# PUBLIC HEALTH REPORTS

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## CASES OF INFLUENZA REPORTED BY STATES.

### COMPARISON OF THE FIRST SIX WEEKS OF THE YEARS 1920, 1921, AND 1922.

The accompanying table shows the number of cases of influenza reported for the first six weeks of 1922 by 24 States, compared with similar reports for the corresponding weeks of the years 1920 and 1921.

Weekly reports from States are sometimes sent before all the local health officers are heard from, and for this reason are not always complete, but the comparison of one year with another for the same State is not seriously affected by this difficulty.

All weeks ended on Saturday. The first week of 1922 ended January 7; in 1921 the first week ended January 8; and in 1920 it ended January 10.

*Number of cases of influenza reported by States for the first six weeks of the years 1920 to 1922, inclusive.*

| State. | Week number. | | | | | |
|---|---|---|---|---|---|---|
| | First. | Second. | Third. | Fourth. | Fifth. | Sixth. |
| Alabama: | | | | | | |
| 1922 | 2 | ..... | 5 | 3 | 26 | 95 |
| 1921 | ..... | ..... | ..... | ..... | ..... | 5 |
| 1920 | ..... | ..... | 8 | 203 | 1,296 | 3,236 |
| Arkansas: | | | | | | |
| 1922 | 83 | 40 | 64 | 88 | 192 | 232 |
| 1921 | 63 | 78 | 75 | 37 | 52 | 70 |
| 1920 | 35 | 53 | 179 | 595 | 5,666 | 6,599 |
| California: | | | | | | |
| 1922 | 38 | ..... | 28 | 48 | 92 | 845 |
| 1921 | 22 | 23 | 30 | 37 | ..... | 98 |
| 1920 | 32 | 322 | 1,604 | 7,133 | 13,660 | 11,887 |
| Connecticut: | | | | | | |
| 1922 | 5 | 7 | 9 | 22 | 109 | 518 |
| 1921 | 13 | 14 | 13 | 13 | 8 | 9 |
| 1920 | 1 | 14 | 1,123 | 4,664 | 5,666 | 4,868 |
| Delaware: | | | | | | |
| 1922 | ..... | ..... | 5 | 2 | 7 | 2 |
| 1921 | 9 | 12 | 12 | 4 | 2 | 7 |
| 1920 | 1 | ..... | 5 | 21 | 86 | 78 |
| District of Columbia: | | | | | | |
| 1922 | 1 | 3 | 4 | 7 | 5 | 9 |
| 1921 | 2 | 2 | 2 | 4 | 4 | 1 |
| 1920 | 9 | 126 | 1,216 | 1,616 | 557 | 298 |
| Florida: | | | | | | |
| 1922 | 3 | 6 | 21 | 6 | 15 | 35 |
| 1921 | 6 | 3 | 4 | 10 | 3 | 6 |
| 1920 | 2 | 10 | 484 | 1,547 | 1,581 | 1,735 |
| Georgia: | | | | | | |
| 1922 | 21 | 19 | 52 | 64 | 74 | 81 |
| 1921 | 30 | 24 | 26 | 25 | 37 | 26 |
| 1920 | 27 | 27 | 95 | 617 | 3,256 | 5,411 |

*Number of cases of influenza reported by States for the first six weeks of the years 1920 to 1922, inclusive*—Continued.

| State. | Week number. | | | | | |
|---|---|---|---|---|---|---|
| | First. | Second. | Third. | Fourth. | Fifth. | Sixth. |
| Illinois: | | | | | | |
| 1922 | 25 | 49 | 38 | 125 | 108 | 417 |
| 1921 | 42 | 18 | 27 | 19 | 28 | 85 |
| 1920 | 73 | 3,251 | 14,805 | 29,156 | 30,330 | 23,037 |
| Kansas: | | | | | | |
| 1922 | 9 | 23 | 68 | 121 | 264 | 440 |
| 1921 | 13 | 9 | 13 | 29 | 5 | 9 |
| 1920 | 17 | 45 | 1,130 | 8,582 | 16,960 | 17,699 |
| Kentucky: | | | | | | |
| 1922 | 17 | 25 | 18 | 51 | 332 | ..... |
| 1921 | 10 | 8 | 40 | 19 | 33 | 21 |
| 1920 | 45 | 75 | 170 | 878 | 2,536 | 6,067 |
| Louisiana: | | | | | | |
| 1922 | 7 | 8 | 4 | 8 | 10 | 39 |
| 1921 | 39 | ..... | ..... | 10 | ..... | ..... |
| 1920 | 52 | 27 | 123 | 763 | 1,901 | 3,690 |
| Maine: | | | | | | |
| 1922 | 5 | 9 | 18 | 14 | 97 | 145 |
| 1921 | 18 | 6 | 14 | 7 | 1 | 2 |
| 1920 | 1 | 4 | ..... | 387 | 936 | 3,942 |
| Maryland: | | | | | | |
| 1922 | 21 | 40 | 52 | 93 | 110 | 189 |
| 1921 | 70 | 79 | 82 | 107 | 125 | 164 |
| 1920 | ..... | ..... | ..... | ..... | 4,935 | 8,942 |
| Massachusetts: | | | | | | |
| 1922 | 7 | 12 | 18 | 66 | 398 | 1,469 |
| 1921 | 37 | 63 | 39 | 15 | 17 | 37 |
| 1920 | 40 | 54 | 490 | 3,730 | 9,731 | 12,389 |
| Missouri: | | | | | | |
| 1922 | 7 | 16 | 8 | 20 | 71 | 99 |
| 1921 | 51 | 48 | 40 | 43 | 26 | 32 |
| 1920 | ..... | ..... | ..... | 4,043 | 5,359 | 1,696 |
| Nebraska: | | | | | | |
| 1922 | ..... | ..... | ..... | ..... | 6 | 6 |
| 1921 | 3 | 4 | 1 | 1 | 9 | 2 |
| 1920 | 2 | 1 | 154 | 1,815 | 3,998 | 6,048 |
| New Jersey: | | | | | | |
| 1922 | 28 | 36 | 40 | 126 | 426 | 1,288 |
| 1921 | 34 | 26 | 22 | 33 | 32 | 20 |
| 1920 | 23 | 98 | 753 | 7,365 | 9,603 | 5,807 |
| New Mexico: | | | | | | |
| 1922 | ..... | ..... | 1 | ..... | 10 | 14 |
| 1921 | ..... | ..... | ..... | 2 | 1 | 6 |
| 1920 | 8 | 4 | 61 | 260 | 1,576 | 1,166 |
| New York (exclusive of New York City): | | | | | | |
| 1922 | 28 | 48 | 80 | 173 | 694 | 771 |
| 1921 | 86 | 109 | 96 | 79 | 43 | 44 |
| 1920 | 31 | 61 | 555 | 4,755 | 11,616 | 13,259 |
| New York City: | | | | | | |
| 1922 | 56 | 57 | 110 | 1,230 | 5,731 | 7,070 |
| 1921 | 134 | 78 | 84 | 72 | 59 | 84 |
| 1920 | 100 | 384 | 5,690 | 30,456 | 21,388 | 8,091 |
| Texas: | | | | | | |
| 1922 | 48 | ..... | 5 | 5 | 57 | 141 |
| 1921 | 39 | 24 | ..... | ..... | 9 | 113 |
| 1920 | ..... | ..... | ..... | ..... | 11,265 | 6,788 |
| Vermont: | | | | | | |
| 1922 | ..... | 1 | ..... | 1 | 7 | 2 |
| 1921 | 5 | 1 | 2 | 3 | 6 | 1 |
| 1920 | ..... | ..... | 25 | 89 | 272 | 796 |
| Washington: | | | | | | |
| 1922 | ..... | ..... | 1 | 33 | 176 | 1,061 |
| 1921 | ..... | ..... | ..... | ..... | ..... | ..... |
| 1920 | ..... | ..... | 12 | 902 | 6,451 | 6,426 |
| Wisconsin: | | | | | | |
| 1922 | 46 | 17 | 59 | 22 | 24 | 37 |
| 1921 | 64 | 81 | 44 | 43 | 25 | 48 |
| 1920 | 3 | 67 | 1,944 | 6,739 | 14,328 | 10,310 |
| Total: | | | | | | |
| 1922 | 457 | 416 | 728 | 2,328 | 9,141 | 15,005 |
| 1921 | 790 | 710 | 666 | 612 | 525 | 840 |
| 1920 | 502 | 4,623 | 30,626 | 116,316 | 184,953 | 170,265 |
| Number of States reporting cases: | | | | | | |
| 1922 | 19 | 17 | 22 | 22 | 24 | 23 |
| 1921 | 21 | 20 | 19 | 21 | 20 | 22 |
| 1920 | 18 | 17 | 20 | 22 | 24 | 24 |

## INFLUENZA IN CITIES OF THE UNITED STATES, 1922.

The following table shows, by weeks, the number of cases of influenza reported in certain representative cities of the United States during the present year. The table here given makes possible a ready comparison of the reports for this year from cities in different parts of the country.

Another table will be found on page 363, which gives all cities of more than 10,000 population reporting cases of influenza to the Public Health Service for the week ended January 28, 1922, and the number of cases reported by the same cities for the corresponding week of last year.

Blanks in the table indicate that no cases of influenza were reported for the week. This does not always mean that no cases occurred. For the week ended February 11, 1922, it means in most instances that the report had not been received at the time of going to press.

*Number of cases of influenza reported in certain cities of the United States, by weeks, 1922.*

| City. | Cases reported during week ended— | | | | | |
|---|---|---|---|---|---|---|
| | January— | | | | February— | |
| | 7 | 14 | 21 | 28 | 4 | 11 |
| Little Rock, Ark. | | | | 1 | | 6 |
| Berkeley, Calif. | 4 | 1 | 3 | 1 | 2 | 110 |
| Los Angeles, Calif. | 5 | 3 | 3 | 6 | 20 | 75 |
| Sacramento, Calif. | | | 3 | 8 | | 12 |
| San Francisco, Calif. | 10 | 3 | 3 | 17 | 29 | 413 |
| Bridgeport, Conn. | | | | 1 | 28 | 210 |
| New Haven, Conn. | | | | 1 | 3 | 4 |
| Waterbury, Conn. | | | 1 | 3 | 1 | 7 |
| Washington, D. C. | 1 | 3 | 4 | 7 | 5 | 9 |
| Tampa, Fla. | 4 | 1 | | | 1 | 2 |
| Atlanta, Ga. | 6 | 2 | 3 | 3 | 15 | 18 |
| Chicago, Ill. | 15 | 24 | 12 | 24 | 67 | 298 |
| La Salle, Ill. | | | | 1 | 7 | 1 |
| Kansas City, Kans. | | | | 2 | | |
| Lawrence, Kans. | | | | 3 | 4 | 6 |
| Topeka, Kans. | 1 | | 29 | 38 | 41 | 5 |
| Lexington, Ky. | | | | | 17 | |
| Louisville, Ky. | | 1 | | 7 | 115 | 224 |
| New Orleans, La. | | 3 | 1 | 2 | | 10 |
| Auburn, Me. | | 3 | | 3 | 21 | 7 |
| Bath, Me. | | | | 4 | 3 | 2 |
| Lewiston, Me. | | | | 6 | 44 | 7 |
| Baltimore, Md. | 13 | 23 | 15 | 41 | 51 | 104 |
| Cumberland, Md. | | | 2 | | 3 | 5 |
| Boston, Mass. | 3 | 2 | 2 | 35 | 148 | 367 |
| Cambridge, Mass. | | 2 | 1 | 8 | 32 | 102 |
| Chelsea, Mass. | | | | | 7 | 19 |
| Haverhill, Mass. | | | 2 | 4 | 16 | 58 |
| Lowell, Mass. | | | | 1 | 18 | 58 |
| Worcester, Mass. | | 1 | | 2 | 140 | 356 |
| Detroit, Mich. | | | 5 | 7 | 10 | 16 |
| Kansas City, Mo. | | 2 | | 6 | 4 | 31 |
| St. Louis, Mo. | | | | 2 | 2 | 12 |
| Bayonne, N. J. | 1 | | | 2 | 8 | 4 |
| Englewood, N. J. | | | | 1 | 14 | |
| Jersey City, N. J. | | 1 | | 2 | 21 | 22 |
| Kearny, N. J. | | 4 | 2 | 18 | 23 | 135 |
| Newark, N. J. | 11 | 19 | 16 | 44 | 44 | |
| Orange, N. J. | | | | 4 | 28 | 20 |

*Number of cases of influenza reported in certain cities of the United States, by weeks, 1922*—Continued.

| City. | Cases reported during week ended— | | | | | |
|---|---|---|---|---|---|---|
| | January— | | | | February— | |
| | 7 | 14 | 21 | 28 | 4 | 11 |
| Paterson, N. J | | | | 4 | 345 | 676 |
| Trenton, N. J | | 1 | | 37 | 63 | 57 |
| Albany, N. Y | 4 | 5 | 6 | 10 | 23 | 45 |
| Buffalo, N. Y | | | | 2 | 10 | 7 |
| Mount Vernon, N. Y | | | | 87 | 212 | 106 |
| New York, N. Y | 56 | 57 | 110 | 1,239 | 5,781 | 7,670 |
| Syracuse, N. Y | | | | 2 | 12 | 32 |
| Yonkers, N. Y | 1 | 1 | | 2 | 4 | 4 |
| Akron, Ohio | 4 | 4 | 4 | 5 | 2 | 7 |
| Cincinnati, Ohio | 1 | | 3 | 4 | 24 | 43 |
| Cleveland, Ohio | 1 | 8 | 4 | 6 | 15 | 29 |
| Philadelphia, Pa | 4 | 4 | 2 | 7 | 14 | 49 |
| Pittsburgh, Pa | | | | | 399 | 957 |
| Providence, R. I | | | | 4 | 16 | 83 |
| Columbia, S. C | | | | 3 | | |
| Dallas, Tex | | 2 | | 3 | | |
| Salt Lake City, Utah | | | | | | 17 |
| Rutland, Vt | | | 1 | | | |
| Alexandria, Va | | | | 5 | 3 | |
| Roanoke, Va | 10 | 2 | | 1 | 2 | 2 |
| Seattle, Wash | | | 1 | 28 | 13 | |
| Milwaukee, Wis | | | | | 3 | |

## DEATHS FROM INFLUENZA AND PNEUMONIA COMBINED.

### COMPARISON OF THE FIRST SIX WEEKS OF THE YEARS 1919–1922, INCLUSIVE, FOR CERTAIN LARGE CITIES OF THE UNITED STATES.

The accompanying table gives the number of reported deaths from influenza and pneumonia (all forms), combined, during the first six weeks of the years 1919, 1920, 1921, and 1922, in 36 large cities of the United States.

This is a continuation of the table printed on page 269 of the Public Health Reports of February 10, 1922 (vol. 37, No. 6).

The weeks for which figures are given all ended on Saturday, the "first" week for each year ending on the following days, respectively: January 4, 1919; January 10, 1920; January 8, 1921; and January 7, 1922.

The figures for 1919 and 1920 were taken from the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce, supplemented by reports to the Public Health Service. For 1921 and 1922 the figures are taken from reports made by the city health officers to the Public Health Service.

Blanks in the table indicate that no reports of deaths from influenza or pneumonia were received for the week. This does not always indicate that no deaths from these diseases occurred. In the sixth week of 1922 it means in most instances that the report has been delayed.

