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## DIPHTHERIA.

### AN EPIDEMIC, PROBABLY OF MILK ORIGIN, OCCURRING AT NEWPORT, RHODE ISLAND AND VICINITY.

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During the latter part of July and the early part of August, 1917, there occurred in Newport, Portsmouth, Middletown, and Jamestown, R. I., an outbreak of diphtheria which presented several remarkable features.

The chief facts of interest were: (1) The sudden "explosive" outbreak occurring in the middle of summer, and the rapid decline in the number of cases; (2) the unusual age incidence; (3) the high incidence of cases per 1,000 population; (4) the mildness of the epidemic, and the lack of fatalities among reported cases; (5) the small percentage of contact cases; and finally, and most important, (6) the apparent implication of milk products, especially ice cream.

Preparatory to the discussion of the outbreak, a few facts, as to the localities involved, will be of assistance in understanding what follows. (See map.)

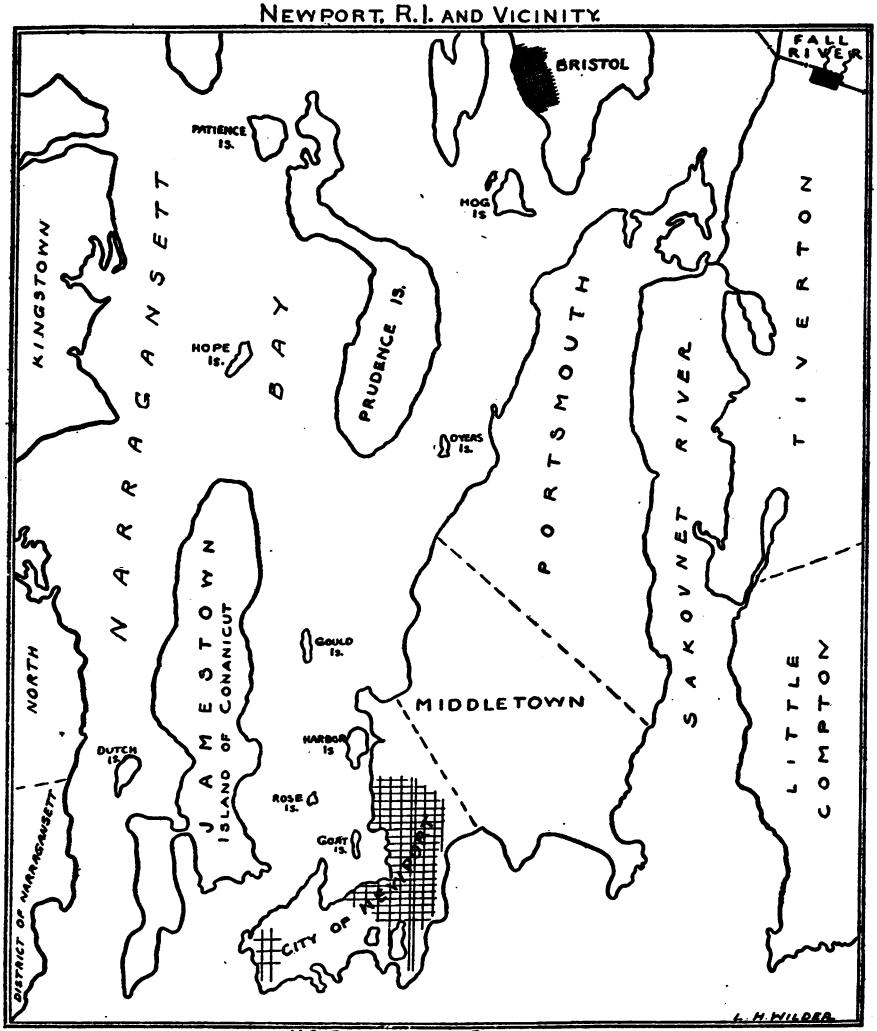
The island of Rhode Island is about 17 miles long and from 2 to 4 miles wide. It consists of 3 municipalities, viz, Newport, Middletown, and Portsmouth. The land is of a slightly rolling character. The chief industry, outside the city of Newport, is agriculture. The sanitary conditions are fair. The water supply is obtained from rain water ponds and shallow wells, and is subjected to proper supervision and treatment. Newport is fairly well sewered, while the other towns depend chiefly upon privies and cesspools for the disposal of sewage.

The island of Conanicut, which also was affected, is due west of Newport and is reached by ferry in 20 minutes. It is about 8 or 9 miles long and 1¼ miles wide. The water supply and sewage disposal are about the same as for Middletown and Portsmouth. The center of population of this island is the town of Jamestown. The

total population of the 2 islands, including the military and transients (summer residents), is estimated at 56,200.

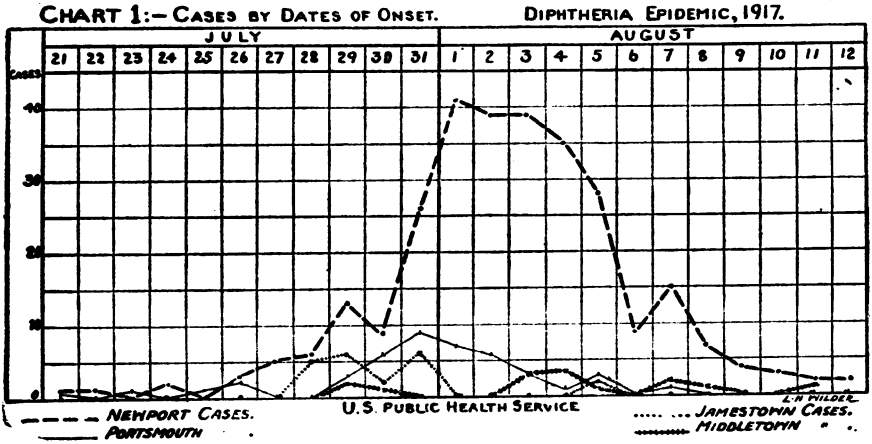
### 1. Explosiveness of Outbreak.

As is true for nearly any community having a population as large as the one under consideration, a few cases of diphtheria occur




throughout the year, chiefly, however, in the cooler months, and Newport is no exception. Thus, for the calendar year 1916, 106 cases occurred in Newport; and for 1917 up to July 1, 36 cases had occurred. In July, cases were reported up to the 21st of the month as follows: July 1, 2 cases; and July 10, 1 case.

The outbreak may be regarded as having begun on July 21, and as having terminated on August 15. A few cases, which are not included in this report, occurred after the latter date, and after our special investigations were completed. Altogether there were 402 cases reported, of which 389 were studied epidemiologically. The 13 cases of which little knowledge was obtained occurred among the Army forces. Of these 402 cases, 291 occurred in Newport; 45 in Portsmouth; 22 in Jamestown; 15 in Middletown; and 29 among the personnel of the Army and Navy. Table 1 shows the number of cases by dates of onset. The greatest number of cases occurring on any one day was 50 on August 1; and between July 28 and August 7 there were 354 cases, or 88 per cent of all that occurred. As the table shows, the epidemic in Jamestown preceded that in Newport by a few days. We are unable to offer a satisfactory explanation for this, unless it be that the Jamestown patients partook




of an infected lot of ice cream a few days prior to the infection of the supply used elsewhere.

In chart 1 the facts are shown in graphic manner.

Chart 2 shows the course of an epidemic in 1916, which presented no features of special interest; it was largely a school outbreak.

### 2. Age and Sex Incidence.

One of the first features that attracted attention was the large number of adults affected. In going through the wards of the hospitals, one was struck by the comparative absence of small children. This peculiar age incidence alone was sufficient to show that some unusual factor was at the root of the outbreak. See Table 2.

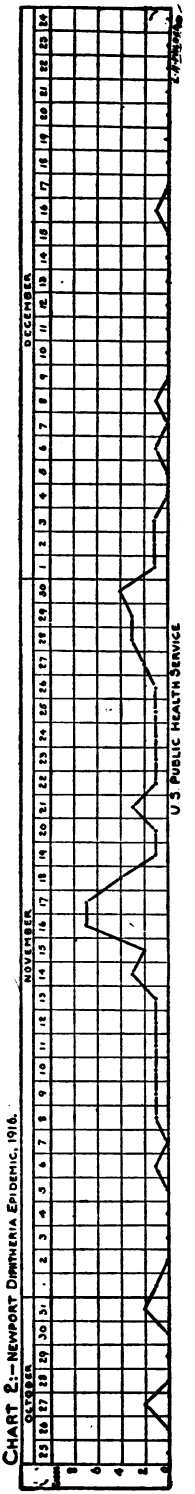


CHART 2:—NEWPORT DIPHTHERIA EPIDEMIC, 1916.
OCTOBER
NOVEMBER
DECEMBER
U S PUBLIC HEALTH SERVICE

TABLE 1.—*Cases by dates of onset.*

| | Newport. | Portsmouth. | Jamestown. | Middletown. | Navy. | Army. | Total. |
|---|---|---|---|---|---|---|---|
| July 21 | 1 | | 1 | | | | 2 |
| 22 | 1 | | | | | | 1 |
| 23 | | 1 | | | | | 1 |
| 24 | 2 | | | | | | 2 |
| 25 | | 1 | | | | | 1 |
| 26 | 3 | 2 | | | | | 5 |
| 27 | 5 | | | | | | 5 |
| 28 | 6 | | 5 | | 1 | 1 | 13 |
| 29 | 13 | 3 | 6 | 2 | 1 | | 25 |
| 30 | 9 | 6 | 2 | 1 | | | 18 |
| 31 | 26 | 9 | 6 | | 2 | | 43 |
| Aug. 1 | 41 | 7 | | | 1 | 1 | 50 |
| 2 | 39 | 6 | | | 2 | | 47 |
| 3 | 39 | 3 | | 3 | 2 | 2 | 49 |
| 4 | 34 | 1 | | 3 | 2 | 2 | 42 |
| 5 | 29 | 3 | 2 | 1 | 3 | 2 | 40 |
| 6 | 9 | | | | | 1 | 10 |
| 7 | 15 | 1 | | 2 | | 1 | 19 |
| 8 | 7 | | | 1 | | | 8 |
| 9 | 4 | | | | | 2 | 6 |
| 10 | | | | | 1 | | 1 |
| 11 | 2 | | | 1 | | | 3 |
| 12 | 2 | | | | | | 2 |
| 13 | | | | | 1 | 1 | 2 |
| 14 | | | | | | | |
| 15 | 1 | | | | | | 1 |
| Date of onset not given | 3 | 2 | | 1 | | | 6 |
| Total | 291 | 45 | 22 | 15 | 16 | 13 | 402 |

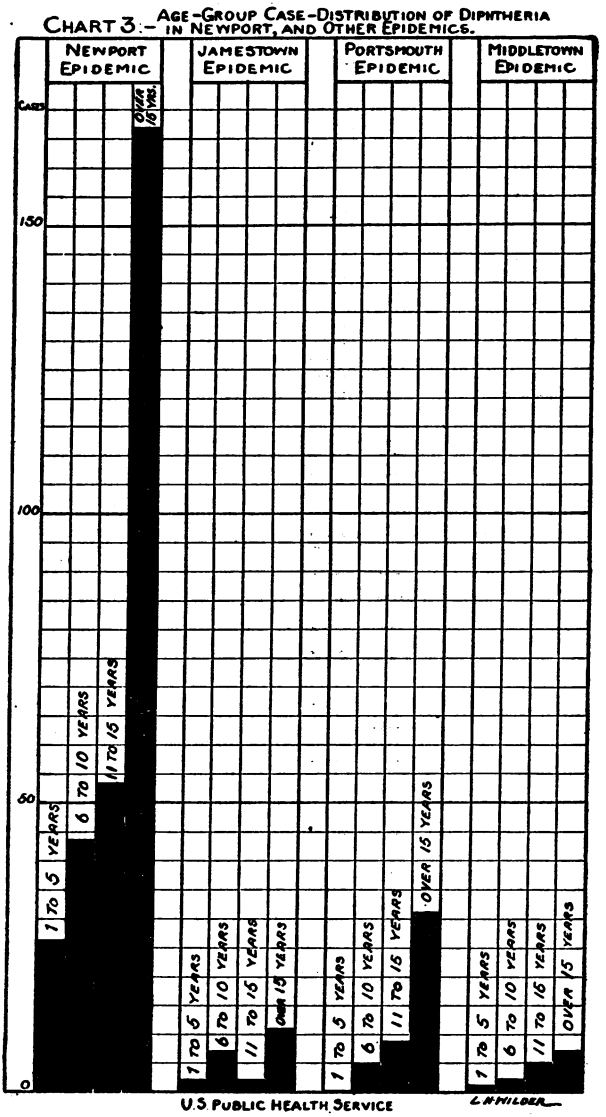
TABLE 2.—*Cases by age and sex groups.*

| | Under 5 years. | | 6 to 10 years. | | 11 to 15 years. | | Over 15 years. | | |
|---|---|---|---|---|---|---|---|---|---|
| | Male. | Female. | Male. | Female. | Male. | Female. | Male. | Female. | |
| Newport | 11 | 15 | 21 | 23 | 27 | 26 | 58 | 110 | 291 |
| Jamestown | 2 | | 1 | 6 | 1 | 1 | 6 | 5 | 22 |
| Portsmouth | | | 3 | 2 | 5 | 4 | 16 | 15 | 45 |
| Middletown | 1 | | | 2 | | 5 | 6 | 1 | 15 |
| Naval | | | | | | | 29 | | 29 |
| Total | 14 | 15 | 25 | 33 | 33 | 36 | 115 | 131 | 402 |

A chart (No. 3) has been prepared showing by age groups the number of persons affected in the various cities. It will be seen that the cases over 10 years of age are several times as numerous as those under 10 years. These figures are contrary to the age grouping in the usual diphtheria epidemics. For comparison, another chart (No. 4) has been made, showing the age groups of the total number of persons affected in this epidemic, of persons affected in Providence, R. I., in 1915, and of persons affected in Newport in 1917 prior to this outbreak. The Providence cases of 1915, and the Newport cases of 1917, up to the present epidemic, agree with other diphtheria outbreaks in the distribution of cases in the age groups affected, while, in the 1917 epidemic, the age groups are, broadly speaking, reversed.

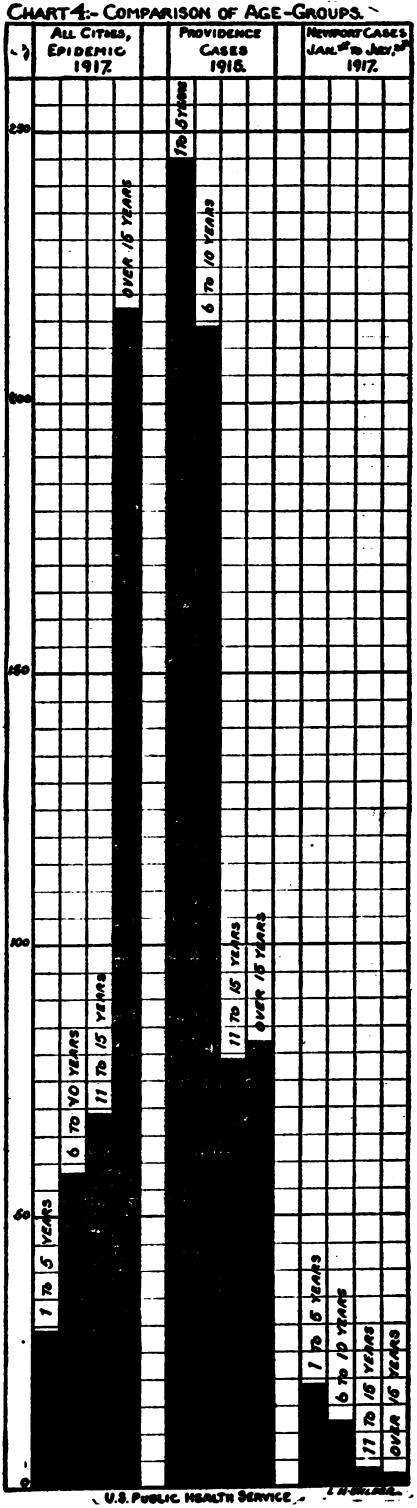
The sex incidence is also interesting. Up to 15 years of age, the sexes are about evenly divided, the females being slightly in excess.

