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## PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

**December 3–30, 1939**

The accompanying table summarizes the prevalence of eight important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State are published in the Public Health Reports under the section "Prevalence of disease." The table gives the number of cases of these diseases for the 4-week period ended December 30, 1939, the number reported for the corresponding period in 1938, and the median number for the years 1934–38.

### DISEASES ABOVE MEDIAN PREVALENCE

*Influenza.*—There was a sharp increase in the number of influenza cases from approximately 7,600 during the preceding 4-week period to 23,874 cases for the 4 weeks ended December 30. The number of cases was more than 3 times the number recorded for the corresponding period in 1938, which figure (7,736) also represents the 1934–38 average incidence for this period. The increase was clearly the sharpest in the South Atlantic, East South Central, and Mountain regions, although there were minor increases in the West North Central and Pacific regions. In the North Atlantic regions the incidence was about normal, while the East North Central reported a relatively low number of cases. A considerable increase in influenza usually occurs at this season of the year, but the rise during the current period was somewhat faster than is normally expected, the current incidence being the highest for this period in 7 years.

*Poliomyelitis.*—The incidence of poliomyelitis declined more than 50 percent during the 4 weeks ended December 30. Compared with recent years the number of cases (265) was about 3.5 times the number reported for the corresponding period in 1938 and more than 1.4 times the 1934–38 median figure for this period. In the East North Central region the number of cases was about normal, but all other regions reported a comparatively high incidence. The comparison of the cur-

rent incidence with that of 1938 was quite unfavorable, as there was no outbreak of this disease in any section of the country in that year, and, while the comparison with other epidemic years is more favorable, the current incidence is still relatively high, being the highest incidence since 1931 when 266 cases were reported for this period. Approximately 7,300 cases were reported for the year 1939, as compared with approximately 1,700 and 9,500 cases in 1938 and 1937, respectively.

*Number of reported cases of 8 communicable diseases in the United States during the 4-week period Dec. 3–30, 1939, the number for the corresponding period in 1938, and the median number of cases reported for the corresponding period 1934–38* [1]

| Division | Diphtheria | | | Influenza [2] | | | Measles [3] | | | Meningococcus meningitis | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Current period | 1938 | 5-year median | Current period | 1938 | 5-year median | Current period | 1938 | 5-year median | Current period | 1938 | 5-year median |
| United States [1] | 2,355 | 2,788 | 3,031 | 23,874 | 7,736 | 7,736 | 11,035 | 18,196 | 18,196 | 132 | 158 | 317 |
| New England | 28 | 115 | 87 | 21 | 32 | 32 | 1,900 | 1,093 | 1,942 | 5 | 7 | 14 |
| Middle Atlantic | 271 | 349 | 355 | 113 | 90 | 115 | 1,936 | 3,429 | 3,429 | 40 | 25 | 54 |
| East North Central | 378 | 493 | 493 | 337 | 280 | 646 | 1,492 | 1,836 | 1,836 | 15 | 20 | 44 |
| West North Central | 135 | 206 | 229 | 542 | 300 | 316 | 876 | 3,617 | 3,617 | 6 | 10 | 27 |
| South Atlantic | 658 | 633 | 766 | 10,659 | 2,607 | 2,007 | 869 | 1,942 | 1,942 | 25 | 25 | 57 |
| East South Central | 298 | 246 | 367 | 2,950 | 803 | 823 | 264 | 324 | 324 | 17 | 30 | 37 |
| West South Central | 384 | 406 | 500 | 2,546 | 2,554 | 2,554 | 274 | 470 | 369 | 7 | 12 | 31 |
| Mountain | 88 | 128 | 90 | 5,978 | 851 | 354 | 629 | 1,389 | 857 | 8 | 19 | 12 |
| Pacific | 115 | 212 | 184 | 728 | 219 | 301 | 2,795 | 4,096 | 744 | 9 | 10 | 15 |
| | Poliomyelitis | | | Scarlet fever | | | Smallpox | | | Typhoid and paratyphoid fever | | |
| | Current period | 1938 | 5-year median | Current period | 1938 | 5-year median | Current period | 1938 | 5-year median | Current period | 1938 | 5-year median |
| United States [1] | 265 | 76 | 185 | 14,672 | 15,128 | 18,928 | 414 | 711 | 711 | 473 | 516 | 752 |
| New England | 10 | 2 | 2 | 717 | 817 | 1,054 | 0 | 0 | 0 | 18 | 7 | 24 |
| Middle Atlantic | 35 | 8 | 9 | 3,393 | 2,610 | 3,638 | 0 | 0 | 0 | 69 | 63 | 102 |
| East North Central | 23 | 7 | 25 | 4,702 | 5,524 | 6,339 | 48 | 210 | 99 | 68 | 78 | 78 |
| West North Central | 50 | 6 | 14 | 1,852 | 2,067 | 2,955 | 165 | 233 | 233 | 22 | 57 | 57 |
| South Atlantic | 24 | 17 | 17 | 1,364 | 993 | 1,246 | 4 | 3 | 5 | 89 | 90 | 152 |
| East South Central | 18 | 13 | 13 | 766 | 656 | 588 | 3 | 2 | 2 | 25 | 39 | 93 |
| West South Central | 21 | 12 | 12 | 442 | 767 | 725 | 57 | 88 | 32 | 115 | 128 | 128 |
| Mountain | 40 | 1 | 5 | 551 | 500 | 804 | 117 | 111 | 111 | 33 | 39 | 39 |
| Pacific | 44 | 10 | 34 | 885 | 1,194 | 1,221 | 20 | 64 | 146 | 34 | 15 | 46 |

[1] 48 States. Nevada is excluded and the District of Columbia is counted as a State in these reports.
[2] 44 States and New York City.
[3] 47 States. Mississippi is not included.

## DISEASES BELOW MEDIAN PREVALENCE

*Diphtheria.*—For the 4 weeks ended December 30 there were 2,355 cases of diphtheria reported, as compared with 2,788, 2,551, and 3,031 cases for the corresponding period in 1938, 1937, and 1936, respectively. The South Atlantic and East South Central regions reported slight increases over the incidence in 1938, but the numbers of cases were lower than the 1934–38 average incidence for this period. In all other regions, except the Mountain, the incidence was not only lower than that in 1938, but it was also considerably below the average incidence for recent years.

*Measles.*—Reports indicated a continued increase in the number of cases of measles during the current period. However, compared with

recent years, the number of cases (11,035) was less than 60 percent of the 1938 figure for this period, as well as of the 1934–38 average incidence, which is represented by the 1938 figure (18,196 cases). The Pacific region reported an excess over the preceding 5-year average number of cases occurring in that region, but in all other regions the incidence was comparatively low.

*Meningococcus meningitis.*—The incidence of meningococcus meningitis also continued comparatively low in all sections of the country. For the 4 weeks ended December 30 there were 132 cases reported, which was the lowest number of cases reported for the corresponding period in the 11 years for which these data are available. The nearest approach to the current low incidence was in 1933, when there were 172 cases reported for this period.

*Scarlet fever.*—For the country as a whole, the number of cases (14,672) of scarlet fever, although showing the usual seasonal rise, was about 5 percent below the incidence reported for the corresponding period in 1938 and was about 20 percent below the 1934–38 average incidence for this period. A comparison of geographic regions shows that the disease was slightly above the normal seasonal expectancy in the South Atlantic and East South Central regions, but the other regions reported very significant decreases from the average incidence for recent years.

*Smallpox.*—For the current period there were 414 cases of smallpox reported, which figure is the lowest recorded for the corresponding period in the 11 years for which these data are available. Of the total cases, Colorado reported 107, Minnesota, 85, Iowa, 43, South Dakota and Oklahoma, 24 cases each. Almost 75 percent of the cases were reported from those 5 States. The largest number of cases of this disease is still reported from the Central and Western regions, the North Atlantic region being apparently free from the disease, and the South Atlantic region reporting a very small number of cases.

*Typhoid fever.*—The number of cases of typhoid fever (473) compared very favorably with the number (516) reported during the same period in 1938 and was about 65 percent of the 1934–38 average figure for the corresponding period. The incidence was comparatively low in all sections of the country, each section reporting a decline from the average incidence for recent years.

## MORTALITY, ALL CAUSES

The average mortality rate from all causes in large cities for the 4 weeks ended December 30, based on data received from the Bureau of the Census, was 11.2 per 1,000 inhabitants (annual basis). The rate for this period in 1938 was 11.9, and the 1934–38 average rate was 12.2.

# EPIDEMIC AND ENDEMIC TYPHUS: PROTECTIVE VALUE FOR GUINEA PIGS OF VACCINES PREPARED FROM INFECTED TISSUES OF THE DEVELOPING CHICK EMBRYO[1]

By HERALD R. COX, *Associate Bacteriologist*, and E. JOHN BELL, *Laboratory Assistant, United States Public Health Service*

Recently one of us reported the successful immunization of guinea pigs against Rocky Mountain spotted fever with vaccines prepared from infected tissues of the developing chick embryo (*1*). Similar satisfactory results, using essentially the same method, have been obtained with epidemic (European) typhus, and somewhat less conclusive results with endemic typhus.

## MATERIALS AND METHODS

The Breinl strain of epidemic typhus virus and the Wilmington strain of endemic typhus virus, which had previously been carried through more than 60 consecutive passages in fertile eggs, were used.

In an earlier report (*2*) it was stated that rickettsiae of European (epidemic) typhus had not been observed in the yolk-sac, although the yolk-sac suspensions were typically pathogenic for guinea pigs. Since then, however, we have shown that rickettsiae of epidemic typhus are consistently found in numbers fully as great as in endemic typhus preparations (*3*).

In previous experiments (*2*) it was shown that in the case of certain rickettsial infections the yolk-sac has a higher limit of infectivity than other tissues of the developing chick. Thus, in order to obtain the greatest number of rickettsiae in proportion to the amount of extraneous protein present, 3 of the vaccines (ep. ty. 26 and 27 and en. ty. 28)[2] were prepared from only yolk-sac tissue. A fourth vaccine (ep. ty. 20) was prepared from the yolk-sac and chorio-allantois, while 3 others (ep. ty. 6–1, 6–2, and 6–3) were prepared from the pooled embryonic tissues (yolk-sac, chorio-allantois, and embryo).

Before inoculation, fertile eggs were incubated 6 to 7 days at 39° C. The inoculum, 0.5 to 1.0 cc. of a 10-percent yolk-sac suspension in Tyrode's-ascitic fluid, was injected into the yolk by means of a 1¼-inch, 21-gage needle introduced through the air-sac end of the egg. The eggs were then placed in a 37° C. incubator until death of the embryo, which usually occurred in 5 to 7 days. In every instance the tissues were used for vaccine preparation within 12 hours after death of the embryo.

*Preparation of vaccines.*—The embryonic tissue or tissues used were completely removed aseptically from a number of eggs of the same

[1] Contribution from the Rocky Mountain Laboratory, Hamilton, Mont., Division of Infectious Diseases, National Institute of Health.

[2] Ep. ty.=epidemic typhus; en. ty.=endemic typhus. The vaccine number represents the number of the serial passage of the typhus strain in eggs at the time the vaccine was prepared.

transfer and washed once or twice with sterile saline to remove any yolk or other fluids that might be present. They were then drained free of excess moisture, pooled, weighed, and ground with sterile alundum to a homogeneous mixture. Sterile saline was added to make a 10-percent suspension. A portion was reserved for titration and to the remainder was added phenol to 1.0-percent, and formalin to 0.5-percent concentration. The suspension was then vigorously shaken on a shaking machine for 1 hour and stored at 2° C. (6 to 76 days) before being refined for use.

Vaccines ep. ty. 26 and 27 and en. ty. 28 were similarly prepared from yolk-sac alone by the following method: The 10-percent suspension was allowed to stand at 2° C. for 6 days and was then centrifuged [3] at 4,500 to 5,000 r. p. m. for 45 minutes to an hour. The precipitate was reground with alundum, resuspended in approximately the same volume of saline,[4] and again centrifuged as above. This precipitate was also resuspended, this time in one-half the original volume of saline and then centrifuged at 1,000 r. p. m. for 10 minutes. The supernatant fluid thus obtained constituted the vaccine.

Practically all the lipoids along with some protein were eliminated in the first two supernatant fluids, while the great bulk of cellular debris was thrown down in the final precipitate. The final supernatant fluid, which constituted the vaccine, contained rickettsiae in profusion with relatively little detritus. Further clearing may be obtained by fractional centrifugation.

Vaccine ep. ty. 20 was similarly prepared except that it was made from yolk-sac and chorio-allantois and the crude suspension was kept at 2° C. for 25 days before being refined.

Vaccines ep. ty. 6–1, 6–2, and 6–3 were prepared somewhat differently. The crude suspension (yolk-sac, chorio-allantois, and embryo) was kept at 2° C. for 76 days and then treated as follows: A portion was diluted with saline (containing no phenol or formalin) to make a final tissue concentration of 2 percent. The suspension was centrifuged at 1,000 r. p. m. for 10 minutes and the supernatant fluid thus obtained constituted vaccine ep. ty. 6–1. The remaining portion of the crude suspension was diluted with saline (containing no phenol or formalin) to make a final tissue concentration of 4 percent. This suspension was centrifuged at 5,000 r. p. m. for 1 hour and the supernatant fluid thus obtained used as vaccine ep. ty. 6–2. The resulting precipitate was resuspended in one-fifth the original volume of saline (containing 0.4 percent phenol and 0.1 percent formalin), centrifuged at 1,000 r. p. m. for 10 minutes, and this supernatant fluid was used as vaccine ep. ty. 6–3.

[3] A 51° angle centrifuge was used in all experiments.

[4] All saline used for resuspending the various vaccine fractions as well as that used in the final product contained phenol at 0.4-percent and formalin at 0.1-percent concentration.

TITRATION TESTS FOR INFECTIVITY OF EMBRYONIC TISSUE SUSPENSIONS

Titrations were made to determine the infective titers of the various suspensions used and to see whether differences found in immunizing powers might be related to the number of infectious doses in the source material. The procedure was as follows: The suspension was centrifuged (2,000 to 2,500 r. p. m. for 15 minutes) to throw down tissue fragments. The supernatant fluid was pipetted off, tenfold dilutions were prepared with a mixture containing equal volumes of ascitic fluid and Tyrode's solution, and each such dilution was tested by injecting guinea pigs intraperitoneally with 1 cc. each. All animals that survived were later tested for immunity.

*Vaccine tests.*—Guinea pigs received subcutaneously 1 cc. of vaccine either on one, two, or three occasions. If vaccine was injected more than once, the doses were given 6 or 7 days apart. Temperatures were taken daily throughout the period of immunization as well as through the period following the later test for immunity.

Fifteen to forty-four days after the last injection of vaccine the animals were tested for immunity by injecting each intraperitoneally with 1 cc. of inoculum. A suitable number of normal, control guinea pigs of the same weight always received the same inoculum. In addition, decimal dilutions of the inoculum were tested in other control guinea pigs to determine the approximate number of infectious doses given the vaccinated guinea pigs.

