foul liquids or washings from settling in the earth beneath.

Privies and Cesspools—Location, Construction, Maintenance, and Cleaning—Sewer Connections Required where Possible. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 2. No privy pit, cesspool, or reservoir into which any privy, water-closet, stable, sink, or other receptacle of refuse or sewage is drained shall be constructed or maintained in any situation or manner whereby through leakage or overflow of its contents, it may cause pollution of the soil near or about habitations, or of any well, spring, or other source of water used for drinking or culinary purposes; nor shall overflow from any such reservoir or receptacle be permitted to discharge into any public place or in any wise whereby danger to health may be caused. And every such pit, reservoir, or receptacle shall be cleaned and the contents thereof removed at such times and under such precautions as the health officer may prescribe.

SEC. 3. No owner, lessee, occupant, or agent of any building or premises shall maintain within the city any privy, privy vault, or cesspool made or built in the earth within 25 feet of any door or window of any residence upon such premises, or any residence upon the adjoining premises, and such maintenance of any privy, privy vault, or cesspool is hereby declared to be a nuisance and condition detrimental to life and health. And any or all privies, privy vaults, and cesspools existing within the city shall be removed or filled up by the owner, lessee, occupant, agent, or other person having charge or control of the premises on which they exist, whenever the same becomes a nuisance and condition detrimental to life and health, by rendering the soil, air, or water impure, injurious, unwholesome, or they constitute a condition of any kind detrimental to life and health. But no person shall hereafter erect, construct, or maintain any privy, privy vault, or cesspool made or built in the earth upon any lot or parcel of ground within the city adjoining any street where a public or main sewer exists with which connections can be made by means of any drain pipes laid in or from any such lot or piece of ground, nor shall any privy vault hereafter constructed be located within 10 feet of any street (alleys excepted) or within 5 feet of the boundary line of the premises on which it is constructed.

Stables, Piggens, etc.—Location and Sanitary Regulation. Manure—Care and Disposal. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 7. No horse stable shall be built or maintained within 10 feet of any door or window of any dwelling, bakery, or any building where flour or food products are stored or kept.

No receptacle for storing manure shall be built or maintained within 10 feet of any door or window of any dwelling, bakery, or any building where flour or food products are stored or kept.

No cow stable shall be built or maintained within 50 feet of any dwelling, bakery, or any building where flour or food products are stored or kept.

No piggens shall be built or maintained within 200 feet of any dwelling, bakery, or any building where flour or food products are stored or kept.

All stables, barns, and other places wherein horses or cattle, pigs, or other animals are kept shall be kept in a clean and sanitary condition. All accumulations of manure shall be kept stored in a covered receptacle built so as to prevent the entrance of flies, and said accumulations shall be removed with such frequency and in such manner as to prevent offensive or noxious odors.

No piles of manure shall be allowed to accumulate on any premises whereby they shall become breeding places for flies or whereby any leakings therefrom may discharge on any sidewalk, street, or pass into any stream or watercourse.

No hennery building, duck or goose pen, or pigeon house or loft shall be built or maintained within 25 feet of any dwelling, and all fowls and chickens shall be confined within a proper inclosure. All such henneries or pens shall be kept in a clean and sanitary condition, and filth accumulating in or about the same shall be removed with such frequency and in such manner as the board shall direct.

No dwelling shall be built or maintained within 15 feet of the center of any alley, excepting at the corner of a street.

Garbage, Refuse, and Ashes—Care and Disposal—Receptacles. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 4. No ashes, refuse, rubbish of whatsoever kind, offal, garbage, dead animals, decaying vegetable matter, or organic waste substance of any kind shall be thrown upon any private land or premises, street, public place, or the canals or Mohawk River, and no putrid or decaying animal or vegetable matter shall be kept in any house, cellar, or adjoining outbuilding for more than 24 hours.