*Number of deaths from influenza and pneumonia (all forms) combined.*

| City. | Week number. | | | | | |
|---|---|---|---|---|---|---|
| | First. | Second. | Third. | Fourth. | Fifth. | Sixth. |
| Birmingham, Ala.: | | | | | | |
| 1922 | 8 | 10 | 14 | 6 | 13 | 4 |
| 1921 | 7 | 14 | 6 | 4 | 9 | 9 |
| 1920 | 13 | 9 | 16 | 14 | 22 | 18 |
| 1919 | 36 | 44 | 52 | 41 | 29 | 21 |
| Los Angeles, Calif.: | | | | | | |
| 1922 | 18 | 19 | 14 | 21 | 26 | 29 |
| 1921 | 12 | 19 | 9 | 13 | 15 | 12 |
| 1920 | 16 | 18 | 19 | 22 | 42 | 88 |
| 1919 | 99 | 151 | 178 | 177 | 104 | 47 |
| Oakland, Calif.: | | | | | | |
| 1922 | 4 | 5 | 5 | ..... | 8 | ..... |
| 1921 | 4 | 3 | 8 | 7 | 9 | 4 |
| 1920 | 4 | 8 | 20 | 24 | 55 | 54 |
| 1919 | 66 | 92 | 111 | 67 | 38 | 18 |
| San Francisco, Calif.: | | | | | | |
| 1922 | 11 | 12 | 4 | 12 | 9 | ..... |
| 1921 | ..... | 5 | 8 | 9 | 7 | 11 |
| 1920 | 14 | 26 | 48 | 59 | 115 | 137 |
| 1919 | 194 | 290 | 310 | 149 | 59 | 41 |
| Denver, Colo.: | | | | | | |
| 1922 | 22 | 11 | 10 | 17 | 18 | 16 |
| 1921 | 25 | 22 | 23 | 11 | 16 | 21 |
| 1920 | 21 | 18 | 24 | 49 | 159 | 160 |
| 1919 | 65 | 47 | 35 | 24 | 29 | 30 |
| New Haven, Conn.: | | | | | | |
| 1922 | 5 | 1 | 5 | 4 | 13 | 10 |
| 1921 | 4 | 7 | 7 | 7 | 2 | 6 |
| 1920 | 6 | 8 | 10 | 19 | 20 | 60 |
| 1919 | 40 | 38 | 27 | 26 | 20 | 12 |
| Washington, D. C.: | | | | | | |
| 1922 | 20 | 22 | 27 | 27 | 25 | 22 |
| 1921 | 22 | 22 | 14 | 9 | 9 | 12 |
| 1920 | 22 | 27 | 81 | 181 | 164 | 92 |
| 1919 | 139 | 109 | 107 | 73 | 60 | 42 |
| Atlanta, Ga.: | | | | | | |
| 1922 | 13 | 7 | 9 | 7 | 20 | 17 |
| 1921 | 10 | 8 | 9 | 5 | 7 | 18 |
| 1920 | 19 | 11 | 10 | 15 | 32 | 75 |
| 1919 | [1] 40 | [1] 40 | [1] 54 | [1] 57 | [1] 54 | [1] 28 |
| Chicago, Ill.: | | | | | | |
| 1922 | 48 | 43 | 63 | 65 | 72 | 80 |
| 1921 | 64 | 79 | 89 | 102 | 92 | 90 |
| 1920 | 107 | 153 | 472 | 1,109 | 1,005 | 494 |
| 1919 | 321 | 269 | 328 | 341 | 277 | 194 |
| Indianapolis, Ind.: | | | | | | |
| 1922 | 20 | 11 | 9 | 17 | 29 | 42 |
| 1921 | 15 | 12 | 13 | 13 | 21 | 6 |
| 1020 | 18 | 16 | 21 | 36 | 92 | 124 |
| 1919 | 34 | 40 | 25 | 28 | 25 | 23 |
| Louisville, Ky.: | | | | | | |
| 1922 | 6 | 12 | 18 | 7 | 16 | 24 |
| 1921 | 6 | 4 | 5 | 5 | 2 | 2 |
| 1920 | 10 | 10 | 9 | 18 | 40 | 52 |
| 1919 | 22 | 20 | 21 | 30 | 20 | 19 |
| New Orleans, La.: | | | | | | |
| 1922 | 13 | 14 | 14 | 13 | 4 | 25 |
| 1921 | 18 | 18 | 21 | [2] 3 | 12 | 21 |
| 1920 | 27 | 27 | 27 | 32 | 36 | 62 |
| 1919 | 94 | 141 | 202 | 201 | 125 | 58 |
| Baltimore, Md.: | | | | | | |
| 1922 | 32 | 25 | 24 | 26 | 29 | 27 |
| 1921 | 33 | 20 | 24 | 18 | 26 | 56 |
| 1920 | 20 | 35 | 24 | 59 | 122 | 268 |
| 1919 | 48 | 75 | 83 | 150 | 138 | 126 |
| Boston, Mass.: | | | | | | |
| 1922 | 21 | 17 | 36 | 28 | 33 | 38 |
| 1921 | 27 | 23 | 36 | 33 | 22 | 10 |
| 1920 | 28 | 28 | 45 | 85 | 158 | 255 |
| 1919 | 244 | 227 | 158 | 153 | 110 | 89 |
| Cambridge, Mass.: | | | | | | |
| 1922 | 5 | 8 | 3 | 4 | 7 | 7 |
| 1921 | 4 | 5 | 5 | 5 | 1 | 3 |
| Cambridge, Mass.—Continued. | | | | | | |
| 1920 | 8 | 7 | 8 | 14 | 22 | 28 |
| 1919 | 39 | 22 | 20 | 16 | [2] 5 | 10 |
| Fall River, Mass.: | | | | | | |
| 1922 | 5 | 4 | 3 | 6 | 5 | 7 |
| 1921 | 14 | 5 | 11 | 4 | 5 | 8 |
| 1920 | 7 | 10 | 5 | 3 | 5 | 16 |
| 1919 | 10 | 18 | 16 | 14 | 17 | 17 |
| Lowell, Mass.: | | | | | | |
| 1922 | 4 | 7 | 5 | 4 | 4 | 6 |
| 1921 | 7 | 6 | 8 | 3 | 6 | 4 |
| 1920 | 5 | 4 | 2 | 7 | 12 | 10 |
| 1919 | 13 | [1] 10 | 20 | 26 | 11 | [1] 7 |
| Worcester, Mass.: | | | | | | |
| 1922 | 5 | 10 | 11 | 7 | 16 | 16 |
| 1921 | 4 | 7 | 13 | 9 | 4 | 10 |
| 1920 | 10 | 9 | 7 | 14 | 15 | 44 |
| 1919 | 40 | 36 | 44 | 22 | 23 | 21 |
| Minneapolis, Minn.: | | | | | | |
| 1922 | 10 | 6 | 9 | 9 | 6 | 9 |
| 1921 | 13 | 14 | 10 | 8 | 10 | 16 |
| 1920 | 12 | 10 | 9 | 63 | 168 | 125 |
| 1919 | 37 | 45 | 24 | 32 | 31 | 31 |
| St. Paul, Minn.: | | | | | | |
| 1922 | 7 | 13 | 7 | 3 | 8 | ..... |
| 1921 | 9 | 5 | 9 | 9 | ..... | 7 |
| 1920 | 4 | 10 | 26 | 75 | 80 | 63 |
| 1919 | 39 | 25 | 14 | 12 | 15 | 13 |
| Kansas City, Mo.: | | | | | | |
| 1922 | 15 | 13 | 14 | 25 | 25 | 28 |
| 1921 | 17 | 17 | 19 | 13 | 14 | 17 |
| 1920 | 13 | 29 | 96 | 120 | 220 | 167 |
| 1919 | 49 | 50 | 68 | 45 | 58 | 40 |
| Omaha, Nebr.: | | | | | | |
| 1922 | 11 | 9 | 17 | 12 | 16 | 12 |
| 1921 | 8 | 7 | 4 | 14 | ..... | 4 |
| 1920 | 4 | 7 | 13 | 45 | 62 | 63 |
| 1919 | 25 | 25 | 17 | 17 | 11 | 12 |
| Newark, N. J.: | | | | | | |
| 1922 | 13 | 15 | 20 | 20 | 33 | 29 |
| 1921 | 18 | 14 | 15 | 7 | 12 | 13 |
| 1920 | 17 | 14 | 30 | 55 | 116 | 142 |
| 1919 | 72 | 66 | 57 | 53 | 50 | 45 |
| Buffalo, N. Y.: | | | | | | |
| 1922 | 6 | 20 | 13 | 19 | 21 | 15 |
| 1921 | 20 | 18 | 18 | 20 | 13 | 18 |
| 1920 | 10 | 7 | 19 | 17 | 67 | 141 |
| 1919 | 48 | [1] 19 | 90 | 123 | 90 | 75 |
| New York, N. Y.: | | | | | | |
| 1922 | 215 | 263 | 284 | 302 | 481 | 596 |
| 1921 | 235 | 216 | 204 | 203 | 199 | 212 |
| 1920 | 218 | 261 | 511 | 1,308 | 1,988 | 1796 |
| 1919 | 753 | 870 | 998 | 1,193 | 1,153 | 893 |
| Rochester, N. Y.: | | | | | | |
| 1922 | 5 | 11 | 12 | 14 | 6 | 7 |
| 1921 | 4 | 3 | 6 | 8 | 5 | 5 |
| 1920 | 13 | 7 | 12 | 23 | 50 | 52 |
| 1919 | 59 | 26 | 17 | 21 | 12 | 16 |
| Syracuse, N. Y.: | | | | | | |
| 1922 | 4 | 6 | 4 | 6 | 7 | 7 |
| 1921 | 4 | 8 | 3 | 5 | 6 | 2 |
| 1920 | 9 | 8 | 10 | 31 | 89 | 78 |
| 1919 | 8 | 13 | 4 | 14 | 18 | 10 |
| Cincinnati, Ohio: | | | | | | |
| 1922 | 14 | 20 | 15 | 19 | 21 | 27 |
| 1921 | 14 | 16 | 13 | 11 | 18 | 16 |
| 1920 | 14 | 12 | 17 | 25 | 38 | 62 |
| 1919 | 51 | 18 | 18 | 26 | 23 | 39 |
| Cleveland, Ohio: | | | | | | |
| 1922 | ..... | ..... | 30 | 28 | 25 | 18 |
| 1921 | 25 | 22 | 23 | 24 | 31 | 28 |
| 1920 | 21 | 25 | 26 | 41 | 158 | 258 |
| 1919 | 132 | 94 | 92 | 92 | 108 | 100 |

[1] Pneumonia (all forms) deaths only.
[2] Influenza deaths only.

*Number of deaths from influenza and pneumonia (all forms) combined*—Continued.

| City. | Week number. | | | | | |
|---|---|---|---|---|---|---|
| | First. | Second. | Third. | Fourth. | Fifth. | Sixth. |
| Columbus, Ohio: | | | | | | |
| 1922 | 5 | 9 | 4 | 10 | 8 | 6 |
| 1921 | 8 | 8 | 12 | 12 | 13 | 12 |
| 1920 | 15 | 9 | 8 | 22 | 59 | 118 |
| 1919 | 15 | 14 | 10 | 20 | 19 | 11 |
| Toledo, Ohio: | | | | | | |
| 1922 | 6 | 9 | 8 | 12 | 7 | 6 |
| 1921 | ---- | 3 | 9 | 10 | 5 | 4 |
| 1920 | 9 | 8 | 9 | 18 | 54 | 50 |
| 1919 | 19 | 15 | 19 | 20 | 15 | 6 |
| Portland, Oreg.: | | | | | | |
| 1922 | 4 | 7 | 4 | 6 | 5 | 15 |
| 1921 | 6 | 5 | 7 | 6 | 4 | 8 |
| 1920 | 13 | 8 | 9 | 17 | 21 | 57 |
| 1919 | 55 | 101 | 123 | 122 | 50 | 15 |
| Philadelphia, Pa.: | | | | | | |
| 1922 | 73 | 98 | 87 | 85 | 85 | 91 |
| 1921 | 72 | 83 | 85 | 101 | 114 | 108 |
| 1920 | 55 | 75 | 108 | 153 | 289 | 564 |
| 1919 | 142 | 194 | 229 | 259 | 308 | 262 |
| Providence, R. I.: | | | | | | |
| 1922 | 13 | 8 | 12 | 17 | 11 | 15 |
| 1921 | 14 | 6 | 5 | 8 | 14 | 11 |
| 1920 | 12 | 13 | 8 | 14 | 39 | 88 |
| 1919 | 47 | 59 | 62 | 61 | 35 | 30 |
| Nashville, Tenn.: | | | | | | |
| 1922 | 2 | 7 | ---- | ---- | ---- | 5 |
| 1921 | 2 | 8 | 4 | ---- | 10 | 9 |
| 1920 | 6 | 11 | 6 | 12 | 8 | 23 |
| 1919 | 20 | 17 | 21 | 21 | 17 | 15 |
| Richmond, Va.: | | | | | | |
| 1922 | 8 | 9 | 9 | 4 | 8 | 9 |
| 1921 | 5 | 5 | 12 | 6 | 5 | 7 |
| 1920 | 2 | 9 | 6 | 21 | 35 | 38 |
| 1919 | 50 | 26 | 34 | 30 | 23 | 11 |
| Total: | | | | | | |
| 1922 | 671 | 761 | 823 | 863 | 1,120 | 1265 |
| 1921 | 750 | 737 | 768 | 725 | 738 | 800 |
| 1920 | 802 | 947 | 1,771 | 3,320 | 5,657 | 5922 |
| 1919 | 3,165 | 3,346 | 3,688 | 3,756 | 3,180 | 2427 |

# THE DETERMINATION OF HYDROGEN ION CONCENTRATION.

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The acidity of a solution may be expressed in terms of concentration of acid or in terms of hydrogen ion concentration. Though the significance and relationship of these two modes of expression and the practical determination of degree of acidity in both senses have become of considerable practical importance in medicine, I have not yet seen a statement of the subject simple enough to enable the physician with very little knowledge of chemistry to understand and actually determine hydrogen ion concentration. The statement which follows, framed especially for the bacteriologist with very little knowledge of chemistry, is intended as a step in this direction.

## 1. CONCENTRATION OF ACID.

*Normal solutions.*—The concentration of acid solutions is not usually expressed in percentage strength but as normal (N), half normal $\left(\frac{N}{2}, 0.5\ N\right)$, tenth normal $\left(\frac{N}{10}, 0.1\ N\right)$, etc. A normal solution of acid is one containing one gram of hydrogen per liter replaceable by a base. This chemical use of the term "normal" with reference to acids and alkalis is not to be confused with the use of the term in the expression "normal salt solution" where it means a solution normal to, or containing as much salt as blood and tissue fluids—about three-quarters of 1 per cent.

Examples: A normal solution of hydrochloric acid contains 36.5 grams HCl per liter (atomic weights: H = 1, Cl = 35.5). A normal solution of sulphuric acid ($H_2SO_4$), which has two replaceable hydrogens in the molecule, contains 49 grams, half a molecular weight, per liter (atomic weights: H = 1, S = 32, O = 16). Crystalline oxalic acid has two replaceable hydrogens and two molecules of water of crystallization ($C_2O_4H_2 . 2\ H_2O$; molecular weight, 126); a normal solution contains 63 grams oxalic acid. The formula of acetic acid is $CH_3\ COOH$ (molecular weight, 60), and it has only one hydrogen atom replaceable by base; a normal solution contains 60 grams pure acetic acid. In determining the amount of acid to be used in making up a normal solution we must consider whether the acid is monobasic, like hydrochloric acid, or dibasic, like sulphuric acid; we must consider its whole molecular weight, including any water of crystallization present as in the case of oxalic acid; and we must consider whether, as in the case of acetic acid and most other organic acids, some of the hydrogen is not replaceable by base.

*Experiments on equivalence of normal solution.*—Make 500 c. c. of approximately $\frac{N}{10}$ hydrochloric acid, sulphuric acid, oxalic acid, acetic acid, and sodium hydroxide as follows:

Hydrochloric acid: Make 4.9 c. c. of concentrated hydrochloric acid (U. S. P. specific gravity 1.155, containing about 32 per cent HCl) up to 500 c. c.

Sulphuric acid: Make 1.42 c. c. of concentrated sulphuric acid (U. S. P. specific gravity 1.83, containing about 94 per cent $H_2\ SO_4$) up to 500 c. c.

Oxalic acid: Dissolve 3.150 grams $C_2H_2O_4 . 2H_2O$ in 500 c. c. water.

Acetic acid: Make 2.9 c. c. glacial acetic acid (U. S. P. specific gravity 1.048, containing 99 per cent $HC_2H_3O_2$) up to 500 c. c.

Sodium hydroxide: Dissolve 2 grams of sodium hydroxide in 500 c. c. water.

Measure out 10 c. c. of each of the acid solutions into small flasks and to each add two drops of 1–2 per cent alcoholic solution of phenolphthalein. Run $\frac{N}{10}$ sodium hydroxide drop by drop into each flask until the solution just turns pink.

Oxalic acid practically 100 per cent pure, from which accurately $\frac{N}{10}$ oxalic acid may be prepared, is readily obtained. The other solutions can be made only approximately $\frac{N}{10}$ at first; but after comparison with the accurate $\frac{N}{10}$ oxalic acid, they can be corrected by dilution with water or addition of acid or alkali.

*Normality and percentage strength.*—Since equal volumes of all normal acids will neutralize equal volumes of all normal alkali solutions, the use of acids and bases in the form of normal or fractionally normal solutions, rather than in percentage strength, is of practical convenience in simplifying calculations.

*Measurement of acid concentration.*—The concentration of acid in a solution may be determined by titration with standard alkali solution.

A liter of normal acetic acid will neutralize the same amount of alkali as a liter of normal hydrochloric acid. In this respect the "acidity" of a liter of normal acetic acid is the same as that of a liter of normal hydrochloric acid. But acid solutions have other properties besides that of neutralizing alkalis which are proportional to the "acidity" of the solution and can, therefore, serve to measure "acidity." If a solution of cane sugar is boiled with acid, the sugar breaks down into one molecule of glucose and one of levulose:

$$\underset{\text{Cane sugar}}{C_{12}H_{22}O_{11}} + H_2O = \underset{\text{Glucose}}{C_6H_{12}O_6} + \underset{\text{Levulose}}{C_6H_{12}O_6}$$

The acid does not appear to take a direct part in the reaction; it acts as a stimulator to hasten the reaction, the rate at which the reaction takes place depending on the concentration of the acid. A tenth normal hydrochloric acid solution has twice as great a stimulating effect as a twentieth normal, and half as great an effect as a fifth normal solution. And a tenth normal acetic acid solution has twice as great an effect as a twentieth normal, and half as great an effect as a fifth normal solution. *But* a tenth normal solution of hydrochloric acid has a far greater effect as a stimulator than a tenth normal solution of acetic acid. In this respect the "acidity" of the two tenth-normal solutions is not the same. Hydrochloric acid is a "stronger" acid than acetic acid. To understand the apparent contradiction in the two different senses of the word "acidity", it is necessary to understand something about the dissociation theory.

*Experiments on strength of acid.*—Make an $\frac{M}{2}$ (half molecular) solution of cane sugar (dissolve 17.1 grams of sugar and make up to 100 c.c.).

Prepare the following solutions in test tubes:

(*a*) 1 c.c. $\frac{M}{2}$ cane sugar + 1 c.c. $\frac{N}{10}$ HCl + 1 c.c. water.

(*b*) 1 c.c. $\frac{M}{2}$ cane sugar + 0.5 c.c. $\frac{N}{10}$ HCl + 1.5 c.c. water.

(*c*) 1 c.c. $\frac{M}{2}$ cane sugar + 3.0 c.c. $\frac{N}{10}$ acetic acid.

(*d*) 1 c.c. $\frac{M}{2}$ cane sugar + 2 c.c. water.

Boil each of these solutions exactly one minute. Cool. Dilute to 25 c.c. Add each solution drop by drop from a buret to a boiling Fehling's solution (4 c.c. of the copper colution and 6 c.c. of the alkaline tartrate) until the Fehling's solution is decolorized (in test (*c*) the Fehling's will still remain blue after all the sugar has been added, showing that less than 10 per cent of the sugar has been hydrolyzed). Calculate the amount of reducing sugar present, and from this the percentage of cane sugar hydrolyzed in cases (*a*) and (*b*).

*Molecules in solution.*—It has long been known that certain properties of a solvent are modified by substances in solution. An aqueous solution of cane sugar, for example, has a higher boiling point, a lower freezing point, and a lower vapor pressure than pure water, and it exerts an osmotic pressure. The rise in boiling point, the fall in freezing point, the diminution in vapor pressure, and the osmotic pressure are proportional to the amount of sugar in solution. The same is true for aqueous solutions of other substances—urea, for example. The effect of one gram molecule (60 grams) of urea ($CO(NH_2)_2$) on these properties of the solutions is precisely the same as that of one gram molecule (342 grams) of cane sugar ($C_{12}H_{22}O_{11}$) or one gram molecule of any other substance. All this indicates that the effect of substances in solution on the properties of the solution depends on the number of molecular weights of the substance per unit volume of solution; or, translated into terms of the molecular hypothesis, the number of dissolved molecules per unit volume.

*Ions in solution.*—There are apparent exceptions to the foregoing. It holds true for sugar, urea, and most other organic substances; but the effect of salts, strong acids, and bases is much greater. Sodium chloride, hydrochloric acid, sodium hydroxide, for example, in dilute solution have just twice as great an effect, and sodium sulphate three times as great an effect as they should. The deviations are due to the dissociation of these substances into ions. Sodium chloride (NaCl) is dissociated into a positive ion, or cation, Na, and a negative ion, or anion, Cl; hydrochloric acid (HCl) is dissociated into the cation H and the anion Cl; sodium hydroxide (Na OH) into the cation Na and the anion OH; sodium suphate ($Na_2SO_4$) into two Na cations and the anion $SO_4$. The quantitative effect of these ions on the physical properties of solutions is the same as that of whole undissociated molecules.

*Electrolytes.*—Solutions of sodium chloride, hydrochloric acid, sodium hydroxide, and other substances which dissociate, transmit the electric current; such compounds are called electrolytes. The current is transmitted by the moving ions; each cation carries a positive charge, each anion a negative charge of electricity. When an electric current is passed through a solution of silver nitrate, for example, the Ag cations pass with the current to the cathode, give up their positive charge, and are deposited as molecular silver; the $NO_3$ anions pass to the anode and are there discharged. Solutions of urea, cane sugar, and other substances which do not dissociate, de not transmit the electric current; such substances are called non-electrolytes. Besides the electrolytes like sodium chloride which are completely dissociated in dilute solution, and the non-electrolytes

like urea which are not dissociated, there are substances like acetic acid and ammonia which are slightly dissociated; these are called weak electrolytes. Speaking generally, the electrolytes include all salts, strong acids, and bases; the weak electrolytes include the weak acids and weak bases; the non-electrolytes include organic substances which are not salts, acids, or bases.