In testing for immunity to epidemic typhus the inoculum always consisted of a freshly prepared suspension of infected brain tissue taken from guinea pigs on the fourth or fifth day of fever. The brain tissues were ground with the aid of alundum and diluted to a 10 percent suspension with a mixture [5] containing equal volumes of ascitic fluid and Tyrode's solution. The suspension was then centrifuged at 1,800 to 2,000 r. p. m. for 10 minutes and the supernatant fluid pipetted off. This fluid, representing the $10^{-1}$ concentration of brain tissue, and the tenfold dilutions made from it were used as inocula.

Washings prepared on the third or fourth day of fever (second or third day of scrotal swelling) from the testicles and tunicae of guinea pigs were used in testing for immunity to endemic typhus. The testes and tunicae of 2 or more guinea pigs were removed aseptically and shaken with glass beads in an Erlenmeyer flask containing a suitable amount of fluid. The washings were then diluted to make a volume equal to 20 cc. for each testicle and tunica. The suspension was centrifuged at 1,800 to 2,000 r. p. m. for 10 minutes and the supernatant fluid pipetted off. The resulting supernatant fluid (called undiluted material) and the 10-fold dilutions were used as inocula.

[5] This mixture was employed in preparing all the infectious inocula used in the typhus tests.

*Experimental data.*—Titration tests showed that the infectivity end-points per gram of the embryonic tissues used in the preparation of the vaccines were remarkably high and uniform. Thus epidemic typhus vaccines ep. ty. 6–1, 6–2, 6–3 (all prepared from the same source material), 20, and 26, and endemic typhus vaccine en. ty. 28 all showed the limit of infectivity in a dilution of 1:100 million ($10^{-8}$), while epidemic typhus vaccine ep. ty. 27 was active in a dilution of 1:1 billion ($10^{-9}$).

Table 1 summarizes the data obtained in the three experiments with the six epidemic typhus vaccines.

TABLE 1.—*Tests of vaccinated guinea pigs for protection against epidemic typhus*

| Immunization | | | | | Test for immunity | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Dilution of infectious inoculum | | Number of guinea pigs | | | | | | |
| | | | | | | | Showing fever of 39.7° C. or above | | | | | | |
| Experiment number | Vaccine lot number | Age of vaccine (days) | Dosage | Interval between vaccination and test for immunity (days) | Untreated controls | Test animals | 1 day | 2 days | 3 days | More than 3 days | Showing scrotal swelling | Fully protected, no fever shown | Showing typical typhus |
| 1 | Ep. ty. 6–1 | 77 | 1 cc. twice | 23 | | $10^{-1}$ | 1 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 3 of 4 | 0 of 4 |
| | Ep. ty. 6–2 | 77 | do | 23 | | $10^{-1}$ | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 4 of 4 | 0 of 4 |
| | Ep. ty. 6–3 | 77 | do | 23 | | $10^{-1}$ | 1 of 5 | 1 of 5 | 0 of 5 | 0 of 5 | 0 of 5 | 3 of 5 | 0 of 5 |
| | | | | | $10^{-1}$ | | | | | 4 of 4 | 1 of 4 | | 4 of 4 |
| | | | | | $10^{-2}$ | | | | | 3 of 4 | 0 of 4 | | 3 of 4 |
| | | | | | $10^{-3}$ | | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | | 0 of 4 |
| 2 | Ep. ty. 6–1 | 77 | 1 cc. twice | 44 | | $10^{-1}$ | 0 of 5 | 0 of 5 | 0 of 5 | 0 of 5 | 0 of 5 | 5 of 5 | 0 of 5 |
| | do | 77 | do | 44 | | $10^{-2}$ | 0 of 5 | 1 of 5 | 0 of 5 | 0 of 5 | 0 of 5 | 4 of 5 | 0 of 5 |
| | Ep. ty. 6–2 | 77 | do | 44 | | $10^{-1}$ | 0 of 5 | 0 of 5 | 0 of 5 | 0 of 5 | 0 of 5 | 5 of 5 | 0 of 5 |
| | do | 77 | do | 44 | | $10^{-2}$ | 0 of 3 | 0 of 3 | 0 of 3 | 0 of 3 | 0 of 3 | 3 of 3 | 0 of 3 |
| | Ep. ty. 6–3 | 77 | do | 44 | | $10^{-1}$ | 0 of 5 | 0 of 5 | 0 of 5 | 0 of 5 | 0 of 5 | 5 of 5 | 0 of 5 |
| | do | 77 | do | 44 | | $10^{-2}$ | 0 of 3 | 0 of 3 | 0 of 3 | 0 of 3 | 0 of 3 | 3 of 3 | 0 of 3 |
| | Ep. ty. 20 | 27 | 1 cc. thrice | 16 | | $10^{-1}$ | 1 of 8 | 0 of 8 | 0 of 8 | 0 of 8 | 0 of 8 | 7 of 8 | 0 of 8 |
| | do | 27 | do | 16 | | $10^{-2}$ | 0 of 6 | 0 of 6 | 0 of 6 | 0 of 6 | 0 of 6 | 6 of 6 | 0 of 6 |
| | | | | | $10^{-1}$ | | | | | 4 of 4 | 1 of 4 | | 4 of 4 |
| | | | | | $10^{-2}$ | | | | 1 of 4 | 3 of 4 | 0 of 4 | | 3 of 4 |
| | | | | | $10^{-3}$ | | | | | 4 of 4 | 0 of 4 | | 4 of 4 |
| | | | | | $10^{-4}$ | | 0 of 4 | 0 of 4 | 1 of 4 | 1 of 4 | 0 of 4 | | 1 of 4 |
| | | | | | $10^{-5}$ | | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | | 0 of 4 |
| | | | | | $10^{-6}$ | | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | | 0 of 4 |
| 3 | Ep. ty. 26 | 10 | 1 cc. thrice | 20 | | $10^{-1}$ | 4 of 8 | 1 of 8 | 0 of 8 | 0 of 8 | 0 of 8 | 3 of 8 | 0 of 8 |
| | do | 10 | do | 20 | | $10^{-2}$ | 1 of 8 | 0 of 8 | 0 of 8 | 0 of 8 | 0 of 8 | 7 of 8 | 0 of 8 |
| | Ep. ty. 27 | 20 | 1 cc. once | 20 | | $10^{-1}$ | 1 of 7 | 3 of 7 | 0 of 7 | 0 of 7 | 0 of 7 | 3 of 7 | 0 of 7 |
| | do | 20 | do | 20 | | $10^{-2}$ | 2 of 6 | 1 of 6 | 0 of 6 | 0 of 6 | 0 of 6 | 3 of 6 | 0 of 6 |
| | do | 14 | 1 cc. twice | 20 | | $10^{-1}$ | 1 of 6 | 1 of 6 | 0 of 6 | 0 of 6 | 0 of 6 | 4 of 6 | 0 of 6 |
| | do | 14 | do | 20 | | $10^{-2}$ | 2 of 6 | 0 of 6 | 0 of 6 | 0 of 6 | 0 of 6 | 4 of 6 | 0 of 6 |
| | do | 8 | 1 cc. thrice | 20 | | $10^{-1}$ | 2 of 6 | 0 of 6 | 0 of 6 | 0 of 6 | 0 of 6 | 4 of 6 | 0 of 6 |
| | do | 8 | do | 20 | | $10^{-2}$ | 0 of 6 | 0 of 6 | 0 of 6 | 0 of 6 | 0 of 6 | 6 of 6 | 0 of 6 |
| | | | | | $10^{-1}$ | | | | | 5 of 5 | 0 of 5 | | 5 of 5 |
| | | | | | $10^{-2}$ | | | | 1 of 5 | 4 of 5 | 0 of 5 | | 4 of 5 |
| | | | | | $10^{-3}$ | | | | | 5 of 5 | 0 of 5 | | 5 of 5 |
| | | | | | $10^{-4}$ | | | | | 2 of 5 | 0 of 5 | | 2 of 5 |
| | | | | | $10^{-5}$ | | | | | 0 of 5 | 0 of 5 | | 0 of 5 |

The table shows that all epidemic typhus vaccines were potent and that complete protection was apparently afforded to 82 of the 106 vaccinated guinea pigs. Of the remaining 24 animals, 16 had only 1 day of fever while 8 had 2 days; 8 had a maximum temperature of

39.7°, 5 of 39.8°, 4 of 40.0°, 2 of 40.2°, and 5 of 40.4° C. Three of the vaccines, 6–1, 6–2, and 6–3, had been stored in the cold for 77 days before use.

The experiments recorded above clearly show that a high degree of active immunity may be induced in guinea pigs against epidemic typhus by use of killed vaccines prepared from infected tissues of developing chick embryos. Similar results have been achieved with rickettsial vaccines prepared against Rocky Mountain spotted fever (*1*).

Table 2 summarizes the data obtained in a single test made with the one endemic typhus vaccine.

TABLE 2.—*Test of vaccinated guinea pigs for protection against endemic typhus*

| Immunization | | | | Test for immunity | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Dilutions of infectious inoculum | | Number of guinea pigs | | | | | | |
| | | | | | | Showing fever of 39.7° C. or above | | | | | | |
| Vaccine lot number | Age of vaccine (days) | Dosage | Interval between vaccination and test for immunity (days) | Untreated controls | Test animals | 1 day | 2 days | 3 days | More than 3 days | Showing scrotal swelling | Fully protected, no fever shown | Showing typical typhus |
| En. ty. 28 | 12 | 1 cc. thrice | 15 | ------ | (1) | 3 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 1 of 4 | 0 of 4 |
| Do | 12 | do | 15 | ------ | $10^{-1}$ | 2 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 2 of 4 | 0 of 4 |
| Do | 12 | do | 15 | ------ | $10^{-2}$ | 0 of 4 | 2 of 4 | 0 of 4 | 1 of 4 | 1 of 4 | 1 of 4 | 1 of 4 |
| Do | 18 | 1 cc. twice | 15 | ------ | (1) | 2 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 2 of 4 | 0 of 4 |
| Do | 18 | do | 15 | ------ | $10^{-1}$ | 1 of 4 | 1 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 2 of 4 | 0 of 4 |
| Do | 18 | do | 15 | ------ | $10^{-2}$ | 1 of 4 | 1 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 2 of 4 | 0 of 4 |
| Do | 25 | 1 cc. once | 15 | ------ | (1) | 2 of 4 | 1 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 1 of 4 | 0 of 4 |
| Do | 25 | do | 15 | ------ | $10^{-1}$ | 2 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 2 of 4 | 0 of 4 |
| Do | 25 | do | 15 | ------ | $10^{-2}$ | 2 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 0 of 4 | 2 of 4 | 0 of 4 |
| ---------- | --- | ---------- | ------ | (1) | ------ | ------ | ------ | ------ | 4 of 4 | 4 of 4 | ------ | 4 of 4 |
| ---------- | --- | ---------- | ------ | $10^{-1}$ | ------ | ------ | ------ | ------ | 3 of 4 | 3 of 4 | ------ | 3 of 4 |
| ---------- | --- | ---------- | ------ | $10^{-2}$ | ------ | ------ | ------ | 2 of 4 | 2 of 4 | 4 of 4 | ------ | 4 of 4 |
| ---------- | --- | ---------- | ------ | $10^{-3}$ | ------ | ------ | ------ | ------ | 2 of 2 | 2 of 2 | ------ | 2 of 2 |
| ---------- | --- | ---------- | ------ | $10^{-4}$ | ------ | ------ | ------ | ------ | 2 of 2 | 2 of 2 | ------ | 2 of 2 |

[1] Undiluted.

In the case of the single endemic typhus vaccine tested, the table shows that complete protection was afforded to 15 of the 36 vaccinated guinea pigs. Of the remaining 21 animals, 15 had only 1 day of fever, 5 had 2 days, and 1 had 5 days. This latter animal was the only one that showed scrotal swelling and a temperature curve typical of endemic typhus.

Of the 20 animals showing 1 or 2 days of fever, 6 had a maximum temperature of 39.7°, 7 of 39.8°, 3 of 40.0°, and 4 of 40.2° C.

Although the results obtained with the endemic typhus vaccine were not as satisfactory as those with the epidemic vaccine, they indicate that some active immunity was produced.

The quantity of vaccine obtained by the various methods of preparation described here varied considerably, but it is believed that any one of these methods would be found practical from the standpoint of quantity production. Thus, if all the embryonic tissues were used, the material obtained from 2 infected eggs would be sufficient to make at least 550 cc. of vaccine ep. ty. 6–1, 275 cc. of vaccine ep. ty. 6–2 or 50 to 60 cc. of vaccine ep. ty. 6–3. Similarly, 220 cc. of vaccine ep. ty. 20 were prepared from 14 eggs (only the yolk-sac and chorio-allantois were used) while 85 to 100 cc. of vaccine were obtained from 14 eggs by making vaccines such as ep. ty. 26 and 27 and en. ty. 28, in which the yolk-sac tissue alone was used. These latter vaccines, while giving a lesser yield in volume, possibly possess an advantage in that they may be more readily refined to contain a greater number of rickettsiae in proportion to the amount of extraneous protein present.

## CONCLUSIONS

Vaccines that will protect most of the test guinea pigs against epidemic (European) typhus have been prepared from infected tissues of developing chick embryos. A similarly prepared vaccine against endemic typhus was not as efficient in protecting the guinea pigs, although it apparently did produce some active immunity.

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(*2*) Cox, Herald R.: Use of yolk-sac of developing chick embryo as medium for growing rickettsiae of Rocky Mountain spotted fever and typhus groups. Pub. Health Rep., **53**: 2241 (1938).

(*3*) Cox, Herald R.: Cultivation of rickettsiae in the embryonic tissues of developing chicks. Paper presented before Section VII of the Sixth Pacific Science Congress, Berkeley, Calif., July 29, 1939.

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# THE PATHOLOGY OF POLIOMYELITIS EXPERIMENTALLY INDUCED IN THE EASTERN COTTON RAT, *SIGMODON HISPIDUS HISPIDUS*[1]

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The following is a report of the pathologic findings in the cotton rats used in Armstrong's (*1*) recently reported study of poliomyelitis in this species. A total of 31 animals was studied. Of these, 6 were excluded, 2 because of lack of lesions and failure to recover the virus, and 4 because of intercurrent infections. Table 1 lists the 31 cotton rats with the sources of inoculum and further transmission of the virus from them.

[1] From the Divisions of Pathology and Infectious Diseases, National Institute of Health.