In the age group over 15 in the Newport cases, the females are in excess, almost two to one over males; in Portsmouth and Jamestown they are equally divided; while in Middletown there were 6 males and only 1 female affected. If we include the military cases in the New-




port epidemic, the females are in excess only in a slight degree, but there were from 10,000 to 12,000 males stationed here, which made the male population almost double the female population.

CHART 4:- COMPARISON OF AGE-GROUPS.



### 3. Case Incidence per 1,000 Population.

The epidemic was a large one, as regards the incidence of cases per 1,000 population. A table (No. 3) has been prepared showing the population, the number of cases, case rate per 1,000 population, and the number of the population per case.

TABLE 3.

| | Population. | Number of cases. | Rate per 1,000 population. | Population per case. |
|---|---|---|---|---|
| Newport: | | | | |
| Permanent residents | 32,000 | 291 | 8 | 127 |
| Transient (civilian) | 5,000 | | | |
| Military—Navy | 7,000 | 16 | 2.3 | 438 |
| Army | 5,000 | 13 | 2.6 | 385 |
| Total | 49,000 | 320 | 6.5 | 153 |
| Portsmouth | 2,700 | 45 | 16.7 | 60 |
| Middletown | 2,500 | 15 | 6 | 167 |
| Jamestown | 2,000 | 22 | 11 | 91 |
| Grand total | 56,200 | 402 | 7.2 | 140 |

It is evident that the communities of Portsmouth and Jamestown had a greater relative prevalence than had Newport. An explanation for the low incidence rate and the few cases among the military will be given later, in a section devoted to the cases occurring among the personnel of the Army and Navy.

In order to show the high incidence of cases per 1,000 inhabitants in Newport, the following data (Table 4) taken from the Public Health Reports of August 24, 1917, are given for comparison. The population of the cities is as near that of Newport as possible.

TABLE 4.

| | Population July 1, 1916. | Cases reported. | Cases per 1,000 population. | | Population July 1, 1916. | Cases reported. | Cases per 1,000 population. |
|---|---|---|---|---|---|---|---|
| Newport epidemic (1917)[1] | 37,000 | 291 | 8 | Lorain, Ohio | 36,964 | 48 | 1.3 |
| Newport (1916) | 30,108 | 106 | 3.5 | Mount Vernon, N. Y. | 37,009 | 36 | .97 |
| Aurora, Ill. | 34,204 | 45 | 1.3 | New Rochelle, N. Y. | 37,759 | 53 | 1.4 |
| Austin, Tex. | 34,814 | 67 | 1.9 | Niagara Falls, N. Y. | 37,353 | 107 | 2.9 |
| Cedar Rapids, Iowa | 37,308 | 19 | .51 | Oshkosh, Wis. | 36,065 | 9 | .3 |
| Columbia, S. C. | 34,611 | 31 | .9 | Pittsfield, Mass. | 38,629 | 53 | 1.4 |
| Decatur, Ill. | 39,631 | 43 | 1.1 | Quincy, Ill. | 36,798 | 45 | 1.2 |
| Dubuque, Iowa | 39,873 | 8 | .2 | Quincy, Mass. | 38,136 | 60 | 1.6 |
| Everett, Mass. | 39,235 | 99 | 2.5 | San Jose, Cal. | 38,902 | 68 | 1.7 |
| Jackson, Miss. | 35,363 | 75 | 2.1 | Taunton, Mass. | 36,283 | 31 | .86 |
| Knoxville, Tenn. | 38,676 | 35 | .9 | Waterloo, Iowa | 35,559 | 23 | .65 |

[1] Newport population obtained from figures of board of health. Other populations obtained from estimated population as of July 1, 1916, of the United States Bureau of the Census. Newport cases only for period of epidemic. Other cities for entire year.

### 4. Mildness of Epidemic and Lack of Fatalities of Reported Cases.

Another striking feature was the mildness of the epidemic and the lack of fatalities among cases reported to the health authorities. Among the 402 cases analyzed there were no deaths.[1]

All cases were diagnosed as diphtheria upon a positive culture, and a very large majority were clinically diphtheria. Antitoxin was administered freely, and the symptoms usually cleared up promptly under this treatment.

A number of rather severe cases occurred, including about a dozen with laryngeal involvement requiring intubation, but fortunately with favorable outcome.

Probably three of the factors concerned in the relatively benign character of the epidemic were: (1) the very large proportion of adults attacked; (2) the early recognition of cases and the free use of antitoxin; and (3) the fact that a considerable number of cases were almost free from symptoms, and ordinarily would not have been recognized as diphtheria; all of these were verified microscopically.

It may be that other factors, such as the season of the year, or some attenuation of the organism due to the mode of distribution, were operative.

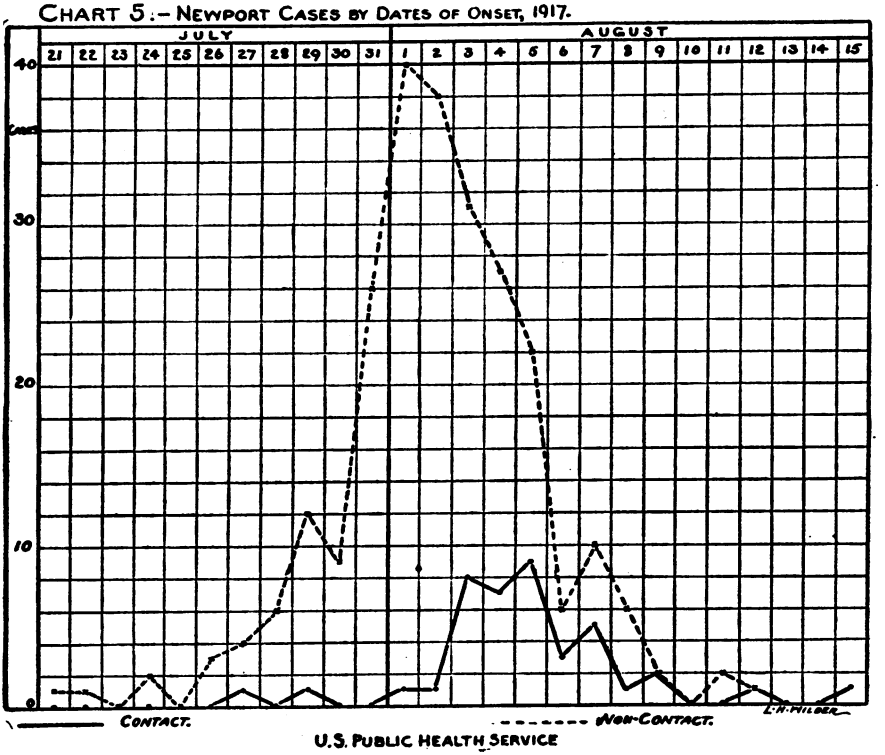
The city of Newport is to be commended for the prompt and efficient manner in which hospitalization of the diphtheria patients was effected. The Newport Hospital, the Naval Hospital, the Emergency Hospital (used formerly for smallpox), and a school building, hastily converted into a hospital, were used to care for the sick. Of 291 cases in Newport 262, or 90 per cent, were cared for in the hospitals. Of the 29 cases among the military all, or 100 per cent, were placed in hospitals. Jamestown had 11 and Middletown 3 cases in the hospital, while Portsmouth had none.

### 5. Contact Cases.

A total of 50 cases, or 12.4 per cent, was attributed to contact infection. All of these gave a definite history of association with a clinical case. The incubation period ranged from 2 to 7 days, with the majority of cases occurring 4 days after exposure. There were 42 of these cases in Newport, 5 in Portsmouth, 2 in Jamestown, and 1 in Middletown. The contact cases occurred, for the most part, after the height of the epidemic was reached. A chart (No. 5) showing Newport cases by onset, clearly illustrates the situation. The crest of the Newport epidemic, not counting the contact cases, was reached on August 1; while the crest of the contact curve was reached on August

[1] On the last day of our stay in Newport, August 19, a fatal case was reported to the health department. This case did not have the services of a physician until moribund. The patient was a boy of 6 and the duration of the illness was 7 days. The source of infection could not be determined.

5. The Jamestown cases which occurred on August 5 (see Table 1), gave a clear history of contact with clinical diphtheria. Contact infections were to be expected, on account of cases and carriers which were not immediately diagnosed and at once isolated. It is remarkable that a greater number of contact infections did not occur. This we attribute, in part, to the fact that in many households where a case occurred, immunizing doses of antitoxin were given to contacts, and, in part, to the fact that so high a degree of hospitalization was




effected in Newport. Another probable factor was the warm weather which discouraged indoor association, and promoted free ventilation.

### 6. Implication of Milk Products, Especially Ice Cream.

The explosive character of the outbreak pointed to some common source of infection. Hasty epidemiological studies, which later were confirmed by a more deliberate investigation, showed that probably contaminated milk used in making ice cream was the cause. The history of the milk and milk products epidemics usually shows certain definite features more or less peculiar. These are an explosive onset; a special incidence among the patrons of a certain producer, dealer, or distributor; and lastly a greater percentage of women

and children affected. This epidemic presents some of these characteristics, but differs radically in the age incidence, as has been shown.

There can be no doubt regarding the explosive character of this epidemic, 402 cases occurring in about 3 weeks, and more than 88 per cent in 10 to 12 days. The second characteristic, following the distribution of a certain dealer or dairy, does not stand out so prominently and is not so easily disposed of.

Considerable difficulty was experienced in obtaining the correct histories of sources of milk. In the majority of instances the patients, or their parents, were able to state definitely the source of their milk supplies; but frequently added that, when they were short of milk, the corner grocery store was resorted to. The cases were distributed fairly evenly and there was practically no undue preponderance on any one dealer's route. Table 5 has been prepared showing the dealers who daily handled over 125 quarts of milk, with the number of cases on their routes and the number of cases that would have occurred per 1,000 quarts of milk sold. The latter method is the fairer one, as it puts all the dealers on a common basis of calculation.

It is clear at a glance that, to have considered the outbreak a milk-borne one in the ordinary sense, would have meant that practically all supplies were infected. It was obvious that such a widespread infection was most unlikely. Dipthheria was found on several dairy farms, but in each case there was a history that indicated that the infection had been acquired from the source which we believe was properly chargeable with the outbreak.

TABLE 5.

| Dealer. | Number of quarts of milk handled daily. | Number of cases among his customers. | Number of cases that would have occurred per 1,000 quarts of milk. | Dealer. | Number of quarts of milk handled daily. | Number of cases among his customers. | Number of cases that would have occurred per 1,000 quarts of milk. |
|---|---|---|---|---|---|---|---|
| H. C. S. | 225 | 15 | 66 | G. I. | 200 | 4 | 20 |
| J. H. B. | 200 | 21 | 85 | H. P. | 450 | 2 | 5 |
| M. M. | 140 | 6 | 43 | W. J. P. | 350 | 3 | 9 |
| J. P. P. | 260 | 6 | 23 | P. H. | 200 | 4 | 20 |
| H. H. | 150 | 4 | 27 | G. A. S. | 140 | 2 | 14 |
| C. A. | 125 | 7 | 56 | H. S. | 150 | 2 | 13 |
| Sn. | 200 | 6 | 30 | C. | 150 | 2 | 13 |
| D. M. | 500 | 16 | 32 | H. C. | 130 | 3 | 23 |
| C. B. | 175 | 10 | 57 | F. P. | 150 | 2 | 13 |
| J. E. | 150 | 6 | 40 | D. A. B. | 250 | 5 | 20 |
| P. M. | 150 | 6 | 40 | H. I. C. | 125 | 3 | 24 |
| J. P. F. | 1,200 | 34 | 28 | R. W. | 140 | 4 | 28 |
| J. E. K. | 200 | 5 | 25 | M. | 130 | 3 | 23 |

Jamestown and Middletown showed no undue proportion of cases on any one dealer's milk route. In Portsmouth there were 12 cases charged to one dairy, but this dairy sold by far the greatest part of the milk distributed in the community, and, if calculated on a 1,000-

quart basis, had fewer cases than some competitors who sold much less milk.

These facts, we think, show that milk, as such, was not responsible for the outbreak.

Ice cream early attracted attention by reason of the fact that the patients, almost uniformly, gave a history of having used that product.

The histories of the early cases pointed particularly to cream secured from the largest dealer (A) in Newport. This led to as comprehensive an investigation of the cream and the ice-cream supplies as we were able to make.

Newport, and the towns affected, obtain their supplies of cream for ice-cream purposes from 3 large dealers. These we shall designate A, B, and C. A fourth group designated D, has been made to include the few miscellaneous sources. Where the history of the source of ice cream used by a patient was not definite, we included that case under the miscellaneous or D column.

The cream supply of the islands is about 580 gallons per day. The sources of this cream, with the data pertinent in this connection, are shown in Table 6.

When a patient gave a history of using ice cream from two or more sources, one case was charged against each source named.

TABLE 6.

| | Amount of cream sold. | Per cent of all cream sold. | Number of cases of diphtheria charged to dealer. | Per cent of all cases. |
|---|---|---|---|---|
| | *Gallons.* | | | |
| Dealer A | 200 | 34.5 | 285 | 62 |
| Dealer B | 180 | 31 | 50 | 11 |
| Dealer C | 100 | 17.3 | 67 | 14.5 |
| (Miscellaneous) D | 100 | 17.3 | 58 | 12.5 |

Owing to the extremely hot weather, which prevailed generally over the eastern part of the country on July 29, 30, 31, and August 1, ice cream was partaken of in much larger quantities, and by more persons than ordinarily. In fact, many patients stated that they had not eaten ice cream during the summer until these hot days, and they were able to state accurately when and where they had taken ice cream. According to the dates of onset of the disease, the majority of cases occurred a day or two after the hot spell began, and for four days after the hot weather ceased.

In Newport, 51 patients gave histories of eating ice cream on certain dates only, and of becoming ill 2 to 9 days later, the majority developing the disease about 3 days after eating ice cream. In

Portsmouth, 13 patients gave histories of eating ice cream only on certain days (July 26, 27, and 28), and of coming down with diphtheria from 2 to 6 days later. In Jamestown, 9 patients gave histories of eating ice cream on only one occasion, and of becoming ill 2 to 5 days later.

The histories of some of these cases are of sufficient interest to be given briefly.

In Newport, Mrs. S. and a friend went to the beach one day and while there bought ice cream cones from a source supplied by dealer A. They had not eaten ice cream for several days prior to or after this day. Mrs. S. developed diphtheria 3 days later. Her friend complained of severe sore throat, but did not call a physician.

Two cases occurred in Portsmouth on July 31. These patients were young men from Brockton, Mass., who arrived in Portsmouth July 27. On this day they purchased ice cream from a source supplied by dealer A. No history of contact with a case or any factor except ice cream, could be obtained.