*Dissociation constant.*—We can write the reaction for dissociation of the strong electrolyte hydrochloric acid as follows:

$$HCl = H + Cl$$

In dilute solution the reaction is complete from left to right; there is no undissociated HCl in solution. The reaction for the weak electrolyte acetic acid would be written as follows:

$$HC_2H_3O_2 \rightleftharpoons H + C_2H_3O_2$$

The sign of reversibility $\rightleftharpoons$, instead of equality, $=$, indicates that the reaction goes in both directions, that when equilibrium is reached, there is always some of all three of the reacting substances—undissociated acetic acid, hydrogen ion, and the acetic acid anion—present. The extent of dissociation—that is, the amount of each of the reacting substances present when equilibrium is reached—is determined by a law, the mass law, which all reversible reactions are found to obey, according to which the extent of reaction is proportional to the mass of the reacting substances. According to the mass law, the product of the concentration of the ions bears a constant ratio to the concentration of the undissociated substance, a relationship which is expressed as follows:

$$K = \frac{c_1 \times c_2}{C}$$

In the case of acetic acid, $c_1$ is the concentration of hydrogen ions, $c_2$ the concentration of the $C_2H_3O_2$ ions, and C the concentration of the undissociated acetic acid. K is a constant—in this case, 0.000018—the dissociation constant for acetic acid.

*Dissociation of acetic acid.*—Using 0.0001 (a rough approximation that will simplify presentation) for the dissociation constant of acetic acid, $\frac{c_1 \times c_2}{C} = 0.0001$, or $c_1 \times c_2 = 0.0001\ C$. That is to say, in a dilute solution of acetic acid, the product of the concentration of the hydrogen ions and the acetic acid anion is one ten-thousandth that of the concentration of the undissociated acetic acid. In a normal solution of acetic acid, $C = 1$, and $c_1 \times c_2 = 0.0001$; if the solution contains no other acid and no acetate, $c_1 = c_2 = 0.01$. According to this calculation, a normal solution of acetic acid is about one per cent dissociated. (The correct figure is $\sqrt{0.000018}$, or about 0.4 per cent.)

*Diminution of dissociation.*—In the equation for acetic acid, $K=\frac{c_1 \times c_2}{C}$, or $c_1 \times c_2 = KC$, C, the undissociated acetic acid, is so nearly constant (it varies from 99.5 to 100 per cent of the total acetic acid in a dilute solution) that we may call it constant, and write $c_1 \times c_2 = K_1$, where $K_1 = KC$. If now, in a solution of acetic acid, we increase $c_2$ by adding $C_2 H_3 O_2$ anion in the form of the completely dissociated sodium acetate, then, in order to maintain $K_1$ constant, $c_1$ must decrease. The following reaction takes place:

$$C_2 H_3 O_2 + H = HC_2 H_3 O_2$$

In other words, the addition to an acid solution of a salt of the same acid diminishes the dissociation of the acid, diminishes the "acidity," diminishes the hydrogen ion concentration.

*Calculation of hydrogen ion concentration.*—The equation $c_1 \times c_2 = KC$ may be written $c_1 = K \frac{C}{c_2}$. In a solution containing a weak acid and a salt of the acid, C, the concentration of the undissociated acid, is practically the total concentration of the acid, dissociated and undissociated; and, since all of the salt is dissociated and very little of the acid, $c_2$, the concentration of the anion, is practically the concentration of the salt. We may, therefore, write—

$$\text{concentration of hydrogen ions} = K \frac{\text{concentration of acid}}{\text{concentration of salt}}.$$

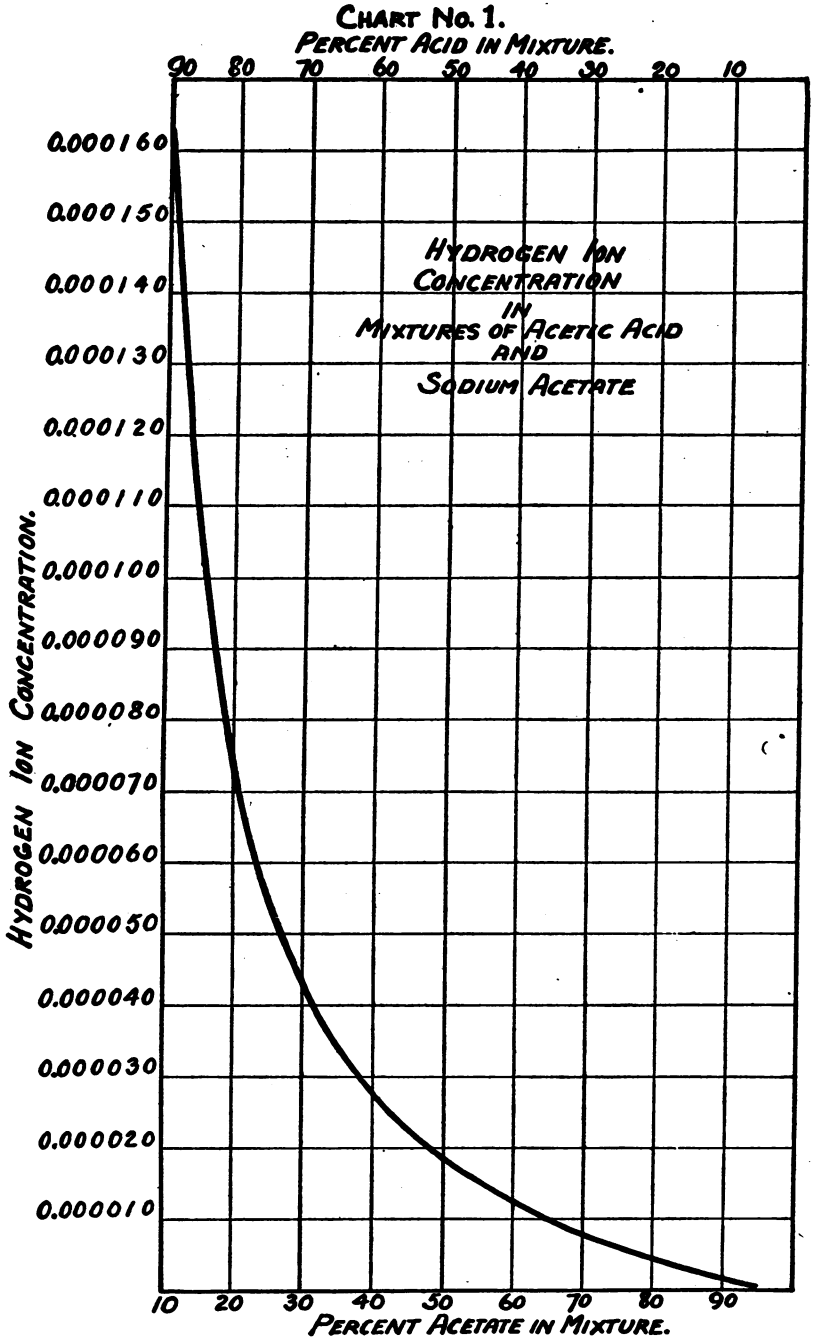
Table I and Chart No. 1 show the hydrogen ion concentration in mixtures of acetic acid and sodium acetate.

TABLE I.

| $c_2$ Parts acetate in 10 | C Parts acetic acid in 10 | Hydrogen ion concentration. $K \frac{C}{c_2} = c_1$ |
|---|---|---|
| 1 | 9 | $0.000018 \times \frac{9}{1} = 0.000162$ |
| 2 | 8 | $0.000018 \times \frac{8}{2} = 0.000072$ |
| 3 | 7 | $0.000018 \times \frac{7}{3} = 0.000042$ |
| 4 | 6 | $0.000018 \times \frac{6}{4} = 0.000027$ |
| 5 | 5 | $0.000018 \times \frac{5}{5} = 0.000018$ |
| 6 | 4 | $0.000018 \times \frac{4}{6} = 0.000012$ |
| 7 | 3 | $0.000018 \times \frac{3}{7} = 0.000008$ |
| 8 | 2 | $0.000018 \times \frac{2}{8} = 0.000004$ |
| 9 | 1 | $0.000018 \times \frac{1}{9} = 0.000002$ |

The figures indicate how great a reduction in the acidity of a weak acid results from addition of comparatively small amounts of a salt of the same acid; an increase of the proportion of salt from ten up to 20 per cent in the mixture diminishes the acidity by half, and a further increase of ten per cent reduces the acidity again by a half. The figures show, further, that the hydrogen ion concentration in a solution containing a mixture of weak acid and salt of the same acid in

equal proportions is numerically equivalent to the dissociation constant; when $C = c_2$, then the equation $c_1 = K\frac{C}{c_2}$ becomes $c_1 = K$.




*Dissociation of water.*—Water dissociates to a very slight extent, so slight that $C_{HOH}$ in the equation $C_H \times C_{OH} = KC_{HOH}$ may be regarded

as a constant, and we may write $C_H \times C_{OH} = K$. K is 0.00000000000001 or $10^{-14}$. In pure water, $C_H = C_{OH} = 10^{-7}$. The degree of dissociation of water is so slight that for most practical purposes water may be regarded as undissociated. It is because water dissociates so little that acids and bases react in solution to form salts. Before the publication of the dissociation theory, the cause of the reaction $HCl + NaOH = NaCl + HOH$ was seen in the attraction or affinity between sodium and chlorine. Now we write the reaction—

$$Na + OH + H + Cl = HOH + Na + Cl.$$

What really happens is that the hydrogen ions from the acids and the hydroxyl ions from the base unite to form undissociated HOH; the sodium and chloride ions remain unaffected. In the case of a weak, slightly dissociated acid like acetic acid, the result is the same; as fast as the free hydrogen ions disappear to form undissociated HOH, more hydrogen ions are set free from the undissociated weak acid, until finally all the acid, dissociated and undissociated, has been converted to salt. Titration with alkali measures the total concentration of acid, dissociated and undissociated; it does not measure the hydrogen ion concentration.

*$p_H$.*—The hydrogen ion concentration of a solution containing equal parts acetic acid and acetate can be expressed in the following different ways: $0.000018 = \frac{18}{1{,}000{,}000} = \frac{1.8}{100{,}000} = \frac{1.8}{10^5} = 1.8 \times \frac{1}{10^5} = 1.8 \times 10^{-5} = 10^{0.25} \times 10^{-5} = 10^{-4.75}$. The simplest of these figures for defining the hydrogen ion concentration is the negative logarithm 4.75; and so it is everywhere used for this purpose instead of the more cumbersome figures. It is referred to as $p_H$. $p_H$ is likewise more convenient to plot on charts than $C_H$. The change in $C_H$ from normal acid to pure water runs from 1.0 to 0.0000001. On a scale where the change from 0.0000001 to 0.000001 would be one inch, the change from 0.0000001 to 1.0 would be one million inches or several miles. The corresponding variation in $p_H$ runs from 7 to 0, and can be plotted on a scale seven inches long. $p_H$ can be used to define the alkalinity as well as acidity. In a $\frac{N}{100}$ alkaline solution, for example, $C_{OH} = \frac{1}{100}$ or $10^{-2}$. Then, since $C_H \times 10^{-2} = 10^{-14}$, $C_H = 10^{-12}$, and $p_H = 12$. Chart No. 2 shows the $p_H$ value for mixtures of acetic acid and sodium acetate. ($p_H$ in this case is the logarithm of $c_1$, Table 1.)

#### 4. BUFFER MIXTURES.

*Definition.*—From Chart No. 2 it will be seen that a solution containing acetic acid and sodium acetate in any except extreme proportions has a fairly constant acidity. With equal parts acid

and salt, $p_H$ is 4.75; with three parts acid and seven parts salt $p_H$ is 5.1; with seven parts acid and three parts salt, $p_H$ is 4.4. Now if we add to a mixture containing equal parts acid and salt, alkali enough to convert some of the acid to salt, we merely change the proportion of acid and salt from 5:5, let us say, to 3:7, a change which does not greatly affect $p_H$. If we add a strong, completely dissociated acid like hydrochloric acid, the highly concentrated hydrogen ions from this acid will unite with the acetic acid anions from the sodium acetate to form undissociated acetic acid:

$$H + Cl + Na + C_2H_3O_2 = HC_2H_3O_2 + Na + Cl$$

The end result will be a decrease in the sodium acetate, and an increase in the acetic acid, the proportion of salt to acid changing from 5:5, let us say, to 3:7—a change which does not greatly affect $p_H$. Mixtures of this kind (mixtures of a weak acid and a salt of the acid) to which either alkali or acid may be added in moderate quantities with but little change in $p_H$ are called buffer mixtures.

*Experiments on buffer mixtures—Acetic acid and sodium acetate.*—Observe the color imparted to dilute acid, to distilled water and to dilute alkali by two drops of a 1–2 per cent alcoholic solution of dimethylamidoazobenzol, and by two drops of 1–2 per cent alcoholic solution of phenolphthalein. Add both indicators together to 10 c. c. of water, and determine how many drops of $\frac{N}{10}$ HCl is required to turn this neutral solution red (acid); how many drops of $\frac{N}{10}$ alkali is required to turns this neutral solution red (alkaline). Now mix together 5 c. c. $\frac{N}{10}$ acetate acid and 5 c. c. $\frac{N}{10}$ sodium acetate solution, add two drops of each of these indicators and determine how much $\frac{N}{10}$ hydrochloric acid can be added before this neutral solution becomes acid. How much $\frac{N}{10}$ sodium hydroxide is required to turn such a mixture alkaline.

*Important buffer mixtures.*—Two buffer mixtures of great practical importance in physiology are the phosphate pair, $NaH_2PO_4 : Na_2HPO_4$ and the carbonate pair, $H_2CO_3 : NaHCO_3$.

*$NaH_2PO_4$.*—Phosphoric acid, $H_3PO_4$, has three hydrogens replaceable by base. $H_3PO_4$ is a strong acid dissociated in solution as follows:

$$H_3PO_4 = H + H_2PO_4.$$

The anion $H_2PO_4$ is a very weak acid, far weaker than acetic acid, which dissociates to a very slight extent as follows:

$$H_2PO_4 \rightleftharpoons H + HPO_4;$$

Its dissociation constant is about $10^{-7}$. $HPO_4$ does not further dissociate. The salt $NaH_2PO_4$ dissociates as follows:

$$NaH_2PO_4 = Na + H_2PO_4 \text{ (almost completely)} \quad (1)$$

and then the anion further dissociates as follows:

$$H_2PO_4 \rightleftharpoons H + HPO_4 \text{ (to a very slight extent)} \quad (2)$$

As a result of this second reaction a solution of $Na\ H_2\ PO_4$ reacts weakly acid.

*$Na_2\ HPO_4$.*—This salt dissociates in solution as follows:

$$Na_2\ HPO_4 = Na_2 + HPO_4 \quad (3)$$

Now the dissociation constant of $H_2\ PO_4$ is so small, so near that of pure water, that even the small quantities of hydrogen ion resulting from the dissociation of water can not remain in the presence of the large amount of $HPO_4$ ion coming from $Na_2\ HPO_4$. The following reaction, accordingly, takes place to a slight extent:

$$H + OH + HPO_4 = H_2\ PO_4 + OH \quad (4)$$

leaving a slight excess of the alkaline hydroxyl ions in the solution.

*The $Na\ H_2\ PO_4$ : $Na_2\ HPO_4$ mixture.*—Reactions (2) and (4) are reversible reactions; addition of any of the members appearing on the right hand side of the equation makes the reactions run from right to left. Addition of even a small quantity of $Na_2\ HPO_4$, which gives much $HPO_4$, to a solution of $Na\ H_2\ PO_4$ makes reaction (2) run from right to left; that is to say, it diminishes the acidity of $Na\ H_2\ PO_4$ to practically the neutral point. Similarly, addition of even a small amount of $Na\ H_2\ PO_4$, which gives much $H_2\ PO_4$, to a solution of $Na_2\ HPO_4$ makes reaction (4) run from right to left; that is, it diminishes the alkalinity of $Na_2\ HPO_4$ to practically the neutral point. Accordingly, a solution containing a mixture of $NaH_2PO_4$ and $Na_2HPO_4$ in any proportions except extreme ones is almost precisely neutral.

*$Na_2\ HPO_4$ : $Na\ H_2\ PO_4$ as a buffer mixture.*—If, now, to a solution containing, say, equal parts $Na\ H_2\ PO_4$ and $Na_2\ HPO_4$ we add HCl, some of the alkaline phosphate is converted to acid phosphate:

$$Na_2\ HPO_4 + HCl = Na\ H_2\ PO_4 + Na\ Cl.$$

If instead of HCl we add NaOH, some of the acid phosphate is converted to alkaline phosphate:

$$Na\ H_2\ PO_4 + NaOH = Na_2\ HPO_4 + H_2\ O.$$

The end result of adding either acid or alkali to such a mixture is merely a change in the proportion of the two salts present; and since a mixture of the two salts in any except extreme proportions is almost precisely neutral, these two salts form a buffer mixture.

*$H_2\ CO_3$ : $Na\ HCO_3$ buffer mixture.*—The weak acid $H_2\ CO_3$ dissociates to a slight extent as follows:

$$H_2\ CO_3 \rightleftharpoons H + HCO_3 \text{ (dissociation constant about } 10^{-7}) \quad (5).$$

The salt $NaHCO_3$ dissociates completely as follows:

$$NaH\ CO_3 = Na + HCO_3 \quad (6).$$

Even the slight quantity of hydrogen ions from the dissociation of water reacts with the $HCO_3$:

$$H + OH + HCO_3 = H_2CO_3 + OH \quad (7).$$

$H_2CO_3$ is, therefore, a very weak acid (reaction 5); and $NaHCO_3$ is a very weak alkali (reaction 7). But addition of even a very small amount of Na $HCO_3$ to a solution of carbonic acid diminishes the acidity to practically the neutral point (reaction 5 goes from right to left) and addition of even a little $H_2CO_3$ to a solution of Na $HCO_3$ diminishes its alkalinity to practically the neutral point (reaction 7 goes from right to left). In other words, a mixture of carbonic acid and sodium bicarbonate in any except extreme proportions is almost precisely neutral. Addition of acid to such a mixture changes some of the bicarbonate to acid:

$$NaHCO_3 + HCl = NaCl + H_2CO_3;$$

and addition of alkali changes some of the acid to bicarbonate

$$H_2CO_3 + NaOH = Na\,H\,CO_3 + H_2O.$$

The change in $p_H$ resulting from the change in relative amounts of acid and salt is very little.