TABLE 1.—*Inocula, passage generation, virus recovery, and pathology in cotton rats*

| Cotton rat passage generation | Day died | Cotton rat number | Pathology number | Source of inoculum | Recovery of virus on subinoculation | Pathologic diagnosis | Remarks |
|---|---|---|---|---|---|---|---|
| 1 | 26 | 1 | 12693 | M. R. 341 | | Poliomyelitis | |
| 1 | 9 | 9 | 13111 | M. R. 325 | Virus recovered, to C. R. 13. | do | |
| 1 | 8 | 27 | 14344 | M. R. 538+ L. C. M. virus. | L. C. M. virus recovered. | Lymphocytic choriomeningitis. | Excluded. |
| 1 | 9 | 18 | 14534 | M. R. 543 | Virus not recovered | No lesions | Do. |
| 1 | 18 | 10 | 14660 | M. R. 543 | do | do | Do. |
| 1 | 15 | C | 15953 | M. R. 852 | Virus recovered, to C. R. C-2. | Poliomyelitis | |
| 2 | 21 | 8 | 13287 | M. R. 8 | Virus not recovered | do | |
| 2 | 18 | 13 | 13166 | C. R. 9 | do | do | |
| 2 | 60 | 17 | 14853 | C. R. 28 polio+ L. C. M. virus. | Not transferred | Lymphocytic meningitis. | Do. |
| 2 | 7 | 30 | 14505 | C. R. 28 polio+ L. C. M. virus. | | Lymphocytic choriomeningitis. | Do. |
| 2 | 15 | C-2 | 16032 | C. R. "C" | Virus stored | Poliomyelitis | |
| 2 | 10 | 25 | 16025 | M. R. 363 | Virus recovered, to C. R. 23. | Encephalitis | |
| 3 | 50 | 5 | 13429 | C. R. 13 | No paralysis, not transferred. | Monocytic meningitis | Do. |
| 3 | 11 | 4 | 16087 | C. R. 25 | Died, transfer died early. | Poliomyelitis | |
| 4 | 8 | 26-4 | 16115 | C. R. 34 | Died, not transferred | do | |
| 5 | 13 | 3 | 16204 | C. R. 26 | do | Encephalitis | |
| 5 | 7 | 12 | 16170 | C. R.-26 | Virus recovered, to C. R. 1A. | Poliomyelitis | |
| 5 | 7 | 148 | 16171 | C. R.-26 | Virus recovered, to M. R. 601 and C. R. 153.[1] | do | |
| 5 | 8 | 154 | 16202 | C. R. 141 | Not transferred | do | |
| 6 | 8 | 1A | 16214 | C. R. 12 | Virus recovered, to C. R. 190. | do | |
| 6 | 9 | 149 | 16215 | C. R. 12 | Not transferred | do | |
| 6 | 7 | 153 | 16212 | C. R. 148 | Virus recovered, to C. R. 179. | do | |
| 7 | 6 | 179 | 16234 | C. R. 153 | Virus recovered, to C. R. 197. | do | |
| 7 | 11 | 190 | 16274 | C. R.-1A | Killed 6th day sympt., virus not recovered. | do | |
| 8 | 7 | 197 | 16278 | C. R. 179 | Virus recovered, to C. R. 187. | do | |
| 8 | 12 | 198 | 16317 | C. R. 179 | Died, not transferred | do | |
| 8 | 6 | 204 | 16275 | C. R. 169 | do | do | |
| 8 | 6 | 206 | 16279 | C. R. 169 | Virus recovered, to C. R. 181. | do | |
| 9 | 6 | 181 | 16319 | C. R. 206 | Not transferred | do | |
| 9 | 14 | 216 | 16356 | C. R. 206 | Died, not transferred | do | |
| 10 | 9 | 244 | 16357 | C. R. 181 | do | do | |

[1] M. R. 601, Path. 16213, showed typical poliomyelitis on histologic study.
M. R.=*Macacus rhesus*. C. R.=cotton rat. L. C. M.=lymphocytic choriomeningitis.

Of the 25 rats used for the pathologic study, all showed focal lesions in some part of the brain and cord. These focal lesions are distributed much as in poliomyelitis in man and rhesus monkeys, showing fairly frequent but slight involvement of the frontal cortex, few lesions in other parts of the cerebral cortex, with more in the hippocampus, and increasing numbers of focal lesions in the brain stem from the corpora striata backward to the pons and medulla. Very slight involvement of the cerebellar cortex is seen, but moderate numbers of lesions are present in the cerebellar roof nuclei. Table 2 shows the distribution of the lesions. In regard to frequency and severity of cord lesions, this table is misleading to the extent that

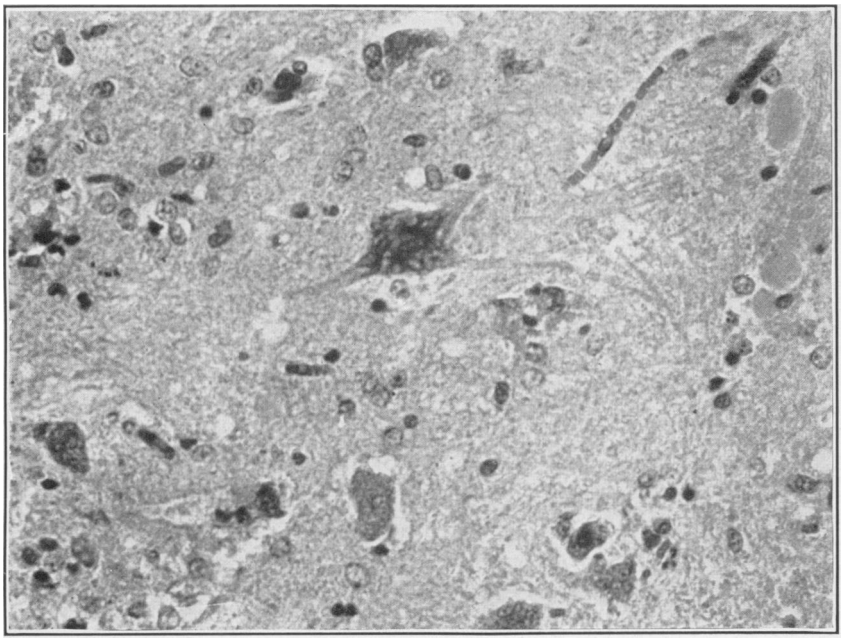

FIGURE 1.—Cotton rat No. 179, path. No. 16234, 6 days. Acute coagulation necrosis of nerve cells in the anterior horn of the spinal cord. Romanowsky stain. × 400.

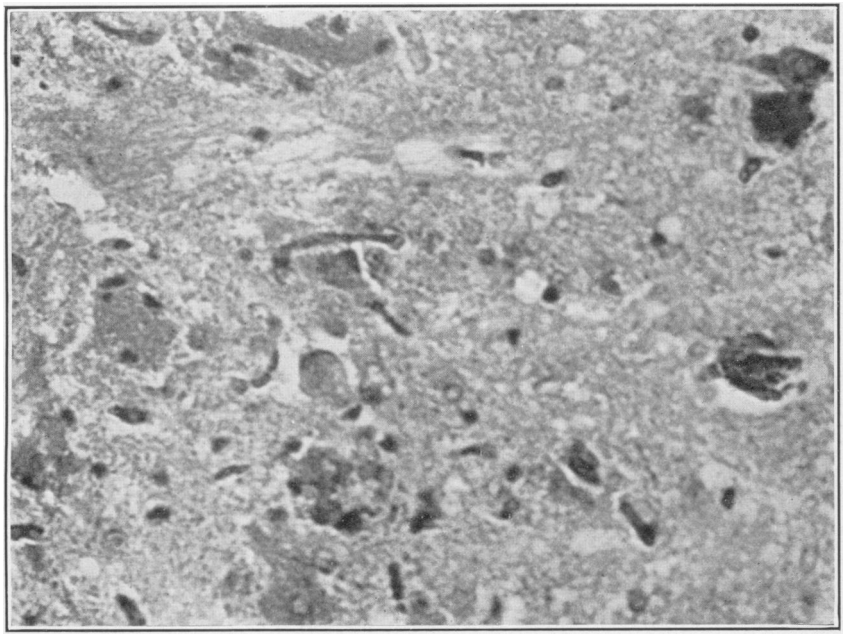

FIGURE 2.—Same as figure 1.

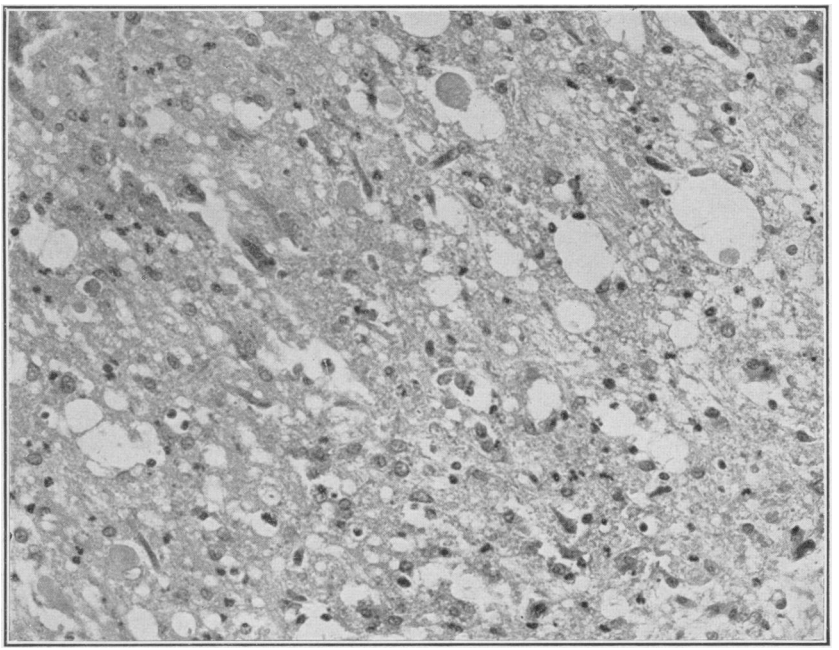

FIGURE 3.—Cotton rat No. 154, path. No. 16202, 8 days. Necrosis of nerve cells, pericellular vacuolation, and only occasional leucocytes in the anterior horn of the cord. × 267.

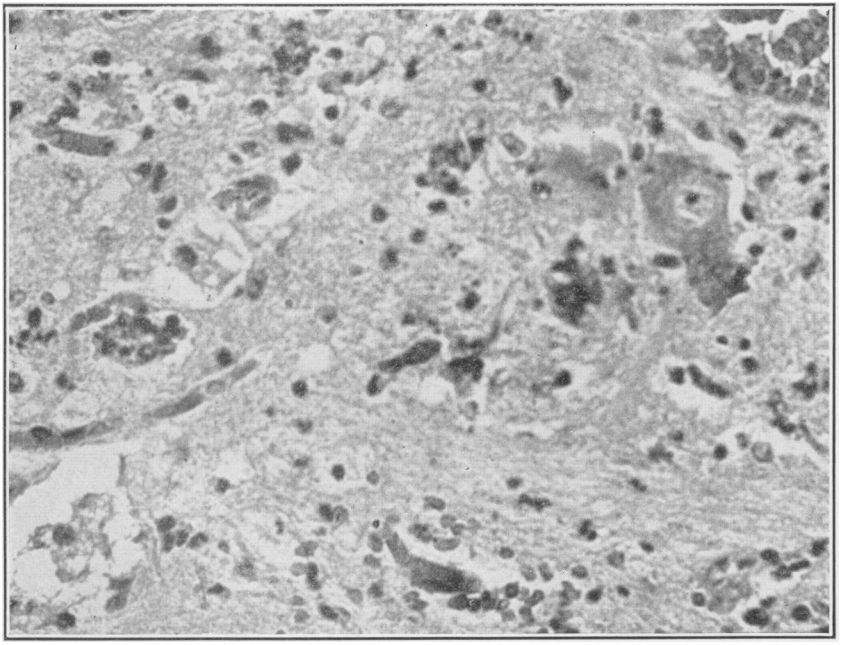

FIGURE 4.—Cotton rat No. 244, path. No. 16357, 9 days. Diffuse and focal polymorphonuclear infiltration and invasion of necrotic nerve cells, as well as pericellular vacuoles, necrotic cells, and pericapillary hemorrhage in the anterior horn of the spinal cord. × 400.

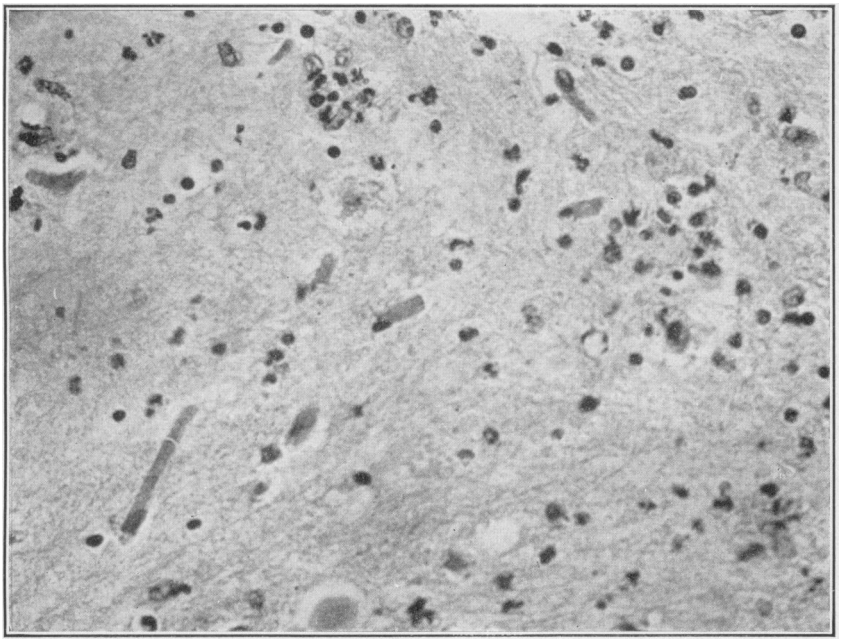

FIGURE 5.—Same as figure 4.

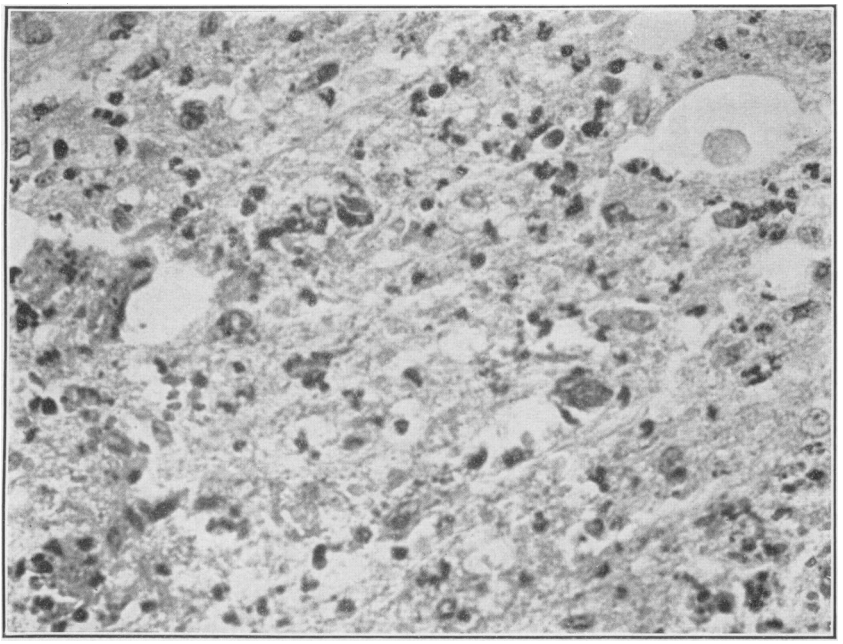

FIGURE 6.—Same as figures 4 and 5.