The case of S. R. of Jamestown is of interest. The family, consisting of three small boys and their parents, made a trip to Worcester on July 26. The father purchased for one of the boys (S. R.) an ice cream cone from a vendor in Jamestown supplied by dealer A. No ice cream was obtained there for the other children. When the boat reached Newport ice cream cones were purchased for the other two boys from a source which could not be traced. On July 31 S. R. was taken ill with diphtheria while the other children remained well. No other source of infection could be implicated.

A milk producer, who sold milk at retail to the extent of about 450 quarts, purchased the cream for his family's use from dealer A. One of his children, the child who drank the cream, came down with diphtheria.

It was rather significant that in the families of three ice-cream dealers, all supplied by A, there occurred one or more cases of diphtheria at about the same time; while among the other dealers who did not handle A's product, no cases occurred.

A study of instances in which more than one case occurred in a family, the onset being simultaneous or nearly so, gave suggestive results. We included only those families in which cases occurred within 24 hours of each other. It was found that there were 13 such examples, and in all of these there was a history of the use of ice cream supplied by vendors who secured cream from dealer A; curiously enough, the other two instances were families that secured milk from dealer A, though there was no evidence that this dealer's milk supply was infected.

As soon as suspicion was directed to the cream supplied by dealer A, an investigation was begun by the local health authorities to determine the possible source of infection. It was found that on one of the farms, which we may call Z, which supplied milk to A, a case of clinical diphtheria was reported on July 25 and another on July 29. The patients were both young men who milked the cows or handled the milk. Both cases were microscopically positive and, when other members of the family who were not ill at the time were cultured, four additional positive throats were found. The entire output of milk from the farm Z was sent to dealer A, who used at least part, and sometimes all, of it for diluting heavy pasteurized cream furnished to ice-cream makers.

This dealer (A) had no undue incidence among his milk customers, though two cases occurred among a comparatively small number of persons using his cream. He sold little cream except to ice-cream manufacturers.

Dealer A had a pasteurizing plant of the "flash" type in more or less regular operation, but the milk used for diluting heavy cream was not pasteurized. The efficiency of the pasteurization of the milk and cream was questionable, but on this point we have no direct evidence.

Dealer A's plant was closed, and the sale of ice cream was forbidden on August 4, too late, we believe, to have accounted for the rapid decline of the epidemic which occurred beginning August 6. It is more likely that the discontinuance of the suspected supply from farm Z, which occurred several days earlier (the exact date is not available), was responsible for the rapid fall in the number of cases.

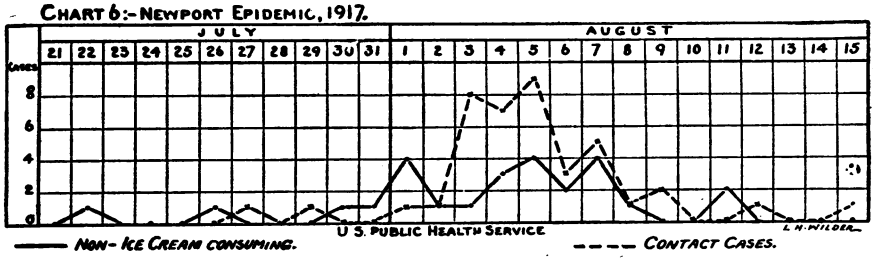
Infection of this milk supply on July 25 or later would not account for the earlier cases in the epidemic, though it might well be regarded as the origin of the cases with onset on and after the 28th of the month. It is very likely that one of the boys who developed diphtheria, or one of the four healthy carriers on the farm, infected the supply possibly as early as the middle of the month.

There is another source from which the infection may have originated, or which may have accounted for some of the cases, particularly in Portsmouth. When cultures were made from all ice-cream handlers, it was found that a boy of 16, who may be designated X, the son of an ice-cream vendor, gave a positive result. This boy gave a history of having diphtheria two years previous, and it is possible, but not probable, that he may have been a carrier for this period and may have infected dealer A's supply through returned containers, as the X supply all came from dealer A. We think it is more probable that this boy was infected from A's supply. This boy daily dispensed ice cream from a wagon to the inhabitants of

Portsmouth, and also waited on customers in the store. If he had been a carrier for so long a time, there should have been cases cropping up among the customers he served. As a matter of fact, cases occurred among them only during the time that the epidemic was prevailing, none prior to that time.

A total of 32 patients denied having used ice cream within 10 days before becoming sick and gave no contact history. These cases we consider as probably chargeable to contact with mild unrecognized cases, or with carriers, and we believe that the cases using ice cream from sources other than dealer A may be so accounted for.

Another chart (No. 6) has been prepared showing by date of onset the non-ice-cream-consuming patients in Newport alone, 28 in number. It will be seen from this chart that the cases which did not consume ice cream had their onset after the decline of the epidemic. The curve of these cases approximates closely the curve of the contact cases, as seen from the same chart. The source of the milk supply of these




cases was carefully gone over, but no evidence was adduced incriminating any one milk dealer. Fourteen milk dealers supplied the 28 patients.

There were only three patients who did not use any milk or ice cream. Of these, one had the onset very early in the epidemic, July 22; one, during the height of the outbreak, August 3; and the third on August 11, when the epidemic had almost ceased.

Of the 11 cases in Newport which gave a history of not using milk, but of eating ice cream, 9 obtained their ice cream from sources supplied by dealer A, 1 had ice cream supplied by both A and B, and 1 obtained it from an unknown source.

### 7. Cases Among Military Forces.

There were stationed in Newport about 7,000 men belonging to the Navy and about 5,000 to the Army. The men belonging to the Navy were divided into two groups; the training station with a personnel of 5,000 and the reservists about 2,000 in number. The personnel of the former lived at the naval training station, while the latter (the reservists) lived in a camp adjacent to the city or boarded

in town with the civilian population and had the same opportunities for infection. There occurred among the naval men 16 cases of diphtheria. Of this number, only 2 occurred among the 5,000 men stationed at the training camp, whereas 14 occurred among the 2,000 reservists. The reservists' incidence, 7 cases per 1,000, approximates that in Newport. The explanation for the small number of cases among the personnel of the training camp presented a difficulty inasmuch as our first information indicated that the ice cream supplied there was from a source which secured cream from dealer A. Closer investigation, however, showed such was not the case, and that ice cream provided at the training station came from dealer B, who had comparatively few cases charged to him, 11 per cent of all, though he supplied 31 per cent of the cream used in Newport and vicinity. Ice cream was served at the naval station on Sundays only, so that, even had the supply been from an infected source, there would have been but a fraction of the risk of acquiring the disease which was incurred by the community in general.

Another factor which must be considered is the relative lack of opportunity for acquiring infection by the men at the training station, due to the restrictions placed on leaving the reservation. Liberty was granted once a week to most of the men, so that the number for comparative purposes should be but a fraction of the 5,000. We must remember also that in this outbreak the proportion of women affected was much higher than that among men, and of course the personnel of the station was made up exclusively of men. On August 1, an absolute quarantine was established at the training station. This effectually prevented any new infections.

Considering all of these facts, the low incidence among this large group of men is in harmony with the ice-cream theory.

The 13 cases among the 5,000 soldiers occurred mainly among the men of one regiment. Satisfactory histories were not obtainable, because most of the men had already embarked for other ports at the time when we attempted to get the necessary epidemiological data.

At first it seemed doubtful that the age incidence would accord with the theory of the distribution of the infection by milk or milk products. By personal investigation, at places where ice cream was dispensed, we found that by far the larger number of patrons were adolescents and adults. A sanitary inspector found that only about 6 per cent of the patrons of ice-cream stands were children under 10 years of age. The major portion of the business was done in the evening hours, when the adults visited the downtown section and the beach where the ice-cream dispensing establishments are located, while children generally were at home.

The occurrence of cases among residents of other cities who visited Newport is very interesting and, while the data with regard to them are not so complete as we might desire, they are worth presenting here.

### Fall River Cases.

In the early part of August there were 9 cases in the city of Fall River, Mass. Six were in adults over 16, and 3 in children whose ages were 4, 6, and 8 years, respectively. One of the latter cases proved fatal. Seven of these cases gave a history of eating ice cream at either Newport or Portsmouth. The histories are incomplete regarding dates of eating ice cream and the source of the same, but all cases were reported in the period between August 2 and 9, when Newport and the other communities were having their outbreak. We were informed that there were very few cases of diphtheria in Fall River prior to these nine cases.

### Providence Cases.

Through the courtesy of Dr. Charles V. Chapin, city health officer, we are able to present the data for the Providence cases. There were 5 cases in Providence, and 1 case in East Providence, chargeable to Newport, 1 being a contact, the father of a child who probably acquired the disease there. The facts are as follows: Of these 5 cases directly chargeable to Newport, 3 were in persons over 16, 1 was a girl of 13 years and 1 a child of 3 years. All gave histories of visiting Newport, between July 26 and 31, and of eating ice cream from a source which was supplied with cream by dealer A. In each case the onset of the disease occurred from 4 to 5 days after eating the ice cream. The factor operating to cause the Newport epidemic was at its height at about this time (July 26–31).

A few cases of diphtheria were occurring in Providence which were not related in any manner to those which could be traced to Newport. According to Dr. Chapin, the former were of a distinctly severer type, 8 cases proving fatal among 62 which were reported in July and August.

### Location and Occupation.

We have discussed above the noteworthy features of the outbreak and will conclude this portion of the report with a very brief consideration of two circumstances which are often of prime importance in epidemiological investigations, but which were not of special interest in the present study.

*Location.*—A spot map was made of the cases, as they occurred from day to day, and the locations agreed pretty closely with the

distribution of the population, the greater number of cases occurring in the more thickly settled portions of the town. The wealthy class was not seriously affected, probably because they purchased a goodly part of their milk and ice cream from sources outside of Newport. Ice cream that was purchased in the city (Newport) came largely from one of the manufacturers supplied by dealer B.

*Occupation.*—As might be expected, a large number of these cases occurred in school children, although the schools were not in session. The occupations of the remainder of the patients were widely diversified, and no one occupation had a predominance of cases with the possible exception of manufacturers and vendors of ice cream, among whose families there occurred a total of 5 cases, all chargeable to cream from dealer A.

**Laboratory Features.**

The virulence of the organism from three cases was tested by the subcutaneous inoculation of guinea pigs with a suspension of the 24-hour Loeffler medium slant directly from the throat (i. e., a mixed culture was used), giving the same quantity of the same suspension to another guinea pig which had been protected by 10 units of commercial antidiphtheric serum. In each case, the animal which did not have the antidiphtheric serum died with the usual lesions of diphtheria. Death occurred in 2 cases on the third day, and in 1 on the fourth. All of the protected guinea pigs remained well.

All of the recognized types of diphtheria bacilli were encountered. On account of the press of work, no records were kept of the percentages of the different types.

*Practical application.*—We wish to conclude this study with the expression of our opinion that this epidemic of diphtheria could have been averted by proper pasteurization of the milk supply, and to emphasize the importance, if not the necessity, of pasteurization of the milk supply of large communities.

*Acknowledgments.*—We wish to express our appreciation of the courtesies extended by the State Health Department, by Mr. Frank Greenlaw, president of the Newport Board of Health, the members of the board, and the physicians of Newport and vicinity, particularly Drs. Mendenhall, Storrs, and Du Blois.

For much of the data used above we are indebted to Surg. A. M. Stimson, United States Public Health Service, and Asst. Surgs. Joslin, Merritt, and Poppin, of the United States Navy, who were kindly detailed by Medical Director Gates to assist in the investigation. Drs. A. G. Gigger and A. W. Sweet, Messrs. G. F. Fasting, C. A. Abele, E. D. Reynolds, Miss Whiffle, and Miss R. Tuthill, bacteriologist of the Newport Board of Health, gave valuable assistance.

# 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 Oct. 20, 1917.

The California State Board of Health reported that during the week ended October 20, 1917, 4 cases of anthrax in man occurred in the State, 3 cases in San Joaquin County and 1 case in Los Angeles County. There were fewer cases of anthrax among animals. One case of cerebrospinal meningitis occurred in Sacramento and one in Stockton. Six cases of smallpox were notified in Kern County. One case of poliomyelitis was notified in Los Angeles County and one case in the city of Los Angeles. Cases of diphtheria, mumps, typhoid fever, and whooping cough showed some increase.

The details of notifiable disease cases reported during the week ended October 13, 1917, are as follows:

| | | | |
|---|---|---|---|
| Anthrax | 1 | Mumps | 78 |
| Cerebrospinal meningitis | 5 | Pneumonia | 27 |
| Chicken pox | 33 | Poliomyelitis | 3 |
| Diphtheria | 37 | Scarlet fever | 74 |
| Dysentery | 2 | Smallpox | 2 |
| Erysipelas | 3 | Syphilis | 16 |
| German measles | 26 | Tetanus | 1 |
| Gonococcus infection | 36 | Tuberculosis | 73 |
| Leprosy | 1 | Typhoid fever | 31 |
| Malaria | 23 | Whooping cough | 47 |
| Measles | 42 | | |

### ANTHRAX.

#### Iowa—Muscatine.

On October 17, 1917, a case of anthrax was reported in Muscatine Township, just outside the city limits of Muscatine, Iowa, in the person of B. F. E., female, aged 31 years, engaged in housekeeping and truck farming.

## ANTHRAX—Continued.

### Wisconsin—Milwaukee.

On October 19, 1917, a case of anthrax was notified at Milwaukee, Wis., in the person of A. T., employed in the handling of hides at the plant of a leather company at Milwaukee. The infection was probably received from imported hides.

## CEREBROSPINAL MENINGITIS.

### State Reports for September, 1917.

| Place. | New cases reported. |
|---|---|
| Kansas: | |
| Butler County— | |
| Augusta | 1 |
| Geary County— | |
| Junction City | 1 |
| Montgomery County— | |
| Independence | 1 |
| Riley County— | |
| Camp Funston | 2 |
| Wyandotte County— | |
| Kansas City | 1 |
| Total | 6 |
| Ohio: | |
| Champaign County | 1 |
| Cuyahoga County | 6 |
| Franklin County | 1 |
| Jefferson County | 1 |
| Lucas County | 1 |
| Mahoning County | 3 |
| Ross County | 1 |
| Stark County | 2 |
| Summit County | 3 |
| Ohio—Continued. | |
| Trumbull County | 1 |
| Total | 20 |
| Pennsylvania: | |
| Allegheny County | 9 |
| Blair County | 1 |
| Butler County | 1 |
| Columbia County | 1 |
| Erie County | 2 |
| Greene County | 1 |
| Lancaster County | 1 |
| Northumberland County | 1 |
| Philadelphia County | 9 |
| Washington County | 1 |
| Westmoreland County | 1 |
| Total | 28 |
| West Virginia: | |
| Ohio County— | |
| Wheeling | 1 |

### City Reports for Week Ended Oct. 6, 1917.

| Place. | Cases. | Deaths. |
|---|---|---|
| Boston, Mass | 1 | 1 |
| Bridgeport, Conn | ..... | 1 |
| Chelsea, Mass | 1 | 1 |
| Chicago, Ill | 8 | 4 |
| Cincinnati, Ohio | 1 | 1 |
| Cleveland, Ohio | ..... | 1 |
| Columbus, Ohio | 1 | 2 |
| Galesburg, Ill | ..... | 1 |
| Hartford, Conn | 2 | ..... |
| Malden, Mass | 1 | ..... |
| Milwaukee, Wis | 3 | 2 |
| Minneapolis, Minn | 1 | ..... |
| Newark, N. J | 1 | ..... |
| New York, N. Y | ..... | 5 |
| Philadelphia, Pa | 1 | ..... |
| Pittsburgh, Pa | 3 | 2 |
| Portland, Oreg | 1 | ..... |
| San Francisco, Cal | ..... | 1 |

## DIPHTHERIA.

### Alabama—Elmore County.

On October 22, 1917, an outbreak of diphtheria was reported in Elmore County, Ala., where 8 cases of the disease, with 3 deaths, had occurred. The cases occurred principally in the town of Speigeners, where from among 40 pupils in one school 35 carriers were demonstrated by positive bacteriological cultures.