*$p_H$ of these buffer mixtures.*—In the equation $\frac{C_H \times C_{HPO_4}}{C_{H_2\,PO_4}} = K$, K is $1.55 \times 10^{-7}$. Then $C_H = 1.55 \times 10^{-7} \times \frac{C_{H_2\,PO_4}}{C_{H\,PO_4}}$. In a mixture of these two phosphates the concentration of $H_2PO_4$ is practically that of Na $H_2PO_4$, and the concentration of $HPO_4$ practically that of the $Na_2HPO_4$. So we may write:

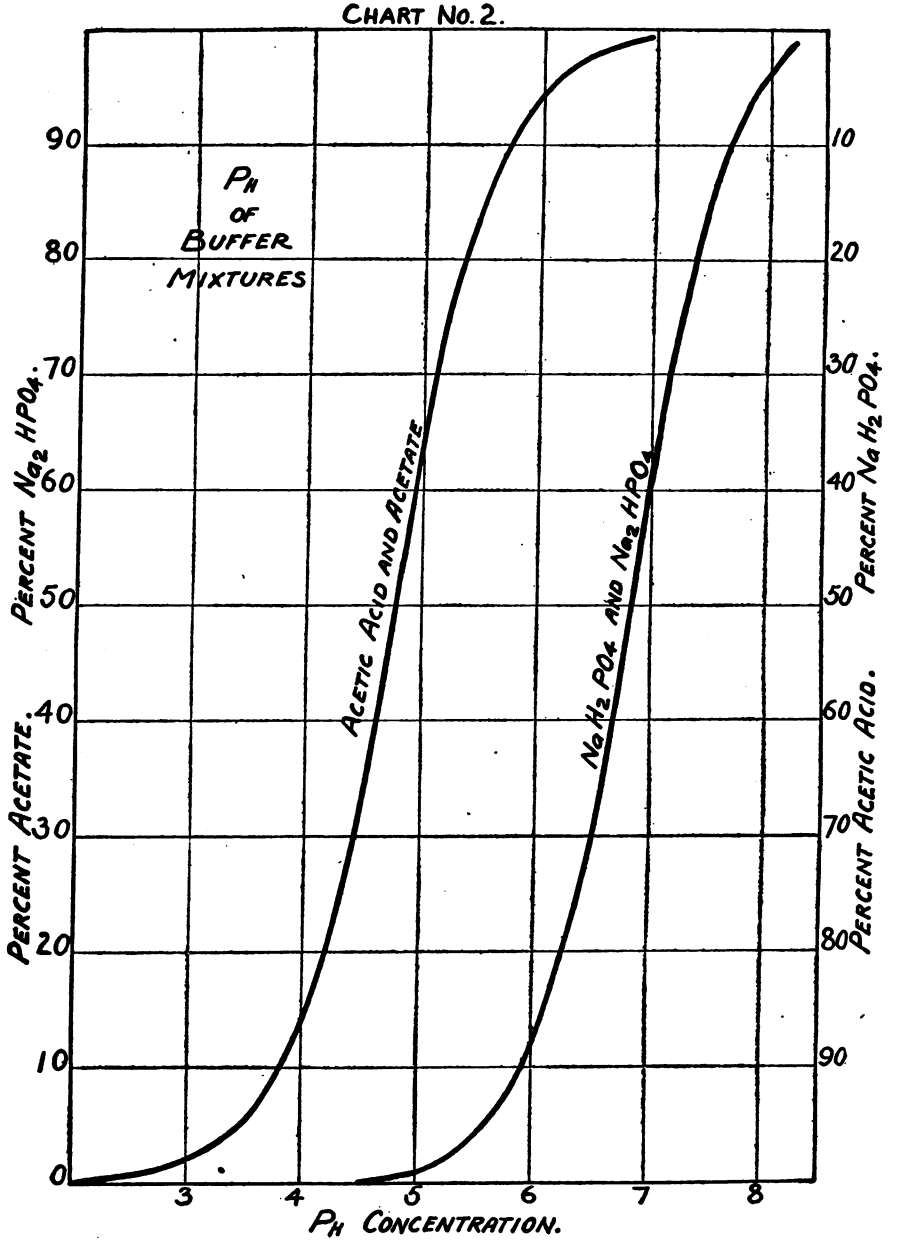
$$C_H = 1.55 \times 10^{-7} \times \frac{\text{concentration of acid phosphate}}{\text{concentration of alkaline phosphate}}.$$

Table II and Chart 2 show the hydrogen ion concentration of mixtures of the two phosphates.

TABLE II.—*$p_H$ of mixture of $Na_2HPO_4$ and Na $H_2PO_4$.*

| Percentage $NaH_2PO_4$ in mixture. | Percentage $Na_2HPO_4$ in mixture. | $C_H$. | $p_H$. |
|---|---|---|---|
| 10 | 90 | $0.17 \times 10^{-7}$ | 7.77 |
| 20 | 80 | $0.38 \times 10^{-7}$ | 7.42 |
| 30 | 70 | $0.66 \times 10^{-7}$ | 7.18 |
| 40 | 60 | $1.03 \times 10^{-7}$ | 6.99 |
| 50 | 50 | $1.55 \times 10^{-7}$ | 6.81 |
| 60 | 40 | $2.32 \times 10^{-7}$ | 6.63 |
| 70 | 30 | $3.13 \times 10^{-7}$ | 6.50 |
| 80 | 20 | $6.2 \times 10^{-7}$ | 6.21 |
| 90 | 10 | $14 \times 10^{-7}$ | 5.85 |

From Table II and Chart 2 it will be seen that $p_H$ in mixtures of alkaline and acid phosphate lies between the limits 6 and 8; this means a variation in reaction of only from $\frac{N}{1,000,000}$ acid to $\frac{N}{1,000,000}$ alkali. The dissociation constant for $H_2CO_3$ is practically the same as for $H_2PO_4$, so that Table II and Chart 2 are practically correct for the $H_2CO_3$: $NaHCO_3$ buffer mixture.

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*Their physiological importance.*—These two pairs of buffer mixtures occur in blood and tissue fluids and maintain the reaction of the body fluids precisely neutral. The end products of metabolism are more acid than alkaline, so that there would be a tendency to accumulation of the acid members of these buffer mixtures were this tendency not combated by the continuous excretion of the excess of these acid members, the acid phosphate through the kidneys, the carbonic acid through the lungs.

5. COLORIMETRIC DETERMINATION OF HYDROGEN ION CONCENTRATION.

*Nature of indicators.*—The indicators used in determining the reaction of a solution are weak organic acids whose anion has a different color in solution from that of the undissociated acid. Methyl orange, for example, is pink in acid solution and yellow in alkaline solution. In alkaline solution the indicator is all present as salt; the salt is completely dissociated, and the anion gives its characteristic yellow color to the solution. In acid solution, the excess of hydrogen ions diminishes the dissociation of the weakly acid indicator just as hydrochloric acid diminishes the dissociation of acetic acid; and the undissociated acid gives its characteristic pink color to the solution.

$p_H$ *and color of indicator.*—The $p_H$ of mixtures of the pink undissociated acid methyl orange and the yellow salt of methyl orange varies slightly about a mean just as does the $p_H$ of buffer mixtures; the mean value, as in the case of buffer mixtures, is numerically equivalent to the dissociation constant. The form of the curve for $p_H$ is similar to that of the curves for $p_H$ in mixtures of acetic acid and sodium acetate and other buffers. Since, now, mixtures of the acid methyl orange and the methyl orange salt in varying proportions correspond to definite hydrogen ion concentrations; and since these mixtures show varying shades of orange likewise corresponding to the proportions of the pink acid solution and the yellow salt solution, each shade of orange corresponds to a definite hydrogen ion concentration. And this fact gives the basis for a colorimetric method of determining hydrogen ion concentration.

*Indicators useful in bacteriology.*—Any one indicator changes color over only a very small range of hydrogen ion concentration; and any one buffer mixture acts as such over only a very small range of hydrogen ion concentration. To cover a large range would require, therefore, a considerable number of indicators and several pairs of buffer mixtures. In bacteriological work we are interested chiefly in values for $p_H$ close to neutrality ($p_H = 7$), a region which is covered by the phosphate buffer mixture ($p_H = 5.8$ to 8.2). There are several indicators for this region; brom cresol purple, which shows changes from yellow to purple between $p_H$ 5.2 and $p_H$ 6.8, and phenol

red, which shows color changes from yellow to red between $p_H$ 6.8 and $p_H$ 8.4, are among the best.

### 6. TECHNIQUE OF THE DETERMINATION.

*The standard solutions.*—Tenth molecular solutions of $KH_2PO_4$ (13.62 grams potassium phosphate, monobasic, anhydrous, Merck's reagent, to the liter) and $Na_2HPO_4$ (14.21 grams sodium phosphate, anhydrous, Merck's reagent, per liter) are convenient strengths for the stock solutions. From these the following twelve standard solutions are prepared:

TABLE III.—*$p_H$ of phosphate solutions.*

| C. c. $\frac{M}{10}$ $Na_2HPO_4$ | C. c. $\frac{M}{10}$ $KH_2PO_4$ | $p_H$ |
|---|---|---|
| 8 | 92 | 5.8 |
| 12 | 88 | 6.0 |
| 19 | 81 | 6.2 |
| 27 | 73 | 6.4 |
| 37 | 63 | 6.6 |
| 49 | 51 | 6.8 |
| 61 | 39 | 7.0 |
| 73 | 27 | 7.2 |
| 82 | 18 | 7.4 |
| 89 | 11 | 7.6 |
| 94 | 6 | 7.8 |
| 97 | 3 | 8.0 |

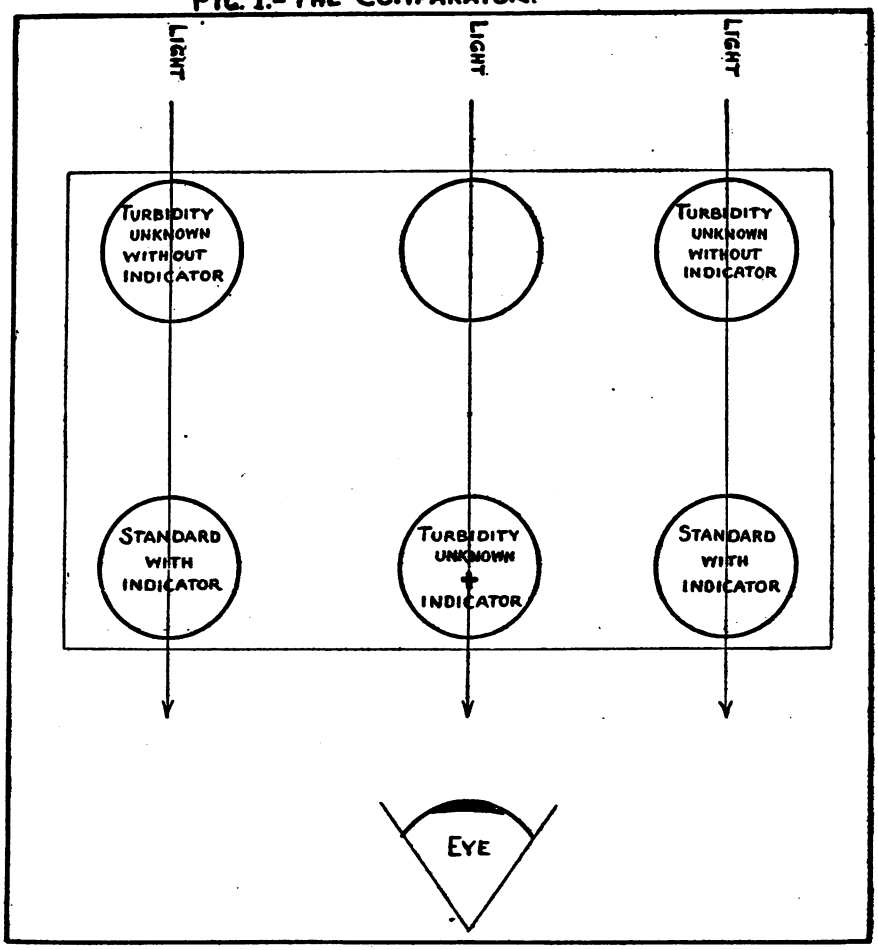
*The reading.*—To determine the hydrogen ion cencentration of an unknown solution coming within the limits of $p_H = 6.8$ to 8.2, add to it five drops of a 0.03 per cent solution of phenol red and compare the resulting color with that obtained by adding the same amount of indicator to 5 c. c. of each of the standard phosphate solutions diluted with 10 c. c. of water. Between the limits $p_H = 5.8$ to 6.8 the indicator brom cresol purple—five drops of a saturated solution—should be used. (The standard solutions with indicator in them will keep several weeks if tightly stoppered.)

*The comparator.*—The color comparison can be made in large clear glass test tubes. To overcome the effect of turbidity, such as occurs in bacteriological media, the unknown solution is diluted to a moderate extent, say to three times its volume, and the test tubes are arranged in a device called a comparator. The device consists of a block of wood containing 6 perpendicular holes large enough to carry the test tubes. Three other holes are then bored horizontally through the block from side to side, so that one can look right through each pair of test tubes in series. When the solutions are arranged as indicated in Figure 1, in each case the light reaching the eye has passed through solution containing indicator and solution containing turbidity. In the case of the unknown, one solution contains both

turbidity and indicator; in the case of the standards the turbidity and indicator are in separate solutions.

*Adjusting reaction of culture media.*—Most bacteria grow best in media whose $p_H$ lies between 7.2 and 7.6. The optimum for typhoid and paratyphoid is near the lower of these two limits; that for pneumococcus, streptococcus, and menigococcus, nearer the upper of

FIG. 1:- THE COMPARATOR.




these limits. To adjust media to any desired hydrogen ion concentration, $\frac{N}{10}$ alkali is added drop by drop to five c. c. of the somewhat diluted media containing indicator until, as shown by comparison with the standards, the desired hydrogen ion concentration is reached. From the amount of alkali required for five c. c., the amount needed for the whole batch of media can then be calculated. Sterilization of the media shifts the $p_H$ about 0.2 toward the acid side. Allowance should be made for this.

## COURT DECISION RELATING TO QUARANTINE.

The Supreme Court of California has decided [1] that by virtue of statutory authority "the State board of health has power to order the quarantine of persons who have come in contact with cases and carriers of contagious diseases," and that the unauthorized removal of a quarantine placard affixed to premises by order of the State board of health is "a misdemeanor under the Public Health Act."

## TYPHOID FEVER IN THE UNITED STATES.

### CASE RATES, JANUARY TO NOVEMBER, 1921 AND 1920, AND MEDIANS FOR THE YEARS 1913 TO 1920.

The accompanying table shows the number of reported cases of typhoid fever per 1,000 population by quarters, from January to June, and by months, from July to November, 1921, compared with the same periods during 1920, and the medians for 1913 to 1920, inclusive.

The median was ascertained by arraying the figures so that the greatest number was first, the next smaller number was second, and so on to the smallest number, which was placed last. The middle number of the array was then selected as the median. Data were not available for all the States for the full eight years. As many years as possible were included for each State, but no year earlier than 1913 was used. The first column shows the number of years for which figures were obtained for each State.

The estimated populations on which the rates were computed are as follows:

| | Number of States. | Estimated population. |
|---|---|---|
| 1921 | 40 | 88,475,824 |
| 1920 | 39 | 85,189,366 |
| Median, 1913-1920 | 38 | 83,144,829 |

For comparison the death rates per 100,000 population in the registration area for deaths are shown in the following table:

*Typhoid fever death rates per 100,000 population in registration area for deaths, 1913-1920, inclusive.*

| | | | |
|---|---|---|---|
| 1920 | 7.8 | 1915 | 12.4 |
| 1919 | 9.2 | 1914 | 15.5 |
| 1918 | 12.6 | 1913 | 17.9 |
| 1917 | 13.5 | | |
| 1916 | 13.3 | Median | 12.9 |

[1] *Ex parte* Culver, 202 Pac. 661.

*Typhoid fever—Annual case rates per 1,000 population, January to November, 1921 and 1920, and medians for the years 1918 to 1920, inclusive.*

| Geographic division and State. | January, February, March. | April, May, June. | July. | August. | September. | October. | November. | 11 months. |
|---|---|---|---|---|---|---|---|---|
| **NEW ENGLAND.** | | | | | | | | |
| Maine: | | | | | | | | |
| 1921 | 0.29 | 0.20 | 0.34 | 0.85 | 0.76 | 0.76 | 0.22 | 0.40 |
| 1920 | .37 | .63 | .42 | .55 | .94 | 1.45 | .67 | .64 |
| Median (5 years) | .18 | .19 | .35 | .42 | .30 | .50 | .52 | .29 |
| Vermont: | | | | | | | | |
| 1921 | .48 | .32 | .17 | .41 | .55 | .78 | .27 | .42 |
| 1920 | .34 | .40 | .34 | .51 | .95 | .85 | .51 | .49 |
| Median (7 years) | .35 | .42 | .31 | .58 | .95 | .71 | .37 | .48 |
| Massachusetts: | | | | | | | | |
| 1921 | .14 | .28 | .19 | .35 | .39 | .32 | .18 | .24 |
| 1920 | .12 | .16 | .32 | .36 | .62 | .39 | .26 | .25 |
| Median (8 years) | .21 | .23 | .39 | .77 | .94 | .68 | .38 | .41 |
| Rhode Island: | | | | | | | | |
| 1921 | .08 | .03 | .65 | .41 | .35 | .18 | .04 | .18 |
| 1920 | .02 | .08 | .10 | .18 | .32 | .20 | .10 | .11 |
| Median (6 years) | .07 | .16 | .27 | .43 | .45 | .37 | .22 | .22 |
| Connecticut: | | | | | | | | |
| 1921 | .11 | .30 | .45 | .81 | .69 | .41 | .23 | .35 |
| 1920 | .07 | .15 | .17 | .54 | 1.04 | .53 | .39 | .30 |
| Median (8 years) | .13 | .23 | .43 | .86 | 1.24 | .67 | .54 | .44 |
| **MIDDLE ATLANTIC.** | | | | | | | | |
| New York: | | | | | | | | |
| 1921 | .17 | .14 | .23 | .50 | .68 | .59 | .34 | .30 |
| 1920 | .09 | .18 | .20 | .45 | .65 | .44 | .31 | .26 |
| Median (8 years) | .25 | .26 | .42 | .70 | .99 | .64 | .39 | .42 |
| New Jersey: | | | | | | | | |
| 1921 | .10 | .13 | .26 | 1.25 | .94 | .63 | .30 | .37 |
| 1920 | .09 | .13 | .15 | .35 | .47 | .34 | .30 | .21 |
| Median (8 years) | .19 | .20 | .39 | .76 | 1.07 | .63 | .37 | .40 |
| Pennsylvania: | | | | | | | | |
| 1921 | .16 | .17 | .71 | 1.56 | 1.33 | .99 | .43 | .55 |
| 1920 | .17 | .22 | .37 | .45 | .68 | .63 | .37 | .33 |
| Median (8 years) | .48 | .44 | .59 | 1.02 | 1.70 | 1.29 | .67 | .73 |
| **EAST NORTH CENTRAL.** | | | | | | | | |
| Ohio: | | | | | | | | |
| 1921 | .17 | .30 | .93 | 1.93 | 1.54 | 1.58 | .63 | .74 |
| 1920 | .14 | .26 | .39 | .69 | 1.03 | 1.42 | 1.09 | .53 |
| Median (7 years) | .24 | .38 | .61 | 1.13 | 1.56 | 1.33 | .71 | .68 |
| Indiana: | | | | | | | | |
| 1921 | .16 | .13 | .49 | .78 | .99 | .64 | .32 | .37 |
| 1920 | .10 | .30 | .22 | .28 | .33 | .56 | .46 | .28 |
| Median (8 years) | .34 | .32 | .59 | 1.27 | 1.25 | 1.03 | .52 | .60 |
| Illinois: | | | | | | | | |
| 1921 | .15 | .18 | .60 | .77 | .73 | .70 | .34 | .37 |
| 1920 | .18 | .22 | .31 | .35 | .49 | .44 | .33 | .28 |
| Median (6 years) | .21 | .21 | .38 | .62 | .84 | .43 | .34 | .35 |
| Michigan: | | | | | | | | |
| 1921 | .17 | .27 | .31 | 1.32 | 1.11 | .87 | .58 | .50 |
| 1920 | .16 | .37 | .35 | .52 | .53 | .54 | .72 | .39 |
| Median (8 years) | .36 | .33 | .48 | .60 | .82 | .73 | .46 | .47 |
| Wisconsin: | | | | | | | | |
| 1921 | .16 | .10 | .09 | .28 | .26 | .39 | .36 | .20 |
| 1920 | .07 | .11 | .14 | .13 | .17 | .17 | .18 | .12 |
| Median (8 years) | .16 | .17 | .14 | .18 | .20 | .20 | .20 | .17 |
| **WEST NORTH CENTRAL.** | | | | | | | | |
| Minnesota: | | | | | | | | |
| 1921 | .31 | .28 | .42 | .21 | .32 | .37 | .26 | .31 |
| 1920 | .16 | .17 | .46 | .45 | .39 | .55 | .30 | .29 |
| Median (8 years) | .29 | .23 | .41 | .53 | .57 | .58 | .39 | .37 |
| North Dakota: | | | | | | | | |
| 1921 | .14 | .18 | .07 | .15 | .57 | .09 | .05 | .17 |
| 1920 | .23 | .09 | .30 | .44 | .68 | .81 | .52 | .34 |
| Median (4 years) | .14 | .09 | .19 | .39 | .58 | .60 | .41 | .26 |
| South Dakota: | | | | | | | | |
| 1921 | .07 | .08 | .07 | .24 | .30 | .28 | .06 | .13 |
| 1920 | .11 | .06 | .19 | .19 | .09 | .28 | .13 | .13 |
| Median (6 years) | .07 | .08 | .13 | .25 | .39 | .37 | .25 | .17 |
| Nebraska: | | | | | | | | |
| 1921 | .09 | .08 | .26 | .26 | .27 | .37 | .09 | .16 |
| 1920 | .04 | .15 | .06 | .11 | .44 | .31 | .10 | .14 |
| Median (1918-1920) | .04 | .06 | .06 | .11 | .45 | .28 | .10 | .12 |