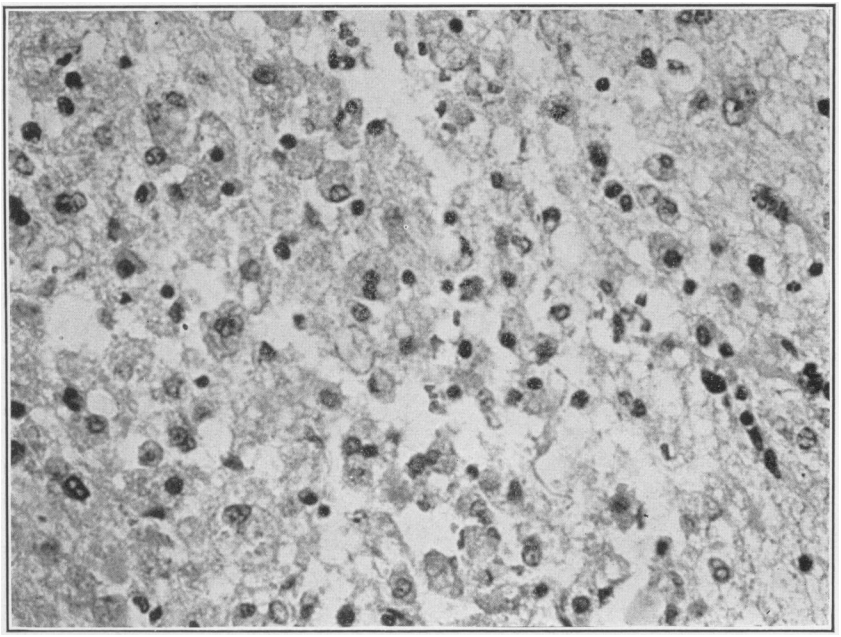

FIGURE 7.—Cotton rat No. 216, path. No. 16356, 14 days. An extensive macrophage infiltration, softening, and absence of nerve cells in the anterior horn of the spinal cord. × 400.

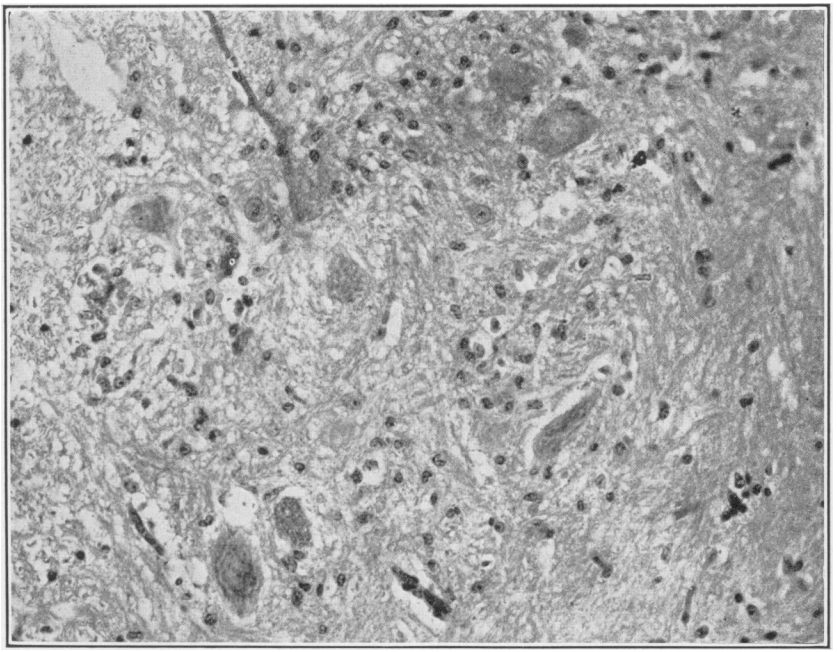

FIGURE 8.—Cotton rat No. 13, path. No. 13166, 18 days. Focal cellular gliosis replacing part of the anterior horn cells of the spinal cord. × 267.

presumably severely involved portions of the cord were taken for virus in a number of animals, and this fact may have operated to reduce the frequency of severe cord involvement in the material studied.

TABLE 2.—*Numbers of cotton rats and grades of reaction in various parts of the central nervous system*

| Grade of involvement | Cerebral cortex | | | | | Brain stem and cerebellum | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Frontal | Parietal | Temporal | Hippocampus | Occipital | Corpora striata | Thalamus | Midbrain | Pons | Roof nuclei | Cerebellar cortex | Medulla | Spinal cord |
| None | 8 | 15 | 16 | 10 | 9 | 18 | 10 | 3 | 1 | 4 | 20 | 0 | 2 |
| Slight | 15 | 6 | 7 | 5 | 3 | 5 | 10 | 10 | 6 | 4 | 2 | 3 | 9 |
| Moderate | 1 | 2 | 0 | 7 | 2 | 2 | 3 | 8 | 15 | 10 | 1 | 10 | 7 |
| Marked | 1 | 1 | 1 | 2 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 4 |
| Total | 25 | 24 | 24 | 24 | 14 | 25 | 23 | 24 | 24 | 18 | 23 | 13 | 22 |

Cord lesions were present in all but 2 of the 22 animals in which spinal cord was saved for histologic study. Usually a few, occasionally more numerous, small vessels in gray and often white substance show sheath lymphocyte infiltration, endothelial swelling and proliferation, or both. Perivascular glia proliferation is rare. In about three-fourths of the animals few to numerous, often scattered, coagulated necrotic nerve cells with oxyphil cytoplasm and complete karyolysis are seen in the anterior horns. These are seen throughout the series, from 5 to 26 days after inoculation. Often there is no evident cellular reaction about them, and apparently they may disappear (by cytolysis?), leaving nothing behind but an apparent or perhaps quite evident diminution in nerve cell content of the gray substance. Up to 9 days after inoculation there is a quite frequent, more or less diffuse infiltration of the anterior horns by variable numbers of polymorphonuclear leucocytes. Not infrequently one or more leucocytes are seen invading the cytoplasm of necrotic cells, but the picture of a ring of leucocytes around the coagulated anterior horn cell which is so characteristic in man and monkeys has not thus far been seen in cotton rats. After the tenth day leucocytes are infrequent. Nodular and diffuse cellular gliosis is infrequent in the earlier stages, becoming more evident from about the eighth day on, and frequent after 11 days. Definite neuronophagia [2] is relatively infrequent even in the later stages, and absent before the eighth day. One cord section taken 14 days after inoculation showed replacement of one anterior horn by a mass of foam cells, with no remaining

[2] The term "neuronophagia" is reserved for pictures in which a coagulated nerve cell is still visible and is surrounded by macrophages.

neurons, although these were present in the contralateral anterior horn.

Cerebral cortical lesions were almost entirely vascular, with only few foci of cellular gliosis. Nerve cell necrosis in the hippocampus was noted in three cotton rats and was accompanied by more marked cellular gliosis, and in one by some polymorphonuclear leucocyte infiltration. This animal also showed similar changes in the adjacent parietal cortex, and while no inoculation wound was identified its proximity would seem indicated.

The corpora striata presented few lesions, almost all vascular, and, while lesions were more numerous in the thalamus, especially the hypothalamus, focal glia reactions remained infrequent.

Focal and patchy diffuse cellular gliosis became more frequent in the midbrain, tending to involve more the tegmental areas, substantia "nigra," red and oculomotor nuclei. Isolated necrotic nerve cells, sometimes in neuronophagia, were seen in three cotton rats, all in the red nuclei.

In the pons, lesions of all types became more numerous, focal and diffuse gliosis were more prominent, and necrotic nerve cells were often seen, particularly in trigeminus nuclei and tegmentum. Tectile nuclei were apparently more involved than dentate, as in man and monkeys, though these nuclei are less well separated in cotton rats. Both vascular lesions and focal and diffuse cellular gliosis were seen, but no nerve cell necrosis or neuronophagia was observed.

Only occasional foci of cellular gliosis in the molecular layer or vascular lesions were seen in the cerebellar cortex.

In the medulla, vascular lesions and focal and diffuse cellular gliosis were frequent, especially in the reticular substance, as in man and monkeys. Necrotic nerve cells were found in three animals, once in the nucleus dorsalis vagi, twice in the substantia reticularis.

Meninges commonly show some diffuse and perivascular infiltration, chiefly by lymphocytes.

Other organs were studied in more or less detail in eight cotton rats. No significant lesions were found in heart, testicle, pancreas, small intestine, adrenal, or liver. Kidneys in four rats were normal while four showed slight granular degeneration of convoluted tubules with albuminous exudate in their lumina. The spleens generally showed large follicles with germinal centers, mitoses, and perhaps phagocytosis of nuclear debris by the follicle cleft phagocytes. In the lungs, focal hemorrhage was present in two rats, slight edema in one, and no lesions in six. Femoral marrow was studied in three rats and in all showed active myelopoiesis with active maturation of polymorphonuclear leucocytes. Bladder, esophagus, stomach, colon, omentum,

salivary gland, larynx, and skeletal muscle were studied in one to three animals each, and showed no significant lesions.

SUMMARY

The virus of human poliomyelitis produces in the cotton rat, *Sigmodon hispidus hispidus*, a poliomyeloencephalitis which is closely similar in topographic distribution as well as in individual lesion types to that observed in man and *Macacus rhesus* with this virus. In the brain, medulla and pons show the greatest reaction, cerebellar roof nuclei and midbrain next. Nerve cell necrosis, polymorphonuclear infiltration and invasion of necrotic cells, neuronophagia, focal and diffuse cellular gliosis, and vascular endothelial swelling and proliferation and sheath lymphocyte infiltration are all observed.

Other organs show no important changes.

REFERENCE

(*1*) Armstrong, C.: The experimental transmission of poliomyelitis to the eastern cotton rat, *Sigmodon hispidus hispidus*. Pub. Health Rep., **54**: 1719 (1939).

## *ANOPHELES WALKERI* (THEOBALD): A WILD-CAUGHT SPECIMEN HARBORING MALARIAL PLASMODIA [1]

By F. B. Bang, G. E. Quinby, and T. W. Simpson, *Scientific Assistants, United States Public Health Service*

*Anopheles walkeri* Theobald has for a number of years been under suspicion as a vector of malaria in the Reelfoot Lake region of Tennessee and Kentucky because of its prevalence and its tendency to bite man. It has been shown to be a laboratory vector of *Plasmodium vivax* (*1*) and *P. falciparum* (*2*). For this reason a series of salivary gland dissections from wild-caught adult mosquitoes was undertaken.

It has been the custom when carrying on dissections of anophelines to collect them either in their daytime resting place or as they come to bite at night. However, *A. walkeri* cannot be collected in very large numbers, for they tend to remain hidden deep in the swamps, sometimes on damp logs just over the water, but more frequently in thick growths of Cut Grass, *Zizianopsis miliacea*, and here can be collected only in small numbers. Even fewer numbers are found in damp barns, under bridges near the mud, and in springhouses. The best method of collection has always been the New Jersey light trap (*3*).

It was thought worth while to attempt to determine whether specimens obtained in light traps would be suitable for dissection; that is,

[1] From the Reelfoot Lake Biological Station.

to find out whether they had had any previous blood meals. Almost invariably females caught in light traps have thin, tapering abdomens.

At the suggestion of Dr. Mark F. Boyd, Station for Malaria Research, Tallahassee, Fla., a series of ovarian dissections was begun. It was found that the majority of the ovaries of light-trap-caught *A. walkeri* were in stage 2, that there was no blood in the gut; further, that there were a few individuals with ovaries in stage 2 with mature eggs retained from the previous oviposition. This was considered sufficient evidence that probably the majority of the specimens, and certainly a few of them, had had a previous blood meal.

On July 11, 1939, a series of dissections of light-trap material from the environs of Bondurant, Ky., was started. Dissections were carried on at night in temporary quarters and were continued on refrigerated specimens the following day in the laboratory at the Reelfoot Lake Biological Station. The heads of all specimens were kept on the slides until the examination was completed.

On July 29, 1939, the salivary glands of the 231st *A. walkeri* specimen which had been caught in a light trap were found to be heavily infected with about 150 motile sporozoites per high power field (fig. 1). The determination of the mosquito specimen was rechecked. The stomach was immediately dissected and six oocysts with heavy black blocks of pigment were found on the posterior portion of the stomach. Several of these oocysts in "sunburst" stage had mature sporozoites (fig. 2). Several other oocysts had ruptured and had discharged numerous sporozoites.

The slides were forwarded to Dr. Bruce Mayne at the malaria research laboratory of the Public Health Service at Columbia, S. C., where on the basis of comparative measurements the sporozoites were found to be indistinguishable from similar forms dissected from *A. quadrimaculatus* artificially infected with human malaria.

This evidence does not, of course, prove that the sporozoites are those of human malaria. However, when added to the fact that *A. walkeri* shows a definite preference for mammals, including man, rather than for birds, it indicates a human origin of the plasmodia.

## REFERENCES

(*1*) Matheson, Robert, Boyd, Mark F., and Stratman-Thomas, Warren K.: *Anopheles walkeri* Theobald as a vector of *Plasmodium vivax*, Grassi and Feletti. Am. J. Hyg., **17**: 515–516 (1933).

(*2*) Kitchen, S. F., and Bradley, G. H.: *Anopheles walkeri* Theobald as a vector of *Plasmodium falciparum* (Welch). Am. J. Trop. Med., **16**: 579–581 (1936).

(*3*) Johnson, H. A.: Notes on the occurrence of *A. walkeri*. South. Med. J., **29**: 856–857 (1936).