SEC. 5. Each and every owner, tenant, lessee, and occupant of each and every building used or occupied as a place of residence or as a place of business, or any part thereof, in the city of Cohoes must forthwith provide and cause to be provided and at all times hereafter must keep and cause to be kept and provided separate, suitable, proper, and sufficient boxes, barrels, or tubs for all ashes and rubbish of whatsoever kind, and also in addition thereto must provide and cause to be provided and at all times hereafter must keep and cause to be kept and provided separate, suitable, proper, and sufficient metallic receptacles with cover for all garbage, refuse, vegetable, animal matter, and liquid substances of whatsoever kind. Said wood and metallic receptacles shall be left at a convenient place on the street and at such times as the city garbage contractor collects garbage, ashes, and rubbish in the locality.

SEC. 6. No sunken places shall be filled nor made land constructed with any materials containing an admixture of putrescible animal or vegetable matter, except by permission of the health officer.

Offensive Trades—Regulation. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 8. No garbage, bone, or animal boiling or rendering occupations shall be carried on without the consent of the board of health nor in any establishment unless provided with tight walls, impervious floors, and such provisions for adequate water supply and drainage and other facilities as will enable all operations to be carried on with cleanliness and freedom from all offense or nuisance.

No such occupation shall be carried on, nor shall any establishment be constructed or maintained in or near a thickly inhabited neighborhood, nor shall the drainage from any establishment unless subject to purification be permitted to flow into any stream or watercourse.

SEC. 9. No person shall erect or maintain any manufactory or place of business dangerous to life or detrimental to health, or where unwholesome, offensive, or deleterious odors, dust, dirt, gas, smoke, deposit, or exhalations are generated without the approval of the board of health; and all such establishments shall be kept clean and wholesome so as not to be offensive or prejudicial to public health; nor shall any offensive or deleterious waste substance, gas-tar, chemicals, sludge, refuse, or injurious matter be allowed to run into any public waters, stream, watercourse, street, or public place. And every person conducting such manufactory or business shall use the best approved and all reasonable means to prevent the escape of smoke, gases, dust, dirt, and odors and to protect the health and safety of all operatives employed therein.

Nuisances—Definition and Prohibition. (Reg. Bd. of H., Apr. 10, 1916.)

SECTION 1. Whatever is dangerous to human life or health; whatever building or part of cellar thereof is overcrowded or not provided with adequate means of ingress and egress, or contains garbage, ashes, refuse, or rubbish of whatsoever kind, or is not sufficiently ventilated, sewerred, drained, lighted, or cleaned; and whatever renders soil, air, water, or food impure or unwholesome, are declared to be nuisances and to be unlawful.

Cemeteries—Care. Communicable Diseases—Burial. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 17. Every person who acts as a sexton, or undertaker, or cemetery keeper, within the limits of this municipality, or has the charge or care of any tomb, vault, burying ground or other place for the reception of the dead, or where the bodies of any human beings are deposited, shall so conduct his business and so care for any such place above named as to avoid detriment or danger to public health; and every person undertaking preparations for the burial of a body dead from contagious or infectious disease as hereinbefore specified shall adopt such precautions as the health officer may prescribe to prevent the spread of such disease.

Board of Health—Organization and Meetings. Health Officer, Registrar of Vital Statistics, and Inspectors—Appointment and Duties. Burial Permits. (Reg. Bd. of H., Apr. 10, 1916.)

1. *Meetings.*—The regular meetings of this board shall be held the second Monday of each month at 8 o'clock p. m. Special meetings may be held whenever called by the president, or by a majority of the board. Notice shall be sent to each member of the board to attend such special meetings, and a written or printed notice mailed 24 hours before the hour stated for such special meetings shall be deemed a proper and sufficient notice. Such notice shall state the special business to be brought before the board. A majority of the board shall constitute a quorum.

2. *Appointments.*—The health officer, registrar of vital statistics, clerk, and inspector of plumbing shall be appointed by the board at the first regular meeting in January following the termination of their term of office by a concurring vote of a majority of the members of the board, for a term of four years, and they shall continue in office unless removed, as provided in the public health law, until the expiration of their respective terms, and until their successors, duly chosen, have taken the oath of office and become duly qualified to serve.

3. *Order of business.*—The following shall be the order of business at meetings of the board unless otherwise ordered:

(1) Roll call; (2) reading of minutes; (3) report of health officer; (4) reports from special committees; (5) communications and complaints; (6) resolutions and orders; (7) unfinished business; (8) new business.

4. *Resolutions.*—All resolutions shall be submitted to the board in writing.

5. *Committees.*—Committees may be appointed by the board for special service, as the best interest of the public health of the municipality may require. Said committees may serve until a subsequent meeting fixed by the board.

6. *Office hours.*—The health officer, registrar of vital statistics, and inspectors shall be considered as always on duty.

7. *Hearings and complaints.*—Complaints concerning matters affecting public health or the safety of life must be made to the health officer in writing or by personal appearance before the board. All written communications must be signed by the party or parties making the complaint.

8. *Duties of health officer.*—Duties and powers of health officer:

(1) The health officer is directed and empowered to execute and enforce all sanitary regulations of general or special nature now or hereafter adopted or published by this board.

(2) To examine into the nature of complaints, made by any inhabitant of this municipality, concerning sources or conditions dangerous to public health, and when by investigation or otherwise he shall find such conditions to be a menace to health he shall forthwith proceed to have the same removed or abated.

(3) To preserve an accurate record of his official actions, and to report the same to the board of health at the first regular meeting of each month or at such other times as may be requested by the board.

(4) To meet with the board of health and to recommend to the board the adoption of such sanitary measures as in his judgment would prove most conducive to the health of the people of this municipality.

(5) To perform such duties as are laid upon the health officer by the public health law and the sanitary code established by the public health council; to maintain an adequate supply of tetanus and diphtheria antitoxin, culture tubes, sputum jars, etc., furnished by the State department of health; and to properly distribute such circulars and all printed matter relating to communicable diseases, etc., as are provided for that purpose by the State department of health.

9. *Duties of registrar of vital statistics.*—The registrar of vital statistics shall make complete the registration of all births and deaths occurring within the municipality

and, after registration, promptly forward the certificates of such births and deaths to the State bureau of vital statistics on or before the fifth of each month. He shall make reports to the health officer at such times and in such manner as the said health officer shall require.

10. *Duties of inspectors.*—Inspectors will be subject to the immediate control of the health officer, to whom they will report; they will obey orders with promptness, and when necessary relinquish the demands of private business in order the better to observe the obligations imposed upon them by their office. They shall make reports to the health officer and the forms furnished them must be filled up legibly and minutely, and any information added that will throw light on the subject investigated. They shall wear a badge of office, prominently displayed, when engaged in their official duties. Upon entering any house or premises they must announce their authority and the object of their visit, and, while endeavoring to avoid giving offense, must make their investigations with care and minuteness. When in the discharge of their duty they meet resistance, they are to report at once to the health officer and await instructions. It shall also be their duty to report all who violate health laws.

11. *Records to be open.*—All books of registration of vital statistics and records of law and ordinances shall be open for public inspection daily, at such place and during such hours as the board may determine.

12. *Duties of clerk.*—The clerk shall be subordinate to the board and his duties shall be clerical. He shall keep the books of minutes in which are recorded the minutes and proceedings of the board. He shall perform such other duties as the board may require of him. He shall report to and receive instructions from the board.

13. *Burial permits.*—Burial permits and all permits for the removal of the body of any deceased person from the city of Cohoes shall be granted and signed by the registrar of vital statistics, and all permits for the disinterment of the remains of deceased persons in the city of Cohoes shall be granted and signed by the health officer.

14. *Amendments.*—These regulations shall not be altered nor shall any of them be repealed, nor shall any new regulation be made, unless pursuant to a notice of motion for a new regulation, or to alter or repeal, entered on the minutes of some prior regular meeting, or by a concurring vote of at least five members of the board.

Definitions of Terms—Penalty. (Reg. Bd. of H., Apr. 10, 1916.)

SEC. 18. *Definitions.*—“Person” includes a natural person, corporation, company, association, joint-stock association, estate, firm, and copartnership. “Street” includes avenue, road, alley, lane, highway, boulevard, concourse, driveway, bridge, tunnel, subway, parkway, and every kind of public road, square, and place.

General penalty.—Any person violating any of the provisions of this code shall be subject to a penalty of \$25 for each offense, except when such violation continues for more than 24 hours, then such person shall be subject to a penalty of \$25 for each 24 hours such violation shall so continue. In addition to such penalty every such violation shall constitute a misdemeanor.