*Typhoid fever—Annual case rates per 1,000 population, January to November, 1921 and 1920, and medians for the years 1913 to 1920, inclusive*—Continued.

| Geographic division and State. | January, February, March. | April, May, June. | July. | August. | September. | October. | November. | 11 months. |
|---|---|---|---|---|---|---|---|---|
| **WEST NORTH CENTRAL—continued.** | | | | | | | | |
| Kansas: | | | | | | | | |
| 1921 | 0.13 | 0.26 | 1.27 | 1.83 | 1.01 | 0.75 | 0.26 | 0.57 |
| 1920 | .18 | .37 | .91 | 1.60 | 1.77 | 1.13 | .51 | .69 |
| Median (8 years) | .22 | .30 | 1.41 | 1.93 | 1.94 | 1.47 | 1.09 | .85 |
| **SOUTH ATLANTIC.** | | | | | | | | |
| Delaware: | | | | | | | | |
| 1921 | .16 | .28 | .69 | 1.06 | 1.22 | 1.49 | .53 | .57 |
| 1920 | .23 | .34 | .21 | .43 | .75 | 1.12 | .48 | .43 |
| Median [1] | | | | | | | | |
| Maryland: | | | | | | | | |
| 1921 | .31 | .45 | 1.71 | 3.10 | 2.26 | 1.51 | .90 | 1.16 |
| 1920 | .23 | .28 | .86 | 1.09 | 1.89 | 1.39 | 1.00 | .71 |
| Median (6 years) | .56 | .65 | 1.51 | 3.47 | 4.33 | 2.45 | 1.30 | 1.52 |
| District of Columbia: | | | | | | | | |
| 1921 | .33 | .19 | .79 | .93 | .63 | .45 | .13 | .41 |
| 1920 | .07 | .18 | .38 | .51 | .92 | .62 | .41 | .33 |
| Median (8 years) | .26 | .36 | .79 | 1.81 | 1.67 | 1.11 | .70 | .72 |
| Virginia: | | | | | | | | |
| 1921 | .36 | .83 | 3.33 | 2.77 | 1.64 | 1.66 | .62 | 1.23 |
| 1920 | .17 | .40 | 1.93 | 1.82 | 1.87 | 1.12 | .71 | .83 |
| Median (8 years) | .40 | .88 | 2.85 | 4.31 | 3.41 | 2.04 | 1.22 | 1.60 |
| West Virginia: | | | | | | | | |
| 1921 | .49 | .36 | 1.81 | 2.37 | 2.89 | 2.35 | .94 | 1.17 |
| 1920 | .57 | .56 | 1.10 | .88 | .93 | 1.12 | .64 | .73 |
| Median (4 years) | .36 | .65 | 1.39 | 2.20 | 1.91 | 1.23 | .82 | .96 |
| North Carolina: | | | | | | | | |
| 1921 | .15 | .78 | 2.25 | 2.03 | 1.19 | .69 | .37 | .85 |
| 1920 | .09 | .38 | 1.83 | 2.03 | 1.77 | .97 | .44 | .77 |
| Median (1918–1920) | .13 | .55 | 3.50 | 2.38 | 2.51 | .98 | .45 | 1.08 |
| South Carolina: | | | | | | | | |
| 1921 | .10 | .32 | 87 | .46 | .52 | .18 | .07 | .30 |
| 1920 | .03 | .32 | .72 | .77 | .74 | .29 | .28 | .35 |
| Median (8 years) | .08 | .59 | 1.10 | 1.04 | .77 | .39 | .29 | .51 |
| Florida: | | | | | | | | |
| 1921 | .74 | .81 | .72 | 1.16 | .63 | .43 | .35 | .72 |
| 1920 | .55 | .62 | .74 | .72 | .37 | .48 | .25 | .55 |
| Median (1918–1920) | .35 | .62 | .75 | .75 | .38 | .49 | .30 | .51 |
| **EAST SOUTH CENTRAL.** | | | | | | | | |
| Alabama: | | | | | | | | |
| 1921 | .31 | .47 | .96 | 1.41 | .87 | .65 | .40 | .60 |
| 1920 | .13 | .32 | .82 | 1.26 | .97 | .40 | .33 | .46 |
| Median (7 years) | .25 | .71 | 1.68 | 2.17 | 1.17 | .73 | .39 | .82 |
| Mississippi: | | | | | | | | |
| 1921 | .65 | 1.35 | 3.12 | 2.23 | 2.02 | 1.93 | 1.46 | 1.52 |
| 1920 | .57 | 1.30 | 2.96 | 3.51 | 2.62 | 1.42 | 1.01 | 1.56 |
| Median (7 years) | 1.14 | 2.07 | 5.88 | 6.72 | 4.75 | 3.04 | 2.24 | 2.93 |
| **WEST SOUTH CENTRAL.** | | | | | | | | |
| Arkansas: | | | | | | | | |
| 1921 | .24 | .23 | 1.52 | 1.79 | .87 | .55 | .53 | .61 |
| 1920 | .19 | .15 | .76 | 1.08 | 1.27 | 1.13 | .78 | .55 |
| Median (4 years) | .14 | .16 | .70 | .77 | .76 | .78 | .56 | .41 |
| Louisiana: | | | | | | | | |
| 1921 | .27 | .54 | .76 | .71 | .74 | .57 | .44 | .51 |
| 1920 | .23 | .34 | .68 | 1.27 | .77 | .35 | .29 | .46 |
| Median (7 years) | .22 | .82 | 1.16 | 1.04 | .83 | .68 | .48 | .67 |
| Oklahoma: | | | | | | | | |
| 1921 | .05 | .27 | .95 | .77 | .51 | .28 | .22 | .33 |
| 1920 [1] | | | | | | | | |
| Median (1913, 1915, 1917) | .32 | .41 | 1.59 | 1.57 | 1.71 | 1.54 | 1.16 | .89 |
| **MOUNTAIN.** | | | | | | | | |
| Montana: | | | | | | | | |
| 1921 | .14 | .22 | .85 | .92 | .52 | .25 | .10 | .34 |
| 1920 | .16 | .33 | .51 | .49 | .86 | .60 | .95 | .45 |
| Median (7 years) | 40 | .47 | .67 | 1.21 | 1.45 | 1.05 | .88 | .71 |

[1] Not available.

*Typhoid fever—Annual case rates per 1,000 population, January to November, 1921 and 1920, and medians for the years 1913 to 1920, inclusive*—Continued.

| Geographic division and State. | January, February, March. | April, May, June. | July. | August. | September. | October. | November. | 11 months. |
|---|---|---|---|---|---|---|---|---|
| MOUNTAIN—continued. | | | | | | | | |
| Idaho: | | | | | | | | |
| 1921 | 0.25 | 0.12 | 0.29 | 0.35 | 0.51 | 0.29 | 0.11 | 0.24 |
| 1920 | .06 | .36 | .22 | .63 | .30 | .22 | .80 | .31 |
| Average (1913, 1920) | .04 | .24 | .30 | .71 | .98 | .44 | .86 | .37 |
| Wyoming: | | | | | | | | |
| 1921 | .46 | .30 | .77 | 1.01 | .48 | .24 | .42 | .47 |
| 1920 | .24 | .33 | .43 | .91 | 1.10 | .73 | .30 | .47 |
| Median (8 years) | .09 | .20 | .33 | .59 | .79 | .46 | .20 | .29 |
| Colorado: | | | | | | | | |
| 1921 | .13 | .38 | .35 | 1.10 | 1.16 | .99 | .81 | .54 |
| 1920 | .06 | .15 | .38 | 1.13 | 1.31 | .84 | .30 | .42 |
| Median (6 years) | .11 | .18 | .60 | 1.05 | 1.29 | .94 | .39 | .46 |
| New Mexico: | | | | | | | | |
| 1921 | .22 | .30 | .89 | .85 | 2.07 | 2.43 | 1.58 | .85 |
| 1920 | .30 | .56 | 1.39 | .86 | 2.12 | 1.76 | 1.69 | .95 |
| Median [1] | | | | | | | | |
| Arizona: | | | | | | | | |
| 1921 | .01 | .05 | .20 | .44 | .31 | .71 | .31 | .19 |
| 1920 | .02 | .11 | 1.09 | .46 | .42 | .53 | .14 | .28 |
| Median (1916, 1918, 1920) | .04 | .13 | .92 | .27 | .38 | .54 | .15 | .25 |
| PACIFIC. | | | | | | | | |
| Washington: | | | | | | | | |
| 1921 | .16 | .26 | .56 | .59 | .59 | .58 | .28 | .35 |
| 1920 | .18 | .15 | .34 | .66 | .87 | .64 | .39 | .35 |
| Median (8 years) | .29 | .26 | .53 | .95 | 1.25 | .90 | .45 | .52 |
| Oregon: | | | | | | | | |
| 1921 | .05 | .05 | .13 | .28 | .36 | .40 | .16 | .15 |
| 1920 | .08 | .07 | .06 | .11 | .36 | .33 | .21 | .14 |
| Median (8 years) | .19 | .15 | .24 | .40 | .41 | .54 | .25 | .26 |
| California: | | | | | | | | |
| 1921 | .15 | .20 | .36 | .58 | .38 | .37 | .25 | .27 |
| 1920 | .14 | .32 | .43 | .54 | .63 | .44 | .24 | .33 |
| Median (8 years) | .24 | .31 | .60 | .62 | .53 | .51 | .32 | .38 |
| TOTAL. | | | | | | | | |
| Above States combined: | | | | | | | | |
| 1921 | .19 | .29 | .76 | 1.10 | .93 | .77 | .40 | .49 |
| 1920 | .16 | .27 | .53 | .70 | .82 | .66 | .46 | .40 |
| Median | .29 | .39 | .88 | 1.20 | 1.31 | .91 | .56 | .63 |

[1] Not available.

## DEATHS FROM INFLUENZA IN NINETY-SIX GREAT TOWNS OF ENGLAND AND WALES.

The following table shows the number of deaths attributed to influenza in Ninety-six Great Towns of England and Wales during the late fall and early winter months 1918–19 to 1921–22, inclusive. The figures are taken from the "Weekly Returns," issued by the Registrar General of England and Wales. The population of these towns collectively was given as 16,577,000 in 1917 and 18,555,000 in 1921.

*Number of deaths from influenza in Ninety-six Great Towns of England and Wales.*

| Week ended— | Deaths. | Week ended— | Deaths. | Week ended— | Deaths. | Week ended— | Deaths. |
|---|---|---|---|---|---|---|---|
| 1918 | | 1919 | | 1920 | | 1921 | |
| Oct. 12 | 647 | Oct. 11 | 39 | Oct. 9 | 33 | Oct. 15 | 49 |
| Oct. 19 | 1,887 | Oct. 18 | 57 | Oct. 16 | 34 | Oct. 22 | 46 |
| Oct. 26 | 4,482 | Oct. 25 | 71 | Oct. 23 | 33 | Oct. 29 | 30 |
| Nov. 2 | 7,412 | Nov. 1 | 71 | Oct. 30 | 35 | Nov. 5 | 32 |
| Nov. 9 | 7,559 | Nov. 8 | 56 | Nov. 6 | 29 | Nov. 12 | 44 |
| Nov. 16 | 5,916 | Nov. 15 | 74 | Nov. 13 | 42 | Nov. 19 | 59 |
| Nov. 23 | 5,106 | Nov. 22 | 79 | Nov. 20 | 60 | Nov. 26 | 80 |
| Nov. 30 | 5,119 | Nov. 29 | 63 | Nov. 27 | 69 | Dec. 3 | 128 |
| Dec. 7 | 3,574 | Dec. 6 | 77 | Dec. 4 | 65 | Dec. 10 | 149 |
| Dec. 14 | 1,885 | Dec. 13 | 81 | Dec. 11 | 61 | Dec. 17 | 212 |
| Dec. 21 | 1,015 | Dec. 20 | 64 | Dec. 18 | 75 | Dec. 24 | 237 |
| Dec. 28 | 581 | Dec. 27 | 43 | Dec. 25 | 81 | Dec. 31 | 418 |
| 1919 | | 1920 | | 1921 | | 1922 | |
| Jan. 4 | 442 | Jan. 3 | 52 | Jan. 1 | 89 | Jan. 7 | 807 |
| Jan. 11 | 379 | Jan. 10 | 73 | Jan. 8 | 101 | Jan. 14 | 1,240 |
| Jan. 18 | 274 | Jan. 17 | 62 | Jan. 15 | 87 | Jan. 21 | 1,404 |
| Jan. 25 | 224 | Jan. 24 | 85 | Jan. 22 | 66 | Jan. 28 | 1,419 |

## A HIGH DEATH RATE IN SCOTLAND.

During the week ended January 21, 1922, 379 deaths from influenza were registered in sixteen principal towns of Scotland. The population of these towns collectively is given as 2,370,600. This gives an influenza death rate for the week, on an annual basis, of 8.33 per thousand population. One thousand nine hundred and thirty deaths from all causes were reported during the week, the crude death rate being 42.5 per thousand.

The Registrar General of Scotland, in the Weekly Return of Births, Deaths, and Marriages in the Principal Towns of Scotland (No. 3), says:

"The death rate for the week is 15.8 above that for the previous week, 22.3 above the mean of the rates for the three preceding weeks, and 25.9 above that for the corresponding week of last year. It is the highest Principal Town weekly death rate since that of the week ending 2nd March, 1895, which was 42.8. In the influenza epidemic of 1918–1919 the highest corresponding death rate was 40.0, and occurred in the week ending 1st March, 1919.

"In the individual towns the death rate ranged from 55.6 in Glasgow, 50.9 in Coatbridge, and 48.7 in Kirkcaldy, to 11.6 in Ayr, 17.3 in Motherwell and Wishaw, and 17.6 in Clydebank. In Dundee it was 41.1, in Edinburgh 35.1, in Falkirk 34.4, in Paisley 33.7, in Perth 33.2, in Hamilton 33.0, in Greenock 31.2, in Kilmarnock 29.0, in Dunfermline 25.4, and in Aberdeen 23.0. Compared with the returns for the previous week, the rate for Coatbridge shows an increase of 28.4, Kilmarnock of 24.6, Glasgow of 20.7, Hamilton of 19.8, Paisley of 17.7, Greenock of 16.5, and Edinburgh of 16.0. The only rate less than in the previous week is that for Perth, which was 33.2, or 17.4 less.

"Deaths from the principal epidemic diseases * * * numbered 150. They are 44 more than in the previous week, and are equal to an annual death rate from these causes of 3.3 per thousand. These deaths include 2 from enteric fever, 88 from measles, 4 from

scarlet fever, 34 from whooping cough, 13 from diphtheria, and 9 from the diarrhœas of childhood. Compared with the returns for the previous week, deaths from measles are 25 more, from whooping cough 14 more, from diphtheria 7 more, from scarlet fever 2 more, and from enteric fever 1 more, while those from the diarrhœas of childhood are 5 fewer.

"Deaths from influenza numbered 379. They are 227 more than in the previous week.

"Deaths from respiratory diseases numbered 681. They are 310 more than in the previous week.

"Deaths of children of less than one year old numbered 344, and those of persons of sixty-five and upward 497. The former are 133 more than in the previous week, and 203 more than in the corresponding week of last year. The latter are 152 more than in the previous week, and 271 more than in the corresponding week of last year."

## DEATH RATES IN A GROUP OF INSURED PERSONS.

### COMPARISON OF DEATH RATES FOR PRINCIPAL CAUSES, 1911–1921, AND NOVEMBER AND DECEMBER, 1921.

The following statements and tables are taken from the Statistical Bulletin of the Metropolitan Life Insurance Co. for January, 1922:

The death rate for 1921 among nearly 14,000,000 industrial policyholders of the company in the United States and Canada was 853.8 per 100,000, the lowest rate recorded in the history of the company. It is 13.7 per cent lower than the rate for 1920, namely, 989.4 per 100,000, which was the lowest recorded up to that time. The 1921 death rate is 31.9 per cent lower than that for 1911. Using absolute figures representing deaths instead of rates, the low mortality record for 1921 means that 18,661 fewer deaths occurred among the policyholders during 1921 than would have occurred had the rate for 1920 prevailed, and 54,942 fewer deaths than would have occurred if the 1911 rate had obtained.

The annual death rate in this selected group, from 1911 to 1920, has varied between 74 and 87 per cent of the rate in the registration area of the United States.

Marked declines in the mortality from tuberculosis, pneumonia, and influenza were, as in 1920, a large factor in the improvement noted in the total mortality. In a period of 11 years the death rate for tuberculosis has been almost cut in half. There were also declines in mortality from Bright's disease and organic heart disease.