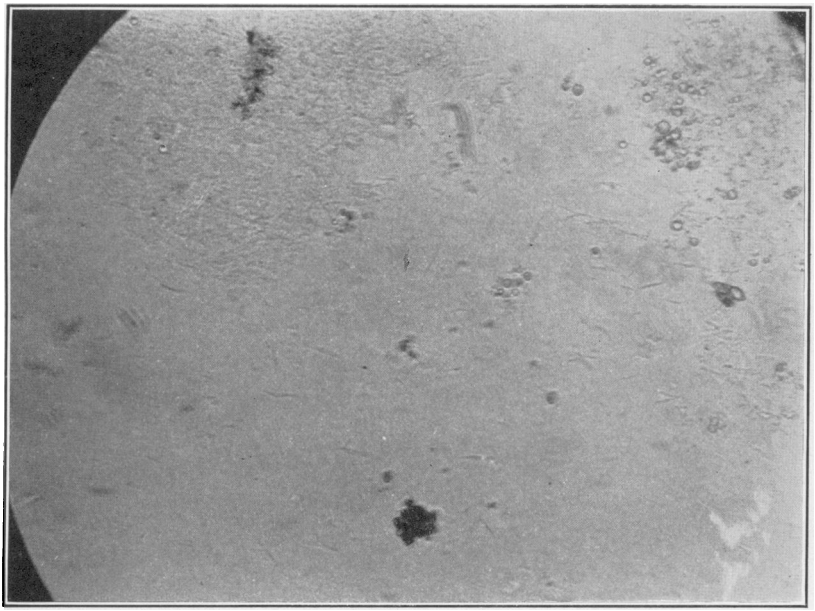

FIGURE 1.

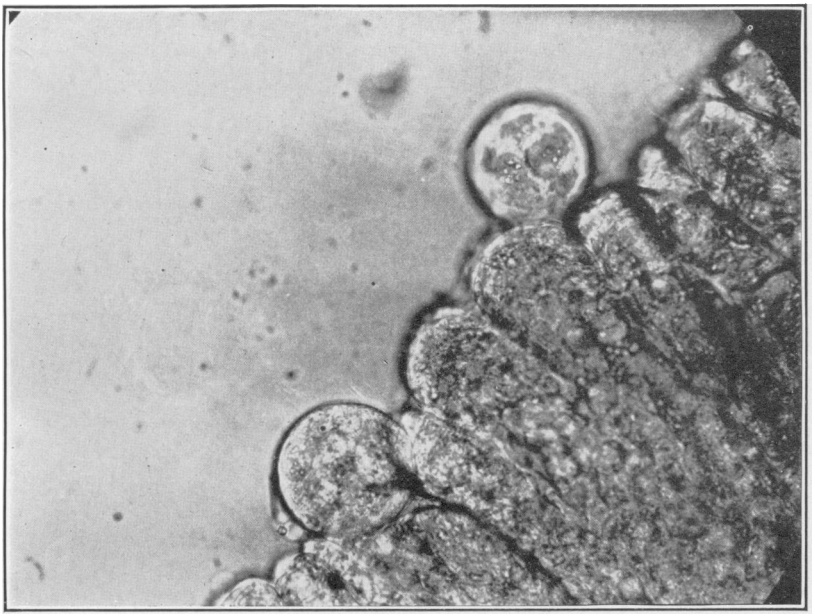

FIGURE 2.

(Photographs by courtesy of Dr. C. L. Baker.)

# REPORT ON MARKET-MILK SUPPLIES OF CERTAIN URBAN COMMUNITIES

**Compliance of the Market-Milk Supplies of Certain Urban Communities With the Grade A Pasteurized and Grade A Raw Milk Requirements of the Public Health Service Milk Ordinance and Code, as Shown by Compliance (Not Safety) Ratings of 90 Percent or More Reported by the State Milk-Sanitation Authorities During the Period January 1, 1938, to December 31, 1939**

The accompanying list gives the thirteenth semiannual revision of the list of certain urban communities in which the pasteurized market milk is both produced and pasteurized in accordance with the Grade A pasteurized milk requirements of the Public Health Service Milk Ordinance and Code and in which the raw market milk sold to the final consumer is produced in accordance with the Grade A raw milk requirements of said ordinance and code, as shown by ratings of 90 percent or more reported by State milk-sanitation authorities.

These ratings are not a complete measure of safety but represent the degree of compliance with the Grade A requirements of the Public Health Service Milk Ordinance and Code. Safety estimates should also take into account the percentage of milk pasteurized, which is given in the following tables.

The primary reason for publishing such lists from time to time is to encourage the communities of the United States to attain and maintain a high level of excellence in the public health control of milk supplies.

It is emphasized that the Public Health Service does not intend to imply that only those communities on the list are provided with high-grade milk supplies. Some communities which have high-grade milk supplies are not included because arrangements have not been made for the determination of their ratings by the State milk-sanitation authority. In other cases the ratings which have been determined are now more than 2 years old and have therefore lapsed. In still other communities with high-grade milk supplies there seems, in the opinion of the community, to be no local necessity nor desire for rating or inclusion in the list, nor any reasonable local benefit to be derived therefrom.

The rules under which a community is included in this list are as follows:

(1) All ratings must have been determined by the State milk-sanitation authority in accordance with the Public Health Service rating method (Pub. Health Rep., **53**: 1386 (1938). Reprint No. 1970), based upon the Grade A pasteurized milk and the Grade A raw milk requirements of the Public Health Service Milk Ordinance and Code.

(2) No community will be included in the list unless both its pasteurized milk and its raw milk ratings are 90 percent or more. Communities in which only raw milk is sold will be included if the raw milk ratings are 90 percent or more.

(3) The rating used will be the latest rating submitted to the Public Health Service, but no rating will be used which is more than 2 years old.

(4) The Public Health Service will make occasional check surveys of cities for which ratings of 90 percent or more have been reported by the State. If such check rating is less than 90 percent but not less than 85, the city will be removed from the 90-percent list after 6 months unless a resurvey submitted by the State during this probationary interim shows a rating of 90 percent or more. If, however, such check rating is less than 85 percent, the city will be removed from the list immediately. If the check rating is 90 percent or more, the city will be retained on the list for a period of 2 years from the date of the check survey unless a subsequent rating submitted during this period warrants its removal.

Communities are urgently advised to bring their ordinances up to date at least every 5 years, since ratings will be made on the basis of later editions if those adopted locally are more than 5 years old.

Communities which are not now on the list and desire to be rated should request the State milk-sanitation authority to determine their ratings and, if necessary, should improve their status sufficiently to merit inclusion in the list.

Communities which are now on the list should not permit their ratings to lapse, as ratings more than 2 years old cannot be used.

Communities which have not adopted the Public Health Service Milk Ordinance may wish to give thoughtful consideration to the advisability of doing so. It is obviously easier to satisfy the requirements upon which the rating method is based if these are included in the local legislation.

Communities which are enforcing the Public Health Service Milk Ordinance, but which have not yet been admitted to the list, should determine whether this has been the result of failure to enforce the ordinance strictly or failure to bring the ordinance up to date.

State milk-sanitation authorities which are not now equipped to determine municipal ratings are urged, in fairness to their communities, to equip themselves as soon as possible. The personnel required is small, as in most States one milk specialist is sufficient for the work.

The inclusion of a community in this list means that the pasteurized milk sold in the community, if any, is of such a degree of excellence that the weighted average of the percentages of compliance with the various items of sanitation required for Grade A pasteurized milk is 90 percent or more and that, similarly, the raw milk sold in the com-

munity, if any, so nearly meets the requirements that the weighted average of the percentages of compliance with the various items of sanitation required for Grade A raw milk is 90 percent or more. However, high-grade pasteurized milk is safer than high-grade raw milk, because of the added protection of pasteurization. To secure this added protection, those who are dependent on raw milk can pasteurize the milk at home in the following simple manner: Heat the milk over a hot flame to 155° F., stirring constantly; then immediately place the vessel in cold water and continue stirring until cool.

TABLE 1.—*Communities in which all market milk is pasteurized. In these communities market milk complies with the Grade A pasteurized milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by pasteurized milk ratings of 90 percent or more* [1]

| Community | Percentage of milk pasteurized | Date of rating | Community | Percentage of milk pasteurized | Date of rating |
|---|---|---|---|---|---|
| ILLINOIS | | | MINNESOTA | | |
| Elgin | 100 | Dec. 14, 1938. | Albert Lea | 100 | Sept. 29, 1938. |
| Evanston | 100 | May 10, 1938. | Rochester | 100 | October 1938. |
| Glencoe | 100 | May 13, 1938. | Winona | 100 | Aug. 12, 1938. |
| Highland Park | 100 | Do. | MISSOURI | | |
| Kenilworth | 100 | Do. | St. Louis | 100 | June 1938. |
| Lake Bluff | 100 | Do. | NORTH CAROLINA | | |
| Lake Forest | 100 | Do. | Clinton | 100 | Aug. 18, 1939. |
| Waukegan | 100 | May 16, 1938. | Fort Bragg | 100 | Do. |
| Winnetka | 100 | May 13, 1938. | Tarboro | 100 | Nov. 1, 1938. |

[1] Note particularly the percentage of milk pasteurized in the various communities listed in these tables. This percentage is an important factor to consider in estimating the safety of a city's milk supply.

TABLE 2.—*Communities in which some market milk is pasteurized. In these communities the pasteurized market milk complies with the Grade A pasteurized milk requirements and the raw market milk complies with the Grade A raw milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by pasteurized and raw milk ratings, respectively, of 90 percent or more* [1]

[NOTE.—All milk should be pasteurized or boiled, either commercially or at home, before it is consumed. See text for home method]

| Community | Percentage of milk pasteurized | Date of rating |
|---|---|---|
| **ALABAMA** | | |
| Dothan | 49 | June 21, 1938. |
| Huntsville | 80 | Dec. 7, 1938. |
| Montgomery | 27 | Mar. 15, 1939. |
| **ARKANSAS** | | |
| Fayetteville | 59 | May 1939. |
| Fort Smith | 38 | June 1939. |
| Jonesboro | 37 | May 1939. |
| Little Rock | 49 | October 1939. |
| Pine Bluff | 28 | June 1939. |
| Texarkana | 35 | Aug. 16, 1939. |
| **FLORIDA** | | |
| Miami Beach | 93 | May 12, 1938. |
| **GEORGIA** | | |
| Americus | 13 | June 21, 1939. |
| **ILLINOIS** | | |
| Chicago | 99.9 | May 20, 1939. |
| Decatur | 87 | Jan. 28, 1939. |
| **KANSAS** | | |
| Kansas City | 51 | December 1938. |
| Lawrence | 61 | January 1938. |
| Ottawa | 13 | Do. |
| Wichita | 75 | December 1939. |
| **KENTUCKY** | | |
| Berea | 1 | November 1939. |
| Bowling Green | 70 | Dec. 22, 1939. |
| Glasgow | 68 | June 27, 1939. |
| Jefferson County | 43 | August 1939. |
| Louisville | 97 | July 1938. |
| Richmond | 22 | November 1939. |
| **MINNESOTA** | | |
| Austin | 77 | May 19, 1938. |
| Little Falls | 70 | June 26, 1939. |
| **MISSISSIPPI** | | |
| Greenville | 58 | May 25, 1939. |
| McComb | 21 | Dec. 6, 1938. |
| Tupelo | 21 | Jan. 6, 1939. |
| **MISSOURI** | | |
| Clayton | 99.9 | June 1938. |
| Ferguson | 80 | Do. |
| Kirkwood | 94 | Do. |
| University City | 99.6 | Do. |
| Webster Groves | 93 | Do. |
| **NEW MEXICO** | | |
| Albuquerque | 69 | Nov. 1939. |
| Las Vegas | 65 | July 25, 1939. |
| Roswell | 77 | Aug. 8, 1939. |
| **NORTH CAROLINA** | | |
| Asheville | 67 | June 23, 1938. |
| Fayetteville | 50 | Aug. 18, 1939. |
| Franklin | 85 | July 19, 1939. |
| Greensboro | 79 | August 1939. |
| Hendersonville | 53 | Sept. 13, 1938. |
| Mount Airy | 47 | Oct. 18, 1938. |
| Reidsville | 69 | Aug. 18, 1938. |
| Rocky Mount | 50 | Nov. 29, 1938. |
| Salisbury | 57 | Oct. 6, 1938. |
| Tryon | 49 | July 24, 1939. |
| Winston-Salem | 61 | November 1938. |
| **NORTH DAKOTA** | | |
| Valley City | 23 | Nov. 10, 1939. |
| **OHIO** | | |
| Athens | 84 | Oct. 6, 1938. |
| **OKLAHOMA** | | |
| Ada | 62 | Sept. 16, 1938. |
| Bartlesville | 45 | Dec. 19. 1939. |
| Blackwell | 35 | Nov. 28, 1939. |
| Lawton | 47 | Feb. 22, 1939. |
| Muskogee | 59 | Nov. 10, 1939. |
| Oklahoma City | 73 | Mar. 29, 1939. |
| Okmulgee | 61 | Nov. 8, 1939. |
| Tulsa | 74 | April 1939. |
| **OREGON** | | |
| Astoria | 64 | June 16, 1939. |
| Portland | 80 | July 2, 1938. |
| **SOUTH CAROLINA** | | |
| Walterboro | 26 | Dec. 6. 1939. |
| **TENNESSEE** | | |
| Bristol | 69 | July 14, 1939. |
| Clinton | 75 | June 9, 1938. |
| **TEXAS** | | |
| Abilene | 67 | Apr. 25, 1939. |
| Amarillo | 73 | Oct. 17, 1938. |
| Ballinger | 49 | Apr. 21, 1939. |
| Big Spring | 34 | Sept. 20. 1938. |
| Corpus Christi | 87 | May 26, 1939. |
| Dallas | 77 | Dec. 10, 1938. |
| Fort Worth | 75 | Feb. 25, 1939. |
| Gainesville | 63 | June 30, 1939. |
| Henderson | 50 | Nov. 25, 1939. |
| Kerrville | 74 | Sept. 6, 1939. |
| Lamesa | 48 | May 4, 1939. |
| Lubbock | 76 | Oct. 28, 1939. |
| Seguin | 12 | July 30, 1938. |
| Sherman | 43 | June 17. 1939. |
| Texarkana | 26 | Aug. 16, 1939. |
| Tyler | 49 | Apr. 14, 1939. |
| Waco | 48 | Mar. 30, 1939. |
| **UTAH** | | |
| Salt Lake City | 96 | Mar. 31, 1938. |
| **VIRGINIA** | | |
| Bristol | 69 | July 14, 1939. |
| Lexington | 41 | Oct. 26, 1939. |
| Pulaski | 77 | Sept. 20, 1939. |
| South Boston | 72 | Sept. 22, 1939. |
| Waynesboro | 95 | Oct. 11, 1939. |
| Williamsburg | 41 | May 3, 1939. |
| **WASHINGTON** | | |
| Camas | 8 | May 22, 1939 |
| Vancouver | 31 | May 25, 1939. |
| Walla Walla | 53 | Apr. 14, 1939. |
| Yakima | 67 | Apr. 20, 1939. |
| **WEST VIRGINIA** | | |
| Huntington | 66 | June 5, 1939. |
| **WYOMING** | | |
| Casper | 71 | Aug. 17, 1938. |
| Cheyenne | 74 | July 7, 1938. |

[1] Note particularly the percentage of milk pasteurized in the various communities listed in these tables. This percentage is an important factor to consider in estimating the safety of a city's milk supply.