## DIPHTHERIA—Continued.

### Indiana.

On October 22, 1917, diphtheria was reported as epidemic at Connersville, Princeton, Rochester, and South Whitley, Ind.

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1817.

## ERYSIPELAS.

### City Reports for Week Ended Oct. 6, 1917.

| Place. | Cases. | Deaths. | Place. | Cases. | Deaths. |
|---|---|---|---|---|---|
| Birmingham, Ala. | ..... | 1 | Philadelphia, Pa. | 5 | 1 |
| Buffalo, N. Y. | 1 | ..... | Pittsburgh, Pa. | 3 | ..... |
| Chicago, Ill. | 4 | ..... | Portland, Oreg. | 2 | 1 |
| Cleveland, Ohio. | 5 | ..... | Reading, Pa. | 1 | ..... |
| Denver, Colo. | 3 | ..... | St. Louis, Mo. | 1 | ..... |
| Detroit, Mich. | ..... | 1 | San Francisco, Cal. | 6 | ..... |
| Kansas City, Mo. | 1 | ..... | Stockton, Cal. | 1 | ..... |
| Los Angeles, Cal. | 2 | ..... | Topeka, Kans. | 1 | ..... |
| Milwaukee, Wis. | 1 | ..... | Williamsport, Pa. | 1 | ..... |
| Newark, N. J. | 3 | ..... | | | |

## LEPROSY.

### Mississippi—Biloxi.

On October 18, 1917, a case of leprosy was reported at Biloxi, Miss., in a person who had been employed as an oyster shucker at Biloxi for a period of six years.

### Montana—Alberton.

On October 19, 1917, a case of leprosy was reported at Alberton, Mineral County, Mont.

## MALARIA.

### State Reports for September, 1917.

| Place. | New cases reported. | Place. | New cases reported. |
|---|---|---|---|
| Kansas: | | Ohio: | |
| Anderson County— | | Cuyahoga County | 3 |
| Colony | 1 | Ross County | 2 |
| Garnett | 2 | Van Wert County | 1 |
| Butler County— | | Total | 6 |
| El Dorado | 2 | | |
| Latham | 1 | Pennsylvania: | |
| Total | 6 | Allegheny County | 1 |
| | | Montgomery County | 1 |
| | | Philadelphia County | 2 |
| | | Total | 4 |

## MALARIA—Continued.

### City Reports for Week Ended Oct. 6, 1917.

| Place. | Cases. | Deaths. | Place. | Cases. | Deaths. |
|---|---|---|---|---|---|
| Birmingham, Ala. | [1] 36 | | New Orleans, La. | 2 | 1 |
| Boston, Mass. | 2 | | Orange, N. J. | 1 | |
| Charleston, S. C. | | 3 | Pittsfield, Mass. | 1 | |
| Chelsea, Mass. | 1 | | Richmond, Va. | 6 | |
| Los Angeles, Cal. | 1 | | San Diego, Cal. | 1 | |
| Memphis, Tenn. | 18 | 2 | Savannah, Ga. | 4 | |
| Mobile, Ala. | | 2 | Stockton, Cal. | 2 | |
| Newark, N. J. | 1 | | | | |

[1] The reason that Birmingham had so many more cases of malaria reported than any other city is not that the disease is more prevalent in Birmingham than in other cities of Alabama and neighboring States, but undoubtedly because of the successful efforts the health department has made in securing the cooperation of the practicing physicians in reporting cases.

## MEASLES.

See Diphtheria, measels, scarlet fever, and tuberculosis, page 1817.

## PELLAGRA.

### State Reports for August and September, 1917.

| Place. | New cases reported. | Place. | New cases reported. |
|---|---|---|---|
| Oregon (Aug. 1-31): | | Pennsylvania (Sept. 1-30): | |
| Malheur County | 1 | Allegheny County | 1 |
| Multnomah County | 1 | | |
| Total | 2 | West Virginia (Sept. 1-30): | |
| | | McDowell County | 1 |
| Kansas (Sept. 1-30): | | | |
| Cowley County— | | | |
| State Hospital at Winfield | 2 | | |
| Shawnee County— | | | |
| Topeka | 1 | | |
| Total | 3 | | |

### City Reports for Week Ended Oct. 6, 1917.

| Place. | Cases. | Deaths. | Place. | Cases. | Deaths. |
|---|---|---|---|---|---|
| Birmingham, Ala. | [1] 6 | 3 | New York, N. Y. | 1 | |
| Charleston, S. C. | | 1 | Philadelphia, Pa. | | 1 |
| Denver, Colo. | 1 | 1 | Roanoke, Va. | | 1 |
| Lexington, Ky. | | 2 | Wilmington, N. C. | | 1 |
| Long Beach, Cal. | 1 | 1 | Winston-Salem, N. C. | | 1 |
| Memphis, Tenn. | 4 | | Worcester, Mass. | 1 | |
| New Orleans, La. | 1 | 1 | | | |

[1] The reason that Birmingham had so many cases of pellagra reported is not that the disease is more prevalent in Birmingham than in other cities of Alabama and neighboring States, but undoubtedly because of the successful efforts the health department has made in securing the cooperation of the practicing physicians in reporting cases.

## PNEUMONIA.

### City Reports for Week Ended Oct. 6, 1917.

| Place. | Cases. | Deaths. | Place. | Cases. | Deaths. |
|---|---|---|---|---|---|
| Ann Arbor, Mich. | 1 | ..... | Long Beach, Cal. | 2 | 2 |
| Baltimore, Md. | 6 | 7 | Los Angeles, Cal. | 8 | 9 |
| Binghamton, N. Y. | 5 | 2 | Lowell, Mass. | 1 | 3 |
| Boston, Mass. | 5 | 9 | Lynn, Mass. | 1 | ..... |
| Braddock, Pa. | 1 | ..... | Manchester, N. H. | 3 | 3 |
| Cambridge, Mass. | 1 | 2 | Medford, Mass. | 1 | 1 |
| Chelsea, Mass. | 1 | ..... | Newark, N. J. | 24 | 7 |
| Chicago, Ill. | 114 | 72 | New Bedford, Mass. | 2 | 1 |
| Chicopee, Mass. | 4 | ..... | New Castle, Pa. | 1 | ..... |
| Cleveland, Ohio. | 13 | 16 | Philadelphia, Pa. | 30 | 15 |
| Dayton, Ohio. | 3 | 2 | Pittsburgh, Pa. | 23 | 22 |
| Detroit, Mich. | 2 | 14 | Pontiac, Mich. | 1 | ..... |
| Duluth, Minn. | 2 | 1 | Rutland, Vt. | 1 | ..... |
| Fitchburg, Mass. | 1 | ..... | San Francisco, Cal. | 7 | 2 |
| Flint, Mich. | 4 | ..... | Schenectady, N. Y. | 1 | ..... |
| Haverhill, Mass. | 1 | ..... | Springfield, Mass. | 3 | ..... |
| Jackson, Mich. | 1 | ..... | Springfield, Ohio. | 1 | ..... |
| Kalamazoo, Mich. | 4 | 2 | Stockton, Cal. | 1 | ..... |
| | | | Worcester, Mass. | 3 | 1 |

## POLIOMYELITIS (INFANTILE PARALYSIS).

### Illinois.

During the week ended October 20, 1917, cases of poliomyelitis were notified in Illinois as follows: One each in Dewitt, Macon, McDonough, and McHenry Counties; 3 cases each in Rock Island and Whiteside Counties; 56 cases in Cook County, 49 of which were in the city of Chicago.

### Indiana.

During the week ended October 20, 1917, poliomyelitis was reported in Indiana as follows: One case each at Fort Wayne, Gary, and Rensselaer.

### Kansas.

During the week ended October 20, 1917, one case of poliomyelitis was notified at each of the following places in Kansas: Benton, Bigelow, Douglas, Herrington, McPherson, Tampa, and White Cloud.

### Oregon—Portland.

Three cases of poliomyelitis were notified in the city of Portland, Oreg., one case each on October 11, 13, and 14, 1917.

## POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

### State Reports for August and September, 1917.

| Place. | New cases reported. |
|---|---|
| Oregon (Aug. 1-31): | |
| Clackamas County | 1 |
| Marion County | 1 |
| Multnomah County— | |
| Portland | 2 |
| Total | 4 |
| Kansas (Sept. 1-30): | |
| Brown County— | |
| Everest | 1 |
| Horton | 1 |
| Cowley County— | |
| Dexter | 1 |
| Dickinson County— | |
| Herington | 1 |
| Doniphan County— | |
| Severance | 1 |
| Elk County— | |
| Howard | 1 |
| Gray County— | |
| Montezuma | 1 |
| Leavenworth County— | |
| Leavenworth | 1 |
| McPherson County— | |
| McPherson (R. D.) | 1 |
| Montgomery County— | |
| Wayside | 1 |
| Ottawa County— | |
| Lamar | 1 |
| Pratt County— | |
| Preston | 1 |
| Rawlins County— | |
| McDonald | 1 |
| Republic County— | |
| Republic | 1 |
| Riley County— | |
| Randolph (R. D.) | 1 |
| Sedgwick County— | |
| Wichita | 1 |
| Shawnee County— | |
| Topeka | 1 |
| Smith County— | |
| Smith Center (R. D.) | 1 |
| Stevens County— | |
| Hugoton (R. D.) | 3 |
| Washington County— | |
| Greenleaf | 1 |
| Wyandotte County— | |
| Kansas City | 2 |
| Total | 24 |
| Ohio (Sept. 1-30): | |
| Allen County | 1 |
| Ashland County | 2 |
| Belmont County | 6 |
| Columbiana County | 8 |
| Cuyahoga County | 6 |
| Franklin County | 1 |
| Jackson County | 3 |
| Logan County | 1 |
| Lorain County | 3 |
| Mahoning County | 1 |
| Medina County | 4 |
| Montgomery County | 2 |
| Ohio—Continued. | |
| Morrow County | 2 |
| Richland County | 3 |
| Stark County | 4 |
| Summit County | 17 |
| Wayne County | 7 |
| Total | 71 |
| Pennsylvania (Sept. 1-30): | |
| Allegheny County | 24 |
| Beaver County | 1 |
| Butler County | 1 |
| Cambria County | 1 |
| Clarion County | 1 |
| Clearfield County | 1 |
| Crawford County | 5 |
| Dauphin County | 1 |
| Erie County | 4 |
| Fayette County | 9 |
| Franklin County | 2 |
| Greene County | 2 |
| Huntingdon County | 2 |
| Jefferson County | 2 |
| Lancaster County | 20 |
| Lawrence County | 20 |
| McKean County | 2 |
| Mercer County | 10 |
| Mifflin County | 3 |
| Montgomery County | 1 |
| Northampton County | 2 |
| Philadelphia County | 1 |
| Schuylkill County | 2 |
| Somerset County | 4 |
| Washington County | 8 |
| Westmoreland County | 4 |
| Total | 133 |
| West Virginia (Sept. 1-30): | |
| Barbour County | 1 |
| Braxton County | 1 |
| Cabell County— | |
| Huntington | 2 |
| Calhoun County | 2 |
| Hampshire County | 2 |
| Hancock County | 1 |
| Harrison County | 6 |
| Jackson County | 4 |
| Lewis County | 6 |
| Marshall County | 4 |
| Marion County | 2 |
| Mason County | 2 |
| Mineral County | 3 |
| Monroe County | 1 |
| Ohio County— | |
| Wheeling | 2 |
| Preston County | 2 |
| Richey County | 3 |
| Tucker County | 1 |
| Upshur County | 3 |
| Wood County | 2 |
| Parkersburg | 8 |
| Total | 58 |

## POLIOMYELITIS (INFANTILE PARALYSIS)—Continued.

### City Reports for Week Ended Oct. 6, 1917.

| Place. | Cases. | Deaths. | Place. | Cases. | Deaths. |
|---|---|---|---|---|---|
| Boston, Mass | 1 | | Omaha, Nebr | 1 | 1 |
| Chicago, Ill | 65 | 20 | Philadelphia, Pa | 1 | |
| Cleveland, Ohio | 2 | | Providence, R. I | 1 | |
| Davenport, Iowa | 2 | | Richmond, Va | 1 | |
| Detroit, Mich | | 1 | Rock Island, Ill | 1 | 1 |
| Fort Wayne, Ind | 1 | | St. Louis, Mo | 2 | |
| Kansas City, Mo | 2 | | Seattle, Wash | 1 | |
| Minneapolis, Minn | 1 | | South Bend, Ind | 1 | |
| Mobile, Ala | 1 | | Syracuse, N. Y | 1 | |
| New Haven, Conn | 1 | | Washington, D. C | 2 | |
| New York, N. Y | 3 | 1 | | | |

## RABIES IN ANIMALS.

### City Reports for Week Ended Oct. 6, 1917.

During the week ended October 6, 1917, cases of rabies in animals were reported as follows: Detroit, Mich., 3; Newark, N. J., 1; and New York, N. Y., 1.

## ROCKY MOUNTAIN SPOTTED FEVER.

### Kansas—Hoxie.

On October 20, 1917, the occurrence of a case of Rocky Mountain spotted fever was reported at Hoxie, Sheridan County, Kans. The patient was L. H., aged 2 years, who was taken sick August 17, 1917, and died October 1, 1917. The infection was received in Colorado.

## SCARLET FEVER.

See Diphtheria, measles, scarlet fever, and tuberculosis, page 1817.

## SMALLPOX.

### Alabama.

On October 17, 1917, outbreaks of smallpox were reported in Alabama, as follows: In Pickens County, from 30 to 40 cases; and at Selma, Dallas County, 5 cases; all of the mild form of the disease.

### Minnesota.

During the week ended October 20, 1917, two new foci of smallpox infection were reported in Minnesota, cases of the disease having been notified as follows: Marshall County, Strandquist, 2; Ramsey County, Rose Township, 1.

### Ohio—Chillicothe.

On October 17, 1917, the occurrence of 5 cases of smallpox were reported at Chillicothe, Ohio.