*Death rates per 100,000 lives exposed, for principal causes, 1911 to 1921.*

[Industrial department, Metropolitan Life Insurance Co.]

| Cause of death.[1] | 1921[1] | 1920 | 1919 | 1918 | 1917 | 1916 | 1915 | 1914 | 1913 | 1912 | 1911 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| All causes of death. | 853.8 | 989.4 | 1,063.0 | 1,559.2 | 1,161.1 | 1,168.1 | 1,130.9 | 1,152.8 | 1,199.4 | 1,201.2 | 1,253.0 |
| Typhoid fever | 6.6 | 6.7 | 7.3 | 11.5 | 12.1 | 13.0 | 12.9 | 16.1 | 18.4 | 19.1 | 22.8 |
| Communicable diseases of childhood | 37.2 | 43.1 | 31.5 | 41.6 | 46.8 | 40.8 | 36.4 | 48.2 | 58.1 | 46.2 | 58.9 |
| Measles | 3.1 | 8.5 | 3.5 | 8.6 | 11.1 | 9.9 | 5.7 | 6.9 | 12.3 | 7.6 | 11.4 |
| Scarlet fever | 6.9 | 6.0 | 3.9 | 3.6 | 6.0 | 4.1 | 4.6 | 9.8 | 12.7 | 9.0 | 13.1 |
| Whooping cough | 3.9 | 6.6 | 3.2 | 10.1 | 5.1 | 5.8 | 4.7 | 5.8 | 5.9 | 5.1 | 7.1 |
| Diphtheria | 23.3 | 22.1 | 20.9 | 19.3 | 24.6 | 21.0 | 21.4 | 25.7 | 27.2 | 24.5 | 27.3 |
| Influenza and pneumonia | 75.1 | 159.5 | 214.1 | 542.2 | 135.4 | 138.1 | 119.5 | 111.6 | 118.4 | 116.2 | 131.2 |
| Influenza | 8.6 | 53.5 | 96.9 | 272.4 | 14.4 | 23.8 | 13.0 | 11.3 | 12.3 | 12.3 | 15.9 |
| Pneumonia | 66.5 | 106.1 | 117.2 | 269.8 | 121.0 | 114.3 | 106.5 | 100.3 | 106.1 | 103.9 | 115.3 |
| Meningococcus meningitis | .9 | 1.0 | 1.3 | 2.8 | 3.5 | 1.5 | 1.3 | 1.5 | 1.7 | 3.0 | [2] |
| Tuberculosis (all forms) | 115.1 | 137.9 | 156.5 | 189.0 | 188.9 | 190.2 | 197.8 | 204.5 | 205.7 | 212.9 | 224.6 |
| Tuberculosis of respiratory system | 103.6 | 124.0 | 141.6 | 171.2 | 172.3 | 172.8 | 180.0 | 185.2 | 186.6 | 191.5 | 203.0 |
| Cancer (all forms) | 70.4 | 69.8 | 67.0 | 67.2 | 70.9 | 70.3 | 70.9 | 69.8 | 70.5 | 70.3 | 68.0 |
| Diabetes mellitus | 15.2 | 14.1 | 13.4 | 14.0 | 15.3 | 15.9 | 15.1 | 14.2 | 13.9 | 13.7 | 13.3 |
| Cerebral hemorrhage, apoplexy | 60.9 | 61.3 | 59.8 | 64.0 | 66.8 | 68.7 | 68.5 | 69.2 | 67.2 | 70.3 | 64.2 |
| Diseases of heart | 115.0 | 117.0 | 113.9 | 141.7 | 142.0 | 140.2 | 136.7 | 138.1 | 140.6 | 143.8 | 141.8 |
| Diarrhea and enteritis | 13.9 | 15.8 | 16.9 | 23.4 | 25.5 | 26.2 | 24.4 | 24.7 | 27.7 | 27.6 | 28.0 |
| 1 to 2 years | 5.9 | 7.0 | 7.5 | 11.6 | 11.9 | 12.5 | 11.3 | 11.9 | 13.2 | 12.8 | 13.0 |
| 2 years and over | 8.0 | 8.8 | 9.5 | 11.8 | 13.6 | 13.7 | 13.1 | 12.8 | 14.5 | 14.8 | 15.0 |
| Chronic nephritis (Bright's disease) | 66.7 | 70.8 | 73.5 | 86.8 | 95.7 | 99.0 | 95.7 | 95.4 | 96.0 | 99.4 | 95.0 |
| Puerperal state (total) | 19.5 | 23.0 | 20.0 | 27.4 | 18.2 | 17.6 | 18.0 | 19.8 | 20.0 | 18.4 | 19.8 |
| Puerperal septicemia | 8.3 | 8.6 | 6.7 | 7.3 | 7.5 | 7.2 | 7.2 | 8.4 | 9.1 | 8.0 | 8.8 |
| Puerperal albuminuria and convulsions | 4.8 | 5.0 | 4.8 | 4.9 | 5.1 | 5.0 | 4.8 | 5.1 | 5.3 | 4.8 | 4.7 |
| Accidents of pregnancy | 1.6 | 3.1 | 3.0 | 6.9 | 1.6 | 1.4 | 1.8 | 1.7 | 1.7 | 1.5 | 1.7 |
| Total external causes | 70.5 | 72.0 | 94.2 | 128.9 | 106.7 | 99.5 | 88.2 | 89.2 | 98.3 | 92.9 | 97.9 |
| Suicides | 7.5 | 6.1 | 6.8 | 7.6 | 9.3 | 9.8 | 12.2 | 12.3 | 13.5 | 12.4 | 13.3 |
| Homicides | 6.6 | 5.8 | 6.9 | 6.2 | 7.4 | 6.9 | 6.9 | 7.0 | 7.2 | 6.7 | 7.2 |
| Accidents (total) | 56.2 | 59.6 | 63.8 | 75.5 | 76.5 | 73.2 | 67.3 | 69.9 | 77.6 | 73.8 | 77.4 |
| Accidental burns | 6.5 | 8.1 | 8.1 | 9.0 | 8.9 | 8.8 | 8.6 | 8.4 | 9.0 | 9.1 | 8.8 |
| Accidental drowning | 8.0 | 6.7 | 8.6 | 9.4 | 8.7 | 9.7 | 11.9 | 10.0 | 12.1 | 10.2 | 10.2 |
| Accidental traumatism, by fall | 7.0 | 7.3 | 8.0 | 10.4 | 11.9 | 13.1 | 11.9 | 12.6 | 13.7 | 12.7 | 13.2 |
| Accidental traumatism, by machines | 1.0 | 1.7 | 1.6 | 2.4 | 2.0 | 1.7 | 1.4 | 1.5 | 2.0 | 1.7 | 1.8 |
| Railroad accidents | 3.8 | 5.2 | 5.7 | 7.8 | 8.5 | 7.9 | 7.4 | 7.5 | 9.0 | 9.2 | 9.5 |
| Automobile accidents | 11.9 | 11.1 | 10.7 | 10.3 | 9.7 | 7.4 | 5.4 | 4.8 | 4.1 | 3.0 | 2.3 |
| All other accidents | 18.0 | 19.5 | 21.2 | 26.1 | 26.8 | 24.6 | 20.7 | 25.1 | 27.7 | 27.9 | 31.6 |
| War deaths | .1 | .5 | 16.6 | 39.7 | 13.5 | 9.6 | 1.8 | ..... | ..... | ..... | ..... |
| Other diseases and conditions | 187.0 | 197.4 | 193.5 | 218.7 | 233.2 | 247.1 | 245.5 | 250.5 | 261.9 | 267.4 | 287.5 |

[1] Returns for 1921 were classified in accordance with the requirements of the third decennial revision of the International List of Causes of Sickness and Death. Nineteen hundred and twenty-one death rates based upon provisional estimate of lives exposed to risk.
[2] Not available.

The death rate for December, 1921, shows a slight increase over that for November, the increase being due to higher mortality from respiratory conditions and important organic diseases. The rate was lower, however, for December, 1921, than for the same month of 1920.

*Death rates (annual basis) for principal causes per 100,000 lives exposed, November and December, 1921, and December and year, 1920.*

[Industrial department, Metropolitan Life Insurance Co.]

| Cause of death. | Death rate per 100,000 lives exposed. | | | |
|---|---|---|---|---|
| | December, 1921. | November, 1921. | December, 1920. | Year 1920. |
| Total, all causes | 885.9 | 836.7 | 948.8 | 989.4 |
| Typhoid fever | 6.0 | 8.7 | 5.0 | 6.7 |
| Measles | 1.3 | .6 | 3.5 | 8.5 |
| Scarlet fever | 5.5 | 5.5 | 8.8 | 6.0 |
| Whooping cough | 1.1 | 1.6 | 4.4 | 6.6 |
| Diphtheria | 31.3 | 30.7 | 35.1 | 22.1 |
| Influenza | 7.2 | 5.2 | 8.6 | 53.5 |
| Tuberculosis (all forms) | 105.6 | 95.3 | 125.3 | 137.9 |
| Cancer | 76.6 | 70.1 | 76.8 | 69.8 |
| Meningitis (all forms) | 5.7 | 5.3 | 4.6 | 5.2 |
| Cerebral hemorrhage | 70.6 | 62.6 | 66.1 | 61.3 |
| Organic diseases of heart | 124.9 | 118.4 | 122.1 | 117.0 |
| Pneumonia (all forms) | 76.5 | 61.1 | 86.7 | 106.1 |
| Other respiratory diseases | 16.2 | 15.1 | 17.3 | 18.2 |
| Diarrhea and enteritis | 7.1 | 13.2 | 9.7 | 15.8 |
| Bright's disease | 71.9 | 69.1 | 75.3 | 70.8 |
| Puerperal state | 17.0 | 16.3 | 17.7 | 23.0 |
| Suicides | 6.9 | 5.9 | 5.7 | 6.1 |
| Homicides | 8.4 | 6.3 | 6.9 | 5.8 |
| Other external causes (excluding suicides and homicides) | 50.2 | 51.4 | 58.0 | 60.1 |
| Traumatism by automobile | 12.5 | 13.6 | 10.3 | 11.1 |
| All other causes | 196.1 | 194.1 | 211.4 | 188.9 |

## DEATHS DURING WEEK ENDED FEB. 4, 1922.

*Summary of information received by telegraph from industrial insurance companies for week ended Feb. 4, 1922, and corresponding week, 1921. (From the Weekly Health Index, Feb. 7, 1922, issued by the Bureau of the Census, Department of Commerce.)*

| | Week ended Feb. 4, 1922. | Corresponding week, 1921. |
|---|---|---|
| Policies in force | 48,750,583 | 45,778,701 |
| Number of death claims | 9,346 | 8,621 |
| Death claims per 1,000 policies in force, annual rate | 10.0 | 9.8 |

*Deaths from all causes in certain large cities of the United States during the week ended Feb. 4, 1922, infant mortality, annual death rate, and comparison with corresponding week of 1921. (From the Weekly Health Index, Feb. 7, 1922, issued by the Bureau of the Census, Department of Commerce.)*

| City. | Estimated population July 1, 1921. | Week ended Feb. 4, 1922. | | Annual death rate per 1,000, corresponding week, 1921. | Deaths under 1 year. | | Infant mortality rate, week ended Feb. 4, 1922.[2] |
|---|---|---|---|---|---|---|---|
| | | Total deaths. | Death rate.[1] | | Week ended Feb. 4, 1922. | Corresponding week, 1921. | |
| Total | 27,483,800 | 8,261 | 15.7 | 13.7 | 1,066 | 1,085 | ..... |
| Akron, Ohio | [3] 208,435 | 35 | 8.8 | 7.3 | 6 | 5 | 64 |
| Albany, N. Y. | 115,071 | 39 | 17.7 | 12.7 | 7 | 3 | 157 |
| Atlanta, Ga. | 207,473 | 72 | 18.1 | 17.3 | 8 | 9 | ..... |
| Baltimore, Md. | 750,864 | 236 | 16.4 | 15.1 | 23 | 35 | 65 |
| Birmingham, Ala. | 186,133 | 54 | 15.1 | 19.6 | 8 | 10 | ..... |
| Boston, Mass. | 757,634 | 229 | 15.8 | 15.9 | 38 | 36 | 102 |
| Bridgeport, Conn. | [3] 143,555 | 55 | 20.0 | 14.3 | 12 | 11 | 150 |
| Buffalo, N. Y. | 519,608 | 129 | 12.9 | 16.2 | 18 | 38 | 71 |
| Cambridge, Mass. | 110,444 | 33 | 15.6 | 20.8 | 4 | 4 | 73 |
| Camden, N. J. | 119,672 | 35 | 15.3 | 13.5 | 10 | 5 | 153 |
| Chicago, Ill. | 2,780,655 | 719 | 13.5 | 13.2 | 110 | 131 | ..... |
| Cincinnati, Ohio. | 403,418 | 142 | 18.4 | 14.9 | 11 | 19 | 73 |
| Cleveland, Ohio. | 831,138 | 194 | 12.2 | 10.9 | 31 | 28 | 80 |
| Columbus, Ohio. | 245,358 | 66 | 14.0 | 12.1 | 10 | 9 | 106 |
| Dallas, Tex. | 165,282 | 44 | 13.9 | 11.7 | 3 | 3 | ..... |
| Dayton, Ohio. | [3] 152,559 | 34 | 11.6 | 10.9 | 6 | 2 | 102 |
| Denver, Colo. | 263,152 | 113 | 22.4 | 13.7 | 10 | 8 | ..... |
| Detroit, Mich. | 1,070,450 | 216 | 10.5 | 10.5 | 41 | 37 | 79 |
| Fall River, Mass. | 120,668 | 49 | 21.2 | 20.7 | 11 | 11 | 154 |
| Fort Worth, Tex. | 111,423 | 32 | 15.0 | ..... | 3 | ..... | ..... |
| Grand Rapids, Mich. | 141,197 | 43 | 15.9 | 10.3 | 5 | 3 | 83 |
| Houston, Tex. | 144,340 | 35 | 12.6 | 10.8 | 5 | 3 | ..... |
| Indianapolis, Ind. | 325,632 | 180 | 28.8 | 14.7 | 12 | 14 | 91 |
| Jersey City, N. J. | 302,788 | 94 | 16.2 | 15.5 | 15 | 15 | 96 |
| Kansas City, Kans. | 103,884 | 43 | 21.6 | 15.6 | 4 | 2 | 92 |
| Kansas City, Mo. | 336,157 | 92 | 14.3 | 13.5 | 12 | 15 | ..... |
| Los Angeles, Calif. | 614,160 | 197 | 16.7 | 15.7 | 18 | 10 | 75 |
| Louisville, Ky. | 236,083 | 80 | 17.7 | 12.8 | 11 | 9 | 119 |
| Lowell, Mass. | 113,757 | 23 | 10.5 | 15.6 | 5 | 6 | 84 |
| Memphis, Tenn. | 165,656 | 72 | 22.7 | 11.0 | 12 | 4 | ..... |
| Milwaukee, Wis. | 468,386 | 112 | 12.5 | 10.8 | 18 | 22 | 88 |
| Minneapolis, Minn. | 392,815 | 97 | 12.9 | 11.5 | 4 | 22 | 22 |
| Nashville, Tenn. | 122,038 | 46 | 19.7 | 20.9 | 10 | 5 | ..... |
| New Bedford, Mass. | 125,012 | 27 | 11.3 | 10.4 | 8 | 5 | 119 |
| New Haven, Conn. | 167,007 | 54 | 16.9 | 13.1 | 4 | 3 | 49 |
| New Orleans, La. | 394,657 | 139 | 18.4 | 19.3 | 17 | 23 | ..... |
| New York, N. Y. | 5,751,867 | 1,837 | 16.7 | 13.0 | 238 | 213 | 92 |
| Newark, N. J. | 424,885 | 138 | 16.9 | 12.5 | 24 | 12 | 106 |
| Norfolk, Va. | 121,260 | 24 | 10.3 | 9.5 | 6 | 7 | 106 |
| Oakland, Calif. | 226,472 | 67 | 15.4 | 11.7 | 4 | 4 | 50 |
| Omaha, Nebr. | 197,066 | 62 | 16.4 | 13.2 | 5 | 7 | 54 |
| Paterson, N. J. | 137,463 | 45 | 17.1 | 13.3 | 4 | 6 | 62 |
| Philadelphia, Pa. | 1,866,212 | 498 | 13.9 | 17.1 | 50 | 74 | 59 |
| Pittsburgh, Pa. | 602,452 | 238 | 20.6 | 17.4 | 27 | 23 | 86 |
| Portland, Oreg. | 261,859 | 63 | 12.4 | 13.4 | 9 | 6 | 89 |
| Providence, R. I. | 239,645 | 73 | 15.9 | 17.2 | 14 | 9 | 111 |
| Richmond, Va. | 175,686 | 79 | 23.4 | 15.4 | 7 | 9 | 85 |
| Rochester, N. Y. | 305,229 | 76 | 13.0 | 13.0 | 11 | 9 | 85 |
| St. Louis, Mo. | 796,164 | 228 | 15.1 | 13.3 | 16 | 25 | ..... |
| St. Paul, Minn. | 237,781 | 46 | 10.1 | 8.8 | 8 | 7 | 75 |
| Salt Lake City, Utah. | 121,595 | 34 | 14.6 | 12.4 | 3 | 7 | 45 |
| San Francisco, Calif. | 520,546 | 170 | 17.0 | 13.8 | 14 | 9 | 81 |
| Seattle, Wash. | [3] 315,312 | 85 | 14.1 | 8.1 | 8 | 8 | 68 |
| Spokane, Wash. | 101,442 | 40 | 20.0 | 9.0 | 4 | 0 | 85 |
| Springfield, Mass. | 135,877 | 37 | 14.2 | 11.9 | 4 | 3 | 60 |
| Syracuse, N. Y. | 177,265 | 59 | 17.4 | 12.6 | 11 | 8 | 132 |
| Toledo, Ohio. | 253,696 | 65 | 13.4 | 14.2 | 9 | 11 | 88 |
| Trenton, N. J. | 122,760 | 56 | 23.8 | 20.4 | 12 | 9 | 184 |
| Washington, D. C. | [3] 437,571 | 219 | 26.1 | 14.8 | 17 | 20 | 97 |
| Wilmington, Del. | 113,408 | 23 | 10.6 | 15.6 | 5 | 4 | 97 |
| Worcester, Mass. | 184,972 | 63 | 17.8 | 12.4 | 12 | 7 | 130 |
| Yonkers, N. Y. | 103,324 | 31 | 15.6 | 12.6 | 7 | 8 | 146 |
| Youngstown, Ohio. | 139,432 | 45 | 16.8 | 17.6 | 7 | 14 | 92 |

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births—based on deaths under 1 year for the week and estimated births for 1921. Cities left blank are not in the registration area for births.
[3] Enumerated population Jan. 1, 1920.