TABLE 3.—*Communities in which no market milk is pasteurized, but in which the raw market milk complies with the grade A raw milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by raw milk ratings of 90 percent or more* [1]

[NOTE.—All milk should be pasteurized or boiled, either commercially or at home, before it is consumed. See text for home method]

| Community | Date of rating |
|---|---|
| **KENTUCKY** | |
| Somerset | November 1939. |
| **MISSISSIPPI** | |
| Canton | Oct. 17, 1938. |
| Greenwood | Nov. 22, 1933. |
| Hollandale | Nov. 30, 1938. |
| Holly Springs | Jan. 4, 1939. |
| Leland | Nov. 30, 1938. |
| Magnolia | Dec. 6, 1938. |
| Yazoo City | Oct. 12, 1938. |
| **NORTH CAROLINA** | |
| Ahoskie | Oct. 20, 1938. |
| Aulander | Nov. 8, 1938. |
| Belhaven | Oct. 26, 1938. |
| Bladenboro | Aug. 23, 1939. |
| Brevard | July 28, 1939. |
| Clarkton | Aug. 23, 1939. |
| Colerain | Nov. 8, 1938. |
| Dunn | July 6, 1939. |
| Edenton | Nov. 7, 1938. |
| Elkin | Sept. 18, 1939. |
| Fremont | Feb. 2, 1938. |
| Hope Mills | Aug. 18, 1939. |
| Kelford | Nov. 8, 1938. |
| Lewiston | Do. |
| Mars Hill | Feb. 21, 1939 |
| Mount Olive | Aug. 22, 1939. |
| Murfreesboro | Oct. 20, 1938. |
| North Wilkesboro | July [illegible], 1938. |
| Pilot Mountain | Sept. 20, 1939. |
| Powellsville | Nov. 8, 1938. |
| **NORTH CAROLINA—continued** | |
| Roxobel | Nov. 8. 1938. |
| Wilkesboro | July 29, 1938. |
| Windsor | Nov. 8, 1938. |
| Woodville | Do. |
| **OKLAHOMA** | |
| Hobart | Jan. 19, 1938. |
| **SOUTH CAROLINA** | |
| Hartsville | Nov. 9, 1939 |
| **TENNESSEE** | |
| Knox County | June 7, 1938. |
| Savannah | Apr. 22, 1938. |
| **TEXAS** | |
| Canyon | Oct. 14, 1938. |
| Colorado | Nov. 3, 1939. |
| Commerce | Mar. 16, 1939. |
| Del Rio | Apr. 20, 1939. |
| Kermit | Sept. 12, 1938. |
| **VIRGINIA** | |
| Blackstone | Nov. 2, 1939. |
| Boydton | Apr. 26, 1939. |
| **WEST VIRGINIA** | |
| Grantsville | June 7, 1939. |

[1] Note particularly the percentage of milk pasteurized in the various communities listed in these tables This percentage is an important factor to consider in estimating the safety of a city's milk supply.

## DEATHS DURING WEEK ENDED DECEMBER 30, 1939

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

| | Week ended Dec. 30, 1939 | Corresponding week, 1938 |
|---|---|---|
| Data from 88 large cities of the United States: | | |
| Total deaths | 8,901 | 9,178 |
| Average for 3 prior years | [1] 9,757 | |
| Total deaths, 52 weeks of year | 429,419 | 424,348 |
| Deaths under 1 year of age | 465 | 485 |
| Average for 3 prior years | [1] 573 | |
| Deaths under 1 year of age, 52 weeks of year | 25,713 | 27,159 |
| Data from industrial insurance companies: | | |
| Policies in force | 66,393,376 | 68,321,330 |
| Number of death claims | 10,624 | 10,406 |
| Death claims per 1,000 policies in force, annual rate | 8.3 | 7.9 |
| Death claims per 1,000 policies, 52 weeks of year, annual rate | 9.8 | 9.2 |

[1] Data for 86 cities.

# 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

### REPORTS FROM STATES FOR WEEK ENDED JANUARY 13, 1940

#### Summary

Influenza continued its rise during the current week, as was to be expected, with 12,516 cases reported, as compared with 9,630 cases for the preceding week and with 3,018 cases for the corresponding median week of the 5-year period 1935–39. The highest incidence is still shown in the South Atlantic and South Central areas, where 6 States reported 9,902 cases, or nearly 80 percent of the total for the week. The plotted curve shows a much earlier and sharper rise in the disease this winter than that for either last year or the 5-year median.

While the figures for all of the other 8 important communicable diseases, with the exception of typhoid fever and poliomyelitis, showed slight increases from the preceding week, all were below the median expectancy except poliomyelitis. The total number of cases for poliomyelitis reported was 42, as compared with 43 for the preceding week and with 22 for the 5-year median. Only 3 States reported more than 2 cases, however. The largest number of cases and the largest increase is shown for California, where 16 cases were reported as compared with 8 cases for the preceding week.

Maryland reported 5 cases of tularaemia, and the South Atlantic and South Central States reported 39 cases of endemic typhus fever, as compared with 24 cases for the preceding week. The incidence of smallpox and typhoid fever remained low as compared with the median expectancy. Of the 110 cases of smallpox reported, 77 cases, or 70 percent, occurred in three States—Minnesota, Iowa, and Colorado.

## *Cases of certain diseases reported by telegraph by State health officers for the week ended January 13, 1940, and comparison with corresponding week of 1939 and 5-year median*

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers.

In these and the following tables, a zero (0) indicates a positive report and has the same significance as any other figure, while leaders (..) represent no report with the implication that cases or deaths may have occurred but were not reported to the State health officer.

| Division and State | Diphtheria | | | Influenza | | | Measles | | | Meningitis, meningococcus | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 |
| | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | |
| **NEW ENG.** | | | | | | | | | | | | |
| Maine | 4 | 13 | 3 | 32 | 3 | 5 | 73 | 34 | 66 | 0 | 0 | 0 |
| New Hampshire | 0 | 0 | 0 | ..... | ..... | ..... | 12 | 1 | 24 | 0 | 0 | 0 |
| Vermont | 0 | 0 | 0 | ..... | ..... | ..... | 3 | 11 | 11 | 0 | 0 | 0 |
| Massachusetts | 9 | 3 | 7 | ..... | ..... | ..... | 185 | 441 | 287 | 1 | 1 | 1 |
| Rhode Island | 0 | 1 | 0 | ..... | ..... | ..... | 226 | 5 | 13 | 1 | 0 | 0 |
| Connecticut | 0 | 2 | 4 | 3 | 6 | 10 | 161 | 184 | 184 | 1 | 0 | 0 |
| **MID. ATL.** | | | | | | | | | | | | |
| New York | 25 | 37 | 43 | [1] 13 | [1] 57 | [1] 52 | 369 | 1,338 | 971 | 1 | 10 | 10 |
| New Jersey | 7 | 13 | 18 | 18 | 24 | 24 | 23 | 22 | 66 | 0 | 0 | 3 |
| Pennsylvania | 28 | 33 | 64 | ..... | ..... | ..... | 50 | 109 | 365 | 9 | 1 | 4 |
| **E. NO. CEN.** | | | | | | | | | | | | |
| Ohio | 28 | 33 | 45 | 88 | ..... | 14 | 22 | 24 | 73 | 0 | 1 | 6 |
| Indiana | 14 | 20 | 51 | 25 | 11 | 39 | 7 | 9 | 12 | 1 | 0 | 3 |
| Illinois | 41 | 65 | 45 | 36 | 12 | 57 | 33 | 48 | 57 | 0 | 0 | 7 |
| Michigan [2] | 11 | 7 | 12 | 15 | ..... | 2 | 384 | 440 | 252 | 0 | 0 | 2 |
| Wisconsin | 2 | 1 | 4 | 48 | 65 | 35 | 221 | 471 | 471 | 0 | 1 | 2 |
| **W. NO. CEN.** | | | | | | | | | | | | |
| Minnesota | 5 | 2 | 4 | 3 | 2 | 2 | 255 | 1,003 | 122 | 0 | 1 | 1 |
| Iowa | 11 | 6 | 6 | 11 | 4 | 5 | 49 | 161 | 34 | 0 | 1 | 1 |
| Missouri | 14 | 29 | 29 | 18 | 59 | 215 | 5 | 4 | 16 | 0 | 1 | 1 |
| North Dakota | 0 | 0 | 0 | 42 | 11 | 7 | 1 | 249 | 27 | 0 | 0 | 0 |
| South Dakota | 5 | 10 | 1 | 13 | ..... | ..... | 6 | 447 | 26 | 0 | 0 | 0 |
| Nebraska | 4 | 3 | 4 | ..... | ..... | ..... | 8 | 43 | 43 | 1 | 0 | 0 |
| Kansas | 11 | 7 | 12 | 99 | 9 | 32 | 141 | 12 | 18 | 0 | 0 | 1 |
| **SO. ATL.** | | | | | | | | | | | | |
| Delaware | 0 | 2 | 2 | ..... | ..... | 2 | 1 | ..... | 2 | 0 | 1 | 0 |
| Maryland [2] | 5 | 6 | 10 | 37 | 5 | 24 | 1 | 470 | 139 | 0 | 0 | 3 |
| Dist. of Col | 3 | 10 | 10 | 10 | 2 | 2 | 0 | 11 | 9 | 1 | 0 | 1 |
| Virginia | 25 | 51 | 32 | 869 | 420 | ..... | 25 | 168 | 168 | 2 | 3 | 3 |
| West Virginia | 19 | 14 | 15 | 37 | 13 | 72 | 8 | 54 | 54 | 0 | 1 | 4 |
| North Carolina [2] | 41 | 33 | 30 | 211 | 7 | 26 | 67 | 434 | 434 | 2 | 2 | 3 |
| South Carolina [2] | 7 | 10 | 5 | 3,948 | 495 | 652 | 3 | 7 | 7 | 1 | 1 | 1 |
| Georgia [2] | 13 | 16 | 10 | 2,192 | 136 | 136 | 26 | 72 | 0 | 0 | 0 | 1 |
| Florida [2] | 5 | 12 | 9 | 28 | 1 | 11 | 11 | 45 | 31 | 0 | 0 | 2 |
| **E. SO. CEN.** | | | | | | | | | | | | |
| Kentucky | 19 | 18 | 18 | 21 | 65 | 79 | 5 | 7 | 84 | 2 | 2 | 6 |
| Tennessee | 6 | 12 | 19 | 184 | 64 | 252 | 74 | 67 | 42 | 4 | 3 | 5 |
| Alabama [2] | 15 | 6 | 20 | 1,360 | 191 | 352 | 50 | 126 | 126 | 2 | 5 | 5 |
| Mississippi [2] | 9 | 8 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | 0 | 1 | 1 |
| **W. SO. CEN.** | | | | | | | | | | | | |
| Arkansas | 18 | 11 | 16 | 638 | 203 | 182 | 4 | 21 | 21 | 0 | 0 | 0 |
| Louisiana [2] | 13 | 22 | 22 | 32 | 36 | 36 | 2 | 61 | 56 | 0 | 2 | 1 |
| Oklahoma | 17 | 14 | 15 | 263 | 149 | 149 | 9 | 59 | 15 | 0 | 0 | 2 |
| Texas [2] | 57 | 48 | 68 | 895 | 716 | 619 | 307 | 216 | 84 | 0 | 2 | 3 |
| **MOUNTAIN** | | | | | | | | | | | | |
| Montana | 1 | 1 | 1 | 17 | 26 | 26 | 11 | 412 | 9 | 1 | 0 | 1 |
| Idaho | 1 | 1 | 2 | 3 | 2 | 4 | 48 | 46 | 46 | 0 | 0 | 0 |
| Wyoming | 1 | 1 | 1 | 24 | ..... | ..... | 9 | 8 | 4 | 0 | 0 | 0 |
| Colorado | 14 | 18 | 12 | 80 | 21 | ..... | 43 | 28 | 28 | 1 | 1 | 1 |
| New Mexico | 1 | 2 | 4 | 6 | 1 | 9 | 5 | 29 | 35 | 0 | 0 | 1 |
| Arizona | 2 | 8 | 6 | 242 | 117 | 95 | 10 | 3 | 3 | 0 | 0 | 0 |
| Utah [2] | 0 | 0 | 0 | 458 | 1 | ..... | 149 | 27 | 27 | 0 | 1 | 1 |

See footnotes at end of table.

*Cases of certain diseases reported by telegraph by State health officers for the week ended January 13, 1940, and comparison with corresponding week of 1939 and 5-year median*—Continued

| Division and State | Diphtheria | | | Influenza | | | Measles | | | Meningitis, meningococcus | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 |
| | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | |
| PACIFIC | | | | | | | | | | | | |
| Washington | 7 | 1 | 1 | ------- | 4 | 3 | 999 | 141 | 58 | 1 | 0 | 0 |
| Oregon | 7 | 1 | 2 | 274 | 39 | 39 | 141 | 27 | 27 | 0 | 0 | 0 |
| California | 18 | 41 | 33 | 223 | 41 | 86 | 326 | 2,262 | 144 | 1 | 1 | 3 |
| Total | 543 | 652 | 707 | 12,516 | 3,018 | 3,018 | 4,568 | 9,857 | 9,857 | 33 | 43 | 106 |
| 2 weeks | 1,031 | 1,291 | 1,401 | 22,146 | 6,273 | 6,273 | 7,451 | 16,527 | 16,527 | 58 | 103 | 201 |