## SMALLPOX—Continued.

### State Reports for September, 1917.

| Place. | New cases reported. | Deaths. | Vaccination history of cases. | | | |
|---|---|---|---|---|---|---|
| | | | Number vaccinated within 7 years preceding attack. | Number last vaccinated more than 7 years preceding attack. | Number never successfully vaccinated. | Vaccination history not obtained or uncertain. |
| **Kansas:** | | | | | | |
| Atchison County— | | | | | | |
| Atchison | 1 | | | | 1 | |
| Butler County— | | | | | | |
| Augusta (R. D.) | 1 | | | | 1 | |
| Cowley County— | | | | | | |
| Arkansas City (R. D.) | 1 | | | | 1 | |
| Geuda Springs | 3 | | | | 3 | |
| Geary County— | | | | | | |
| Junction City | 1 | | | | 1 | |
| Jefferson County— | | | | | | |
| McLouth (R. D.) | 1 | | | | 1 | |
| Johnson County— | | | | | | |
| Shawnee (R. D.) | 1 | | | | 1 | |
| Leavenworth County— | | | | | | |
| Leavenworth | 3 | | | | 3 | |
| Lincoln County— | | | | | | |
| Barnard (R. D.) | 1 | | | | 1 | |
| Miami County— | | | | | | |
| Paola | 1 | | | | 1 | |
| Montgomery County— | | | | | | |
| Coffeyville | 3 | | | | 3 | |
| Independence | 3 | | | | 3 | |
| Norton County— | | | | | | |
| Norton | 1 | | | | 1 | |
| Riley County— | | | | | | |
| Fort Riley | 1 | | | | 1 | |
| Sumner County— | | | | | | |
| Oxford (R. D.) | 1 | | | | 1 | |
| Wellington (R. D.) | 1 | | | | 1 | |
| Wabaunsee County— | | | | | | |
| McFarland | 1 | | | | 1 | |
| Wilson County— | | | | | | |
| Fredonia (R. D.) | 1 | | | | 1 | |
| Wyandotte County— | | | | | | |
| Kansas City | 19 | | | | 19 | |
| Total | 45 | | | | 45 | |
| **Massachusetts:** | | | | | | |
| Worcester County— | | | | | | |
| Winchendon (town) | 1 | | | 1 | | |
| **Ohio:** | | | | | | |
| Butler County | 5 | | | | 5 | |
| Clark County | 2 | | | | | 2 |
| Cuyahoga County | 69 | | | | 1 | 68 |
| Darke County | 1 | | | | 1 | |
| Erie County | 1 | | | | 1 | |
| Fairfield County | 5 | | | | 3 | 2 |
| Franklin County | 6 | | | | 4 | 2 |
| Gallia County | 5 | | | | | 5 |
| Greene County | 2 | | | | | 2 |
| Guernsey County | 1 | | | | 1 | |
| Highland County | 1 | | | | | 1 |
| Knox County | 1 | | | | | 1 |
| Lucas County | 26 | | | | 1 | 25 |
| Miami County | 1 | | | 1 | | |
| Montgomery County | 8 | | | | | 8 |
| Scioto County | 8 | | | | 1 | 7 |
| Shelby County | 9 | | | 1 | 7 | 1 |
| Summit County | 10 | | | | | 10 |
| Trumbull County | 1 | | | | 1 | |
| Van Wert County | 1 | | | | 1 | |
| Warren County | 3 | | | | | 3 |
| Wayne County | 2 | | | | 1 | 1 |
| Williams County | 1 | | | | | 1 |
| Total | 169 | | | 2 | 28 | 139 |

## SMALLPOX—Continued.

### Miscellaneous State Reports.

| Place. | Cases. | Deaths. |
|---|---|---|
| Pennsylvania (Sept. 1-30): | | |
| Allegheny County | 1 | |
| Blair County | 2 | |
| Dauphin County | 2 | |
| Erie County | 3 | |
| Snyder County | 2 | |
| Warren County | 2 | |
| Total | 12 | |
| West Virginia (Sept. 1-30): | | |
| Doddridge County | 9 | |
| West Virginia—Continued. | | |
| Fayette County | 1 | |
| Jackson County | 2 | |
| Monongalia County | 2 | |
| Pendleton County | 1 | |
| Tyler County | 1 | |
| Wirt County | 2 | |
| Wood County | 2 | |
| Total | 20 | |

### City Reports for Week Ended Oct. 6, 1917.

| Place. | Cases. | Deaths. |
|---|---|---|
| Alton, Ill | 1 | |
| Butte, Mont | 9 | |
| Chicago, Ill | 3 | |
| Cleveland, Ohio | 24 | |
| Coffeyville, Kans | 1 | |
| Columbus, Ohio | 2 | |
| Dayton, Ohio | 3 | |
| Denver, Colo | 1 | |
| Detroit, Mich | 5 | |
| Evansville, Ind | 1 | |
| Everett, Wash | 1 | |
| Fort Wayne, Ind | 29 | |
| Grand Rapids, Mich | 1 | |
| Indianapolis, Ind | 22 | |
| Kansas City, Kans | 2 | |
| Kansas City, Mo | 9 | |
| La Crosse, Wis | 2 | |
| Leavenworth, Kans | 2 | |
| Lincoln, Nebr | 1 | |
| Minneapolis, Minn | 5 | |
| Muscatine, Iowa | 1 | |
| Omaha, Nebr | 5 | |
| Quincy, Ill | 1 | |
| Richmond, Va | 1 | |
| St. Joseph, Mo | 1 | |
| St. Louis, Mo | 2 | |
| Salt Lake City, Utah | 1 | |

## TETANUS.

### City Reports for Week Ended Oct. 6, 1917.

| Place. | Cases. | Deaths. |
|---|---|---|
| Newburgh, N. Y | | 1 |
| Philadelphia, Pa | 1 | 1 |
| Pittsburgh, Pa | | 1 |
| Pittsfield, Mass | 1 | 1 |
| Portsmouth, Va | | 1 |
| St. Louis, Mo | 1 | 1 |
| San Diego, Cal | 1 | 1 |

## TUBERCULOSIS.

See Diphtheria, measles, scarlet fever, and tuberculosis, see page 1817.

## TYPHOID FEVER.

### Indiana—Michigan City.

Typhoid fever was reported as epidemic at Michigan City, Ind., on October 22, 1917.

### State Reports for August and September, 1917.

| Place. | New cases reported. |
|---|---|
| Oregon (Aug. 1-31): | |
| Clatsop County | 1 |
| Douglas County | 1 |
| Multnomah County— | |
| Portland | 15 |
| Polk County | 1 |
| Tillamook County | 1 |
| Yamhill County | 2 |
| Total | 21 |
| Kansas (Sept. 1-30): | |
| Allen County | 8 |
| Anderson County | 3 |
| Atchison County | 7 |
| Barton County | 1 |
| Bourbon County | 3 |
| Brown County | 3 |
| Butler County— | |
| Augusta (R. D.) | 20 |
| Douglas (R. D.) | 3 |
| Eldorado (R. D.) | 84 |
| Potwin | 2 |
| Rosehill (R. D.) | 1 |
| Chase County | 4 |
| Chautauqua County | 2 |
| Cherokee County | 4 |
| Cheyenne County | 2 |
| Cloud County | 3 |
| Coffey County | 2 |
| Cowley County | 7 |
| Crawford County | 30 |
| Decatur County | 1 |
| Dickinson County— | |
| Abilene | 1 |
| Elmo (R. D.) | 3 |
| Herington | 11 |
| Doniphan County | 11 |
| Douglas County | 4 |
| Edwards County | 2 |
| Elk County | 7 |
| Ellis County | 1 |
| Ellsworth County | 4 |
| Finney County | 1 |
| Ford County | 2 |
| Franklin County | 8 |
| Geary County | 4 |
| Gove County | 1 |
| Gray County— | |
| Cimarron (R. D.) | 12 |
| Greenwood County | 6 |
| Harper County | 3 |
| Harvey County | 2 |
| Jefferson County | 1 |
| Jewell County | 2 |
| Johnson County | 5 |
| Kearny County | 2 |
| Kingman County | 1 |
| Labette County | 9 |
| Leavenworth County— | |
| Basehor (R. D.) | 1 |
| Easton | 1 |
| Jarbalo | 2 |
| Lansing | 2 |
| Leavenworth (R. D.) | 15 |
| Linwood | 2 |
| Lincoln County | 2 |
| Linn County | 5 |
| Kansas (Sept. 1-30)—Continued. | |
| Lyon County | 6 |
| Marion County | 2 |
| Marshall County | 6 |
| McPherson County | 4 |
| Meade County | 1 |
| Miami County | 1 |
| Mitchell County | 1 |
| Montgomery County | 13 |
| Morris County | 2 |
| Neosho County | 13 |
| Ness County | 3 |
| Norton County | 2 |
| Osage County | 3 |
| Osborne County | 1 |
| Ottawa County | 1 |
| Pawnee County | 1 |
| Phillips County | 2 |
| Pottawatomie County | 1 |
| Reno County | 6 |
| Republic County | 3 |
| Rice County | 3 |
| Riley | 11 |
| Rooks County | 1 |
| Russell County | 4 |
| Saline County | 4 |
| Sedgwick County— | |
| Wichita (R. D.) | 34 |
| Seward County | 3 |
| Shawnee County— | |
| Topeka (R. D.) | 23 |
| Sheridan County | 2 |
| Smith County | 3 |
| Sumner County | 11 |
| Washington County | 3 |
| Wilson County | 9 |
| Woodson County | 1 |
| Wyandotte County— | |
| Kansas City | 15 |
| Piper | 1 |
| Rosedale | 1 |
| Wolcott | 1 |
| Total | 525 |
| Ohio (Sept. 1-30): | |
| Adams County | 2 |
| Allen County | 12 |
| Ashland County | 6 |
| Ashtabula County | 3 |
| Athens County | 20 |
| Auglaize County | 7 |
| Belmont County | 33 |
| Brown County | 7 |
| Butler County | 2 |
| Carroll County | 6 |
| Champaign County | 3 |
| Clark County | 9 |
| Clermont County | 16 |
| Clinton County | 4 |
| Columbiana County | 6 |
| Coshocton County | 4 |
| Crawford County | 3 |
| Cuyahoga County | 45 |
| Darke County | 8 |
| Defiance County | 8 |
| Delaware County | 4 |
| Erie County | 3 |
| Fairfield County | 9 |

## TYPHOID FEVER—Continued.

### State Reports for August and September, 1917—Continued.

| Place. | New cases reported. |
|---|---|
| Ohio (Sept. 1-30)—Continued. | |
| Fayette County | 6 |
| Franklin County | 20 |
| Fulton County | 8 |
| Gallia County | 1 |
| Geauga County | 1 |
| Guernsey County | 16 |
| Hamilton County | 19 |
| Hancock County | 4 |
| Hardin County | 3 |
| Highland County | 12 |
| Hocking County | 9 |
| Jackson County | 3 |
| Jefferson County | 9 |
| Knox County | 5 |
| Lawrence County | 4 |
| Licking County | 15 |
| Logan County | 6 |
| Lorain County | 3 |
| Lucas County | 22 |
| Madison County | 5 |
| Mahoning County | 11 |
| Marion County | 4 |
| Medina County | 5 |
| Mercer County | 5 |
| Miami County | 6 |
| Monroe County | 1 |
| Montgomery County | 26 |
| Morrow County | 2 |
| Muskingum County | 6 |
| Noble County | 1 |
| Ottawa County | 1 |
| Paulding County | 2 |
| Perry County | 2 |
| Pickaway County | 5 |
| Pike County | 3 |
| Portage County | 7 |
| Putnam County | 2 |
| Richland County | 8 |
| Ross County | 15 |
| Sandusky County | 3 |
| Scioto County | 14 |
| Seneca County | 2 |
| Shelby County | 10 |
| Stark County | 14 |
| Summit County | 37 |
| Trumbull County | 5 |
| Tuscarawas County | 10 |
| Union County | 1 |
| Van Wert County | 1 |
| Warren County | 8 |
| Wayne County | 5 |
| Williams County | 2 |
| Wood County | 10 |
| Wyandot County | 3 |
| Total | 628 |
| Pennsylvania (Sept. 1-30): | |
| Adams County | 13 |
| Allegheny County | 125 |
| Armstrong County | 19 |
| Beaver County | 18 |
| Bedford County | 20 |
| Berks County | 13 |
| Blair County | 38 |
| Bradford County | 10 |
| Bucks County | 18 |
| Butler County | 6 |
| Cambria County | 45 |
| Carbon County | 1 |
| Center County | 9 |
| Chester County | 27 |
| Clarion County | 7 |
| Clearfield County | 21 |
| Clinton County | 1 |
| Columbia County | 7 |

| Place. | New cases reported. |
|---|---|
| Pennsylvania (Sept. 1-30)—Continued. | |
| Crawford County | 3 |
| Cumberland County | 1 |
| Dauphin County | 13 |
| Delaware County | 9 |
| Erie County | 25 |
| Fayette County | 31 |
| Franklin County | 23 |
| Fulton County | 5 |
| Greene County | 4 |
| Huntingdon County | 21 |
| Indiana County | 6 |
| Jefferson County | 7 |
| Juniata County | 2 |
| Lackawanna County | 4 |
| Lancaster County | 68 |
| Lawrence County | 10 |
| Lebanon County | 13 |
| Lehigh County | 18 |
| Luzerne County | 10 |
| Lycoming County | 8 |
| McKean County | 2 |
| Mercer County | 10 |
| Mifflin County | 5 |
| Montgomery County | 32 |
| Montour County | 11 |
| Northampton County | 18 |
| Northumberland County | 7 |
| Perry County | 2 |
| Philadelphia County | 105 |
| Potter County | 2 |
| Schuylkill County | 15 |
| Snyder County | 3 |
| Somerset County | 32 |
| Susquehanna County | 1 |
| Tioga County | 8 |
| Union County | 1 |
| Venango County | 4 |
| Warren County | 1 |
| Washington County | 20 |
| Wayne County | 1 |
| Westmoreland County | 21 |
| York County | 27 |
| Total | 1,007 |
| West Virginia (Sept. 1-30): | |
| Barbour County | 5 |
| Berkeley County | 8 |
| Brooke County | 6 |
| Cabell County | 13 |
| Doddridge County | 5 |
| Fayette County | 35 |
| Gilmer County | 1 |
| Grant County | 12 |
| Greenbrier County | 4 |
| Hancock County | 8 |
| Jackson County | 1 |
| Jefferson County | 5 |
| Kanawha County | 5 |
| Charleston | 17 |
| Lincoln County | 2 |
| McDowell County | 9 |
| Marshall County | 2 |
| Marion County | 7 |
| Mason County | 2 |
| Mercer County | 6 |
| Princeton | 38 |
| Mineral County | 13 |
| Mingo County | 9 |
| Monongalia County | 17 |
| Morgan County | 4 |
| Ohio County— | |
| Wheeling | 16 |
| Pendleton County | 6 |

## TYPHOID FEVER—Continued.

### State Reports for August and September, 1917—Continued.

| Place. | New cases reported. | Place. | New cases reported. |
|---|---|---|---|
| West Virginia (Sept. 1-30)—Continued. | | West Virginia (Sept. 1-30)—Continued. | |
| Pocahontas County | 11 | Tucker County | 2 |
| Preston County | 2 | Tyler County | 2 |
| Raleigh County | 8 | Upshur County | 3 |
| Roane County | 6 | Wood County | 2 |
| Summers County | 1 | | |
| Taylor County | 1 | Total | 294 |