# 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.

### Telegraphic Reports for Week Ended Feb. 11, 1922.

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

| ALABAMA. | Cases. |
|---|---|
| Chicken pox | 51 |
| Diphtheria | 18 |
| Hookworm disease | 40 |
| Influenza | 95 |
| Malaria | 38 |
| Pellagra | 1 |
| Pneumonia | 29 |
| Scarlet fever | 11 |
| Smallpox: | |
| Butler | 29 |
| Dallas | 11 |
| Scattering | 16 |
| Tuberculosis | 18 |
| Typhoid fever | 17 |

| ARKANSAS. | |
|---|---|
| Cerebrospinal meningitis | 1 |
| Chicken pox | 18 |
| Diphtheria | 10 |
| Influenza | 232 |
| Malaria | 25 |
| Measles | 5 |
| Pellagra | 4 |
| Pneumonia | 8 |
| Scarlet fever | 5 |
| Smallpox | 14 |
| Tuberculosis | 8 |
| Typhoid fever | 9 |

| CALIFORNIA. | |
|---|---|
| Cerebrospinal meningitis: | |
| Kern County | 1 |
| Lindsay | 1 |
| San Francisco | 4 |
| Diphtheria | 161 |
| Influenza | 845 |
| Lethargic encephalitis—Los Angeles | 1 |
| Measles | 18 |
| Scarlet fever | 133 |

| CALIFORNIA—continued. | |
|---|---|
| Smallpox: | Cases. |
| Kern County | 14 |
| San Jose | 16 |
| Santa Clara County | 8 |
| Scattering | 29 |
| Typhoid fever | 4 |

| COLORADO. (Exclusive of Denver.) | |
|---|---|
| Cerebrospinal meningitis | 2 |
| Chicken pox | 13 |
| Diphtheria | 21 |
| Influenza | 6 |
| Measles | 2 |
| Mumps | 6 |
| Pneumonia | 22 |
| Scarlet fever | 54 |
| Smallpox | 22 |
| Tuberculosis | 9 |
| Typhoid fever | 7 |
| Whooping cough | 2 |

| CONNECTICUT. | |
|---|---|
| Cerebrospinal meningitis | 1 |
| Chicken pox | 100 |
| Diphtheria: | |
| Bridgeport | 12 |
| Hartford | 17 |
| New Haven | 9 |
| Waterbury | 8 |
| Scattering | 34 |
| German measles | 7 |
| Influenza | 518 |
| Lethargic encephalitis | 4 |
| Measles: | |
| Hartford | 41 |
| New Haven | 20 |
| West Hartford | 11 |
| Scattering | 32 |

| CONNECTICUT—continued. | Cases. |
|---|---|
| Mumps | 26 |
| Ophthalmia neonatorum | 3 |
| Pneumonia (lobar) | 52 |
| Poliomyelitis | 1 |
| Scarlet fever: | |
| Bridgeport | 11 |
| New Haven | 9 |
| Stamford | 9 |
| Scattering | 71 |
| Septic sore throat | 1 |
| Smallpox: | |
| Bridgeport | 12 |
| Milford | 2 |
| Tetanus | 2 |
| Tuberculosis (pulmonary) | 35 |
| Whooping cough | 36 |

DELAWARE.

| | |
|---|---|
| Chicken pox | 22 |
| Diphtheria | 1 |
| Influenza | 2 |
| Measles | 1 |
| Pneumonia | 13 |
| Scarlet fever: | |
| Wilmington | 64 |
| Scattering | 19 |
| Tuberculosis | 5 |

FLORIDA.

| | |
|---|---|
| Diphtheria | 26 |
| Influenza | 35 |
| Malaria | 5 |
| Ophthalmia neonatorum | 1 |
| Pneumonia | 9 |
| Scarlet fever | 5 |
| Smallpox | 11 |
| Typhoid fever | 10 |

GEORGIA.

| | |
|---|---|
| Chicken pox | 17 |
| Diphtheria | 12 |
| Dysentery (amebic) | 1 |
| Dysentery (bacillary) | 1 |
| Hookworm disease | 6 |
| Influenza | 81 |
| Malaria | 9 |
| Measles | 10 |
| Mumps | 1 |
| Pneumonia | 31 |
| Scarlet fever | 15 |
| Septic sore throat | 6 |
| Smallpox | 136 |
| Tetanus | 2 |
| Tuberculosis (pulmonary) | 20 |
| Typhoid fever | 2 |
| Typhus fever | 1 |
| Whooping cough | 5 |

ILLINOIS.

| | |
|---|---|
| Cerebrospinal meningitis: | |
| Chicago | 1 |
| Piatt County—Cerro Gordo Township | 1 |
| Sangamon County—Loami Township | 1 |
| Stewardson | 1 |
| Diphtheria: | |
| Aurora | 13 |
| Chicago | 169 |
| Scattering | 137 |

| ILLINOIS—continued. | Cases. |
|---|---|
| Influenza | 417 |
| Lethargic encephalitis—Chicago | 3 |
| Pneumonia | 447 |
| Poliomyelitis—Chicago | 1 |
| Scarlet fever: | |
| Chicago | 159 |
| Naperville | 8 |
| Oak Park | 10 |
| Rockford | 11 |
| Scattering | 145 |
| Smallpox: | |
| Chicago | 8 |
| Peoria | 9 |
| Scattering | 36 |
| Typhoid fever | 9 |
| Whooping cough | 46 |

INDIANA.

| | |
|---|---|
| Cerebrospinal meningitis—Henry County | 2 |
| Diphtheria | 152 |
| Scarlet fever | 120 |
| Smallpox | 30 |
| Typhoid fever | 4 |

IOWA.

| | |
|---|---|
| Diphtheria | 26 |
| Scarlet fever | 94 |
| Smallpox | 52 |

KANSAS.

| | |
|---|---|
| Cerebrospinal meningitis | 2 |
| Chicken pox | 139 |
| Diphtheria | 115 |
| German measles | 2 |
| Influenza | 440 |
| Measles | 10 |
| Mumps | 21 |
| Pneumonia | 112 |
| Poliomyelitis | 1 |
| Scarlet fever | 170 |
| Smallpox | 64 |
| Tuberculosis | 23 |
| Typhoid fever | 2 |
| Whooping cough | 4 |

LOUISIANA.

| | |
|---|---|
| Diphtheria | 26 |
| Influenza | 39 |
| Measles | 13 |
| Scarlet fever | 11 |
| Smallpox | 34 |
| Typhoid fever | 13 |

MAINE.

| | |
|---|---|
| Cerebrospinal meningitis | 3 |
| Chicken pox | 22 |
| Diphtheria | 14 |
| German measles | 2 |
| Influenza | 145 |
| Measles | 1 |
| Pneumonia | 22 |
| Scarlet fever | 55 |
| Septic sore throat | 3 |
| Smallpox | 4 |
| Tuberculosis | 11 |
| Typhoid fever | 1 |
| Whooping cough | 11 |

MARYLAND.[1]

| | Cases. |
|---|---|
| Cerebrospinal meningitis | 2 |
| Chicken pox | 85 |
| Diphtheria | 44 |
| German measles | 11 |
| Influenza | 189 |
| Malaria | 1 |
| Measles | 147 |
| Mumps | 75 |
| Pneumonia (all forms) | 160 |
| Poliomyelitis | 1 |
| Scarlet fever | 92 |
| Septic sore throat | 5 |
| Tuberculosis | 48 |
| Typhoid fever | 4 |
| Whooping cough | 18 |

MASSACHUSETTS.

| | |
|---|---|
| Actinomycosis | 1 |
| Cerebrospinal meningitis | 2 |
| Chicken pox | 193 |
| Conjunctivitis (suppurative) | 13 |
| Diphtheria | 211 |
| German measles | 11 |
| Influenza | 1,469 |
| Measles | 528 |
| Mumps | 111 |
| Ophthalmia neonatorum | 12 |
| Pneumonia (lobar) | 244 |
| Poliomyelitis | 1 |
| Scarlet fever | 215 |
| Septic sore throat | 6 |
| Tetanus | 3 |
| Trachoma | 2 |
| Tuberculosis (all forms) | 163 |
| Typhoid fever | 6 |
| Whooping cough | 97 |

MINNESOTA.

| | |
|---|---|
| Chicken pox | 4 |
| Diphtheria | 55 |
| Influenza | 12 |
| Measles | 36 |
| Pneumonia | 2 |
| Scarlet fever | 216 |
| Smallpox | 89 |
| Trachoma | 1 |
| Tuberculosis | 43 |
| Typhoid fever | 6 |
| Whooping cough | 1 |

MISSISSIPPI.

| | |
|---|---|
| Diphtheria | 9 |
| Scarlet fever | 5 |
| Smallpox | 26 |
| Typhoid fever | 6 |

MISSOURI.

| | |
|---|---|
| Cerebrospinal meningitis | 1 |
| Chicken pox | 44 |
| Diphtheria | 115 |
| Epidemic sore throat | 26 |
| Influenza | 99 |
| Measles | 12 |
| Mumps | 11 |
| Pneumonia | 52 |

MISSOURI—continued.

| | Cases. |
|---|---|
| Scarlet fever | 63 |
| Smallpox | 15 |
| Trachoma | 12 |
| Tuberculosis | 41 |
| Typhoid fever | 3 |
| Whooping cough | 8 |

MONTANA.

| | |
|---|---|
| Cerebrospinal meningitis | 1 |
| Diphtheria | 11 |
| Scarlet fever | 32 |
| Smallpox | 35 |
| Typhoid fever | 1 |

NEBRASKA.

| | |
|---|---|
| Chicken pox | 27 |
| Diphtheria | 18 |
| Influenza | 6 |
| Measles: | |
| Hastings | 24 |
| Omaha | 22 |
| Scattering | 3 |
| Mumps | 57 |
| Pneumonia | 1 |
| Scarlet fever | 58 |
| Smallpox | 27 |
| Typhoid fever | 6 |

NEW JERSEY.

| | |
|---|---|
| Cerebrospinal meningitis | 4 |
| Chicken pox | 176 |
| Diphtheria | 155 |
| Influenza | 1,288 |
| Measles | 228 |
| Pneumonia | 420 |
| Poliomyelitis | 1 |
| Scarlet fever | 326 |
| Smallpox | 2 |
| Trachoma | 1 |
| Typhoid fever | 2 |
| Whooping cough | 126 |

NEW MEXICO.

| | |
|---|---|
| Chicken pox | 16 |
| Diphtheria | 28 |
| Influenza | 14 |
| Mumps | 10 |
| Pneumonia | 10 |
| Scarlet fever | 11 |
| Smallpox | 3 |
| Tuberculosis | 27 |
| Whooping cough | 2 |

NEW YORK.

(Exclusive of New York City.)

| | |
|---|---|
| Diphtheria | 198 |
| Influenza | 771 |
| Measles | 357 |
| Pneumonia | 468 |
| Scarlet fever | 336 |
| Smallpox | 3 |
| Typhoid fever | 13 |
| Whooping cough | 225 |

[1] Week ended Friday.

NORTH CAROLINA.

| | Cases. |
|---|---|
| Cerebrospinal meningitis | 3 |
| Chicken pox | 243 |
| Diphtheria | 70 |
| German measles | 4 |
| Measles | 56 |
| Scarlet fever | 56 |
| Septic sore throat | 7 |
| Smallpox | 44 |
| Typhoid fever | 1 |
| Whooping cough | 142 |

OREGON.

| | |
|---|---|
| Cerebrospinal meningitis | 1 |
| Chicken pox | 13 |
| Diphtheria: | |
| Portland | 11 |
| Scattering | 5 |
| Influenza | 168 |
| Lethargic encephalitis—Portland | [1] 1 |
| Measles | 4 |
| Mumps | 11 |
| Pneumonia | [1] 14 |
| Scarlet fever | 17 |
| Smallpox: | |
| Portland | 29 |
| Scattering | 18 |
| Tuberculosis | 6 |
| Whooping cough | 7 |

SOUTH DAKOTA.

| | |
|---|---|
| Chicken pox | 4 |
| Diphtheria | 12 |
| Influenza | 1 |
| Measles | 3 |
| Pneumonia | 5 |
| Scarlet fever | 43 |
| Smallpox | 52 |
| Tuberculosis | 3 |

TEXAS.

| | |
|---|---|
| Diphtheria | 35 |
| Influenza | 141 |
| Measles | 44 |
| Pellagra | 4 |
| Pneumonia | 46 |
| Scarlet fever | 26 |
| Smallpox | 45 |
| Typhoid fever | 9 |

VERMONT.

| | |
|---|---|
| Chicken pox | 28 |
| Diphtheria | 7 |
| Influenza | 2 |
| Measles | 11 |
| Mumps | 19 |
| Pneumonia | 16 |
| Scarlet fever | 38 |
| Whooping cough | 18 |

VIRGINIA.

| | Cases. |
|---|---|
| Smallpox—Warren County | 1 |

WASHINGTON

| | |
|---|---|
| Chicken pox | 70 |
| Diphtheria: | |
| Spokane | 16 |
| Scattering | 28 |
| Influenza | 1,061 |
| Measles | 8 |
| Mumps | 35 |
| Pneumonia | 12 |
| Poliomyelitis—Bellingham | 1 |
| Scarlet fever: | |
| Seattle | 10 |
| Spokane | 9 |
| Scattering | 25 |
| Smallpox: | |
| Aberdeen | 8 |
| Spokane | 14 |
| Tacoma | 11 |
| Scattering | 37 |
| Tuberculosis | 10 |
| Typhoid fever | 3 |
| Whooping cough | 21 |

WEST VIRGINIA.

| | |
|---|---|
| Diphtheria | 26 |
| Influenza | 62 |
| Scarlet fever | 13 |
| Typhoid fever | 5 |

WISCONSIN.

| | |
|---|---|
| Milwaukee: | |
| Cerebrospinal meningitis | 1 |
| Chicken pox | 87 |
| Diphtheria | 24 |
| German measles | 1 |
| Influenza | 3 |
| Measles | 3 |
| Pneumonia | 4 |
| Scarlet fever | 23 |
| Smallpox | 4 |
| Tuberculosis | 22 |
| Typhoid fever | 1 |
| Whooping cough | 21 |
| Scattering: | |
| Cerebrospinal meningitis | 1 |
| Chicken pox | 135 |
| Diphtheria | 76 |
| German measles | 1 |
| Influenza | 34 |
| Measles | 16 |
| Pneumonia | 1 |
| Scarlet fever | 155 |
| Smallpox | 54 |
| Tuberculosis | 35 |
| Typhoid fever | 3 |
| Whooping cough | 37 |

[1] Deaths.

## Delayed Reports for Week Ended Feb. 4, 1922.

DISTRICT OF COLUMBIA.

| | Cases. |
|---|---|
| Chicken pox | 37 |
| Diphtheria | 22 |
| Influenza | 5 |
| Measles | 1 |
| Scarlet fever | 15 |
| Smallpox | 4 |
| Tuberculosis | 20 |
| Whooping cough | 11 |

KENTUCKY.

| | |
|---|---|
| Cerebrospinal meningitis—Pike County | 1 |
| Chicken pox | 10 |
| Diphtheria: | |
| Jefferson County | 27 |
| Scattering | 11 |
| German measles | 2 |
| Influenza | 332 |
| Measles: | |
| Jefferson County | 155 |
| Scattering | 6 |
| Mumps | 6 |
| Pneumonia | 70 |
| Scarlet fever: | |
| Jefferson County | 8 |
| Scattering | 4 |
| Septic sore throat | 1 |

KENTUCKY—continued.

| | Cases. |
|---|---|
| Smallpox | 13 |
| Tonsillitis | 3 |
| Trachoma | 6 |
| Tuberculosis: | |
| Jefferson County | 20 |
| Scattering | 5 |
| Typhoid fever | 6 |
| Whooping cough | 2 |

MISSOURI.

| | |
|---|---|
| Cerebrospinal meningitis | 2 |
| Chicken pox | 74 |
| Diphtheria | 111 |
| Epidemic sore throat | 10 |
| Influenza | 71 |
| Measles | 8 |
| Mumps | 6 |
| Ophthalmia neonatorum | 2 |
| Pneumonia | 46 |
| Poliomyelitis | 1 |
| Scarlet fever | 91 |
| Smallpox | 52 |
| Tuberculosis | 56 |
| Typhoid fever | 8 |
| Whooping cough | 15 |

## SUMMARY OF CASES REPORTED MONTHLY BY STATES.

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

| State. | Cerebrospinal meningitis. | Diphtheria. | Influenza. | Malaria. | Measles. | Pellagra. | Poliomyelitis | Scarlet fever. | Smallpox. | Typhoid fever. |
|---|---|---|---|---|---|---|---|---|---|---|
| Connecticut (January, 1922) | 4 | 368 | 59 | 1 | 441 | ..... | 1 | 389 | 95 | 9 |
| District of Columbia (January, 1922) | ..... | 102 | 15 | ..... | 13 | ..... | ..... | 77 | 13 | 5 |
| Florida (January, 1922) | 2 | 62 | 36 | 20 | 14 | 4 | ..... | 17 | 32 | 44 |
| Hawaii (October, 1921) | 1 | 15 | 46 | ..... | 9 | ..... | ..... | 2 | ..... | 17 |
| Hawaii (November, 1921) | 2 | 18 | 11 | ..... | 13 | ..... | ..... | 5 | ..... | 61 |
| Massachusetts (January, 1922) | 8 | 912 | 135 | 1 | 1,275 | 2 | 8 | 925 | ..... | 31 |
| Nebraska (January, 1922) | 2 | 121 | 6 | ..... | 283 | ..... | ..... | 317 | 108 | 9 |

## PLAGUE (RODENT).

### Galveston, Tex.

One plague-infected rat (from mass inoculation) was reported positive February 14, 1922, at Galveston, Tex. Rat was trapped January 10.

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922.

ANTHRAX.

| City. | Cases. | Deaths. | City. | Cases. | Deaths. |
|---|---|---|---|---|---|
| Connecticut: | | | Pennsylvania: | | |
| Hartford | 1 | ..... | Philadelphia | 1 | ..... |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

### CEREBROSPINAL MENINGITIS.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

| City. | Median for previous years. | Week ended Jan. 28, 1922. | |
|---|---|---|---|
| | | Cases. | Deaths. |
| California: | | | |
| Los Angeles | 0 | 1 | |
| District of Columbia: | | | |
| Washington | 0 | 1 | 1 |
| Georgia: | | | |
| Atlanta | 0 | 1 | |
| Rome | | 3 | |
| Illinois: | | | |
| Chicago | 3 | 2 | 1 |
| Maine: | | | |
| Sanford | 0 | 1 | 1 |
| Massachusetts: | | | |
| Boston | 1 | 1 | |
| Southbridge | 0 | 1 | |
| Springfield | 0 | 1 | |
| Michigan: | | | |
| Detroit | 1 | | 1 |
| Minnesota: | | | |
| Faribault | | | 1 |
| Missouri: | | | |
| St. Louis | 1 | 1 | |
| New Jersey: | | | |
| Plainfield | 0 | 1 | |
| West New York | 0 | 1 | |
| New York: | | | |
| Buffalo | 1 | 1 | |
| New York | 5 | 4 | 2 |
| Poughkeepsie | 0 | 1 | 1 |
| North Carolina: | | | |
| Raleigh | 0 | 1 | |
| Ohio: | | | |
| Columbus | 0 | | 1 |
| Pennsylvania: | | | |
| Philadelphia | 1 | 4 | 1 |
| Rhode Island: | | | |
| Providence | 1 | 1 | |
| South Carolina: | | | |
| Columbia | 0 | 1 | |
| Tennessee: | | | |
| Memphis | 0 | | 2 |
| Texas: | | | |
| Dallas | 0 | 2 | |
| Houston | 0 | | 1 |
| Vermont: | | | |
| Burlington | 0 | | 1 |
| West Virginia: | | | |
| Charleston | 0 | | 1 |

### DIPHTHERIA.

See p. 369; also Telegraphic weekly reports from States, p. 358, and Monthly summaries by States, p. 362.