| Division and State | Poliomyelitis | | | Scarlet fever | | | Smallpox | | | Typhoid and paratyphoid fever | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 |
| | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | |
| NEW ENG. | | | | | | | | | | | | |
| Maine | 0 | 0 | 0 | 26 | 10 | 16 | 0 | 0 | 0 | 0 | 0 | 1 |
| New Hampshire | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vermont | 0 | 0 | 0 | 5 | 6 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| Massachusetts | 0 | 0 | 0 | 128 | 191 | 260 | 0 | 0 | 0 | 0 | 3 | 2 |
| Rhode Island | 0 | 0 | 0 | 4 | 3 | 26 | 0 | 0 | 0 | 0 | 0 | 0 |
| Connecticut | 0 | 0 | 0 | 72 | 73 | 77 | 0 | 0 | 0 | 0 | 1 | 1 |
| MID. ATL. | | | | | | | | | | | | |
| New York | 1 | 0 | 0 | 419 | 481 | 627 | 0 | 0 | 0 | 9 | 8 | 8 |
| New Jersey | 1 | 0 | 0 | 224 | 181 | 158 | 0 | 0 | 0 | 2 | 4 | 4 |
| Pennsylvania | 0 | 0 | 1 | 308 | 352 | 590 | 0 | 0 | 0 | 1 | 16 | 13 |
| E. NO. CEN. | | | | | | | | | | | | |
| Ohio | 1 | 1 | 2 | 354 | 500 | 500 | 1 | 60 | 9 | 4 | 5 | 4 |
| Indiana | 0 | 0 | 0 | 150 | 282 | 174 | 4 | 97 | 5 | 1 | 1 | 1 |
| Illinois | 0 | 1 | 0 | 433 | 548 | 707 | 0 | 10 | 14 | 4 | 1 | 5 |
| Michigan [3] | 1 | 0 | 0 | 321 | 512 | 500 | 1 | 2 | 1 | 2 | 2 | 3 |
| Wisconsin | 1 | 1 | 1 | 133 | 304 | 304 | 6 | 6 | 9 | 0 | 0 | 0 |
| W. NO. CEN. | | | | | | | | | | | | |
| Minnesota | 1 | 0 | 0 | 124 | 136 | 147 | 13 | 43 | 18 | 1 | 2 | 1 |
| Iowa | 2 | 0 | 0 | 91 | 107 | 156 | 31 | 13 | 13 | 0 | 0 | 0 |
| Missouri | 0 | 0 | 0 | 82 | 148 | 193 | 1 | 19 | 19 | 0 | 6 | 6 |
| North Dakota | 0 | 0 | 0 | 20 | 21 | 39 | 1 | 2 | 12 | 0 | 0 | 0 |
| South Dakota | 0 | 1 | 0 | 22 | 22 | 26 | 1 | 5 | 14 | 1 | 1 | 0 |
| Nebraska | 0 | 0 | 0 | 39 | 30 | 67 | 0 | 7 | 7 | 1 | 1 | 1 |
| Kansas | 0 | 1 | 0 | 135 | 160 | 160 | 1 | 36 | 20 | 0 | 1 | 2 |
| SO. ATL. | | | | | | | | | | | | |
| Delaware | 0 | 0 | 0 | 17 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 |
| Maryland [2] | 1 | 0 | 0 | 66 | 66 | 96 | 0 | 0 | 0 | 3 | 0 | 2 |
| Dist. of Col | 0 | 0 | 0 | 13 | 12 | 24 | 0 | 0 | 0 | 0 | 0 | 1 |
| Virginia | 2 | 0 | 0 | 54 | 59 | 59 | 1 | 0 | 0 | 2 | 1 | 2 |
| West Virginia | 1 | 0 | 0 | 66 | 90 | 87 | 0 | 0 | 0 | 3 | 13 | 2 |
| North Carolina [3] | 3 | 1 | 1 | 84 | 63 | 63 | 0 | 0 | 0 | 3 | 1 | 4 |
| South Carolina [3] | 0 | 0 | 0 | 17 | 12 | 9 | 0 | 0 | 0 | 3 | 1 | 1 |
| Georgia [3] | 0 | 0 | 0 | 27 | 29 | 20 | 0 | 8 | 0 | 4 | 2 | 2 |
| Florida [3] | 0 | 1 | 1 | 11 | 8 | 8 | 0 | 1 | 0 | 0 | 2 | 1 |
| E. SO. CEN. | | | | | | | | | | | | |
| Kentucky | 2 | 0 | 0 | 70 | 123 | 86 | 0 | 3 | 2 | 0 | 7 | 7 |
| Tennessee | 0 | 0 | 0 | 67 | 48 | 48 | 0 | 1 | 1 | 0 | 2 | 4 |
| Alabama [3] | 1 | 1 | 0 | 41 | 24 | 24 | 0 | 0 | 0 | 1 | 4 | 2 |
| Mississippi [3] | 0 | 1 | 0 | 13 | 9 | 10 | 0 | 0 | 0 | 1 | 3 | 2 |

See footnotes at end of table.

*Cases of certain diseases reported by telegraph by State health officers for the week ended January 13, 1940, and comparison with corresponding week of 1939 and 5-year median*—Continued

| Division and State | Poliomyelitis | | | Scarlet fever | | | Smallpox | | | Typhoid and paratyphoid fever | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 | Week ended | | Median, 1935–39 |
| | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 | |
| W. SO. CEN. | | | | | | | | | | | | |
| Arkansas | 2 | 0 | 0 | 9 | 18 | 18 | 3 | 9 | 4 | 4 | 2 | 2 |
| Louisiana [2] | 0 | 0 | 1 | 19 | 15 | 18 | 0 | 1 | 1 | 7 | 8 | 8 |
| Oklahoma | 0 | 0 | 0 | 35 | 47 | 47 | 5 | 11 | 2 | 2 | 4 | 4 |
| Texas [2] | 4 | 2 | 1 | 61 | 111 | 111 | 2 | 22 | 12 | 12 | 4 | 14 |
| MOUNTAIN | | | | | | | | | | | | |
| Montana | 0 | 0 | 0 | 52 | 24 | 56 | 0 | 2 | 9 | 0 | 2 | 1 |
| Idaho | 1 | 0 | 0 | 12 | 9 | 19 | 0 | 14 | 14 | 0 | 0 | 1 |
| Wyoming | 0 | 0 | 0 | 5 | 8 | 10 | 0 | 2 | 2 | 1 | 0 | 0 |
| Colorado | 0 | 0 | 0 | 27 | 50 | 61 | 33 | 27 | 7 | 1 | 2 | 0 |
| New Mexico | 0 | 0 | 0 | 14 | 14 | 24 | 1 | 0 | 0 | 0 | 5 | 5 |
| Arizona | 0 | 0 | 0 | 7 | 7 | 11 | 1 | 15 | 0 | 2 | 1 | 0 |
| Utah [2] | 1 | 0 | 0 | 24 | 33 | 33 | 1 | 1 | 0 | 0 | 0 | 0 |
| PACIFIC | | | | | | | | | | | | |
| Washington | 0 | 1 | 1 | 49 | 61 | 56 | 0 | 8 | 31 | 1 | 0 | 2 |
| Oregon | 0 | 1 | 1 | 23 | 66 | 66 | 3 | 14 | 12 | 1 | 3 | 3 |
| California | 16 | 3 | 3 | 161 | 206 | 247 | 0 | 17 | 12 | 1 | 2 | 4 |
| Total | 42 | 16 | 22 | 4,134 | 5,287 | 6,270 | 110 | 456 | 315 | 78 | 122 | 130 |
| 2 weeks | 85 | 32 | 43 | 7,731 | 9,746 | 11,437 | 184 | 747 | 591 | 159 | 220 | 253 |

| Division and State | Whooping cough, week ended | | Division and State | Whooping cough, week ended | |
|---|---|---|---|---|---|
| | Jan. 13, 1940 | Jan. 14, 1939 | | Jan. 13, 1940 | Jan. 14, 1939 |
| NEW ENG. | | | SO. ATL.—continued | | |
| Maine | 65 | 42 | North Carolina [3] | 39 | 284 |
| New Hampshire | 21 | 1 | South Carolina [3] | 10 | 73 |
| Vermont | 40 | 93 | Georgia [3] | 14 | 14 |
| Massachusetts | 152 | 227 | Florida [3] | 7 | 14 |
| Rhode Island | 16 | 86 | E. SO. CEN. | | |
| Connecticut | 87 | 113 | Kentucky | 0 | 9 |
| MID. ATL. | | | Tennessee | 17 | 21 |
| New York | 487 | 755 | Alabama [3] | 13 | 28 |
| New Jersey | 115 | 518 | Mississippi [3] | ---- | ---- |
| Pennsylvania | 414 | 464 | W. SO. CEN. | | |
| E. NO. CEN. | | | Arkansas | 3 | 9 |
| Ohio | 149 | 260 | Louisiana [3] | 2 | 1 |
| Indiana | 43 | 25 | Oklahoma | 0 | 1 |
| Illinois | 119 | 467 | Texas [3] | 94 | 96 |
| Michigan [3] | 101 | 220 | MOUNTAIN | | |
| Wisconsin | 101 | 318 | Montana | 3 | 26 |
| W. NO. CEN. | | | Idaho | 6 | 2 |
| Minnesota | 72 | 38 | Wyoming | 6 | 6 |
| Iowa | 9 | 12 | Colorado | 15 | 44 |
| Missouri | 3 | 20 | New Mexico | 14 | 21 |
| North Dakota | 13 | 3 | Arizona | 37 | 6 |
| South Dakota | 4 | 1 | Utah [3] | 79 | 12 |
| Nebraska | 1 | 5 | PACIFIC | | |
| Kansas | 36 | 9 | Washington | 49 | 24 |
| SO. ATL. | | | Oregon | 27 | 24 |
| Delaware | 3 | 6 | California | 183 | 103 |
| Maryland [3] | 80 | 41 | Total | 2,794 | 4,659 |
| Dist. of Col | 5 | 28 | 2 weeks | 4,871 | 8,354 |
| Virginia | 29 | 53 | | | |
| West Virginia | 11 | 36 | | | |

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Typhus fever, week ended Jan. 13, 1940, 39 cases as follows: North Carolina, 1; South Carolina, 6; Georgia, 13; Florida, 4; Alabama, 7; Louisiana, 2; Texas, 6.

## WEEKLY REPORTS FROM CITIES

*City reports for week ended Dec. 30, 1939*

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table.

| State and city | Diphtheria cases | Influenza | | Measles cases | Pneumonia deaths | Scarlet fever cases | Smallpox cases | Tuberculosis deaths | Typhoid fever cases | Whooping cough cases | Deaths, all causes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cases | Deaths | | | | | | | | |
| Data for 90 cities: | | | | | | | | | | | |
| 5-year average | 194 | 619 | 105 | 1,354 | 911 | 1,524 | 28 | 359 | 23 | 1,064 | ---- |
| Current week [1] | 120 | 474 | 49 | 483 | 494 | 925 | 0 | 321 | 16 | 519 | ---- |
| **Maine:** | | | | | | | | | | | |
| Portland | 0 | ---- | 0 | 5 | 3 | 2 | 0 | 0 | 0 | 6 | 25 |
| **New Hampshire:** | | | | | | | | | | | |
| Concord | 0 | ---- | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 9 |
| Manchester | 0 | ---- | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 13 |
| **Vermont:** | | | | | | | | | | | |
| Barre | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| Burlington | 0 | ---- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 9 |
| Rutland | 0 | ---- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| **Massachusetts:** | | | | | | | | | | | |
| Boston | 1 | ---- | 1 | 33 | 15 | 32 | 0 | 5 | 1 | 14 | 216 |
| Fall River | 0 | ---- | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 10 | 38 |
| Springfield | 0 | ---- | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 4 | 45 |
| Worcester | 0 | ---- | 0 | 0 | 6 | 7 | 0 | 3 | 0 | 1 | 50 |
| **Rhode Island:** | | | | | | | | | | | |
| Pawtucket | 0 | ---- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 |
| Providence | 1 | ---- | 0 | 100 | 4 | 4 | 0 | 2 | 0 | 6 | 65 |
| **Connecticut:** | | | | | | | | | | | |
| Bridgeport | 0 | ---- | 0 | 0 | 2 | 6 | 0 | 3 | 0 | 0 | 40 |
| Hartford | 0 | ---- | 0 | 0 | 2 | 3 | 0 | 1 | 0 | 3 | 54 |
| New Haven | 0 | ---- | 0 | 0 | 2 | 5 | 0 | 0 | 0 | 5 | 72 |
| **New York:** | | | | | | | | | | | |
| Buffalo | 0 | ---- | 0 | 2 | 7 | 8 | 0 | 4 | 0 | 7 | 119 |
| New York | 28 | 9 | 2 | 24 | 61 | 167 | 0 | 67 | 1 | 60 | 1,471 |
| Rochester | 0 | 2 | 0 | 0 | 4 | 1 | 0 | 2 | 0 | 3 | 69 |
| Syracuse | 0 | ---- | 0 | 0 | 2 | 4 | 0 | 0 | 0 | 13 | 49 |
| **New Jersey:** | | | | | | | | | | | |
| Camden | 0 | 1 | 1 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 37 |
| Newark | 0 | 1 | 0 | 2 | 7 | 15 | 0 | 9 | 1 | 11 | 104 |
| Trenton | 0 | ---- | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 41 |
| **Pennsylvania:** | | | | | | | | | | | |
| Philadelphia | 6 | 5 | 2 | 5 | 27 | 60 | 0 | 22 | 1 | 69 | 498 |
| Pittsburgh | 3 | 2 | 3 | 1 | 14 | 33 | 0 | 9 | 0 | 5 | 150 |
| Reading | 2 | ---- | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 5 | 32 |
| Scranton | 0 | ---- | ---- | 0 | ---- | 5 | 0 | ---- | 0 | 0 | ---- |
| **Ohio:** | | | | | | | | | | | |
| Cincinnati | 2 | ---- | 1 | 0 | 3 | 23 | 0 | 4 | 0 | 6 | 127 |
| Cleveland | 1 | 127 | 0 | 1 | 15 | 40 | 0 | 15 | 1 | 25 | 215 |
| Columbus | 4 | 2 | 2 | 0 | 3 | 3 | 0 | 0 | 0 | 1 | 90 |
| Toledo | 0 | 1 | 0 | 4 | 5 | 8 | 0 | 2 | 0 | 4 | 72 |
| **Indiana:** | | | | | | | | | | | |
| Anderson | 0 | ---- | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| Fort Wayne | 1 | ---- | 1 | 0 | 2 | 4 | 0 | 0 | 0 | 0 | 28 |
| Indianapolis | 4 | ---- | 2 | 3 | 11 | 17 | 0 | 6 | 0 | 3 | 117 |
| Muncie | 0 | ---- | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 14 |
| South Bend | 0 | ---- | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 2 | 16 |
| Terre Haute | 1 | ---- | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 29 |
| **Illinois:** | | | | | | | | | | | |
| Alton | 0 | ---- | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 7 |
| Chicago | 9 | 6 | 3 | 8 | 39 | 176 | 0 | 34 | 2 | 41 | 737 |
| Elgin | 0 | ---- | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 14 |
| Moline | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 |
| Springfield | 0 | ---- | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 24 |
| **Michigan:** | | | | | | | | | | | |
| Detroit | 2 | 1 | 2 | 3 | 26 | 49 | 0 | 15 | 2 | 18 | 290 |
| Flint | 0 | ---- | 0 | 0 | 0 | 21 | 0 | 6 | 0 | 0 | 38 |
| Grand Rapids | 0 | ---- | 1 | 1 | 2 | 20 | 0 | 0 | 0 | 0 | 43 |
| **Wisconsin:** | | | | | | | | | | | |
| Kenosha | 0 | ---- | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 5 |
| Madison | 0 | ---- | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 9 |
| Milwaukee | 0 | ---- | 0 | 0 | 5 | 24 | 0 | 3 | 0 | 5 | 106 |
| Racine | 0 | ---- | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 5 | 12 |
| Superior | 0 | ---- | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 13 |
| **Minnesota:** | | | | | | | | | | | |
| Duluth | 0 | ---- | 0 | 60 | 5 | 4 | 0 | 1 | 0 | 0 | 37 |
| Minneapolis | 1 | ---- | 0 | 2 | 6 | 20 | 0 | 0 | 0 | 3 | 121 |
| St. Paul | 0 | ---- | 0 | 1 | 4 | 12 | 0 | 1 | 0 | 18 | 59 |

[1] Figures for Barre, Vt., estimated; report not received.

*City reports for week ended Dec. 30, 1939*—Continued

| State and city | Diphtheria cases | Influenza | | Measles cases | Pneumonia deaths | Scarlet fever cases | Smallpox cases | Tuberculosis deaths | Typhoid fever cases | Whooping cough cases | Deaths, all causes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cases | Deaths | | | | | | | | |
| Iowa: | | | | | | | | | | | |
| Cedar Rapids | 0 | ----- | ----- | 6 | ----- | 0 | 0 | ----- | 0 | 1 | ----- |
| Davenport | 0 | ----- | ----- | 0 | ----- | 2 | 0 | ----- | 0 | 0 | ----- |
| Des Moines | 0 | ----- | 0 | 16 | 0 | 12 | 2 | 0 | 0 | 0 | 42 |
| Sioux City | 0 | ----- | ----- | 0 | ----- | 4 | 0 | ----- | 0 | 0 | ----- |
| Missouri: | | | | | | | | | | | |
| Kansas City | 3 | ----- | 0 | 1 | 6 | 7 | 0 | 7 | 0 | 1 | 97 |
| St. Joseph | 0 | ----- | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 25 |
| St. Louis | 2 | ----- | 2 | 2 | 10 | 17 | 0 | 5 | 1 | 11 | 240 |
| North Dakota: | | | | | | | | | | | |
| Fargo | 0 | ----- | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 13 |
| Grand Forks | 0 | ----- | ----- | 0 | ----- | 0 | 0 | ----- | 0 | 0 | ----- |
| Minot | 0 | ----- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| South Dakota: | | | | | | | | | | | |
| Aberdeen | 0 | ----- | ----- | 0 | ----- | 3 | 0 | ----- | 0 | 0 | ----- |
| Nebraska: | | | | | | | | | | | |
| Lincoln | 1 | ----- | ----- | 2 | ----- | 1 | 0 | ----- | 0 | 0 | ----- |
| Omaha | 0 | ----- | 0 | 1 | 2 | 2 | 0 | 0 | 0 | 1 | 50 |
| Kansas: | | | | | | | | | | | |
| Lawrence | 0 | ----- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Topeka | 0 | ----- | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 11 |
| Wichita | 1 | 2 | 0 | 37 | 4 | 0 | 0 | 0 | 0 | 1 | 37 |
| Delaware: | | | | | | | | | | | |
| Wilmington | 0 | ----- | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 3 | 29 |
| Maryland: | | | | | | | | | | | |
| Baltimore | 8 | 9 | 0 | 2 | 19 | 15 | 0 | 11 | 0 | 40 | 213 |
| Cumberland | 0 | ----- | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 14 |
| Frederick | 0 | ----- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Dist. of Col.: | | | | | | | | | | | |
| Washington | 3 | 5 | 3 | 0 | 8 | 9 | 0 | 9 | 1 | 10 | 190 |
| Virginia | | | | | | | | | | | |
| Lynchburg | 1 | ----- | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 8 |
| Norfolk | 0 | ----- | 0 | 0 | 4 | 0 | 0 | 3 | 0 | 1 | 28 |
| Richmond | 0 | ----- | 1 | 5 | 6 | 0 | 0 | 1 | 1 | 0 | 65 |
| Roanoke | 0 | ----- | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 6 | 21 |
| West Virginia: | | | | | | | | | | | |
| Charleston | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 |
| Huntington | 1 | ----- | ----- | 0 | ----- | 0 | 0 | ----- | 0 | 0 | ----- |
| Wheeling | 0 | ----- | 0 | 1 | 1 | 6 | 0 | 0 | 0 | 0 | 34 |
| North Carolina: | | | | | | | | | | | |
| Gastonia | 0 | ----- | ----- | 0 | ----- | 0 | 0 | ----- | 0 | 0 | ----- |
| Raleigh | 1 | ----- | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 15 |
| Wilmington | 0 | ----- | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 26 |
| Winston-Salem | 0 | ----- | 0 | 0 | 4 | 1 | 0 | 2 | 0 | 0 | 26 |
| South Carolina: | | | | | | | | | | | |
| Charleston | 0 | 153 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 33 |
| Florence | 4 | 27 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 23 |
| Greenville | 0 | ----- | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 14 |
| Georgia: | | | | | | | | | | | |
| Atlanta | 5 | 43 | 0 | 3 | 6 | 8 | 0 | 6 | 0 | 0 | 94 |
| Brunswick | 0 | ----- | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 4 |
| Savannah | 0 | 45 | 2 | 0 | 7 | 2 | 0 | 3 | 0 | 0 | 52 |
| Florida: | | | | | | | | | | | |
| Miami | 0 | 3 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 2 | 39 |
| Tampa | 0 | ----- | 0 | 0 | 4 | 1 | 0 | 2 | 0 | 0 | 35 |
| Kentucky: | | | | | | | | | | | |
| Ashland | 0 | ----- | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 1 | 6 |
| Covington | 0 | 1 | 0 | 0 | 5 | 1 | 0 | 3 | 0 | 0 | 21 |
| Lexington | 0 | ----- | 0 | 0 | 2 | 2 | 0 | 2 | 0 | 0 | 16 |
| Louisville | 0 | 1 | 0 | 0 | 7 | 14 | 0 | 3 | 0 | 28 | 96 |
| Tennessee: | | | | | | | | | | | |
| Knoxville | 0 | ----- | 2 | 2 | 3 | 10 | 0 | 0 | 1 | 0 | 36 |
| Memphis | 1 | ----- | 0 | 2 | 1 | 4 | 0 | 4 | 2 | 1 | 68 |
| Nashville | 3 | ----- | 0 | 1 | 6 | 2 | 0 | 1 | 0 | 0 | 63 |
| Alabama: | | | | | | | | | | | |
| Birmingham | 1 | 24 | 4 | 0 | 3 | 3 | 0 | 3 | 0 | 0 | 77 |
| Mobile | 0 | 2 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 22 |
| Montgomery | 0 | 11 | ----- | 2 | ----- | 1 | 0 | ----- | 0 | 0 | ----- |
| Arkansas: | | | | | | | | | | | |
| Fort Smith | 1 | ----- | ----- | 0 | ----- | 3 | 0 | ----- | 1 | 0 | ----- |
| Little Rock | 1 | ----- | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 8 |
| Louisiana: | | | | | | | | | | | |
| Lake Charles | 0 | ----- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| New Orleans | 5 | 6 | 5 | 0 | 16 | 10 | 0 | 9 | 0 | 10 | 174 |
| Shreveport | 2 | ----- | 1 | 0 | 8 | 0 | 0 | 2 | 0 | 0 | 43 |
| Oklahoma: | | | | | | | | | | | |
| Oklahoma City | 0 | ----- | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 32 |
| Tulsa | 2 | ----- | ----- | 0 | ----- | 0 | 0 | ----- | 0 | 0 | ----- |

*City reports for week ended Dec. 30, 1939*—Continued

| State and city | Diphtheria cases | Influenza | | Measles cases | Pneumonia deaths | Scarlet fever cases | Smallpox cases | Tuberculosis deaths | Typhoid fever cases | Whooping cough cases | Deaths, all causes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cases | Deaths | | | | | | | | |
| Texas: | | | | | | | | | | | |
| Dallas | 3 | ------ | 1 | 0 | 4 | 5 | 0 | 1 | 0 | 2 | 66 |
| Fort Worth | 0 | ------ | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 39 |
| Galveston | 0 | ------ | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 13 |
| Houston | 0 | 1 | 2 | 0 | 7 | 3 | 0 | 2 | 0 | 0 | 71 |
| San Antonio | 0 | 5 | 0 | 34 | 9 | 0 | 0 | 5 | 0 | 3 | 67 |
| Montana: | | | | | | | | | | | |
| Billings | 0 | ------ | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 |
| Great Falls | 0 | ------ | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 14 |
| Helena | 1 | ------ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Missoula | 0 | ------ | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 4 | 6 |
| Idaho: | | | | | | | | | | | |
| Boise | 0 | ------ | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 |
| Colorado: | | | | | | | | | | | |
| Colorado Spgs | 0 | ------ | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 13 |
| Denver | 6 | ------ | 1 | 4 | 10 | 7 | 0 | 4 | 1 | 3 | 81 |
| Pueblo | 0 | ------ | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 10 |
| New Mexico: | | | | | | | | | | | |
| Albuquerque | 0 | ------ | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 10 |
| Utah: | | | | | | | | | | | |
| Salt Lake City | 0 | ------ | 2 | 28 | 2 | 1 | 0 | 1 | 0 | 31 | 35 |
| Washington: | | | | | | | | | | | |
| Seattle | 2 | ------ | 0 | 27 | 6 | 4 | 0 | 2 | 0 | 6 | 112 |
| Spokane | 0 | 1 | 1 | 4 | 1 | 3 | 0 | 1 | 0 | 1 | 33 |
| Tacoma | 0 | ------ | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| Oregon: | | | | | | | | | | | |
| Portland | 4 | 2 | 1 | 5 | 3 | 1 | 0 | 2 | 0 | 6 | 77 |
| Salem | 0 | ------ | -------- | 0 | ------- | 0 | 0 | ------- | 0 | 0 | -------- |
| California: | | | | | | | | | | | |
| Los Angeles | 4 | 10 | 0 | 6 | 14 | 15 | 0 | 14 | 0 | 17 | 356 |
| Sacramento | 0 | ------ | 0 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 36 |
| San Francisco | 2 | 1 | 2 | 4 | 3 | 8 | 0 | 8 | 0 | 11 | 169 |

| State and city | Meningitis, meningococcus | | Poliomyelitis cases | State and city | Meningitis, meningococcus | | Poliomyelitis cases |
|---|---|---|---|---|---|---|---|
| | Cases | Deaths | | | Cases | Deaths | |
| Maine: | | | | Michigan: | | | |
| Portland | 0 | 1 | 0 | Detroit | 1 | 0 | 0 |
| Massachusetts: | | | | Iowa: | | | |
| Boston | 0 | 0 | 1 | Des Moines | 0 | 0 | 1 |
| Rhode Island: | | | | Alabama: | | | |
| Providence | 1 | 0 | 0 | Mobile | 1 | 0 | 0 |
| New York: | | | | Louisiana: | | | |
| New York | 1 | 0 | 0 | Shreveport | 0 | 1 | 0 |
| Pennsylvania: | | | | Texas: | | | |
| Philadelphia | 0 | 0 | 1 | Houston | 0 | 0 | 1 |
| Pittsburgh | 2 | 0 | 0 | Washington: | | | |
| Illinois: | | | | Spokane | 1 | 0 | 0 |
| Chicago | 4 | 0 | 1 | | | | |

*Encephalitis, epidemic or lethargic.*—Cases: Portland, Maine, 1; New York, 3; Sioux City, 1.
*Pellagra.*—Cases: Charleston, S. C., 2; Atlanta, 1; Savannah, 1.
*Typhus fever.*—Cases: Charleston, S. C., 1; Savannah, 1; Miami, 1; Nashville, 1; Mobile, 1; New Orleans, 2.

# FOREIGN REPORTS

## CANADA

*Provinces—Communicable diseases—Week ended December 9, 1939.*—During the week ended December 9, 1939, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada as follows:

| Disease | Prince Edward Island | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Cerebrospinal meningitis | | 1 | | 3 | 1 | | | | | 5 |
| Chickenpox | | 9 | 12 | 242 | 501 | 67 | 63 | 65 | 69 | 1,028 |
| Diphtheria | | 1 | | 35 | 3 | 10 | 3 | | | 52 |
| Influenza | | 64 | | | 45 | 1 | | | 25 | 135 |
| Measles | | 1 | | 80 | 279 | 70 | 1 | 17 | 28 | 476 |
| Mumps | | 1 | | 27 | 139 | 11 | 24 | 3 | 18 | 223 |
| Pneumonia | 1 | 14 | | | 14 | 1 | | | 7 | 37 |
| Poliomyelitis | | | | 2 | 2 | 1 | | | | 5 |
| Scarlet fever | 4 | 10 | 19 | 146 | 174 | 23 | 9 | 31 | 19 | 435 |
| Smallpox | | | | | | | | | 4 | 4 |
| Trachoma | | | | | | | | | 1 | 1 |
| Tuberculosis | | 7 | | 46 | 36 | 7 | 22 | 4 | | 122 |
| Typhoid and paratyphoid fever | | 1 | | 13 | 3 | 1 | 1 | 1 | | 20 |
| Whooping cough | 1 | 24 | | 67 | 87 | 39 | 46 | 21 | 15 | 300 |

## JAMAICA

*Communicable diseases—4 weeks ended December 23, 1939.*—During the 4 weeks ended December 23, 1939, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island outside of Kingston, as follows:

| Disease | Kingston | Other localities | Disease | Kingston | Other localities |
|---|---|---|---|---|---|
| Chickenpox | 2 | 19 | Leprosy | | 1 |
| Diphtheria | 1 | 5 | Puerperal fever | | 2 |
| Dysentery | 6 | 5 | Tuberculosis | 21 | 72 |
| Erysipelas | 1 | 2 | Typhoid fever | 7 | 62 |

## REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—A cumulative table giving current information regarding the world prevalence of quarantinable diseases for a six-month period appeared in the PUBLIC HEALTH REPORTS of December 29, 1939, pages 2319–2333. A cumulative table will appear in future issues of the PUBLIC HEALTH REPORTS for the last Friday of each month.

### Plague

*Bolivia—Chuquisaca Department—Chuquisaca.*—During the period August 1 to September 30, 1939, 1 case of pneumonic plague was reported in Chuquisaca, Chuquisaca Department, Bolivia.

*Brazil.*—During the months of April and May 1939, plague was reported in Brazil as follows: Alagoas State, 8 cases, 3 deaths; Pernambuco State, 9 cases, 4 deaths; Sao Paulo State, 1 case.

*Thailand—Kamphaeng Bajr Province.*—During the week ended December 30, 1939, 6 cases of plague were reported in Kamphaeng Bajr Province, Thailand.

### Typhus Fever

*Cuba—Pinar del Rio Province.*—According to a report dated December 13, 1939, 1 case of typhus fever was reported in Pinar del Rio Province, Cuba.

### Yellow Fever

*Brazil—Espirito Santo State—Guarapari.*—On December 14, 1939, 1 death from the jungle type of yellow fever was reported in Guarapari, Espirito Santo State, Brazil.

*Ivory Coast—Sankadiokro.*—On December 31, 1939, 1 fatal case of yellow fever was reported in Sankadiokro, Ivory Coast.

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