### City Reports for Week Ended Oct. 6, 1917.

| Place. | Cases. | Deaths. | Place. | Cases. | Deaths. |
|---|---|---|---|---|---|
| Alton, Ill. | 4 | | Medford, Mass. | 4 | |
| Ann Arbor, Mich. | 2 | | Memphis, Tenn. | 9 | 1 |
| Atlantic City, N. J. | 2 | | Milwaukee, Wis. | 5 | |
| Baltimore, Md. | 26 | 4 | Minneapolis, Minn. | 7 | |
| Birmingham, Ala. | 26 | 3 | Nashville, Tenn. | 7 | |
| Boston, Mass. | 10 | | Newark, N. J. | 2 | |
| Bridgeport, Conn. | 1 | 2 | New Bedford, Mass. | 3 | |
| Buffalo, N. Y. | 6 | | New Haven, Conn. | 2 | |
| Cambridge, Mass. | 1 | | New London, Conn. | 2 | |
| Camden, N. J. | 1 | | New Orleans, La. | 10 | 1 |
| Canton, Ohio. | 1 | | New York, N. Y. | 48 | 9 |
| Chelsea, Mass. | | 1 | Niagara Falls, N. Y. | 2 | |
| Chicago, Ill. | 15 | 3 | Norfolk, Va. | 6 | |
| Cincinnati, Ohio. | 9 | | Oakland, Cal. | 1 | |
| Cleveland, Ohio. | 9 | 1 | Oklahoma City, Okla. | 2 | 1 |
| Clinton, Mass. | 1 | | Perth Amboy, N. J. | 1 | |
| Columbus, Ohio. | 2 | 2 | Philadelphia, Pa. | 39 | 5 |
| Concord, N. H. | 1 | | Pittsburgh, Pa. | 12 | 1 |
| Covington, Ky. | | 1 | Plainfield, N. J. | | 1 |
| Cumberland, Md. | 2 | | Portland, Oreg. | 5 | |
| Dayton, Ohio. | 2 | | Providence, R. I. | 4 | |
| Denver, Colo. | 2 | 2 | Reading, Pa. | 5 | |
| Detroit, Mich. | 11 | 2 | Richmond, Va. | 1 | |
| East Chicago, Ind. | 1 | | Roanoke, Va. | 3 | |
| Erie, Pa. | 4 | | Sacramento, Cal. | 2 | |
| Evansville, Ind. | 2 | | Saginaw, Mich. | 1 | |
| Fall River, Mass. | 9 | 1 | St. Joseph, Mo. | 1 | |
| Flint, Mich. | 6 | | St. Louis, Mo. | 17 | 1 |
| Fort Wayne, Ind. | 1 | | Salt Lake City, Utah | 11 | 3 |
| Fort Worth, Tex. | 2 | | San Diego, Cal. | 3 | |
| Galveston, Tex. | 2 | 1 | San Francisco, Cal. | 6 | |
| Grand Rapids, Mich. | 5 | | Savannah, Ga. | | 1 |
| Harrisburg, Pa. | 1 | | Seattle, Wash. | 3 | |
| Hartford, Conn. | 4 | 1 | Somerville, Mass. | | 3 |
| Indianapolis, Ind. | 7 | | South Bend, Ind. | 14 | |
| Jersey City, N. J. | 3 | | Springfield, Ill. | 2 | |
| Johnstown, Pa. | 5 | | Springfield, Mass. | | 5 |
| Kansas City, Kans. | 1 | | Stockton, Cal. | 2 | |
| Kansas City, Mo. | 5 | 2 | Syracuse, N. Y. | 4 | 2 |
| Kenosha, Wis. | 1 | | Toledo, Ohio. | 1 | |
| Knoxville, Tenn. | 2 | | Topeka, Kans. | 5 | |
| Kokomo, Ind. | 3 | | Troy, N. Y. | 9 | 1 |
| Leavenworth, Kans. | 2 | 1 | Washington, D. C. | 9 | |
| Lexington, Ky. | 1 | 1 | Washington, Pa. | 1 | |
| Long Branch, N. J. | 1 | | Wheeling, W. Va. | 3 | |
| Lorain, Ohio. | 2 | | Wichita, Kans. | 5 | |
| Los Angeles, Cal. | 10 | 1 | Williamsport, Pa. | 1 | |
| Lowell, Mass. | 2 | | Winston-Salem, N. C. | 2 | 2 |
| Lynchburg, Va. | 3 | | Worcester, Mass. | 1 | |
| Malden, Mass. | 1 | | York, Pa. | 2 | |

## TYPHUS FEVER.

### City Reports for Week Ended Oct. 6, 1917.

During the week ended October 6, 1917, one case of typhus fever was reported in New York City.

## DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

### State Reports for September, 1917.

| State. | Cases reported. | | | State. | Cases reported. | | |
|---|---|---|---|---|---|---|---|
| | Diphtheria. | Measles. | Scarlet fever. | | Diphtheria. | Measles. | Scarlet fever. |
| Kansas | 75 | 50 | 79 | Pennsylvania | 1,558 | 239 | 410 |
| Ohio | 771 | 80 | 343 | West Virginia | 180 | 8 | 60 |

### Oregon Report for August, 1917.

During the month of August, 1917, 13 cases of diphtheria, 9 cases of measles, and 22 cases of scarlet fever were reported in the State of Oregon.

### City Reports for Week Ended Oct. 6, 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 | 189 | 23 | 2 | 9 | ..... | 7 | ..... | 36 | 20 |
| Boston, Mass | 756,476 | 185 | 72 | 1 | 23 | ..... | 16 | ..... | 52 | 21 |
| Chicago, Ill | 2,497,722 | 685 | 230 | 24 | 15 | 1 | 88 | 2 | 322 | 62 |
| Cleveland, Ohio | 674,073 | 175 | 56 | 4 | 1 | ..... | 7 | ..... | 31 | ..... |
| Detroit, Mich | 571,784 | 178 | 87 | 9 | 3 | 2 | 29 | ..... | 25 | 13 |
| Los Angeles, Cal | 503,812 | 114 | 11 | ..... | 1 | ..... | 8 | ..... | 33 | 14 |
| New York, N. Y | 5,602,841 | 1,342 | 254 | 23 | 62 | 1 | 70 | ..... | 323 | 175 |
| Philadelphia, Pa | 1,709,518 | 405 | 58 | 7 | 7 | ..... | 17 | 1 | 77 | 59 |
| Pittsburgh, Pa | 579,090 | 194 | 48 | 6 | 2 | ..... | 4 | ..... | 28 | 13 |
| St. Louis, Mo | 757,309 | 188 | 74 | 5 | 2 | ..... | 15 | ..... | 34 | 18 |
| From 300,000 to 500,000 inhabitants: | | | | | | | | | | |
| Buffalo, N. Y | 468,558 | 137 | 14 | 2 | ..... | ..... | 13 | 1 | 19 | 16 |
| Cincinnati, Ohio | 410,476 | 106 | 21 | ..... | 1 | ..... | 9 | ..... | 24 | 13 |
| Jersey City, N. J | 306,345 | 64 | 11 | 2 | 4 | ..... | 7 | ..... | 27 | 6 |
| Milwaukee, Wis | 436,535 | 80 | 21 | 5 | 12 | ..... | 28 | ..... | 16 | 6 |
| Minneapolis, Minn | 363,454 | ..... | 44 | ..... | 4 | ..... | 3 | ..... | ..... | ..... |
| Newark, N. J | 408,894 | 111 | 13 | 1 | 11 | ..... | 10 | ..... | 29 | 16 |
| New Orleans, La | 371,747 | 109 | 27 | ..... | ..... | ..... | 2 | ..... | 22 | 16 |
| San Francisco, Cal | 463,516 | 119 | 10 | ..... | 9 | ..... | 3 | ..... | 24 | 8 |
| Seattle, Wash | 348,639 | 57 | 7 | 2 | 4 | ..... | 5 | ..... | ..... | 2 |
| Washington, D. C | 363,980 | 116 | 85 | 1 | 1 | ..... | 11 | ..... | 23 | 17 |
| From 200,000 to 300,000 inhabitants: | | | | | | | | | | |
| Columbus, Ohio | 214,878 | 59 | 8 | ..... | ..... | ..... | 20 | ..... | 10 | 4 |
| Denver, Colo | 260,800 | 50 | 4 | 1 | 3 | ..... | 2 | ..... | ..... | 9 |
| Indianapolis, Ind | 271,708 | ..... | 141 | ..... | 4 | ..... | 8 | ..... | 9 | ..... |
| Kansas City, Mo | 297,847 | 66 | 10 | ..... | 1 | ..... | 1 | ..... | 3 | 13 |
| Portland, Oreg | 295,463 | 40 | 5 | 1 | 1 | ..... | 4 | ..... | 5 | 6 |
| Providence, R. I | 254,960 | 54 | 11 | 2 | ..... | ..... | 3 | ..... | ..... | 6 |

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

### City Reports for Week Ended Oct. 6, 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 100,000 to 200,000 inhabitants:** | | | | | | | | | | |
| Birmingham, Ala | 181,762 | 53 | 4 | ..... | 14 | ..... | 2 | ..... | 6 | 4 |
| Bridgeport, Conn | 121,579 | 39 | 3 | ..... | 1 | ..... | 2 | ..... | 3 | 4 |
| Cambridge, Mass | 112,981 | 29 | 6 | ..... | ..... | ..... | ..... | ..... | 2 | 3 |
| Camden, N. J | 106,233 | ..... | 4 | ..... | 5 | ..... | ..... | ..... | 2 | ..... |
| Dayton, Ohio | 127,224 | 34 | 7 | 1 | ..... | ..... | 2 | ..... | 6 | 3 |
| Fall River, Mass | 128,366 | 32 | 2 | 1 | ..... | ..... | 1 | ..... | 9 | 2 |
| Fort Worth, Tex | 104,562 | 12 | 3 | ..... | ..... | ..... | 4 | ..... | ..... | ..... |
| Grand Rapids, Mich | 128,291 | 24 | 4 | ..... | 1 | ..... | 2 | ..... | 3 | ..... |
| Hartford, Conn | 110,909 | 40 | 8 | 1 | 2 | ..... | 4 | ..... | 6 | 1 |
| Lowell, Mass | 113,245 | 37 | 6 | ..... | 1 | ..... | ..... | ..... | 3 | 2 |
| Lynn, Mass | 102,425 | 16 | 3 | 1 | ..... | ..... | ..... | ..... | 5 | 3 |
| Memphis, Tenn | 148,995 | ..... | 21 | 2 | 2 | ..... | 3 | ..... | 18 | 7 |
| Nashville, Tenn | 117,057 | 25 | 2 | ..... | ..... | ..... | 4 | ..... | 4 | 4 |
| New Bedford, Mass | 118,158 | 33 | 3 | ..... | 7 | ..... | 3 | ..... | 8 | 4 |
| New Haven, Conn | 149,685 | ..... | 2 | ..... | 1 | ..... | 1 | ..... | 3 | 2 |
| Oakland, Cal | 198,604 | 57 | 2 | ..... | 4 | ..... | 6 | ..... | ..... | 5 |
| Omaha, Nebr | 165,470 | 27 | 4 | 1 | 1 | ..... | 2 | ..... | ..... | 2 |
| Reading, Pa | 109,381 | 19 | 6 | 1 | ..... | ..... | 1 | ..... | 1 | ..... |
| Richmond, Va | 156,687 | 39 | 14 | ..... | 1 | ..... | 3 | ..... | 9 | 5 |
| Salt Lake City, Utah | 117,399 | 26 | 4 | ..... | 6 | ..... | 6 | ..... | ..... | ..... |
| Springfield, Mass | 105,942 | 29 | 12 | 2 | 2 | ..... | 8 | ..... | 3 | 4 |
| Syracuse, N. Y | 155,624 | 35 | 13 | ..... | 1 | ..... | 4 | ..... | 6 | 1 |
| Toledo, Ohio | 191,554 | 72 | 7 | ..... | 2 | ..... | 3 | ..... | 1 | 2 |
| Trenton, N. J | 111,593 | 27 | 11 | ..... | ..... | ..... | 1 | ..... | 6 | 2 |
| Worcester, Mass | 163,314 | 47 | 2 | 3 | ..... | ..... | 3 | ..... | 7 | 3 |
| **From 50,000 to 100,000 inhabitants:** | | | | | | | | | | |
| Atlantic City, N. J | 57,660 | ..... | 1 | ..... | 1 | ..... | ..... | ..... | 15 | ..... |
| Bayonne, N. J | 69,893 | ..... | 2 | ..... | ..... | ..... | 2 | ..... | 2 | ..... |
| Berkeley, Cal | 57,653 | 4 | 2 | 1 | 4 | ..... | ..... | ..... | 3 | ..... |
| Binghamton, N. Y | 53,973 | 16 | 2 | ..... | ..... | ..... | 2 | ..... | 6 | 3 |
| Canton, Ohio | 60,852 | 18 | 3 | ..... | ..... | ..... | 1 | ..... | ..... | 1 |
| Charleston, S. C | 60,734 | 30 | 7 | ..... | ..... | ..... | ..... | ..... | ..... | 5 |
| Covington, Ky | 57,144 | 16 | 9 | ..... | 1 | ..... | 1 | ..... | 2 | 1 |
| Duluth, Minn | 94,495 | 15 | 15 | ..... | 2 | ..... | 5 | ..... | 3 | 1 |
| El Paso, Tex | 63,705 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 8 |
| Erie, Pa | 75,195 | ..... | 7 | ..... | ..... | ..... | 2 | ..... | 5 | 28 |
| Evansville, Ind | 76,078 | 22 | ..... | ..... | ..... | ..... | 4 | ..... | ..... | 3 |
| Flint, Mich | 54,772 | ..... | 3 | ..... | ..... | ..... | 2 | ..... | ..... | 3 |
| Fort Wayne, Ind | 76,183 | 20 | 8 | 2 | ..... | ..... | ..... | ..... | ..... | ..... |
| Harrisburg, Pa | 72,015 | 22 | 4 | ..... | ..... | ..... | 7 | ..... | 3 | ..... |
| Hoboken, N. J | 77,214 | 31 | ..... | ..... | ..... | ..... | 1 | ..... | 2 | 2 |
| Johnstown, Pa | 68,529 | 13 | 1 | ..... | ..... | ..... | 2 | ..... | 2 | 1 |
| Kansas City, Kans | 99,437 | ..... | 6 | ..... | ..... | ..... | ..... | ..... | 2 | ..... |
| Malden, Mass | 51,155 | 10 | 6 | 1 | ..... | ..... | 1 | ..... | ..... | 1 |
| Manchester, N. H | 78,283 | 26 | 1 | ..... | 6 | ..... | ..... | ..... | ..... | ..... |
| Mobile, Ala | 58,221 | 29 | 4 | ..... | 1 | ..... | ..... | ..... | 1 | 3 |
| Norfolk, Va | 89,612 | ..... | 3 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Oklahoma City, Okla | 92,943 | 17 | 2 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Passaic, N. J | 71,744 | 10 | 15 | 1 | 1 | ..... | ..... | ..... | 1 | ..... |
| Rockford, Ill | 55,185 | 22 | 1 | ..... | ..... | ..... | ..... | ..... | 4 | ..... |
| Sacramento, Cal | 66,895 | 16 | 2 | 1 | ..... | ..... | 4 | ..... | ..... | 1 |
| Saginaw, Mich | 55,642 | 9 | 1 | ..... | ..... | ..... | 3 | ..... | ..... | ..... |
| St. Joseph, Mo | 85,236 | 17 | 4 | ..... | ..... | ..... | ..... | ..... | 2 | 3 |
| San Diego, Cal | 53,339 | 17 | ..... | ..... | ..... | ..... | 2 | ..... | 7 | 4 |
| Savannah, Ga | 68,805 | 37 | 5 | 1 | ..... | ..... | ..... | ..... | ..... | 6 |
| Schenectady, N. Y | 99,519 | 20 | 1 | 1 | ..... | ..... | ..... | ..... | 6 | ..... |
| Sioux City, Iowa | 57,078 | ..... | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Somerville, Mass | 87,039 | 15 | 5 | 1 | 1 | ..... | 3 | ..... | 2 | 3 |
| South Bend, Ind | 68,946 | 11 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Springfield, Ill | 61,120 | ..... | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Springfield, Ohio | 51,550 | 17 | 4 | ..... | ..... | ..... | 1 | ..... | 4 | 3 |
| Terre Haute, Ind | 66,083 | 17 | 5 | ..... | ..... | ..... | ..... | ..... | 1 | 2 |
| Troy, N. Y | 77,916 | ..... | 1 | ..... | 3 | ..... | ..... | ..... | 7 | 3 |
| Wichita, Kans | 70,722 | ..... | 1 | ..... | ..... | ..... | 4 | ..... | 11 | 1 |
| Wilkes-Barre, Pa | 76,776 | 18 | 8 | ..... | ..... | ..... | 1 | ..... | 3 | ..... |
| Wilmington, Del | 94,265 | 43 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 6 |
| York, Pa | 51,656 | ..... | 3 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |

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

### City Reports for Week Ended Oct. 6, 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:** | | | | | | | | | | |
| Alameda, Cal. | 27,732 | 10 | | | 2 | | 11 | | | 3 |
| Auburn, N. Y. | 37,385 | 15 | 5 | 2 | 2 | | | | 2 | |
| Austin, Tex. | 34,814 | 13 | | | | | | | | 2 |
| Bellingham, Wash. | 32,985 | 3 | | | | | | | | |
| Brookline, Mass. | 32,730 | 8 | | | | | 2 | | 1 | |
| Butler, Pa. | 27,632 | 4 | 9 | | | | | | | |
| Butte, Mont. | 43,425 | | | | 1 | | 5 | | 1 | |
| Chelsea, Mass. | 46,192 | 12 | 2 | | 2 | | 2 | | 3 | |
| Chicopee, Mass. | 29,319 | 5 | | | | | | | 4 | 1 |
| Cumberland, Md. | 26,074 | 7 | | | | | | | 2 | 1 |
| Danville, Ill. | 32,261 | 7 | | | | | 2 | | 1 | 1 |
| Davenport, Iowa. | 48,811 | | 2 | | | | | | | |
| Dubuque, Iowa. | 39,873 | | 2 | | | | 2 | | | 4 |
| East Chicago, Ind. | 28,743 | 12 | 4 | | 1 | | | | | 1 |
| East Orange, N. J. | 42,458 | 11 | | | 1 | | | | 1 | 1 |
| Elgin, Ill. | 28,203 | 6 | | | | | | | 4 | |
| Everett, Mass. | 39,233 | 4 | | | | | | | | |
| Everett, Wash. | 35,486 | 3 | | | | | | | | 1 |
| Fitchburg, Mass. | 41,781 | 14 | 6 | | | | | | 1 | |
| Galveston, Tex. | 41,863 | 13 | 1 | 1 | | | | | 1 | 1 |
| Green Bay, Wis. | 29,353 | 8 | | | | | 1 | | | |
| Haverhill, Mass. | 48,477 | 7 | 2 | | | | 3 | | | |
| Jackson, Mich. | 35,363 | 12 | | | 1 | | 2 | | 3 | |
| Kalamazoo, Mich. | 48,886 | 17 | 7 | 1 | 7 | | | | | 1 |
| Kenosha, Wis. | 31,576 | 4 | 1 | | | | 6 | | | |
| Knoxville, Tenn. | 38,676 | | 4 | | 3 | | 15 | | 2 | |
| La Crosse, Wis. | 31,677 | 11 | 6 | | | | | | | |
| Lexington, Ky. | 41,097 | 16 | 7 | | 8 | | | | | 2 |
| Lima, Ohio. | 35,384 | 9 | 6 | 1 | | | 3 | | | |
| Lincoln, Nebr. | 46,515 | 11 | | | | | | | | |
| Long Beach, Cal. | 27,587 | 13 | | | | | | | | 1 |
| Lorain, Ohio. | 36,964 | | 6 | | | | | | 2 | |
| Lynchburg, Va. | 32,940 | 10 | | | | | | | | 1 |
| Madison, Wis. | 30,699 | | 1 | | | | 1 | | | |
| Medford, Mass. | 26,234 | 5 | | | | | 3 | | 1 | |
| Montclair, N. J. | 26,318 | 3 | | | | | | | 2 | 1 |
| Nashua, N. H. | 27,327 | 6 | 2 | | | | | | | 1 |
| Newburgh, N. Y. | 29,603 | 10 | | | 3 | | | | | 2 |
| New Castle, Pa. | 41,133 | | 1 | | | | | | | |
| Newport, Ky. | 31,927 | 8 | | | | | 1 | | 1 | |
| Newport, R. I. | 30,108 | 2 | 2 | | | | | | | |
| Newton, Mass. | 43,715 | 9 | 4 | | | | | | 1 | 2 |
| Niagara Falls, N. Y. | 37,353 | 13 | | | 1 | | | | 1 | 1 |
| Ogden, Utah. | 31,404 | 6 | 2 | 1 | | | 6 | | | |
| Orange, N. J. | 33,080 | 10 | 1 | | | | | | 1 | 2 |
| Pasadena, Cal. | 46,450 | 6 | | | | | | | 1 | |
| Perth Amboy, N. J. | 41,185 | | | | | | 2 | | 2 | |
| Pittsfield, Mass. | 38,629 | 12 | | | 1 | | 1 | | | |
| Portsmouth, Va. | 39,651 | 14 | 2 | | | | 2 | | | 4 |
| Quincy, Ill. | 36,789 | 9 | 1 | | | | | | 1 | |
| Quincy, Mass. | 38,136 | 6 | 1 | | 5 | | | | 3 | |
| Roanoke, Va. | 43,284 | 11 | 3 | | 2 | | | | 2 | 1 |
| Rock Island, Ill. | 28,926 | 8 | | | 1 | | | | 2 | |
| San Jose, Cal. | 38,902 | | | | | | 1 | | 4 | |
| Steubenville, Ohio. | 27,445 | 5 | | | | | | | | |
| Stockton, Cal. | 35,358 | | | | | | | | 1 | |
| Superior, Wis. | 46,226 | 6 | | | | | | | | 1 |
| Taunton, Mass. | 36,288 | 13 | | | | | | | | 1 |
| Topeka, Kans. | 48,726 | 6 | 1 | | | | 2 | | | |
| Waltham, Mass. | 30,570 | 4 | 8 | | | | 1 | | | |
| Watertown, N. Y. | 29,894 | | | | 2 | | | | 3 | |
| Wheeling, W. Va. | 43,377 | 11 | 3 | | | | | | | 1 |
| Williamsport, Pa. | 33,803 | | 8 | | | | | | 1 | |
| Wilmington, N. C. | 29,892 | 9 | | | | | 1 | | | |
| Winston-Salem, N. C. | 31,155 | 15 | | | | | 1 | | 2 | |
| Zanesville, Ohio. | 30,863 | 12 | | | | | | | | 2 |

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

### City Reports for Week Ended Oct. 6, 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 10,000 to 25,000 inhabitants: | | | | | | | | | | |
| Alton, Ill. | 22,874 | 8 | 2 | | | | | | | |
| Ann Arbor, Mich. | 15,010 | 14 | 3 | | | | 1 | | | |
| Berlin, N. H. | 13,599 | 2 | | | | | | | | |
| Braddock, Pa. | 21,685 | | 8 | | | | 1 | | 1 | |
| Cairo, Ill. | 15,794 | 7 | | | | | | | | 1 |
| Clinton, Mass. | [1] 13,075 | 2 | | | | | | | 1 | |
| Concord, N. H. | 22,669 | 7 | 6 | 1 | | | 1 | | 1 | 1 |
| Galesburg, Ill. | 24,276 | 4 | 1 | | | | | | | |
| Harrison, N. J. | 16,950 | | 3 | | | | | | 1 | |
| Kearny, N. J. | 23,539 | 7 | | | 8 | | | | | |
| Kokomo, Ind. | 20,930 | 4 | 4 | | | | | | 1 | 2 |
| Leavenworth, Kans. | 19,363 | 5 | 1 | | | | | | | |
| Long Branch, N. J. | 15,395 | 4 | 4 | | | | | | | 2 |
| Marinette, Wis. | [1] 14,610 | 1 | | | | | | | | |
| Melrose, Mass. | 17,445 | 8 | 2 | | | | 1 | | | |
| Morristown, N. J. | 13,284 | 4 | | | | | | | | |
| Nanticoke, Pa. | 23,126 | 2 | 3 | | | | | | 1 | |
| Newburyport, Mass. | 15,243 | 3 | 2 | | 1 | | 1 | | 1 | |
| New London, Conn. | 20,985 | 4 | 1 | | | | | | | |
| North Adams, Mass. | [1] 22,019 | | 1 | | | | 1 | | 1 | |
| Northampton, Mass. | 19,926 | 6 | | | | | 7 | | | |
| Plainfield, N. J. | 23,805 | 6 | 2 | 1 | | | | | | 1 |
| Pontiac, Mich. | 17,524 | 3 | | | | | | | | 2 |
| Portsmouth, N. H. | 11,666 | | | | | | 6 | | | |
| Rocky Mount, N. C. | 12,067 | 4 | | | | | | | 1 | |
| Rutland, Vt. | 14,831 | 2 | | | | | | | | |
| Sandusky, Ohio. | 20,193 | 12 | | | | | | | | |
| Saratoga Springs, N. Y. | 13,821 | 9 | | | | | | | | 1 |
| Steelton, Pa. | 15,548 | 3 | 6 | | | | 1 | | 1 | |
| Washington, Pa. | 21,618 | | | | | | 3 | | | |
| Wilkinsburg, Pa. | 23,228 | 9 | | | | | 1 | | 1 | |

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

# FOREIGN.

## CUBA.

### Communicable Diseases—Habana.

Communicable diseases have been notified at Habana as follows:

| Disease. | Sept. 11-20, 1917. | | Sept 21-30, 1917. | | Remaining under treatment Sept. 30, 1917. |
|---|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. | |
| Cerebrospinal meningitis | | 1 | | | |
| Diphtheria | 3 | | 5 | 1 | 1 |
| Leprosy | | | | | 10 |
| Malaria | 12 | | 5 | | 15 |
| Measles | 3 | | 1 | 1 | |
| Paratyphoid fever | 2 | | | | 1 |
| Scarlet fever | 2 | | | | 2 |
| Tetanus in the newborn | 1 | 1 | | | |
| Typhoid fever | 28 | 6 | 28 | 6 | 88 |
| Varicella | | | 2 | | 2 |

### Typhoid Fever—Habana—Comparative Statement, 1913-1917.

An increase in typhoid fever was noted at Habana during the third quarter of the current year. The following comparative statement shows the prevalence of the disease at Habana during the three elapsed quarters of the year 1917 and the four years preceding:

| Year. | Cases reported. | | | Year. | Cases reported. | | |
|---|---|---|---|---|---|---|---|
| | First quarter. | Second quarter. | Third quarter. | | First quarter. | Second quarter. | Third quarter. |
| 1913 | 99 | 111 | 135 | 1916 | 83 | 100 | 111 |
| 1914 | 72 | 86 | 163 | 1917 | 94 | 95 | 238 |
| 1915 | 148 | 149 | 123 | | | | |

## ECUADOR.

### Plague—Yellow Fever.

At Guayaquil, Ecuador, during the month of July, 1917, 2 cases of plague were notified and during the month of August, 1917, 2 cases.

Yellow fever was reported present in Ecuador during the months of July and August, 1917, as follows: At Guayaquil, month of July, 4 cases; month of August, 1917, 3 cases. At Naranjito, in July and August, each 1 case.

## JAPAN.

### Cholera—Plague—January-July, 1917.

During the period January to July, 1917, 391 cases of cholera were notified in Japan. The greatest number of cases, namely, 106, occurred in Yamaguchi Ken. The cases were distributed according to provinces and districts as follows:

| | | | |
|---|---|---|---|
| Chiba Ken | 1 | Nagasaki Ken | 62 |
| Ehime Ken | 18 | Ohita Ken | 3 |
| Fukuoka Ken | 93 | Okayama Ken | 4 |
| Hiroshima Ken | 7 | Osaka Fu | 15 |
| Hyogo Ken | 7 | Saga Ken | 27 |
| Kagawa Ken | 7 | Shimane Ken | 35 |
| Kochi Ken | 1 | Tokyo Fu | 4 |
| Kumamoto Ken | 1 | Yamaguchi Ken | 106 |

On September 12, 1917, an outbreak of cholera, with 252 cases, was reported in Japan. The greatest incidence of the disease was in Toyama Ken, with 197 cases. The 252 cases were distributed according to provinces and districts as follows: Gumma Ken, 9 cases; Ishikawa Ken, 38; Kyoto Fu, 1 case; Niigata Ken, 5; Toyama Ken, 197; and at Tokyo, 2 cases.

*Plague.*—During the period January–July, 1917, 25 cases of plague were notified in Japan, the distribution of the cases being as follows: Aichi Ken, 22 cases; Miye Ken, 3 cases.

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

### Reports Received During the Week Ended Oct. 26, 1917.[1]

#### CHOLERA.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| India: | | | | |
| Mandalay | July 29–Aug. 11 | | 1 | |
| Prome | do | | 1 | |
| Japan | | | | Jan.–July, 1917: Cases, 391. Occurring in 16 provinces and districts. Sept. 12, 1917: Cases, 252. In 5 provinces and districts. |
| Tokyo | Sept. 12 | 2 | | |
| Java: | | | | |
| West Java | | | | Aug. 7–23, 1917: Cases, 71; deaths, 44. |
| Batavia | Aug. 2–23 | 5 | 1 | |
| Philippine Islands: | | | | |
| Manila | Sept. 2–8 | 1 | | Not previously reported. |
| Provinces | | | | Sept. 2–8, 1917: Cases, 268; deaths 170. |
| Bohol | Sept. 2–8 | 3 | 3 | |
| Cebu | do | 10 | 5 | |
| Iloilo | do | 10 | 7 | |
| Leyte | do | 54 | 37 | |
| Mindanao | do | 183 | 111 | |
| Negros Oriental | do | 8 | 7 | |

[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 Oct. 26, 1917—Continued.