### INFLUENZA.

| City. | Cases. | | Deaths, week ended Jan. 28, 1922. |
|---|---|---|---|
| | Week ended Jan. 29, 1921. | Week ended Jan. 28, 1922. | |
| Alabama: | | | |
| Montgomery | 1 | | |
| Arkansas: | | | |
| Little Rock | 6 | 1 | |
| North Little Rock | 1 | | |
| California: | | | |
| Alameda | 3 | | |
| Berkeley | 2 | | |
| Long Beach | 1 | | |
| Los Angeles | | 6 | |
| Sacramento | | 8 | |
| San Diego | | 1 | |
| San Francisco | | 17 | |
| Vallejo | | 1 | |
| Connecticut: | | | |
| Bridgeport | | 1 | |
| Greenwich | | 4 | |
| New Haven | | 1 | |
| New London | | 1 | |
| Waterbury | | 3 | |
| District of Columbia: | | | |
| Washington | 4 | 7 | 2 |
| Florida: | | | |
| Tampa | | | 1 |
| Georgia: | | | |
| Atlanta | | 3 | 1 |
| Augusta | | 2 | |
| Rome | 6 | 3 | |
| Valdosta | | | 2 |
| Illinois: | | | |
| Chicago | 18 | 24 | 4 |
| Danville | 2 | | |
| La Salle | | 1 | |
| Oak Park | | 2 | |
| Pekin | | 1 | |
| Indiana: | | | |
| Hammond | | | 2 |
| Kansas: | | | |
| Kansas City | | 2 | |
| Lawrence | | 3 | |
| Salina | | 4 | |
| Topeka | 2 | 38 | 3 |
| Kentucky: | | | |
| Lexington | 1 | | |
| Louisville | | 7 | |
| Louisiana: | | | |
| Baton Rouge | 3 | | |
| New Orleans | 1 | 2 | 3 |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

### INFLUENZA—Continued.

| City. | Cases. | | Deaths, week ended Jan. 28, 1922. |
|---|---|---|---|
| | Week ended Jan. 29, 1921. | Week ended Jan. 28, 1922. | |
| **Maine:** | | | |
| Auburn | | 3 | |
| Bath | | 4 | |
| Biddeford | 1 | | |
| Lewiston | | 6 | |
| Portland | | 1 | |
| **Maryland:** | | | |
| Baltimore | 58 | 41 | |
| Cumberland | 2 | | |
| **Massachusetts:** | | | |
| Arlington | | 1 | 1 |
| Attleboro | | 1 | |
| Boston | 8 | 35 | 3 |
| Brookline | 1 | | |
| Cambridge | 1 | 8 | |
| Clinton | 1 | | |
| Everett | 1 | | |
| Fall River | | 2 | 1 |
| Haverhill | 1 | 4 | |
| Leominster | 1 | | |
| Lowell | | 1 | |
| Lynn | 1 | | |
| Melrose | | 1 | |
| Methuen | | 1 | |
| New Bedford | 1 | | |
| Springfield | | 4 | |
| Worcester | 1 | 2 | |
| **Michigan:** | | | |
| Detroit | 2 | 7 | 1 |
| Flint | 5 | | |
| Grand Rapids | 1 | | |
| **Minnesota:** | | | |
| Minneapolis | 1 | | |
| **Missouri:** | | | |
| Independence | 1 | | |
| Kansas City | 3 | | |
| St. Louis | | 2 | |
| **New Jersey:** | | | |
| Bayonne | | 2 | |
| Belleville | 2 | 3 | |
| Englewood | | 1 | |
| Jersey City | 1 | 2 | |
| Kearny | | 18 | |
| Montclair | | 1 | |
| Newark | 7 | 44 | 3 |
| Orange | | 4 | |
| Passaic | 4 | 3 | |
| Paterson | | 4 | |
| Plainfield | 1 | 3 | |
| Trenton | 15 | 37 | 2 |
| **New York:** | | | |
| Albany | 3 | 10 | |
| Buffalo | 1 | 2 | |
| Elmira | 1 | | |
| **New York—Continued.** | | | |
| Hudson | 2 | | |
| Ithaca | | 3 | |
| Jamestown | 1 | 5 | |
| Mount Vernon | 1 | 87 | |
| New York | 72 | 1,230 | 25 |
| Port Chester | | 2 | |
| Rochester | | | 2 |
| Saratoga Springs | | 2 | |
| Schenectady | | 4 | |
| Syracuse | | 2 | |
| Watervliet | 1 | | |
| Yonkers | | 2 | 1 |
| **Ohio:** | | | |
| Akron | 1 | 5 | |
| Canton | | | 1 |
| Cincinnati | | 4 | 3 |
| Cleveland | 3 | 6 | |
| Columbus | 2 | | 1 |
| Hamilton | 1 | | |
| Toledo | | | 3 |
| Youngstown | | 1 | |
| **Oregon:** | | | |
| Portland | | 1 | |
| **Pennsylvania:** | | | |
| Philadelphia | 4 | 7 | 7 |
| **Rhode Island:** | | | |
| Providence | | 4 | |
| **South Carolina:** | | | |
| Charleston | | | 1 |
| Columbia | | 3 | |
| **South Dakota:** | | | |
| Sioux Falls | 2 | | |
| **Tennessee:** | | | |
| Memphis | | | 1 |
| **Texas:** | | | |
| Dallas | 2 | 3 | 2 |
| Houston | | | 1 |
| **Utah:** | | | |
| Salt Lake City | 1 | | |
| **Virginia:** | | | |
| Alexandria | | 5 | |
| Richmond | 4 | | |
| Roanoke | 1 | 1 | 1 |
| **Washington:** | | | |
| Seattle | | 28 | |
| **West Virginia:** | | | |
| Charleston | | 2 | |
| Morgantown | 6 | | |
| Wheeling | | | 1 |
| **Wisconsin:** | | | |
| Wausau | 2 | 1 | |

### LEPROSY.

| City. | Cases. | Deaths. | City. | Cases. | Deaths. |
|---|---|---|---|---|---|
| **Illinois:** | | | **Louisiana:** | | |
| Chicago | 1 | | New Orleans | 1 | |

### LETHARGIC ENCEPHALITIS.

| | | | | | |
|---|---|---|---|---|---|
| **California:** | | | | | |
| Oakland | | 1 | | | |
| San Francisco | 1 | | | | |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

### MALARIA.

| City. | Cases. | Deaths. | City. | Cases. | Deaths. |
|---|---|---|---|---|---|
| Arkansas: | | | Maryland: | | |
| Little Rock | 2 | | Baltimore | 1 | |
| Florida: | | | Massachusetts: | | |
| Tampa | 7 | | Boston | 1 | |
| Georgia: | | | New York: | | |
| Brunswick | 2 | | New York | 2 | |
| Kentucky: | | | South Carolina: | | |
| Louisville | 1 | | Charleston | | 1 |
| Louisiana: | | | | | |
| New Orleans | 1 | | | | |

### MEASLES.

See p. 369; also Telegraphic weekly reports from States, p. 358, and Monthly summaries by States, p. 362.

### PELLAGRA.

| City. | Cases. | Deaths. | City. | Cases. | Deaths. |
|---|---|---|---|---|---|
| California: | | | North Carolina: | | |
| Stockton | 2 | | Raleigh | | 1 |
| Florida: | | | Salisbury | | 1 |
| Tampa | 1 | | South Carolina: | | |
| Georgia: | | | Charleston | | 3 |
| Augusta | 1 | | Texas: | | |
| New York: | | | Dallas | | 1 |
| New York | | 1 | Virginia: | | |
| | | | Lynchburg | | 1 |

### PNEUMONIA (ALL FORMS).

| | | | | | |
|---|---|---|---|---|---|
| Alabama: | | | Illinois: | | |
| Birmingham | | 6 | Alton | | 1 |
| Mobile | | 1 | Aurora | 1 | |
| Montgomery | | 3 | Bloomington | | 1 |
| Arizona: | | | Blue Island | | 11 |
| Tucson | | 3 | Champaign | 1 | |
| Arkansas: | | | Chicago | 233 | 61 |
| Fort Smith | | 4 | Cicero | | 2 |
| Hot Springs | | 1 | Decatur | | 1 |
| Little Rock | 1 | | East St. Louis | | 4 |
| California: | | | Elgin | | 2 |
| Eureka | | 1 | Evanston | 2 | |
| Los Angeles | 39 | 21 | Freeport | 1 | |
| Oakland | 6 | | Galesburg | | 1 |
| Pasadena | 2 | | Jacksonville | | 3 |
| Riverside | 1 | | Kewanee | | 3 |
| Sacramento | 6 | 2 | La Salle | | 1 |
| San Diego | 3 | 1 | Mattoon | | 1 |
| San Francisco | 21 | 12 | Oak Park | | 1 |
| Santa Ana | | 1 | Peoria | | 5 |
| Santa Barbara | | 1 | Quincy | | 1 |
| Colorado: | | | Rock Island | | 1 |
| Denver | | 17 | Springfield | 7 | |
| Connecticut: | | | Indiana: | | |
| Bridgeport | | 3 | Crawfordsville | | 3 |
| Bristol | | 1 | Fort Wayne | | 2 |
| Derby | | 2 | Gary | | 2 |
| Hartford | 4 | 2 | Hammond | | 4 |
| New Haven | | 4 | Indianapolis | | 17 |
| Norwalk | | 1 | Kokomo | | 2 |
| Norwich | 1 | | La Fayette | | 1 |
| Stonington | | 1 | Muncie | | 2 |
| Waterbury | | 4 | Newcastle | | 1 |
| Delaware: | | | South Bend | | 1 |
| Wilmington | | 5 | Terre Haute | | 2 |
| District of Columbia: | | | Iowa: | | |
| Washington | | 25 | Burlington | | 3 |
| Florida: | | | Kansas: | | |
| Tampa | | 9 | Fort Scott | | 1 |
| Georgia: | | | Kansas City | 9 | |
| Albany | 3 | 2 | Lawrence | 1 | |
| Atlanta | | 6 | Parsons | | 1 |
| Augusta | 7 | | Topeka | 24 | 5 |
| Savannah | | 5 | Wichita | 10 | 4 |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

### PNEUMONIA (ALL FORMS)—Continued.

| City. | Cases. | Deaths. |
|---|---|---|
| Kentucky: | | |
| Covington | ..... | 3 |
| Lexington | ..... | 2 |
| Louisville | 23 | 7 |
| Louisiana: | | |
| New Orleans | 13 | 10 |
| Maine: | | |
| Bangor | 1 | ..... |
| Bath | 2 | ..... |
| Biddeford | ..... | 2 |
| Lewiston | ..... | 2 |
| Portland | ..... | 4 |
| Maryland: | | |
| Baltimore | 59 | 26 |
| Cumberland | 1 | ..... |
| Massachusetts: | | |
| Arlington | 1 | ..... |
| Belmont | 2 | ..... |
| Beverly | 3 | 1 |
| Boston | 33 | 25 |
| Brookline | 2 | ..... |
| Cambridge | 5 | 4 |
| Chelsea | 4 | 1 |
| Chicopee | ..... | 1 |
| Clinton | ..... | 1 |
| Everett | 2 | ..... |
| Fall River | 7 | 5 |
| Gardner | 1 | ..... |
| Greenfield | ..... | 1 |
| Haverhill | 2 | 1 |
| Holyoke | 2 | 1 |
| Lawrence | 5 | 1 |
| Leominster | 2 | ..... |
| Lowell | ..... | 4 |
| Lynn | ..... | 2 |
| Malden | ..... | 3 |
| Melrose | 1 | ..... |
| Methuen | ..... | 1 |
| Newburyport | ..... | 1 |
| Newton | ..... | 2 |
| Northampton | 1 | ..... |
| Peabody | 2 | ..... |
| Plymouth | ..... | 1 |
| Quincy | 4 | 3 |
| Somerville | 3 | 1 |
| Springfield | 3 | 1 |
| Watertown | ..... | 1 |
| Worcester | 24 | 7 |
| Michigan: | | |
| Ann Arbor | ..... | 4 |
| Battle Creek | 1 | ..... |
| Detroit | 73 | 32 |
| Hamtramck | 2 | ..... |
| Jackson | 3 | 2 |
| Kalamazoo | ..... | 1 |
| Marquette | ..... | 1 |
| Muskegon | 4 | ..... |
| Pontiac | ..... | 1 |
| Port Huron | 1 | ..... |
| Minnesota: | | |
| Duluth | 6 | 2 |
| Faribault | 2 | 1 |
| Hibbing | ..... | 1 |
| Minneapolis | ..... | 9 |
| Rochester | 1 | ..... |
| St. Paul | ..... | 3 |
| Missouri: | | |
| Kansas City | 40 | 23 |
| St. Joseph | ..... | 10 |
| Springfield | ..... | 3 |
| Montana: | | |
| Billings | 1 | ..... |
| Nebraska: | | |
| Lincoln | 2 | 1 |
| Omaha | ..... | 12 |
| Nevada: | | |
| Reno | ..... | 1 |
| New Hampshire: | | |
| Concord | ..... | 1 |
| New Jersey: | | |
| Atlantic City | 2 | 1 |
| Bayonne | 2 | ..... |
| Belleville | 4 | ..... |
| Bloomfield | 1 | ..... |
| Clifton | 2 | ..... |
| Elizabeth | ..... | 7 |
| Garfield | 2 | 1 |
| Harrison | 1 | ..... |
| Hoboken | ..... | 5 |
| Jersey City | 16 | ..... |
| Kearny | 5 | 1 |
| Montclair | ..... | 2 |
| Morristown | ..... | 1 |
| Newark | 96 | 17 |
| Orange | 4 | ..... |
| Passaic | ..... | 3 |
| Paterson | 6 | ..... |
| Phillipsburg | ..... | 1 |
| Plainfield | 8 | ..... |
| Summit | 2 | ..... |
| Trenton | 37 | 9 |
| New Mexico: | | |
| Albuquerque | 2 | ..... |
| New York: | | |
| Albany | 12 | ..... |
| Auburn | 2 | ..... |
| Buffalo | 24 | 19 |
| Cortland | 2 | 1 |
| Elmira | ..... | 3 |
| Glens Falls | ..... | 1 |
| Hornell | ..... | 1 |
| Hudson | 4 | 1 |
| Ithaca | 4 | 1 |
| Jamestown | 4 | 1 |
| Lackawanna | 6 | 2 |
| Lockport | ..... | 1 |
| Mount Vernon | 10 | 5 |
| New York | 643 | 277 |
| Niagara Falls | 1 | ..... |
| Ogdensburg | ..... | 1 |
| Peekskill | 1 | ..... |
| Port Chester | 5 | ..... |
| Poughkeepsie | ..... | 3 |
| Rochester | 21 | 12 |
| Rome | 9 | 1 |
| Schenectady | 4 | 2 |
| Syracuse | 27 | 6 |
| Watertown | ..... | 1 |
| White Plains | 7 | 2 |
| Yonkers | 17 | 6 |
| North Carolina: | | |
| Salisbury | ..... | 1 |
| Wilmington | ..... | 1 |
| Ohio: | | |
| Akron | 6 | ..... |
| Alliance | ..... | 1 |
| Barberton | 3 | 1 |
| Bucyrus | ..... | 1 |
| Canton | ..... | 2 |
| Chillicothe | ..... | 1 |
| Cincinnati | ..... | 16 |
| Cleveland | 48 | 28 |
| Columbus | ..... | 9 |
| Dayton | 1 | ..... |
| East Cleveland | 3 | 1 |
| Fremont | 2 | ..... |
| Hamilton | ..... | 1 |
| Kenmore | 1 | ..... |
| Lakewood | ..... | 1 |
| Lancaster | ..... | 1 |
| Lima | ..... | 3 |
| Lorain | 1 | ..... |
| Mansfield | 3 | 1 |
| Newark | ..... | 1 |
| Niles | 1 | ..... |
| Springfield | ..... | 2 |
| Toledo | ..... | 9 |
| Youngstown | ..... | 9 |
| Zanesville | ..... | 1 |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

### PNEUMONIA (ALL FORMS)—Continued.

| City. | Cases. | Deaths. | City. | Cases. | Deaths. |
|---|---|---|---|---|---|
| Oklahoma: | | | Utah: | | |
| Oklahoma City | | 11 | Salt Lake City | | 7 |
| Tulsa | 1 | | Vermont: | | |
| Oregon: | | | Burlington | | 1 |
| Portland | | 6 | Rutland | 1 | |
| Pennsylvania: | | | Virginia: | | |
| Philadelphia | 137 | 79 | Alexandria | 3 | 1 |
| Rhode Island: | | | Lynchburg | | 2 |
| Pawtucket | | 1 | Norfolk | | 5 |
| Providence | | 17 | Petersburg | | 3 |
| South Carolina: | | | Richmond | | 4 |
| Charleston | | 3 | Roanoke | 5 | 3 |
| Greenville | | 1 | West Virginia: | | |
| Tennessee: | | | Bluefield | | 1 |
| Memphis | | 11 | Charleston | | 2 |
| Texas: | | | Clarksburg | | 3 |
| Beaumont | | 1 | Huntington | | 2 |
| Dallas | 9 | 5 | Wheeling | | 4 |
| El Paso | | 9 | Wisconsin: | | |
| Fort Worth | | 2 | Kenosha | | 1 |
| Galveston | | 4 | Milwaukee | 6 | |
| Houston | | 2 | Oshkosh | | 2 |
| Waco | | 3 | Racine | | 2 |

### POLIOMYELITIS (INFANTILE PARALYSIS).

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

| City. | Median for previous years. | Week ended Jan. 28, 1922. | | City. | Median for previous years. | Week ended Jan. 28, 1922. | |
|---|---|---|---|---|---|---|---|
| | | Cases. | Deaths. | | | Cases. | Deaths. |
| California: | | | | Pennsylvania: | | | |
| San Bernardino | | 1 | 1 | Carlisle | | 1 | |
| New York: | | | | Reading | 0 | 1 | |
| New York | 1 | 2 | | | | | |
| Ohio: | | | | | | | |
| Dayton | 0 | 1 | | | | | |

### RABIES IN ANIMALS.

| City. | Cases. |
|---|---|
| California: | |
| Los Angeles | 2 |

### SCARLET FEVER.

See p. 369; also Telegraphic weekly reports from States, p. 358, and Monthly summaries by States, p. 362.

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

### SMALLPOX.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

| City. | Median for previous years. | Week ended Jan. 28, 1922. | |
|---|---|---|---|
| | | Cases. | Deaths. |
| Alabama: | | | |
| Mobile | 0 | 1 | ..... |
| Montgomery | 2 | 1 | ..... |
| California: | | | |
| Long Beach | 0 | 1 | ..... |
| Oakland | 0 | 5 | ..... |
| San Francisco | 0 | 2 | ..... |
| Colorado: | | | |
| Denver | 20 | 25 | 8 |
| Connecticut: | | | |
| Bridgeport | 0 | 8 | ..... |
| District of Columbia: | | | |
| Washington | 0 | 2 | ..... |
| Georgia: | | | |
| Atlanta | 0 | 3 | ..... |
| Macon | 1 | 2 | ..... |
| Illinois: | | | |
| Centralia | 1 | 2 | ..... |
| Chicago | 1 | 9 | 1 |
| East St. Louis | 14 | 1 | ..... |
| Pekin | 6 | 1 | ..... |
| Peoria | 0 | 19 | ..... |
| Indiana: | | | |
| Anderson | 3 | 1 | ..... |
| Fort Wayne | 0 | 4 | ..... |
| Indianapolis | 10 | 3 | ..... |
| Terre Haute | 1 | 1 | ..... |
| Iowa: | | | |
| Burlington | 0 | 5 | ..... |
| Davenport | 3 | 3 | ..... |
| Muscatine | 0 | 4 | ..... |
| Sioux City | 6 | 1 | ..... |
| Kansas: | | | |
| Hutchinson | 0 | 16 | ..... |
| Kansas City | 1 | 7 | ..... |
| Parsons | 1 | 1 | ..... |
| Topeka | 0 | 1 | ..... |
| Wichita | 1 | ..... | 1 |
| Maine: | | | |
| Waterville | 1 | 2 | ..... |
| Michigan: | | | |
| Alpena | 0 | 1 | ..... |
| Detroit | 13 | 6 | ..... |
| Flint | 6 | 5 | ..... |
| Minnesota: | | | |
| Austin | ..... | 2 | ..... |
| