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TRINITROTOLUOL.

PRACTICAL POINTS IN ITS SAFE HANDLING.[1]

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The great reduction in individual efficiency, the lost time, the ill health, and the sometimes fatal results due to chronic poisoning from the nitro and amido compounds of benzol and toluol in general, and trinitrotoluol in particular, are now so well known, and the danger of the occurrence of cases of such poisoning in the tremendously developed munitions industry is so manifest, that there can be little doubt that attempts will be made by all firms engaged in handling such poisons to safeguard their workers from chronic poisoning.

The safe handling of trinitrotoluol, however, can not be accomplished by the will to prevent poisoning alone. Poisonous compounds like trinitrotoluol can only be handled with safety to the workers concerned provided strict attention be paid to a considerable number of details, each of which is perhaps but a small component factor in the defense, the integrity of which, nevertheless, depends upon its unbroken front. This paper, therefore, is an attempt to summarize the practical means for securing effective prevention of poisoning by trinitrotoluol.

Channels of poisoning.—It is well known that trinitrotoluol, like many of the other nitro and amido coal-tar compounds, is readily absorbed through the skin. The next important avenue of absorption is the respiratory tract. Trinitrotoluol is absorbed with much more difficulty through the mucous membrane of the intestinal tract. The main channel of excretion is probably the urinary tract, although it is possible that a certain amount may also be excreted through the intestines.

Like all other poisons, there is a minimum toxic dose, which varies according to the susceptibility of the individual. As long as the amount absorbed remains beneath these limits symptoms will not be observed. While it is well-nigh impossible to prevent completely the absorption of trinitrotoluol whenever this substance is handled, nevertheless it is quite practicable, by attention to the points pres-

[1] Read before the section on industrial hygiene of the American Public Health Association, Washington, D. C., Oct. 18, 1917.

ently to be discussed, to keep this absorption well below the minimum toxic dose, except, perhaps, in the case of susceptible persons.

The following remarks are confined solely to the processes involved in the loading of shells with trinitrotoluol, for the reason that its manufacture is mainly confined to a few firms, whereas loading processes are likely to be carried on by any manufacturer possessing the requisite facilities, which, after all, are rather simple. For this reason the number of workers involved in loading operations is likely to be very much greater than that concerned in the manufacture of this substance. Besides this, long contact with the production of other poisonous nitrated benzol products should have given manufacturers of trinitrotoluol the requisite experience to enable them to handle the manufacture of this substance with safety to the workers concerned. In addition to this, in the manufacture of trinitrotoluol, except at the final sieving and packing operations, the substance is handled either in closed containers or in a moist condition, under which circumstances the risk of poisoning is very greatly reduced. In loading operations, on the other hand, there is constant opportunity for nearly everyone connected with such work to become the subject of chronic poisoning through either the fumes or the dust of this substance.

Precautions to be Observed.

If it is desired to reduce the risk of poisoning with trinitrotoluol to a minimum, attention must be paid to certain details under the following general headings:

1. Planning and construction of workrooms.
   (*a*) Separation of processes.
   (*b*) Conveyor systems.
2. Methods and processes employed.
3. Sanitary precautions on the part of the workers.
4. Hours of labor.
5. Medical supervision.

Planning and construction of workrooms.—The planning and construction of buildings used for handling trinitrotoluol can either greatly simplify or complicate the problem of its safe handling. There is no doubt that great advantage, so far as both production and safety to the health are concerned, is derived from correct location of buildings in relation to each other, the general principle being that these should permit continuous routing of the raw materials so that at no point are there any crosses in the route of the product as it proceeds from the raw to the finished state. This permits the complete segregation of one stage in the process of loading from another, and prevents the exposure of one set of workers to hazards derived from a process with which they have nothing to do.

Type of buildings.—The type of buildings in which a dangerous substance like T. N. T. is handled has also much to do with the facility with which sanitary conditions may be obtained. All such buildings should be long, narrow, and of one story. Such construction lends itself readily to the installation of the conveyor system and methods of progressive assembly; abundant natural ventilation is readily furnished because of cross currents of air through opposite openings. Moreover, monitors in roofs in conjunction with the side openings will operate more effectively than similar installations in rooms which are approximately square. Another favorable characteristic of a long and narrow construction, which aids in the maintenance of sanitary conditions, is the abundant natural illumination afforded. This not only facilitates the work, thus preventing unnecessary splashing and spills, but a well-lighted condition in a workroom reveals accumulations of dust and dirt which otherwise lurk unnoticed.

Separation of processes.—A fundamental tenet in all hazardous processes is that the only persons exposed to the particular hazard should be the group of workers involved. The long narrow construction of buildings renders the segregation of various processes easy by the use of cross partitions. With the square building, this is much more difficult to secure. Such partitions cut off needed light, the greater length makes them expensive to erect, the necessity for using all the floor area either renders their erection impracticable, or if erected, disturbs the routing of the material.

Conveyor systems.—There can be no question that a properly installed conveyor system greatly facilitates the safe handling of trinitrotoluol in loading operations, because handling the substance in the shells is reduced to a minimum. Again, as previously pointed out, such conveyor systems are much more readily installed in long narrow buildings than in square buildings.

Methods and processes involved.—There are two general ways in which the explosive is introduced into the empty shell. The powdered trinitrotoluol may either be pressed into the shell by power presses, or poured into the shell in a molten condition.

The former process is used mainly for loading large shells, which of course are used in much less quantities than small shells, in military operations. Moreover, presses are installed in heavy concrete compartments to guard against the effects of possible explosions. Very simple precautions are all that are needed to prevent any escape of dust in handling the powdered trinitrotoluol prior to pressing the charge.

In the average loading plant, however, we find that the charge is usually placed in the shell by pouring it in in a molten condition. Because of the ease with which poisoning may occur when handling

melted trinitrotoluol, the following deals especially with the methods for rendering such handling safe.

Precautions in melting trinitrotoluol.—The melting of trinitrotoluol is carried on, as a general rule, in large iron kettles heated by steam coils. Such melting kettles should be installed in a separate compartment, provided with abundant natural ventilation, through opposite openings, a monitor roof, and mechanical exhaust in the neighborhood of each kettle. Such kettles should be preferably broad and somewhat shallow in form, rather than narrow and deep. The kettles should be covered in, and provided with an exhaust pipe in which a gentle upward draft is maintained by mechanical means, so that at all times a slight negative pressure exists in the kettles. This prevents the escape of trinitrotoluol fumes into the air of the melting room. The heat should be applied to the lower portion of the kettle rather than uniformly over its area. This brings about the melting of the charge from below upward, so that the trinitrotoluol at the top is distinctly at a lower temperature than that at the bottom. In this way the amount of fumes which must be gotten rid of by the exhaust is substantially less. Attention should also be paid to the temperature maintained in the kettles, so that this is not unnecessarily high. The application of too great a degree of heat in melting not only increases the loss by evaporation of valuable material, but also increases greatly the amount of fumes which may be present in the air of the melting room.

In charging the kettles with fresh trinitrotoluol, attention should be paid to the prevention of dust. The aperture in the kettle should be provided with a lip to prevent spilling of the powder. A removable hopper fitting tightly into the aperture would also assist greatly in the prevention of unnecessary dust. The installation of permanent hoppers above each melting kettle, provided with a cut-off, also merits consideration, as a large quantity of the explosive could be placed in the hopper at one time, and then gradually added in small quantities to the melting kettle as needed. In this way the exposure to trinitrotoluol dust would be reduced to a minimum.

Casting.—After the trinitrotoluol has been melted in the kettle, it is usually drawn off in tubs, in which it cools, while being continuously agitated until near the point of solidification, whereupon it is poured into the shells. The purpose of the agitation is to secure uniform and more rapid cooling of the melted product. Very often this agitation of the melted trinitrotoluol is carried on by the use of wooden hand paddles by workers who sit continuously at these tubs, doing nothing else. Obviously this is extremely hazardous, as the trinitrotoluol is constantly above the temperature at which volatilization takes place. Where this process of hand agitation is carried on, an attempt is usually made to reduce the risk of poisoning

by the installation of exhaust hoods over the tubs. Personal observations, however, have led to the conclusion that hand agitation of melted trinitrotoluol can never be made safe; that the only permissible method is the use of mechanical agitators over hooded tubs. All workers seen engaged in the hand agitation of melted trinitrotoluol have presented a uniformly bad appearance.

Pouring in the shells.—Two methods are in general use. The first consists in arranging a large number of shells in racks on the pouring floor. The pourer takes a considerable quantity of the melted trinitrotoluol in a spouted container, and walks along the rows of shells filling each one as he comes to it. This method is inherently bad. In order to fill an adequate number of shells at one pouring, the pouring container is large, and when full, necessarily heavy. This leads to awkwardness and inaccuracy in pouring the charges, especially in the first shells, thus causing numerous splashes of the trinitrotoluol on the exterior of the shells, the floor of the casting room, the shell racks, and the person of the pourer. In plants where this method of pouring is carried out, the writer has seen thick incrustations of trinitrotoluol on all the localities mentioned, the overalls of the pourers especially being fairly caked with trinitrotoluol. Such methods not only greatly increase the risk of poisoning, but are wasteful of valuable material. Such wasteful methods, however, spring originally from poor design of buildings, as this is about the only practicable method in workrooms of square construction.

The only casting method which should be considered is the one in which the shells are placed in racks on a conveyor and passed before the pourer, who is stationed at the cooling kettle. There is no danger in this position to the pourer if the cooling kettle is adequately hooded with exhaust ventilation and provided with a mechanical agitator. It is needless to say that the charge in the cooling kettle should be conveyed by gravity from the melting kettle above, the opening in the cooling kettle being situated in its lower part, so as to avoid splashing of trinitrotoluol while the charge is running in. The proximity of the pourer to the cooling kettle permits the use of a small pouring ladle. This enables the charge to be accurately poured into the shell, because of the light weight handled.

Avoiding splashes on exterior of shell.—It is evident that all splashing of the explosive on the exterior of the shell should be avoided. Such splashing is not only wasteful of material, but increases the risk of poisoning in subsequent handling, as naturally all such deposits must subsequently be scraped off. Such splashing on the exterior of the shell may be reduced to a minimum by the use of the conveyor system and a small pouring ladle. As an additional precaution, however, the adapters, which are screwed into the shell orifice to

protect the screw threads of the shell from being clogged with melted trinitrotoluol, and also to hold the spout through which the charge is introduced into the interior of the shell, should be provided with a perforated square of tin or stiff paraffined cardboard, slipped over the spout to catch any splashes which would otherwise be deposited on the exterior of the shell. With careful work it is quite possible to pour charges into shells without any splashing of the exterior. Wherever such methods are used the personal appearance of those engaged in pouring is all the evidence that is required to convince the observer of the superiority of such methods.

Recessing the charge.—After casting, the charge is recessed for the reception of the "booster charge" of a more sensitive explosive, required for the detonation of trinitrotoluol. The end of the charge must also be surfaced. This is usually accomplished in special drill presses. In drilling out the charge, naturally considerable dust is produced from the boring. There is also danger of a possible "blowing" of the charge. For this reason the recessing of such charges should be carried on in completely inclosed compartments, provided with doors which may be automatically opened and closed, and with the provision of some holder or jig to hold the shell in the drill press. When carried on under such conditions, workers operatting these drilling machines are exposed only to a minimum extent to any danger of poisoning.

The remainder of the operations concerned consists mainly in blowing out dust remaining after the boring, inspecting the shells, introducing "booster charges," capping the shell for shipment, and painting the exterior when this is required by the specifications.

After casting and recessing the charge the degree to which workers are exposed to trinitrotoluol poisoning will depend upon the care with which these processes have been carried out, such subsequent exposure being due for the most part to scraping off deposits from the exterior of the shell and cleaning out the screw threads in the nose or base of the shell, according to its type, from any trinitrotoluol which may be adherent. The quantities of the poison involved are naturally dependent upon the care which has been employed in the foregoing operations.

Additional operations which bring the workers in contact with trinitrotoluol consist in the recovery of trinitrotoluol which adheres to adapters and casting spouts, and the squares of tin or pasteboard which may have been used to catch splashes during pouring. Besides this, dust from the floor of workrooms and from borings is gathered up for recovery. Charges must also be recovered from shells which have failed to pass the inspection. Such recovery is simple and may be carried out safely by simple melting operations in appropriate melting apparatus, in which the general principles

described in the primary melting of trinitrotoluol are complied with. There is no doubt that the recovery of trinitrotoluol from sweepings, which is usually attended to by ordinary laborers, is frequently accompanied by poisoning, as such employees are usually the least intelligent in the plant and are likely to be careless. Due attention, however, to the loading methods previously described reduces such need for sweeping to a minimum. Whatever sweeping is necessary should be done by moist methods, all sweepings being deposited in fiber or tin paper-lined boxes, with close-fitting covers. The collection of dust from boring machines in tin or fiber boxes provided with a tight-fitting lid, which may be closed subsequently, will also reduce exposure to a minimum. If tin boxes are used these should be paper lined.

Sanitary precautions on the part of the workers.—A lively sense of the poisonous qualities of trinitrotoluol and the will to prevent poisoning by the requisite cooperation with the management are necessary on the part of all the workers. This means that all workers should receive instructions from the plant officials as to the methods by which trinitrotoluol poisoning may be avoided. These consist obviously in reducing personal contact to the fumes and dust of this substance to a minimum. There is no evidence that females are more susceptible than males, but the young of both sexes are likely to be highly susceptible. For this reason persons less than 21 years of age should not be employed in processes in which the worker is brought into contact with trinitrotoluol.

A complete suit of overalls, fitting closely at the neck, wrists, and ankles, gloves, and a cap covering the hair, should be worn by all the workers. Men should keep their hair short and be clean shaven. The overalls should be provided with drawstrings at the neck, wrists, and ankles. The wristband of the overalls should be pulled over the glove gauntlet, and a snug fit secured by the use of a drawstring. Overalls should be laundered weekly. There should also be provided change and locker rooms with lockers or other facilities of such nature that the street and working garments do not come in contact with each other or with those of others.

The eating of lunches in workrooms and keeping of food in workrooms should be rigidly prohibited. Compliance with this rule is best secured by providing attractive and commodious eating rooms for the use of the workers.

The workers should be especially instructed concerning the value of scrupulous bodily and oral cleanliness, as a prevention of trinitrotoluol poisoning. The hands and face should be thoroughly washed and the mouth rinsed out before eating, and a full shower bath taken at the close of the day's work. Proper facilities for this

should be furnished. The teeth should be brushed twice daily with a soft toothbrush and a good dentifrice.

One of the chief difficulties in avoiding poisoning is the reluctance on the part of workers to report to the company physician when they begin to feel sick. This is due to the relatively high wages which are paid to the workers who load ammunition and the natural desire to keep on earning these wages as long as they are able to stand up. Much of this can be done away with by a system of rotation of jobs, workers being transferred from hazardous to less hazardous employment regularly at intervals of two weeks.

Hours of labor.—Except in an emergency no person engaged in a process in which trinitrotoluol is handled should work longer than eight hours a day. By thus limiting the time of exposure, the danger of poisoning may be materially reduced. As previously stated, workers engaged in hazardous processes should be rotated to less hazardous jobs at least once in every two weeks, and oftener if necessary.

Medical supervision.—An efficient system of medical supervision under the direction of a competent physician must necessarily be provided in all plants engaged in the manufacture and handling of trinitrotoluol. The physician in charge should be familiar with the symptoms of poisoning and the precautions for preventing it. He should keep a constant check upon the efficiency of the enforcement of sanitary precautions and be given the authority to transfer or to lay off, as may be required, all workers who are showing symptoms of poisoning. He should also make frequent rounds of inspection through the workrooms, noting all workers showing the characteristic appearance of trinitrotoluol poisoning, and requiring them to report to the works dispensary for further examination. Careful records should be kept of all cases of poisoning and their subsequent treatment.

TYPHOID FEVER SPREAD BY CHRONIC CARRIERS.

A REPORT OF SEVERAL SMALL OUTBREAKS OF WHICH THREE WERE MILK BORNE.

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In order to emphasize the importance of the typhoid carrier in the distribution of the infection through the handling of food we have thought it might be of interest to add the cases which follow to the literature of this subject, and we shall first briefly describe a milk-borne epidemic in which the typhoid bacillus was isolated from the stool of a typhoid-carrier on the dairy farm and also from the milk which produced the outbreak of typhoid fever.

In 1912, Stokes and Stoner[1] observed 56 cases of typhoid, during July, August, September, and October in a town of 2,500 inhabitants, and 50 cases were found on the milk route of one milkman furnishing 1,500 persons, while the four other milk men who served about 1,000 persons had only 6 cases on their dairy routes. A further investigation disclosed the fact that a woman in the dairy who had been handling the milk and dispensing it to customers had suffered from typhoid fever two years previously. An examination showed that the feces from this woman contained the typhoid bacillus. A later study of the milk for the presence of the typhoid bacillus resulted in the isolation of an organism which in all respects resembled the typhoid bacillus. The various confirmatory tests consisted of morphology and staining properties, cultural characteristics, agglutination tests with positive blood and immune typhoid serum, complement fixation tests and bactericidal tests.

During the past few years the departments of health of Baltimore and of Maryland have investigated a number of typhoid outbreaks, which studies entailed the examination of specimens from a number of people for the detection of carriers and resulted in the finding of several of these.

The first of these outbreaks consisted of a series of 22 cases which were traceable to milk. Connected with the handling of this milk was a woman who had had enteric fever about one year previously. An examination of specimens of her stool and urine demonstrated the presence of typhoid bacilli in both. No other carriers were detected among the other people employed at this dairy.

Another outbreak occurred in a college with about 600 students, of whom approximately from 200 to 300 were exposed to the source of infection, a lunch room that had in its employ a cook who was later found to be a typhoid carrier. Of those exposed to this source of infection, 11 developed enteric fever within a period of one month. After the discovery and removal of the carrier no other cases occurred.

Another outbreak was traced to a woman 75 years old, who had had typhoid fever in September, 1912. Before she entirely recovered her granddaughter, living in the same home, developed typhoid fever, and while the latter case was recovering this patient's 2-year old son developed typhoid fever and later died of this disease. In May, 1913, the older woman's son-in-law contracted typhoid fever and his daughter developed this disease in the latter part of July, 1916. A child aged 13 developed typhoid fever in November, 1916, and all of these three later cases were confirmed by the Widal reaction. In November, 1916, a boy aged 9 and a married woman who obtained their milk from the dairy of the original case developed typhoid fever.

[1] Jour. Amer. Med. Assoc., Pt. 1, Vol. LXI, Sept. 27, 1913, p. 1024.

Upon further investigation it was found that her son-in-law and his three children had been drinking milk which had been obtained from the dairy of the mother-in-law, being the original case.

In analyzing the above circumstances it would seem that the case of the granddaughter and a great-grandson of the original case might have been a house outbreak, although they very probably drank milk which was handled by the original case. The other cases would seem to be due to milk furnished by the original case, since an examination of the stools made five years after the attack of typhoid showed the presence of numerous typhoid bacilli.

In two other house outbreaks we found that there had been three cases of typhoid fever within a period of three years in one family, and upon examining the stool of the father of the household, who had had typhoid fever five years previously, we found the typhoid bacillus. In another case in which several members of the household had developed typhoid fever within a period of three years we found the typhoid bacillus in the stool of one of several sisters. Neither of these typhoid carriers cooked or handled food as far as we could learn, and it is difficult to trace out the exact method of causation of these cases.

The next investigation was that of four cases of enteric fever occurring in one family over a period of several months. This resulted in the discovery that the servant was a carrier, *B. typhosus* being isolated from his urine. In the course of the investigation specimens from the drainpipes of several refrigerators were sent to the department, and from one of these an organism which culturally resembles the typhoid bacillus was isolated. This bacillus is also agglutinated by the blood of typhoid cases and by typhoid immune serum. Further studies of this organism are being made and will be reported later by one of the authors. It is interesting to note that this organism was isolated from the material from the waste pipe of the pantry refrigerator, which could readily have become contaminated by the servant. In addition to the above-mentioned cases another was traceable to this same man. This was the servant's grandson, who lived with his grandfather.

Another familial outbreak studied consisted in all of three cases out of a family of six persons. The first was the mother of the family, followed four months after her recovery by her husband and four years later by her daughter. Feces and urine of both father and mother were examined in the course of the investigation and the stool of the latter was found to contain typhoid bacilli.

In another family four cases of enteric fever occurred over a period of four or five years. During the investigation suspicion was directed toward the cook by the following facts: She had lived with these people at the time of the first two cases, but later on left them for a

period of two or three years, during which time no case developed in this household. Almost immediately upon her return to the family in capacity of cook the other two cases developed. The examination of her urine and feces resulted in the detection of *B. typhosus* in the latter. This woman denied having had typhoid, but has had several severe attacks of biliary colic.