#### PLAGUE.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Ecuador: | | | | |
| Guayaquil | July 1–Aug. 31 | 4 | | |
| India: | | | | |
| Bassein | July 29–Aug. 11 | | 17 | |
| Mandalay | do | | 2 | |
| Moulmein | do | | 20 | |
| Pegu | do | | 3 | |
| Toungoo | do | | 5 | |
| Japan: | | | | |
| Aichi Ken | Jan.–July | 22 | | |
| Miye Ken | do | 3 | | |
| Java: | | | | |
| East Java | July 30–Aug. 5 | 3 | 3 | |
| Straits Settlements: | | | | |
| Singapore | Aug. 5–18 | 3 | 2 | |

#### SMALLPOX.

| | | | | |
|---|---|---|---|---|
| Canada: | | | | |
| Ontario— | | | | |
| Windsor | Oct. 7–13 | 1 | | |
| China. | | | | |
| Chungking | Aug. 27–Sept. 2 | | | Present. |
| Ecuador: | | | | |
| Guayaquil | July 1–Aug. 31 | 7 | | |
| Egypt: | | | | |
| Cairo | Mar. 19–Apr. 8 | 61 | | |
| Japan | | | | Jan.–July, 1917: Cases, 4,974. In 37 provinces and districts. |
| Mexico: | | | | |
| Mexico City | Sept. 2–15 | 14 | | |
| Portugal: | | | | |
| Lisbon | Aug. 11–18 | 4 | | |
| Russia: | | | | |
| Archangel | June 18–July 15 | 5 | | |
| Riga | Apr. 1–30 | 3 | | |
| Spain: | | | | |
| Malaga | June 1–30 | | 14 | |

#### TYPHUS FEVER.

| | | | | |
|---|---|---|---|---|
| Egypt: | | | | |
| Cairo | Mar. 19–Apr. 8 | 92 | 36 | |
| Port Said | Mar. 19–25 | 1 | | |
| Java: | | | | |
| Mid-Java | July 23–Aug. 23 | 6 | | |
| West Java | | | | July 29–Aug. 23, 1917: Cases, 36; deaths, 9. |
| Batavia | Aug. 16–23 | 24 | 6 | |
| Mexico: | | | | |
| Mexico City | Sept. 2–15 | 174 | | |
| Russia: | | | | |
| Archangel | July 1–Aug. 14 | 12 | 6 | |
| Riga | Apr. 1–30 | 1 | | |
| Switzerland: | | | | |
| Basel | Aug. 18–Sept. 22 | 4 | | |
| Zurich | Sept. 16–22 | 1 | | |

#### YELLOW FEVER.

| | | | | |
|---|---|---|---|---|
| Ecuador: | | | | |
| Guayaquil | July 1–Aug. 31 | 7 | 1 | |
| Naranjito | do | 2 | 2 | |

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

### Reports Received from June 30 to Oct. 19, 1917.

#### CHOLERA.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| India: | | | | |
| Bassein | Apr. 1–May 5 | | 8 | |
| Bombay | June 24–30 | 1 | 1 | |
| Do | July 8–Aug. 4 | 13 | 7 | |
| Calcutta | Apr. 29–June 30 | | 347 | |
| Do | July 1–28 | | 14 | |
| Madras | Apr. 22–June 30 | 5 | 4 | |
| Do | July 1–Aug. 21 | 93 | 59 | |
| Mandalay | May 6–June 30 | | 2 | |
| Moulmein | May 13–June 2 | | 3 | |
| Pakokku | Apr. 20–May 5 | | 1 | |
| Pegu | May 27–June 30 | | 5 | |
| Do | July 1–7 | | 7 | |
| Rangoon | Apr. 21–June 30 | 31 | 17 | |
| Do | July 8–28 | 9 | 7 | |
| Indo-China: | | | | |
| Provinces | | | | Feb. 1–June 30, 1917: Cases, 1,237; deaths, 805. |
| Anam | Feb. 1–June 30 | 230 | 191 | |
| Cambodia | do | 79 | 51 | |
| Cochin-China | do | 878 | 543 | |
| Laos | June 1–30 | 1 | | |
| Tonkin | Feb. 1–June 30 | 36 | 21 | |
| Saigon | Apr. 23–May 27 | 163 | 108 | |
| 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. 2, 1917: Cases, 100; deaths, 52. |
| Batavia | Apr. 13–July 5 | 7 | 2 | |
| Do | July 6–Aug. 2 | 9 | 3 | |
| Persia: | | | | |
| Mazanderan Province— | | | | |
| Amir Kela | Feb. 3 | 1 | | |
| Barfourouche | Jan. 15–17 | 4 | | |
| Hamze Kela | Jan. 17 | 1 | | |
| Machidessar | Jan. 31 | 3 | | |
| Philippine Islands: | | | | |
| Manila | June 17–23 | 1 | | |
| Do | Aug. 19–25 | 2 | | |
| Provinces | | | | May 20–June 30, 1917: Cases, 795; deaths, 506. July 1–Aug. 4, 1917: Cases, 2,064; deaths, 1,271. Aug. 19–Sept. 1, 1917: Cases, 502; deaths, 294. |
| 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. 1 | 32 | 14 | |
| Capiz | June 3–30 | 62 | 40 | |
| Do | July 1–Aug. 4 | 64 | 45 | |
| Cebu | June 3–30 | 231 | 150 | |
| Do | July 1–Aug. 4 | 388 | 284 | |
| Do | Aug. 19–Sept. 1 | 41 | 28 | |
| Iloilo | July 1–Aug. 4 | 41 | 22 | |
| Leyte | June 10–30 | 14 | 5 | |
| Do | July 1–Aug. 4 | 334 | 223 | |
| Do | Aug. 19–Sept. 1 | 173 | 92 | |
| Misamis | July 8–Aug. 4 | 237 | 117 | |
| Mindanao | July 29–Aug. 4 | 12 | 11 | |
| Do | Aug. 19–Sept. 1 | 108 | 59 | |
| Negros Oriental | July 1–Aug. 4 | 276 | 177 | |
| Do | Aug. 19–Sept. 1 | 40 | 31 | |
| 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 | |

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

### Reports Received from June 30 to Oct. 19, 1917—Continued.

#### CHOLERA—Continued.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Philippine Islands—Continued. | | | | |
| Provinces—Continued. | | | | |
| 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 | |

#### PLAGUE.

| | | | | |
|---|---|---|---|---|
| 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. 8 | 5 | 1 | |
| 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. 1–31 | 33 | 18 | |
| Do | Apr. 1–30 | 9 | 4 | |
| Milagro | Mar. 1–31 | 1 | | |
| Do | Apr. 1–30 | 1 | 1 | |
| Nobol | Feb. 1–28 | 2 | | |
| Saltitre | do | 1 | | |
| Do | Mar. 1–31 | | 1 | |
| Taura | Feb. 1–28 | 3 | 2 | |
| Egypt | | | | Jan. 1–Aug. 2, 1917: Cases, 1,251; deaths, 696. |
| Alexandria | June 21–27 | 6 | 4 | |
| Do | July 31–Aug. 19 | 3 | 1 | |
| Port Said government | Apr. 30–May 19 | 4 | 3 | |
| Port said | June 25 | 1 | | |
| Do | July 28–29 | 1 | 1 | |
| Provinces— | | | | |
| Favoum | May 11–June 26 | 14 | 7 | |
| Galioubeh | June 28 | 1 | | |
| Girgeh | May 17 | | 1 | |
| Minieh | May 12–June 28 | 4 | 3 | |
| Do | July 29 | 1 | | |
| Siout | May 12 | 3 | 1 | |
| Suez government | Apr. 30–June 2 | 23 | 9 | |
| Suez | May 12–June 28 | 38 | 23 | |
| Great Britain: | | | | |
| Gravesend | Aug. 13–24 | 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, 43,922; deaths, 30,197. July 1–7, 1917: Cases, 1,870; deaths, 1,322. July 15–Aug. 4, 1917: Cases, 10,014: deaths, 7,821. |
| Bassein | Apr. 1–June 30 | | 54 | |
| Do | July 1–4 | | 6 | |
| Bombay | Apr. 22–June 30 | 486 | 397 | |
| Do | July 1–Aug. 11 | 231 | 188 | |
| Calcutta | Apr. 29–June 2 | | 38 | |
| Do | July 15–21 | | 1 | |
| Henzada | Apr. 1–June 30 | | 35 | |
| Karachi | Apr. 22–June 30 | 468 | 413 | |
| Do | June 28–July 28 | 11 | 8 | |

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

### Reports Received from June 30 to Oct. 19, 1917—Continued.

#### PLAGUE—Continued.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| India—Continued. | | | | |
| Madras Presidency | Apr. 22–June 30 | 301 | 250 | |
| Do | July 1–Aug. 21 | 721 | 509 | |
| Mandalay | Apr. 8–May 12 | | 9 | |
| Moulmein | Apr. 1–June 30 | | 74 | |
| Do | July 1–7 | | 16 | |
| Myingyan | Apr. 1–7 | | 1 | |
| Pegu | May 27–June 2 | | 2 | |
| Rangoon | Apr. 15–June 30 | 183 | 169 | |
| Do | July 1–Aug. 11 | 303 | 236 | |
| Toungoo | Apr. 8–14 | | 2 | |
| Indo-China: | | | | |
| Provinces | | | | Feb. 1–June 30, 1917: Cases, 730; deaths, 491. |
| Anam | Feb. 1–June 30 | 232 | 131 | |
| Cambodia | do | 132 | 115 | |
| Cochin-China | do | 219 | 133 | |
| Kwang-Chow-Wan | May 1–June 30 | 34 | 23 | |
| Tonkin | Feb. 1–June 30 | 113 | 89 | |
| Saigon | Apr. 23–June 3 | 47 | 26 | |
| Java: | | | | |
| East Java | | | | Apr. 2–May 20, 1917: Cases, 29; deaths, 29. |
| 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. |
| Departments— | | | | |
| Arecuipa | May 16–31 | 4 | | At Mollendo. |
| Callao | do | 1 | | At Callao. |
| Lambayeque | do | 2 | | At Chiclayo. |
| Libertad | do | 7 | | At Salaverry, San Pedro, and Trujillo. |
| Lima | do | 1 | | At Lima. |
| Siam: | | | | |
| Bangkok | Apr. 22–June 30 | 13 | 12 | |
| Do | July 3–Aug. 11 | 9 | 8 | |
| Straits Settlements: | | | | |
| Singapore | June 3–16 | 2 | 1 | |
| Do | July 1–7 | 1 | 1 | |
| 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–July 28, 1917: Cases, 75. |
| 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–July 17 | 50 | | |
| 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–Aug. 4 | 2 | 1 | |
| Rio de Janeiro | do | 126 | 31 | |
| Do | July 1–Sept. 1 | 328 | 68 | |

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

### Reports Received from June 30 to Oct. 19, 1917—Continued.

**SMALLPOX—Continued.**

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| **Canada:** | | | | |
| Manitoba— | | | | |
| Winnipeg | June 10–16 | 1 | | |
| Do | Aug. 19–Sept. 1 | 5 | | |
| Novia 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. 6 | 1 | | |
| **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–Aug. 18 | | | Do. |
| Dairen | May 13–June 30 | 30 | 4 | |
| Do | July 8–28 | 6 | 1 | July 1–7, 1917: Present. |
| Hankow | June 24–30 | 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. 8 | | | Do. |
| Shanghai | May 21–July 1 | 13 | 32 | Cases foreign; deaths among natives. |
| Do | July 2–Sept. 29 | | 9 | Among Chinese. |
| Tsitshar Station | Apr. 16–22 | 1 | | On Chinese Eastern Ry. |
| Tsingtao | May 22–July 7 | 35 | 7 | At another station on railway 1 case. |
| Do | July 30–Aug. 11 | 4 | 1 | |
| **Chosen (Korea):** | | | | |
| Chemulpo | May 1–31 | 1 | | |
| **Ecuador:** | | | | |
| Guayaquil | Feb. 1–28 | 1 | | |
| Do | Mar. 1–31 | 1 | | |
| Do | Apr. 1–30 | 5 | | |
| **Egypt:** | | | | |
| Alexandria | Apr. 30–July 1 | 39 | 9 | |
| Do | July 2–29 | 30 | 4 | |
| Cairo | Feb. 12–Mar. 18 | 19 | 1 | |
| **France:** | | | | |
| Nantes | July 30–Aug. 5 | 1 | | |
| Paris | May 6–12 | 1 | | |
| **Germany** | | | | Mar. 18–Apr. 28, 1917: Cases, 715 in cities and 32 States and districts. |
| Berlin | Mar. 18–Apr. 28 | 106 | | |
| Bremen | do | 16 | | |
| Charlottenberg | do | 18 | | |
| Hamburg | do | 50 | | |
| Leipzig | do | 20 | | |
| Lubeck | 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–Aug. 11 | 48 | 22 | |
| Calcutta | Apr. 29–May 26 | | 12 | |
| Karachi | Apr. 22–July 4 | 27 | 8 | |
| Do | July 8–14 | 1 | 1 | |
| Madras | Apr. 22–June 30 | 80 | 48 | |
| Do | July 1–Aug. 21 | 3 | 18 | |
| Rangoon | Apr. 15–June 30 | 33 | 5 | |
| Do | July 1–28 | 7 | | |

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

### Reports Received from June 30 to Oct. 19, 1917—Continued.

SMALLPOX—Continued.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Indo-China: | | | | |
| Provinces | | | | Feb. 1–June 30, 1917: Cases, 617; deaths, 535. |
| Anam | Feb. 1–June 30 | 1,630 | 237 | |
| Cambodia | do | 136 | 26 | |
| Cochin-China | do | 1,267 | 377 | |
| Kwang-Chow-Wan | Mar. 1–Apr. 30 | 4 | | |
| Laos | Apr. 1–30 | 5 | 1 | |
| Tonkin | Feb. 1–June 30 | 274 | 30 | |
| Saigon | Apr. 27–June 10 | 199 | 63 | |
| Italy: | | | | |
| Turin | May 21–June 24 | 32 | 12 | |
| Do | July 12–Aug. 26 | 9 | 3 | |
| Jamaica: | | | | |
| Kingston | Sept. 9–15 | 1 | | |
| Japan: | | | | |
| 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 | 128 | | |
| 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 8–28 | 4 | | |
| Portuguese East Africa: | | | | |
| Lourenço Marques | Mar. 1–May 31 | | 3 | |
| Russia: | | | | |
| Archangel | May 1–June 28 | 56 | 4 | |
| Do | Aug. 15–28 | 4 | | |
| Petrograd | Feb. 18–June 23 | 543 | | |
| Do | July 2–8 | 14 | | |
| Riga | Mar. 11–June 2 | 4 | | 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–May 31 | | 41 | |
| 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 | | |

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

### Reports Received from June 30 to Oct. 19, 1917—Continued.

#### SMALLPOX—Continued.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Turkey in Asia: | | | | |
| Trebizond | Feb. 25–Apr. 13 | | 15 | |
| Union of South Africa: | | | | |
| Johannesburg | Mar. 12–24 | 4 | | |
| Do | July 1–31 | 3 | | |
| Uruguay: | | | | |
| Montevideo | May 1–31 | 2 | | |
| Venezuela: | | | | |
| Maraciabo | 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 | | |
| China: | | | | |
| Antung | June 25–July 1 | 3 | | |
| Do | July 9–Sept. 9 | 11 | 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. 2 | 306 | 109 | |
| Cairo | Jan. 22–Mar. 18 | 96 | 40 | |
| Great Britain: | | | | |
| Cork | June 17–23 | | 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. 16 | 29 | 2 | |
| 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 9–22, 1917: Cases, 7; 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. 2, 1917: Cases, 46; deaths, 2. |
| Batavia | Apr. 13–July 5 | 70 | 6 | |
| Do | July 6–Aug. 2 | 37 | 2 | |
| 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 | 870 | | |
| 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 Oct. 19, 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 | Aug. 15–28 | 9 | 2 | |
| Petrograd | Feb. 18–June 23 | 138 | 3 | |
| Do | July 2–8 | 10 | | |
| Riga | May 31–June 2 | 2 | | Jan. 1–31, 1917: 1 case. |
| Vladivostok | Mar. 29–May 21 | 5 | | |
| Spain: | | | | |
| Almeria | May 1–31 | | 5 | |
| Madrid | do | | 2 | |
| Switzerland: | | | | |
| Basel | June 17–23 | 1 | | |
| Do | July 8–21 | 3 | 1 | |
| Zurich | July 26–Aug. 18 | 2 | | |
| Trinidad | June 4–9 | 2 | | |
| Tunisia: | | | | |
| Tunis | June 30–July 6 | | 1 | |
| Union of South Africa: | | | | |
| Cape of Good Hope State— | | | | |
| 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. 1–31 | 17 | 9 | |
| Do | Apr. 1–30 | 17 | 9 | |
| Milagro | Feb. 1–28 | 1 | | |
| Do | Mar. 1–31 | 1 | | |
| Do | Apr. 1–30 | 1 | 1 | |
| 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. |

×