Conclusion.

We believe that whenever possible domestics in private service and particularly those handling food in large public establishments should not be admitted to such positions until a careful inquiry has been made into their previous medical history as to a possible former attack of typhoid fever. If there is the slightest history of any continued fever resembling typhoid fever the stools and urine should be examined for the typhoid bacillus, and if possible a second examination should be made at the expiration of a week.

These methods are not only important when applied to domestic and public cooks, waiters, and other handlers of food or food utensils, but should also be applied upon the dairy farm, in the city dairies, in bakeries and bake shops, confectionery stores, green groceries, markets, and other places where food is handled.

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.

CURRENT STATE SUMMARIES.

California Report for the Week Ended Nov. 10, 1917.

The California State Board of Health reported concerning the prevalence of communicable diseases in California for the week ended November 10, 1917, as follows: Two cases of anthrax in man were notified, one at Stockton and one at San Jose. A case of poliomyelitis was notified at Berkeley and one at San Mateo City. One case of leprosy and one case of smallpox were reported in San Francisco. Diphtheria, measles, scarlet fever, and whooping cough show reductions in the numbers of cases reported. Chicken pox was more prevalent than during the preceding week. There was no change in the situation as regards typhoid fever.

The details of notifiable disease cases reported during the week ended November 3, 1917, are as follows:

	Cases.		Cases.
Anthrax	1	Pneumonia	35
Chicken pox	65	Poliomyelitis	1
Diphtheria	78	Scarlet fever	79
Dysentery	2	Smallpox	8
Erysipelas	4	Syphilis	44
German measles	8	Tetanus	2
Gonococcus infection	67	Trachoma	2
Leprosy	1	Tuberculosis	106
Malaria	22	Typhoid fever	28
Measles	51	Whooping cough	66
Mumps	79		

Indiana Report for the Week Ended November 10, 1917.

The State Board of Health of Indiana reported concerning the prevalence of communicable diseases in Indiana for the week ended November 10, 1917, as follows: A scarlet-fever epidemic occurred at Athens, Fulton County. One case of poliomyelitis was reported at

Wabash. Diphtheria epidemics were reported at Bethlehem, Clark County, and in Noble County. Smallpox was notified at Princeton and Portland.

Massachusetts Report for the Week Ended November 10, 1917.

Collaborating Epidemiologist Kelley reported concerning the prevalence of communicable diseases in Massachusetts for the week ended November 10, 1917, as follows: Five cases of diphtheria were notified at Templeton; 6 cases of scarlet fever at Hopkinton; 29 cases of diphtheria at Amesbury; and 1 case of actinomycosis at Westwood.

ANTHRAX.

Louisiana—Chauvin.

On November 2, 1917, a case of anthrax was reported in Chauvin, Terrebonne Parish, La.

Massachusetts Report for October, 1917.

During the month of October, 1917, 8 cases of anthrax were reported in the State of Massachusetts.

City Report for Week Ended Oct. 27, 1917.

During the week ended October 27, 1917, one fatal case of anthrax was reported at Milwaukee, Wis.

CEREBROSPINAL MENINGITIS.

Massachusetts.

During the week ended November 10, 1917, new cases of cerebrospinal meningitis were notified in Massachusetts as follows: Boston, 2; Brookline (town), 1; Wilbraham (town), 1; Fall River, 3; Springfield, 1.

State Reports for September and October, 1917.

Place.	New cases reported.	Place.	New cases reported.
Massachusetts (Oct. 1-31):		Suffolk County—	
Bristol County—		Boston	4
Fall River	1	Chelsea	1
Franklin County—		Worcester County—	
Holyoke	1	Worcester	1
Middlesex County—		Total	11
Ayer (Camp Devens)	1	Oregon (Sept. 1-30):	
Cambridge	1	Clatsop County	1
Malden	1		

CEREBROSPINAL MENINGITIS—Continued.

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio	1		Minneapolis, Minn.	1	
Altoona, Pa.	1		New York, N. Y.	4	3
Boston, Mass.	2	1	Philadelphia, Pa.	3	2
Chicago, Ill.	5	5	Pittsburgh, Pa.		1
Dayton, Ohio		1	Plainfield, N. J.	1	
Detroit, Mich.	2		Providence, R. I.	2	
Fall River, Mass.	1		St. Louis, Mo.	2	2
Hartford, Conn.	1	2	Worcester, Mass.	1	1
Milwaukee, Wis.	1	2			

DIPHTHERIA.

District of Columbia.

Cases of diphtheria have been notified in the District of Columbia as follows:

	Cases.
October 21 to 27	35
October 28 to November 3	34
November 4 to 10	85
November 11 to 13	25

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1938.

ERYSIPELAS.

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Ann Arbor, Mich.	1		Los Angeles, Cal.	2	
Baltimore, Md.	1		Milwaukee, Wis.	1	
Birmingham, Ala.		1	Newark, N. J.	3	1
Chicago, Ill.	14	1	Newton, Mass.		1
Cincinnati, Ohio	1		New York, N. Y.		1
Cleveland, Ohio	4	3	Omaha, Nebr.	1	
Denver, Colo.	3		Philadelphia, Pa.	2	
Flint, Mich.	1		Pittsburgh, Pa.	7	2
Harrisburg, Pa.	2		St. Louis, Mo.	10	2
Kansas City, Mo.	1		San Francisco, Cal.	2	
Lancaster, Pa.	1		Schenectady, N. Y.		1

LEPROSY.

City Report for Week Ended Oct. 27, 1917.

During the week ended October 27, 1917, one case of leprosy was reported in San Francisco, Cal.

MALARIA.

Massachusetts Report for October, 1917.

Place.	New cases reported.	Place.	New cases reported.
Massachusetts:		Massachusetts—Continued.	
Berkshire County—		Worcester County—	
Pittsfield	1	Douglas (town)	1
Essex County—		Total	7
Marblehead (town)	1		
Suffolk County—			
Boston	3		
Chelsea	1		

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala	5		New York, N. Y.		2
Memphis, Tenn	5	2	Philadelphia, Pa	1	
Newark, N. J	1		Richmond, Va	1	

MEASLES.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1938.

PELLAGRA.

State Reports for October, 1917.

Place.	New cases reported.	Place.	New cases reported.
District of Columbia	1	Massachusetts—Continued.	
Massachusetts:		Worcester County—	
Middlesex County—		Worcester State Hospital	1
Lowell	1	Total	4
Tewksbury State Infirmary	1		
Suffolk County—			
Boston	1		

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Birmingham, Ala	2	1	Nashville, Tenn		1
Charleston, S. C		2	New York, N. Y.		1
Chicago, Ill		1	Roanoke, Va	2	2
Fort Worth, Tex		1	Troy, N. Y.		2
Los Angeles, Cal	1	1	Wilmington, N. C.		1
Memphis, Tenn		1	Winston-Salem, N. C.		1
Mobile, Ala		1			

PNEUMONIA.

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Allentown, Pa.	1		Kalamazoo, Mich.	1	1
Atlantic City, N. J.	1		Kansas City, Mo.	2	
Baltimore, Md.	2	12	Lincoln, Nebr.	3	1
Binghamton, N. Y.	1	2	Lorain, Ohio	1	1
Boston, Mass.	3	18	Los Angeles, Cal.	9	5
Brockton, Mass.	1		Nashville, Tenn.	1	5
Butler, Pa.	1		Newark, N. J.	31	5
Cambridge, Mass.	1	1	Newburyport, Mass.	1	1
Chelsea, Mass.	1	2	Newport, Ky.	1	1
Chicago, Ill.	120	69	Philadelphia, Pa.	53	30
Cleveland, Ohio	32	31	Pittsburgh, Pa.	25	23
Dayton, Ohio	5	3	Pontiac, Mich.	1	
Detroit, Mich.	4	29	Rochester, N. Y.	12	2
Duluth, Minn.	1	2	San Diego, Cal.	1	1
Fall River, Mass.	1		San Francisco, Cal.	8	4
Fitchburg, Mass.	1	2	Schenectady, N. Y.	1	1
Flint, Mich.	4	2	Somerville, Mass.	2	3
Grand Rapids, Mich.	2		Springfield, Mass.	3	3
Hagerstown, Md.	1		Steelton, Pa.	1	1
Jackson, Mich.	1	2	Worcester, Mass.	1	1

POLIOMYELITIS (INFANTILE PARALYSIS).

State Reports for September and October, 1917.

Place.	New cases reported.	Place.	New cases reported.
District of Columbia (Oct. 1-31)	2	Oregon (Sept. 1-30):	
Massachusetts (Oct. 1-31):		Marion County	1
Bristol County—		Multnomah County—	
Fall River	1	Portland	2
Essex County—		Total	3
Danvers (town)	1		
Haverhill	1	Washington (Sept. 1-30):	
Hampden County—		Chelan County	1
Springfield	2	Grant County	1
Middlesex County—		Grays Harbor County—	
Lowell	1	Aberdeen	1
Stoneham (town)	1	King County	2
Norfolk County—		Issaquah	1
Wellesley (town)	1	Okanogan County	4
Plymouth County—		Whatcom County—	
Abington (town)	1	Bellingham	3
Suffolk County—		Whitman County	1
Chelsea	1	Total	14
Worcester County—			
Hopedale (town)	1		
Total	11		

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Altoona, Pa.	1		New York, N. Y.	1	
Chicago, Ill.	19	10	Philadelphia, Pa.		1
East Orange, N. J.	1		Pittsburgh, Pa.	1	1
Fall River, Mass.	1		Richmond, Va.	1	
Los Angeles, Cal.	1	1	Saginaw, Mich.	1	
Manchester, N. H.	1		Seattle, Wash.	1	
Milwaukee, Wis.	1		Springfield, Mass.	2	1

RABIES IN MAN.

City Reports for Week Ended Oct. 27, 1917.

During the week ended October 27, 1917, two cases of rabies in man, with two deaths, were reported in Kansas City, Mo.; one fatal case was reported in Pittsburgh, Pa.; and a fatal case in Milwaukee, Wis.

SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1938.

SMALLPOX.

Indiana—Fort Wayne—Outbreak.

There is a sharp outbreak of smallpox of the mild type at Fort Wayne, Ind. During the ten weeks ended November 10 there were 166 cases reported by weeks as follows: 2, 6, 5, 5, 29, 13, no report, 34, 42, 30.

Maine—Gardiner.

On November 6, 1917, an outbreak of smallpox of the mild type was reported from Gardiner, Me.

Michigan—Detroit—Outbreak.

At Detroit there have been 105 cases of smallpox of the mild type reported during the nine weeks ended November 10. These were reported by weeks as follows: 1, 8, 8, 5, 14, 14, 6, 17, 32.

Nebraska—Omaha—Outbreak.

A few weeks ago there was a distinct outbreak of the mild type of smallpox in Omaha. Then the disease seemed to be under control for a time. It has again increased in prevalence. During the nine weeks ended November 10 there were 115 cases. These were reported by weeks as follows: 2, 32, 1, 5, 3, 0, 10, 7, 55.

Washington Report for September, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Washington:			Washington—Continued.		
King County—			Yakima County	4	.....
Seattle	3	.....	Mabton	4	.....
Lewis County	2	.....			
Pend Oreille County	2	.....	Total	23	.....
Pierce County	7	.....			
Tacoma	1	.....			

SMALLPOX—Continued.

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio	10	.....	Leavenworth, Kans.	1	.....
Ann Arbor, Mich.	3	.....	Lima, Ohio	2	.....
Butte, Mont.	10	.....	Milwaukee, Wis.	3	.....
Chicago, Ill.	3	.....	Minneapolis, Minn.	7	.....
Cincinnati, Ohio	1	.....	Niagara Falls, N. Y.	1	.....
Cleveland, Ohio	21	.....	Oklahoma City, Okla.	4	.....
Dayton, Ohio	8	.....	Omaha, Nebr.	10	.....
Detroit, Mich.	6	.....	St. Louis, Mo.	8	.....
Flint, Mich.	4	.....	Salt Lake City, Utah	1	.....
Galesburg, Ill.	1	.....	Springfield, Ill.	1	.....
Grand Rapids, Mich.	6	.....	Springfield, Ohio	1	.....
Indianapolis, Ind.	19	.....	Terre Haute, Ind.	4	.....
Kansas City, Kans.	11	.....	Toledo, Ohio	3	.....
Kansas City, Mo.	24	.....	Wichita, Kans.	1	.....
La Crosse, Wis.	10	.....			

TETANUS.

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Cincinnati, Ohio	1	1	Memphis, Tenn.	4	.....
Detroit, Mich.	1	.....	Mobile, Ala.	1	.....

TRACHOMA.

Arizona—Nogales.

Seven hundred and seventy-three pupils in the public schools of Nogales, Ariz., were recently examined and 20 cases of trachoma were found. Similar examinations were made in 1915 and 1916. The results are shown in the following table:

School year beginning—	Pupils examined.	Trachoma cases.	Per cent.
September, 1915	534	27	5.05
September, 1916	617	20	3.24
September, 1917	773	20	2.59

TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1938.

TYPHOID FEVER.

Mississippi—Greenwood.

An outbreak of typhoid fever has been reported at Greenwood, Miss.

TYPHOID FEVER—Continued.

State Reports for September and October, 1917.

Place.	New cases reported.
District of Columbia (Oct. 1-31)	54
Massachusetts (Oct. 1-31):	
Barnstable County—	
Falmouth (town)	2
Berkshire County—	
Adams (town)	4
Egremont (town)	1
North Adams	2
Bristol County—	
Acushnet (town)	1
Attleboro	1
Fall River	55
New Bedford	12
Rehoboth (town)	2
Somerset (town)	1
Taunton	1
Dukes County—	
Tisbury (town)	1
Essex County—	
Andover (town)	1
Beverly	1
Gloucester	3
Groveland (town)	1
Lawrence	3
Lynn	8
Rowley (town)	1
Franklin County—	
Buckland (town)	1
Greenfield (town)	1
Montague (town)	1
Hampden County—	
Agawam (town)	2
Ludlow (town)	1
Palmer (town)	1
Springfield	10
Westfield (town)	1
Hampshire County—	
Enfield (town)	1
Middlesex County—	
Arlington (town)	1
Ashland (town)	1
Ayer (town)	1
Ayer (Camp Devens)	1
Cambridge	3
Everett	1
Hudson (town)	1
Lowell	4
Malden	2
Marlboro	1
Medford	5
Melrose	1
Natick (town)	2
Reading (town)	1
Somerville	2
Tewksbury State Infirmary	38
Waltham	1
Watertown (town)	1
Westford (town)	2
Winchester (town)	1
Woburn	3
Norfolk County—	
Dedham (town)	1
Quincy	1
Walpole (town)	1
Wellesley (town)	1
Plymouth County—	
Brockton	3
Wareham (town)	2
Suffolk County—	
Boston	22
Chelsea	4
Revere	2
Worcester County—	
Athol (town)	1
Auburn (town)	1
Fitchburg	1
Grafton (town)	1
Hubbardston (town)	1
Uxbridge (town)	1
Webster (town)	1
Westborough (town)	1
West Boylston (town)	1
Worcester	7
Total	246
Oregon (Sept. 1-30):	
Clackamas County	4
Clatsop County	1
Douglas County	6
Klamath County	10
Multnomah County	1
Portland	15
Yamhill County	1
Total	38
Washington (Sept. 1-30):	
Adams County—	
Lind	1
Benton County	3
Chelan County	5
Cashmere	1
Chelan	1
Wenatchee	8
Clark County	1
Columbia County—	
Dayton	2
Cowlitz County	4
Douglas County	3
Bridgeport	1
Waterville	3
Franklin County—	
Connell	2
Grant County—	
Wilson Creek	1
Grays Harbor County—	
Aberdeen	8
King County	5
Issaquah	1
Seattle	15
Kittitas County	1
Lewis County	4
Okanogan County	5
Brewster	1
Conconully	1
Okanogan	1
Pacific County	2
Raymond	1
Pierce County—	
Tacoma	3
Skagit County	1
Mount Vernon	1
Spokane County—	
Spokane	14
Stevens County	1
Colville	3
Walla Walla County—	
Waitsburg	2
Walla Walla	13
Whatcom County	1
Bellingham	1
Whitman County—	
Edicott	1
Yakima County	20
North Yakima	1
Total	143

TYPHOID FEVER—Continued.

City Reports for Week Ended Oct. 27, 1917.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Akron, Ohio	3		Minneapolis, Minn	2	
Alameda, Cal	1		Nashville, Tenn	3	
Allentown, Pa	1		Newark, N. J	2	1
Alton, Ill	3		New Bedford, Mass	2	
Ann Arbor, Mich	3		New Britain, Conn	3	
Atlantic City, N. J	2		New Castle, Pa	1	
Baltimore, Md	17	2	New Haven, Conn	2	
Bellingham, Wash	1		New Orleans	6	3
Birmingham, Ala	18	2	New York, N. Y	49	8
Boston, Mass	7		Niagara Falls, N. Y	1	
Brockton, Mass	1		Oakland, Cal	2	
Butte, Mont	1		Oklahoma City, Okla	7	
Charleston, S. C	1		Orange, N. J		1
Chicago, Ill	16	1	Passadena, Cal	1	
Cincinnati, Ohio	1	1	Passaic, N. J	1	
Cleveland, Ohio	7	2	Pawtucket, R. I	4	
Coffeyville, Kans	1		Perth Amboy, N. J	1	
Columbus, Ohio	2		Philadelphia, Pa	99	4
Danville, Ill	5		Pittsburgh, Pa	7	2
Dayton, Ohio		1	Portland, Me	2	
Denver, Colo	6	1	Portland, Oreg	4	
Detroit, Mich	6	6	Portsmouth, N. H	2	
Duluth, Minn	3		Providence, R. I	2	
East Chicago, Ind	1		Quincy, Ill	1	
El Paso, Tex	1	1	Richmond, Va	3	1
Erie, Pa	1		Roanoke, Va	1	
Fall River, Mass	14	1	Rochester, N. Y		1
Fitchburg, Mass	1		Rutland, Vt	1	
Flint, Mich	5		Sacramento, Cal	1	
Fort Worth, Tex	3		Saginaw, Mich	1	
Galesburg, Ill	1		St Joseph, Mo	5	
Galveston, Tex	5		St. Louis, Mo	9	1
Grand Rapids, Mich	4	2	Salt Lake City, Utah	39	2
Hagerstown, Md	1		San Diego, Cal	1	1
Harrisburg, Pa	1	1	San Francisco, Cal	4	1
Hartford, Conn	8	1	Schenectady, N. Y	2	
Indianapolis, Ind	2		Seattle, Wash	4	
Jackson, Mich	1		South Bend, Ind	4	2
Jersey City, N. J	1	1	Springfield, Ill	6	
Johnstown, Pa	1		Springfield, Mass	2	
Kansas City, Kans	6		Springfield, Ohio	5	
Kansas City, Mo	2		Superior, Wis		1
Knoxville, Tenn	2		Terre Haute, Ind	1	
Kokomo, Ind	5	1	Toledo, Ohio	2	
La Crosse, Wis	2		Trenton, N. J	2	
Lawrence, Mass	1		Troy, N. Y	16	1
Lexington, Ky	4		Washington, D. C	9	2
Lima, Ohio	1		Watertown, N. Y	1	
Los Angeles, Cal	2	1	Wheeling, W. Va	4	
Lowell, Mass	2		Wichita, Kans	4	1
McKeosport, Pa		1	Williamsport, Pa	1	
Melrose, Mass	1		Winston-Salem, N. C	2	1
Memphis, Tenn	7	1	Worcester, Mass	1	
Milwaukee, Wis	1		Zanesville, Ohio	1	

TYPHUS FEVER.

City Report for Week Ended Oct. 27, 1917.

During the week ended October 27, 1917, 2 cases of typhus fever were reported in New York City.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for September and October, 1917.

State.	Cases reported.			State.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
District of Columbia (Oct. 1-31)	357	34	61	Oregon (Sept. 1-30)	16	6	25
Massachusetts (Oct. 1-31)	1,153	589	441	Washington (Sept. 1-30)	25	19	58

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

City Reports for Week Ended Oct. 27, 1917.

City.	Population as of July 1, 1916 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Over 500,000 inhabitants:										
Baltimore, Md	589,621	182	22	.....	5	.....	10	.....	44	28
Boston, Mass	756,476	203	93	3	34	2	26	.....	58	16
Chicago, Ill	2,497,722	642	276	34	29	.....	141	3	411	64
Cleveland, Ohio	674,073	185	60	4	2	.....	11	1	22	.....
Detroit, Mich	571,784	186	114	10	8	.....	31	1	30	16
Los Angeles, Cal	503,812	.....	14	2	1	.....	14	.....	38	16
New York, N. Y	5,602,841	1,241	248	18	96	3	78	.....	238	133
Philadelphia, Pa	1,709,518	456	82	7	18	.....	22	1	99	45
Pittsburgh, Pa	579,090	173	47	8	10	.....	13	.....	18	6
St. Louis, Mo	757,309	187	58	3	8	.....	36	.....	29	10
From 300,000 to 500,000 inhabitants:										
Cincinnati, Ohio	410,476	109	20	.....	6	.....	3	.....	15	12
Jersey City, N. J	303,345	72	16	1	11	4	6	.....	26	10
Milwaukee, Wis	436,535	81	16	2	8	.....	28	.....	15	6
Minneapolis, Minn	363,454	.....	30	.....	3	.....	3	.....	.....	.....
Newark, N. J	408,894	87	30	2	15	.....	18	.....	37	14
New Orleans, La	371,747	144	23	.....	.....	.....	4	.....	31	25
San Francisco, Cal	463,516	116	16	2	13	.....	4	.....	31	14
Seattle, Wash	348,639	58	4	.....	2	.....	13	.....	15	6
Washington, D. C	363,980	117	35	3	4	.....	13	.....	21	14
From 200,000 to 300,000 inhabitants:										
Columbus, Ohio	214,878	62	5	.....	2	.....	28	1	9	6
Denver, Colo	260,800	50	13	.....	4	.....	3	.....	.....	10
Indianapolis, Ind	271,708	.....	59	.....	1	.....	9	.....	6	.....
Kansas City, Mo	297,847	.....	9	.....	2	.....	4	.....	2	.....
Portland, Oreg	295,463	41	2	.....	.....	.....	7	.....	7	1
Providence, R. I	254,960	58	24	1	2	1	6	.....	1	5
Rochester, N. Y	256,417	64	11	2	10	.....	11	1	10	4
From 100,000 to 200,000 inhabitants:										
Birmingham, Ala	181,762	59	9	1	13	.....	6	.....	12	2
Bridgeport, Conn	121,579	28	5	.....	.....	.....	.....	1	9	3
Cambridge, Mass	112,981	.....	6	.....	4	.....	2	.....	8	4
Camden, N. J	106,233	.....	3	.....	8	.....	2	.....	5	.....
Dayton, Ohio	127,224	41	2	.....	.....	.....	3	.....	4	2
Fall River, Mass	128,366	29	9	1	.....	.....	1	.....	10	4
Fort Worth, Tex	104,562	31	1	.....	1	.....	3	.....	.....	.....
Grand Rapids, Mich	128,291	27	8	.....	3	.....	4	.....	5	.....
Harfford, Conn	110,900	40	11	.....	.....	.....	3	.....	9	3
Lawrence, Mass	100,560	29	8	.....	.....	.....	.....	.....	2	5
Lowell, Mass	113,245	29	6	.....	.....	.....	1	.....	4	1
Lynn, Mass	102,425	28	1	.....	1	.....	2	.....	4	2
Memphis, Tenn	148,995	63	17	2	5	.....	3	.....	17	9
Nashville Tenn	117,057	35	6	.....	3	.....	5	.....	5	1
New Bedford, Mass	118,158	21	.....	.....	4	.....	5	.....	7	4
New Haven, Conn	149,685	.....	6	.....	5	.....	2	.....	6	3
Oakland, Cal	198,604	38	.....	.....	1	.....	7	.....	4	2
Omaha, Nebr	165,470	44	1	.....	1	.....	2	.....	.....	2
Reading, Pa	109,381	22	9	1	.....	.....	1	.....	.....	2
Richmond, Va	156,687	47	17	.....	.....	.....	8	.....	.....	4
Salt Lake City, Utah	117,399	12	1	.....	16	.....	7	.....	.....	.....
Springfield, Mass	105,942	38	13	1	10	.....	12	.....	7	4
Syracuse, N. Y	155,624	46	20	.....	.....	.....	20	.....	3	2
Tacoma, Wash	112,770	.....	6	.....	.....	.....	1	.....	.....	.....
Toledo, Ohio	191,554	50	10	.....	3	.....	5	.....	.....	6
Trenton, N. J	111,593	36	8	.....	1	.....	.....	.....	3	1
Worcester, Mass	163,314	42	23	2	3	1	3	.....	6	7
From 50,000 to 100,000 inhabitants:										
Akron, Ohio	85,625	.....	16	.....	2	.....	2	.....	2	.....
Allentown, Pa	63,505	18	5	.....	1	.....	.....	.....	3	.....
Altoona, Pa	58,659	.....	7	.....	.....	.....	1	.....	.....	.....
Atlantic City, N. J	57,660	.....	1	.....	.....	.....	.....	.....	2	.....
Bayonne, N. J	69,893	.....	2	.....	2	.....	1	.....	2	.....
Berkeley, Cal	57,653	11	.....	.....	9	.....	.....	.....	1	.....
Binghamton, N. Y	53,973	25	7	1	1	.....	1	1	1	3
Brockton, Mass	67,449	.....	1	.....	.....	.....	.....	.....	5	.....
Canton, Ohio	60,852	11	1	.....	.....	.....	6	.....	2	.....
Charleston, S. C	60,734	24	6	.....	.....	.....	.....	.....	1	3

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

City Reports for Week Ended Oct. 27, 1917—Continued.

City.	Population as of July 1, 1916 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 50,000 to 100,000 inhabitants—Continued.										
Covington, Ky.	57,144	15	5				1		2	3
Duluth, Minn.	94,495	12	8		2		4		2	2
El Paso, Tex.	63,705	24	1				2			6
Erie, Pa.	75,195		8				5		4	32
Evansville, Ind.	76,078	24	1				6			2
Flint, Mich.	54,772	13	8				1			
Harrisburg, Pa.	72,015	25	7		1		4	2	3	
Hoboken, N. J.	77,214	16			10		2		4	2
Johnstown, Pa.	68,529	25		2			6			3
Kansas City, Kans.	99,437		4				3		3	
Lancaster, Pa.	50,853		6		5		1			
Malden, Mass.	51,155	11	8		2				5	2
Manchester, N. H.	78,283	20	2		5	1	3		3	2
Mobile, Ala.	58,221	22	2				1			1
New Britain, Conn.	53,794	6	8				1			
Norfolk, Va.	89,612	3	3		1				2	3
Oklahoma City, Okla.	92,943	19	2				3			2
Passaic, N. J.	71,744	18	6		1				3	2
Pawtucket, R. I.	59,411	17	3		3		2			1
Portland, Me.	63,867	15			15					
Rockford, Ill.	55,185	11	2	1						
Sacramento, Cal.	66,895	23	1		2		8	1	4	3
Saginaw, Mich.	55,642	10	1						2	
St. Joseph, Mo.	85,236	22	11				2			
San Diego, Cal.	53,330	15	1				1		1	2
Schenectady, N. Y.	99,519	23	5						6	
Sioux City, Iowa	57,078		1				2			
Somerville, Mass.	87,039	10	5				4		4	
South Bend, Ind.	68,946	11	1		1					
Springfield, Ill.	61,120	20	1							
Springfield, Ohio	51,550	21	2				1		1	2
Terra Haute, Ind.	66,083	26	8	4						
Troy, N. Y.	77,916		2						1	3
Wichita, Kans.	70,722		1				1		3	
Wilkes-Barre, Pa.	76,776	16	13				2		3	3
From 25,000 to 50,000 inhabitants:										
Alameda, Cal.	27,732	4			2		5			
Auburn, N. Y.	37,385	5	2							1
Austin, Tex.	34,814	6								
Brookline, Mass.	32,750	5			1		1		1	
Butler, Pa.	27,632	6	3							
Butte, Mont.	43,425	2	2				5			
Chelsea, Mass.	46,192	10	6		14		1		1	1
Chicopee, Mass.	29,319	9	1						2	1
Cumberland, Md.	26,074	9			2				3	
Danville, Ill.	32,261	17					1			
Davenport, Iowa	48,811		2				3			
Dubuque, Iowa	39,873		1	1						1
East Chicago, Ind.	28,743	7	1							
East Orange, N. J.	42,458	1			12					
Elgin, Ill.	28,203	9								1
Everett, Mass.	39,233	4	2		3		3			1
Everett, Wash.	35,486	4								1
Fitchburg, Mass.	41,731	7	5				1		1	
Galveston, Tex.	41,863	8	3						2	1
Green Bay, Wis.	29,353	10								
Hagerstown, Md.	25,679		1		1		2			
Haverhill, Mass.	48,477	12	4		2		1		5	3
Jackson, Mich.	35,363	13								1
Kalamazoo, Mich.	48,886	9	12		25				6	
Kenosha, Wis.	31,576	7	4				6			
Knoxville, Tenn.	38,676		2				14		1	
La Crosse, Wis.	31,677	6	4							
Lexington, Ky.	41,097	21	2		13				1	2
Lima, Ohio	35,384	8	1				2			
Lincoln, Nebr.	46,515	16	5		1					
Long Beach, Cal.	27,587	7	1				1			
Lorain, Ohio	36,964	4	13	2			1		1	1
Lynchburg, Va.	32,940	12	1							1
Madison, Wis.	30,699						1		1	

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

City Reports for Week Ended Oct. 27, 1917—Continued.

City.	Population as of July 1, 1916 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
From 25,000 to 50,000 inhabitants—Continued.										
McKeesport, Pa.	47,521	5	10	1					2	1
Medford, Mass.	26,234	8	2		1		2		2	2
Montclair, N. J.	26,318	2	1		1					
Nashua, N. H.	27,327	7								
Newburgh, N. Y.	29,603	5	2	1	29				2	1
New Castle, Pa.	41,133						2			
Newport, Ky.	31,927	1	1	1						
Newton, Mass.	43,715	6					1			
Niagara Falls, N. Y.	37,353	9	1	1			1		3	
Norristown, Pa.	31,401	6	1							
Ogden, Utah.	31,404	7	2		1		8			
Orange, N. J.	33,080	9			2		2			2
Pasadena, Cal.	46,450	9								
Perth Amboy, N. J.	41,185		2		1		1		4	
Pittsfield, Mass.	38,629	10					2		4	2
Portsmouth, Va.	39,651	7	3	1			3			
Quincy, Ill.	36,798	8			1				1	1
Quincy, Mass.	38,136	7	1				1		4	1
Racine, Wis.	46,486	7					1			1
Roanoke, Va.	43,284	17	1				1		2	2
Rock Island, Ill.	28,926	4	2							
Steubenville, Ohio.	27,445	11	2				1			
Superior, Wis.	46,226	15								2
Taunton, Mass.	36,283	17							6	1
Waltham, Mass.	30,570	4								
Watertown, N. Y.	29,894	2					1		1	2
West Hoboken, N. J.	43,139	1	3		2		1		3	
Wheeling, W. Va.	43,377	9					1		1	1
Williamsport, Pa.	33,809		3				1			
Wilmington, N. C.	29,892	14					1			1
Winston-Salem, N. C.	31,155	20	2				8		1	1
Zanesville, Ohio.	30,863	6	1							
From 10,000 to 25,000 inhabitants:										
Alton, Ill.	22,874	8	2		2		1		2	2
Ann Arbor, Mich.	15,010	4	2				1			1
Braddock, Pa.	21,685		6		1					
Cairo, Ill.	15,794	5								2
Clinton, Mass.	[1] 13,075	4					3			
Coffeyville, Kans.	17,548		2							
Concord, N. H.	22,669	6	3		2				1	
Galesburg, Ill.	24,276	5								
Harrison, N. J.	16,950						2			
Kearny, N. J.	23,539	7					5		1	
Kokomo, Ind.	20,930	5	2							
Leavenworth, Kans.	[1] 19,363	4							1	
Long Branch, N. J.	15,395	1	1							
Marinette, Wis.	[1] 14,610	2					1			
Melrose, Mass.	17,445	1	2				5			
Morristown, N. J.	13,284	3								
Nanticoke, Pa.	23,126	2	1				1			
Newburyport, Mass.	15,243	2								
New London, Conn.	20,985	5	3				1			
North Adams, Mass.	[1] 22,019	8								
Northampton, Mass.	19,926	10	2		1				5	
Plainfield, N. J.	23,805	6	12	3						
Pontiac, Mich.	17,524	10	7				1		1	1
Portsmouth, N. H.	11,666						6			
Rocky Mount, N. C.	12,067	2								
Rutland, Vt.	14,831	5					4			
Sandusky, Ohio.	20,193	4								
Steelton, Pa.	15,548	6	1	1	1				1	
Wilkinsburg, Pa.	23,228	6	4	1			2			
Woburn, Mass.	15,969	5								

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

FOREIGN.

CHINA.

Examination of Rats—Shanghai.

During the period from July 15 to September 15, 1917, 2,322 rats were examined. No plague infection was found. The last plague-infected rat at Shanghai was reported found May 6, 1917.

Plague-Infected Rat—Hongkong.

During the period from August 5 to September 15, 1917, out of 12,048 rats examined at Hongkong, 1 rat, examined during the week ended August 11, was found plague infected.

CUBA.

Communicable Diseases—Habana.

Communicable diseases have been notified at Habana as follows:

Disease.	Oct. 11-20, 1917.		Remaining under treatment. Oct. 20, 1917.	Disease.	Oct. 11-20, 1917.		Remaining under treatment Oct. 20, 1917.
	Cases.	Deaths.			Cases.	Deaths.	
Diphtheria	4	.....	2	Paratyphoid fever	3	.....	4
Leprosy	.....	.....	10	Typhoid fever	26	8	94
Malaria	31	.....	34	Varicella	.....	.....	1
Measles	2	.....	.....				

GREAT BRITAIN.

Examination of Rats—Liverpool.

During the period from July 8 to October 6, 1917, 2,238 rats were examined at Liverpool. No plague infection was found.

RUSSIA.

Typhus Fever—Poland.

Typhus fever was reported present in Poland during the period April 23 to June 3, 1917, with 2,814 cases, and from June 17 to July 14, 1917, with 2,328 cases. Of these cases, 1,644 were notified at Warsaw from April 23 to June 3, and from June 17 to July 14, 1,495 cases.

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

Reports Received During the Week Ended Nov. 16, 1917.[1]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Calcutta	July 8-14		10	
Indo-China:				
Saigon	Sept. 10-16	1	1	
Java:				
East Java	Aug. 20-26	2	2	
West Java				Sept. 1-13, 1917: Cases, 33; deaths, 25.
Batavia	Sept. 1-13	24	10	
Persia:				
Sabzevar	Aug. 20-29	19	14	
Philippine Islands:				
Manila	Aug. 5-11	2		Not previously reported.
Provinces				Aug. 5-11, 1917: Cases, 330; deaths, 211.
Albay	Aug. 5-11	3	2	
Ambos Camarines	do	6	4	
Bohol	do	33	27	
Cebu	do	40	27	
Leyte	do	148	87	
Mindanao	do	11	6	
Negros Oriental	do	58	39	
Samar	do	10	10	
Sorsogon	do	13	4	
Surigao	do	6	2	
Tayabas	do	2	3	
Provinces				Aug. 12-18, 1917: Cases, 203; deaths, 121.
Albay	Aug. 12-18	7	4	
Bohol	do	22	14	
Cebu	do	8	6	
Leyte	do	83	53	
Mindanao	do	1		
Negros Oriental	do	65	34	
Sorsogon	do	17	10	

PLAGUE.

Bahrein Islands				In Persian Gulf. Present Apr. 3, 1917.
Egypt				Jan. 1-Oct. 4, 1917: Cases, 724; deaths, 395.
India				July 8-14, 1917: Cases, 2,350; deaths, 1,616.
Calcutta	July 8-14		3	
Indo-China:				
Saigon	Sept. 9-16	2	2	
Java:				
East Java	Aug. 19-26	1	1	
Persia:				
Mohammera	May 1			Present.
Senegal	Sept. 30			Present in interior.
Straits Settlements:				
Singapore	Sept. 16-22	2	1	

SMALLPOX.

Australia:				
New South Wales				Sept. 25, 1917: 1 case.
Warren district	Sept. 25	1		
Brazil:				
Rio de Janeiro	Sept. 16-22	85	17	
Canada:				
Ontario—				
Windsor	Oct. 28-Nov. 3	1		
China:				
Amoy	Sept. 9-22			Present.
Chungking	Sept. 16-22			Do.
Shanghai	Sept. 25-30	1		
Cuba:				
Habana	Nov. 1	1		From s. s. Alfonso XIII. From ports in Spain. For Mexican ports.
Indo-China:				
Saigon	Sept. 10-16	24	7	
Java:				
East Java	Aug. 19-29	3		
Mid-Java	Aug. 13-Sept. 4	22	1	
West Java	Sept. 1-13	81	9	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

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

Reports Received During the Week Ended Nov. 16, 1917—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands:				
Manila	July 29–Aug. 11	2		
Russia:				
Petrograd	June 24–30	22		
Spain:				
Malaga	July 1–31		19	
Straits Settlements:				
Singapore	Sept. 16–22	1		
On vessel:				
S. S. Alfonso XIII	Nov. 1	1		At Habana. From ports in Spain.

TYPHUS FEVER.

Austria-Hungary:				
Austria				Dec. 24, 1916–Feb. 24, 1917: Cases, 2,553.
Bosnia-Herzegovina				Dec. 22, 1916–Feb. 24, 1917: Cases, 110.
Hungary				Apr. 23–June 17, 1917: Cases, 406; deaths, 72.
Budapest	Apr. 23–May 27	25	4	
Eisenburg	Apr. 23–June 17	278	46	
Egypt:				
Alexandria	Sept. 17–30	12	3	
Japan:				
Nagasaki	Oct. 1–7	3	1	
Java:				
East Java	Aug. 23–29	1		
Mid-Java	Aug. 21–Sept. 4	2		
West Java				Sept. 1–13, 1917: Cases, 20; deaths, 1.
Batavia	Sept. 1–13	15	1	
Mexico:				
Aguascalientes	Oct. 22–28		1	
Russia:				
Petrograd	June 24–30	3		
Poland				Apr. 23–June 3, 1917: Cases, 2,814; deaths, 187. June 17–July 14, 1917: Cases, 2,328; deaths, 211.
Lodz	Apr. 23–June 3	120	16	
Do	June 17–July 14	108	16	
Warsaw	Apr. 23–June 3	1,644	95	
Do	June 17–July 14	1,495	131	

Reports Received from June 30 to Nov. 9, 1917.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bassein	Apr. 1–May 5		8	
Bombay	June 24–30	1	1	
Do	July 8–Aug. 18	14	8	
Calcutta	Apr. 29–June 30		347	
Do	July 1–Aug. 18		20	
Madras	Apr. 22–June 30	5	4	
Do	July 1–Sept. 1	102	63	
Mandalay	May 6–June 30		2	
Do	July 29–Aug. 11		1	
Moulmein	May 13–June 2		3	
Pakokku	Apr. 20–May 5		1	
Pegu	May 27–June 30		5	
Do	July 1–7		7	
Prome	July 29–Aug. 11		1	
Rangoon	Apr. 21–June 30	31	17	
Do	July 8–28	9	7	
Indo-China:				
Provinces				Feb. 1–June 30, 1917: Cases, 1,273; deaths, 805. July 1–31, 1917: Cases, 522; deaths, 314.
Anam	Feb. 1–June 30	230	191	
Do	July 1–31	86	47	
Cambodia	Feb. 1–June 30	79	51	
Do	July 1–31	74	53	

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

Reports Received from June 30 to Nov. 9, 1917—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China—Continued.				
Provinces—Continued.				
Cochin-China	Feb. 1–June 30	878	543	
Do	July 1–31	359	214	
Laos	June 1–30	1	.....	
Tonkin	Feb. 1–June 30	36	21	
Do	July 1–31	3	.....	
Saigon	Apr. 23–May 27	163	108	
Do	July 2–Sept. 9	45	30	
Japan	.....	.....	.....	Jan.–July, 1917: Cases, 391. Occurring in 16 provinces and districts.
Tokyo	Sept. 12	2	.....	Sept. 12, 1917: Cases, 252. In 5 provinces and districts.
Java:				
East Java	Apr. 2–8	1	.....	
Do	July 9–15	1	1	
Mid Java	July 16–22	1	1	
West Java	.....	.....	.....	Apr. 13–July 5, 1917: Cases, 71; deaths, 31. July 6–Aug. 23, 1917: Cases, 171; deaths, 96.
Batavia	Apr. 13–July 5	7	2	
Do	July 6–Aug. 23	14	4	
Persia:				
Mazanderan Province—				
Amir Kela	Feb. 3	1	.....	
Barfourouche	Jan. 15–17	4	.....	
Do	July 28	4	1	
Demavend	July 29	11	6	
Hamze Kela	Jan. 17	1	.....	
Machidessar	Jan. 31	3	.....	
Sari	July 25–Aug. 5	179	98	
Tabriz	.....	.....	.....	Aug. 4, 1917: In village of Ozoundeh, vicinity of Tabriz, about 7 cases daily.
Philippine Islands:				
Manila	June 17–23	1	.....	
Do	Aug. 19–25	2	.....	Sept. 2–8, 1917: 1 case. Not previously reported.
Provinces	.....	.....	.....	May 20–June 30, 1917: Cases, 795; deaths, 506. July 1–Aug. 4, 1917: Cases, 2,064; deaths, 1,271. Aug. 19–Sept. 15, 1917: Cases, 871; deaths, 521.
Agusan	July 15–28	12	2	
Albay	May 20–June 30	113	76	
Do	July 1–Aug. 4	53	30	
Do	Aug. 19–Sept. 1	10	7	
Ambos Camarines	June 3–9	2	1	
Do	July 22–Aug. 4	20	11	
Bataan	July 8–14	1	.....	
Batangas	June 17–23	1	1	
Bohol	May 20–June 30	368	251	
Do	July 1–Aug. 4	203	161	
Do	Aug. 19–Sept. 15	64	35	
Capiz	June 3–30	62	40	
Do	July 1–Aug. 4	64	45	
Cebu	June 2–30	231	150	
Do	July 1–Aug. 4	388	284	
Do	Aug. 19–Sept. 15	65	36	
Iloilo	July 1–Sept. 15	61	36	
Leyte	June 10–30	14	5	
Do	July 1–Aug. 4	334	223	
Do	Aug. 19–Sept. 15	239	138	
Misamis	July 8–Aug. 4	237	117	
Mindanao	July 20–Aug. 4	12	11	
Do	Aug. 19–Sept. 15	327	189	
Negros Oriental	July 1–Aug. 4	276	177	
Do	Aug. 19–Sept. 15	48	39	
Rizal	June 24–30	1	.....	
Do	July 1–7	1	.....	
Romblon	July 22–28	1	1	
Samar	July 15–21	4	2	
Do	Aug. 19–Sept. 1	92	52	
Sorsogon	June 3–30	196	88	
Do	July 1–Aug. 4	216	114	
Do	Aug. 19–25	8	5	
Surigao	July 29–Aug. 4	4	4	
Do	Aug. 19–25	6	4	
Tayabas	June 3–30	7	7	
Do	July 1–Aug. 4	11	9	
Do	Aug. 19–Sept. 1	2	2	
Zamboanga	July 15–21	11	7	

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

Reports Received from June 30 to Nov. 9, 1917—Continued.

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
Arabia:				
Aden	May 3-July 4		43	Apr. 8-May 14, 1917: Cases, 69; deaths, 51.
Brazil:				
Bahia	June 10-30	12	8	
Do	July 8-Sept. 15	6	2	
Pernambuco	July 16-Aug. 15	4	1	
Ceylon:				
Colombo	Apr. 8-June 23	41	33	
Do	July 6-21	1	4	
China:				
Amoy	Apr. 29-May 5			Present and in vicinity.
Do	July 1-7	6	6	Present Aug. 10.
Hongkong	May 13-June 30	20	13	
Do	July 8-Aug. 18	4	3	
Kwangtung Province—				
Ta-pu district	June 2			Present.
Ecuador:				
Estancia Vieja	Feb. 1-28	1		
Guayaquil	do	56	29	
Do	Mar. 1-Apr. 30	42	22	
Do	July 1-Aug. 31	4		
Milagro	Mar. 1-31	1		
Do	Apr. 1-30	1	1	
Nobol	Feb. 1-28	2		
Salitre	do	1		
Do	Mar. 1-31		1	
Taura	Feb. 1-28	3	2	
Egypt				Jan. 1-Sept. 30, 1917; Cases, 723; deaths, 393.
Alexandria	June 21-27	6	4	
Do	July 31-Sept. 11	5	1	
Port Said government	Apr. 30-May 19	4	3	
Port Said	June 25	1		
Do	July 28-29	1	1	
Provinces—				
Fayoum	May 11-June 26	14	7	
Galioubeh	June 28	1		
Girgeh	May 17		1	
Minieh	May 12-June 28	4	3	
Do	July 29-Sept. 11	9		
Siout	May 12	3	1	
Suez government	Apr. 30-June 2	23	9	
Suez	May 12-June 28	38	23	
Great Britain:				
Gravesend	Aug. 13-21	3	1	From s. s. Matiana.
London	May 3-8	2		2 in hospital at port. From s. s. Sardinia from Australian and oriental ports.
India				Apr. 15-June 30, 1917: Cases, 43,992; deaths, 30,197. July 1-7, 1917: Cases, 1,870; deaths, 1,322. July 15-Aug. 18, 1917: Cases, 19,330; deaths, 14,575.
Bassein	Apr. 1-June 30		54	
Do	July 1-Aug. 18		23	
Bombay	Apr. 22-June 30	486	397	
Do	July 1-Sept. 1	294	236	
Calcutta	Apr. 29-June 2		38	
Do	July 15-21		1	
Henzada	Apr. 1-June 30		35	
Do	Aug. 12-18		2	
Karachi	Apr. 22-June 30	468	413	
Do	July 1-Sept. 1	21	16	
Madras Presidency	Apr. 22-June 30	301	250	
Do	July 1-Sept. 1	1,199	870	
Mandalay	Apr. 8-May 12		9	
Do	July 29-Aug. 18		9	
Moulmein	Apr. 1-June 30		74	
Do	July 1-Aug. 18		19	
Myingyan	Apr. 1-7		1	
Pegu	May 27-June 2		2	
Do	July 29-Aug. 18		6	
Rangoon	Apr. 15-June 30	183	169	
Do	July 1-Aug. 11	303	286	
Toungoo	Apr. 8-14		2	
Do	July 29-Aug. 18		7	
Indo-China:				
Provinces				Feb. 1-June 30, 1917: Cases, 730: deaths, 491. July 1-31, 1917; Cases, 69; deaths, 45.
Anam	Feb. 1-June 30	232	131	
Do	July 1-31	13	9	

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

Reports Received from June 30 to Nov. 9, 1917—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China—Continued.				
Provinces—Continued.				
Cambodia	Feb. 1–June 30	132	115	
Do	July 1–31	10	10	
Cochin-China	Feb. 1–June 30	219	133	
Do	July 1–31	43	24	
Kwang-Chow-Wan	May 1–June 30	34	23	
Tonkin	Feb. 1–June 30	113	89	
Do	July 1–31	3	2	
Saigon	Apr. 23–June 3	47	26	
Japan:				
Aichi Ken	Jan.–July	22		
Miye Ken	do	3		
Java:				
East Java				Apr. 2–May 20, 1917: Cases, 29; deaths, 29. July 30–Aug. 5, 1917: Cases, 3; deaths, 3.
Djocjakarta Residency	Apr. 23–May 6	1	1	
Kediri Residency	do	1	1	
Samarang Residency	Apr. 23–May 20	3	3	
Surabaya Residency	Apr. 2–May 20	18	18	
Do	July 8–28	4	4	
Surakarta Residency	do	6	6	
Peru				May 13–31, 1917: Cases, 15. June 1–July 31, 1917: Cases, 38.
Departments—				
Ancachs	July 1–31	3		At Casma.
Arequipa	May 16–July 31	10		At Mollendo.
Callao	do	5		At Callao.
Lambayeque	do	3		At Chiclayo.
Libertad	May 16–21	7		At Salaverry, San Pedro, and Trujillo. July 1–31, 1917: At Truiillo.
Lima	do	20		At Lima. July 1–31, 1917: Lima, city and country.
Siam:				
Bangkok	Apr. 22–June 30	13	12	
Do	July 3–Sept. 1	17	15	
Straits Settlements:				
Singapore	June 3–16	2	1	
Do	July 1–Sept. 6	9	7	
Union of South Africa:				
Cape of Good Hope State—				
Cradock	Aug. 23			Present.
Glengrey district	Aug. 13			Do.
Terka district	May 28	1	1	At Summerhill Farm.
Queenstown	June 6	1		
Orange Free State				Apr. 16–22, 1917: 1 case. Apr. 9–22, 1917: Cases, 26: deaths, 17.
Winburg district	May 28		1	
At sea:				
S. S. Matiana	July 14–18	9	6	En route for port of London.

SMALLPOX.

Australia:				
New South Wales				Apr. 27–Aug. 30, 1917: Cases, 77.
Brewarrina	Apr. 27–June 21	6		
Cessnock	July 25–28	4		
Coonabarabran	May 25–July 5	13		
Quambone	Apr. 27–June 21	2		
Warren district	June 22–Aug. 30	52		
Queensland—				
Thursday Island Quarantine Station.	May 9	1		From s. s. St. Albans from Kobe via Hongkong. Vessel proceeded to Townsville, Brisbane, and Sydney, in quarantine.
Brazil:				
Bahia	May 6–June 30	4		
Do	July 22–Sept. 22	5	1	
Rio de Janeiro	do	126	31	
Do	July 1–Sept. 15	433	91	
Canada:				
Manitoba—				
Winnipeg	June 10–16	1		
Do	Aug. 19–Sept. 1	5		

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

Reports Received from June 30 to Nov. 9, 1917—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Nova Scotia—				
Halifax	June 18–July 7	3		
Port Hawkesbury	June 17–30			Present in district.
Ontario—				
Ottawa	July 30–Aug. 5	1		
Windsor	Sept. 30–Oct. 20	3		
Ceylon:				
Colombo	May 6–12	1		
China:				
Amoy	Apr. 29–May 26			Present and in vicinity.
Do	July 1–Aug. 19			Do.
Antung	May 21–June 24	4		
Do	Aug. 6–12	1		
Changsha	May 27–June 2	5		
Do	Aug. 11–17		7	
Chungking	May 6–June 23			Do.
Do	July 1–Sept. 15			Do.
Dairen	May 13–June 30	30	4	
Do	July 8–28	6	1	July 1–7, 1917; Present.
Hankow	June 21–30	2		
Harbin	Apr. 23–May 6	7		On Chinese Eastern Ry.
Hongkong	May 6–June 16	8	7	
Do	Aug. 5–18	1		
Manchuria Station	Apr. 23–29	1		Do.
Mukden	May 27–June 2			Present.
Do	July 8–Sept. 30			Do.
Shanghai	May 21–July 1	13	32	Cases foreign; deaths among natives.
Do	July 2–Sept. 29		9	Among Chinese.
Tsitsihar Station	Apr. 16–22	1		On Chinese Eastern Ry.
Tsingtao	May 22–July 7	35	7	At another station on railway
Do	July 30–Aug. 11	4	1	1 case.
Chosen (Korea):				
Chemulpo	May 1–31	1		
Ecuador:				
Guayaquil	Feb. 1–28	1		
Do	Mar. 1–Apr. 30	8		
Do	July 1–Aug. 31	12		
Egypt:				
Alexandria	Apr. 30–July 1	39	9	
Do	July 2–29	30	4	
Cairo	Feb. 12–Apr. 8	80	1	
France:				
Nantes	July 30–Aug. 5	1		
Paris	May 6–12	1		
Germany				Mar. 18–Apr. 28, 1917: Cases, 715;
Berlin	Mar. 18–Apr. 28	106		in cities and 32 States and dis-
Bremen	do	16		tricts.
Charlottenberg	do	18		
Hamburg	do	50		
Leipzig	do	20		
Lübeck	do	2		
Munich	do	10		
Stuttgart	do	1		
Greece:				
Athens	July 25–30		23	
India:				
Bombay	Apr. 22–June 30	186	75	
Do	July 1–Sept. 1	55	25	
Calcutta	Apr. 29–May 26		12	
Karachi	Apr. 22–July 4	27	8	
Do	July 8–Sept. 1	5	2	
Madras	Apr. 22–June 30	80	48	
Do	July 1–Sept. 1	11	20	
Rangoon	Apr. 15–June 30	33	5	
Do	July 1–28	7		
Indo-China:				
Provinces				Feb. 1–June 30, 1917: Cases, 617;
Anam	Feb. 1–June 30	1,630	237	deaths, 535. July 1–31, 1917:
Do	July 1–31	353	59	Cases, 525; deaths, 132.
Cambodia	Feb. 1–June 30	136	26	
Do	July 1–31	28	23	
Cochin-China	Feb. 1–June 30	1,267	377	
Do	July 1–31	130	49	
Kwang-Chow-Wan	Mar. 1–Apr. 30	4		

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

Reports Received from June 30 to Nov. 9, 1917—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Indo-China—Continued.				
Provinces—Continued.				
Laos	Apr. 1-30	5	1	
Do	July 1-31	10	1	
Tonkin	Feb. 1-June 30	274	30	
Do	July 1-31	4		
Saigon	Apr. 27-June 10	199	63	
Do	July 2-Sept. 9	33	19	
Italy:				
Turin	May 21-June 24	32	12	
Do	July 12-Sept. 30	12	3	
Jamaica:				
Kingston	Sept. 9-15	1		
Japan				Jan.-July, 1917: Cases, 4,974; in 37 Provinces and districts.
Kobe	May 27-July 22	65	16	
Nagasaki	May 28-June 3	1		
Osaka	May 16-July 5	177	55	
Yokkaichi	July 25-31	1		
Yokohama	May 27-July 1	1	1	
Java:				
East Java	Apr. 2-July 1	38	2	
Do	July 2-29	18		
Mid-Java	Apr. 1-July 1	88	7	
Do	July 2-22	23		
West Java				Apr. 13-July 5, 1917; Cases, 239; deaths, 44. July 6-Aug. 2, 1917: Cases, 68; deaths, 14.
Batavia	Apr 13-July 5	30	6	
Mexico:				
Coatepec	Jan. 1-June 30		116	
Do	Aug. 1-14		1	Jan. 1-Aug. 14, 1916: 118 deaths.
Jalapa	July 1-13		1	
Mazatlan	July 11-Aug. 7		9	
Mexico City	June 3-30	162		
Do	Aug. 5-Sept. 22	142		
Monterey	June 18-24		24	
Orizaba	Jan. 1-June 30		23	
Do	July 1-23		1	
Vera Cruz	July 1-Sept. 15	6	2	
Netherlands:				
Amsterdam	Aug. 13-18	1	1	
Philippine Islands:				
Manila	May 13-June 9	6		Varioloid.
Do	July 8-Sept. 1	5		Do.
Portugal:				
Lisbon	May 13-June 30	14		
Do	July 8-Aug. 18	8		
Portuguese East Africa:				
Lourenço Marques	Mar. 1-June 30		5	
Russia:				
Archangel	May 1-June 28	56	4	
Do	July 2-Aug. 28	6		
Moscow	July 2-15	6		
Petrograd	Feb. 18-June 23	543		
Do	July 2-29	58		
Riga	Mar. 11-June 2	7		Jan. 1-Mar. 31, 1917: Cases, 9.
Vladivostok	Mar. 15-24	23	7	
Siam:				
Bangkok	June 9-30	16		
Do	July 11-17	3	5	
Spain:				
Madrid	May 1-June 19		4	
Malaga	Apr. 1-June 30		44	
Seville	May 1-June 30		11	
Valencia	June 3-23	5		
Do	July 1-Sept. 15	13		
Straits Settlements:				
Penang	Mar. 18-June 23	6	3	
Singapore	June 24-30	1		
Sweden:				
Malmo	Apr. 22-28	1		
Stockholm	May 20-June 23	2	1	
Tunisia:				
Tunis	June 2-8	2		
Turkey in Asia:				
Trebizond	Feb. 25-Apr. 13		15	

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

Reports Received from June 30 to Nov. 9, 1917—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Union of South Africa:				
Johannesburg	Mar. 12-24	4		
Do	July 1-31	3		
Uruguay:				
Montevideo	May 1-31	2		
Venezuela:				
Maracaibo	June 18-July 8		8	
Do	July 9-23		1	

TYPHUS FEVER.

Algeria:				
Algiers	June 1-30	6	3	
Do	July 1-Aug. 31	1	1	
Argentina:				
Buenos Aires	Aug. 12-18		1	
Austria-Hungary:				
Austria				Oct. 22-Dec. 17, 1916: Cases, 2,371.
Bohemia	Oct. 22-Dec. 17	634		
Galicia	do	809		
Lower Austria	do	47		
Moravia	do	617		
Silesia	do	16		
Styria	do	243		
Upper Austria	do	5		
Hungary				Feb. 19-Mar. 25, 1917: Cases, 1,381.
Budapest	Feb. 19-Mar. 25	83		
Brazil:				
Rio de Janeiro	July 29-Aug. 11	2		
Canary Islands:				
Santa Cruz de Tenerife	Sept. 23-29		1	
China:				
Antung	June 23-July 1	3		
Do	July 9-Sept. 23	15	1	
Hankow	June 9-15	1		
Do	July 8-14		1	
Tientsin	June 17-23	1		
Tsingtao	May 30-July 7	4		
Do	Aug. 5-11	1		
Egypt:				
Alexandria	Aug. 30-July 1	1,648	478	
Do	July 17-Sept. 16	418	115	
Cairo	Jan. 22-Apr. 8	188	76	
Port Said	Mar. 19-25	1		
Great Britain:				
Cork	June 17-23		1	
Glasgow	Sept. 30-Oct. 6	1		
Greece:				
Saloniki	May 23-June 30		32	
Do	July 1-Aug. 4		19	
Japan:				
Hakodate	July 22-28	1		
Nagasaki	June 11-24	4		
Do	July 9-Sept. 30	34	6	
Java:				
East Java				May 6-July 1, 1917: Cases, 6. July 9-29, 1917: Cases, 6.
Surabaya	June 25-July 29	4		
Mid-Java				Apr. 1-June 24, 1917: Cases, 38; deaths, 5. July 9-Aug. 23, 1917: Cases, 13; deaths, 1.
Samarang	May 5-June 10	14	2	
Do	July 2-8	5		
West Java				Apr. 13-July 5, 1917: Cases, 147; deaths, 6. July 6-Aug. 23, 1917: Cases, 82; deaths, 11.
Batavia	Apr. 13-July 5	70	6	
Do	July 6-Aug. 23	61	8	
Mexico:				
Aguascalientes	July 10-16		1	
Coatepec	Aug. 1-14		1	
Jalapa	Apr. 1-June 30		5	
Do	July 1-31		3	
Mexico City	June 3-30	431		
Do	July 8-Sept. 22	1,044		
Orizaba	Jan. 1-June 30		6	
Do	July 1-31		1	

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

Reports Received from June 30 to Nov. 9, 1917—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Netherlands:				
Rotterdam	June 9–23	3	2	
Do	July 15–Sept. 1	11		
Norway:				
Bergen	July 8–28	7		
Portuguese East Africa:				
Lourenço Marques	Mar. 1–31	1		
Russia:				
Archangel	May 1–June 28	11	2	
Do	July 2–Aug. 28	16	5	
Moscow	July 2–15	10		
Petrograd	Feb. 18–June 23	138	3	
Do	July 2–29	33		
Riga	May 31–June 16	8		Jan. 1–31, 1917: 1 case.
Do	July 22–28	5		May 1–31, 1917: Cases, 4.
Vladivostok	Mar. 29–May 21	5		
Spain:				
Almeria	May 1–31		5	
Madrid	do		2	
Switzerland:				
Basel	June 17–23	1		
Do	July 8–Sept. 22	7	1	
Zurich	July 26–Sept. 22	2		
Trinidad	June 4–9	2		
Tunisia:				
Tunis	June 30–July 6		1	
Union of South Africa:				
Cape of Good Hope State				Aug. 25, 1917: Present in 16 districts.
East London	Sept. 10			Present.

YELLOW FEVER.

Ecuador:				
Babahoyo	Feb. 1–28	1	1	
Do	Mar. 1–31	2	1	
Chobo	do	1	1	
Guayaquil	Feb. 1–28	18	7	
Do	Mar. 1–Apr. 30	34	18	
Do	July 1–Aug. 31	24	10	
Milagro	Feb. 1–28	1		
Do	Mar. 1–Apr. 30	2	1	
Naranjito	July 1–Aug. 31	2	2	
Mexico:				
Campeche State—				
Campeche	Aug. 19–25	2	1	
Yucatan State—				
Merida	Aug. 8–Sept. 20	8	3	
Peto	June 23	1	1	In person recently arrived from Mexico City.
Do	July 1–Sept. 25	6	1	
Venezuela:				
Coro				Present Sept. 5.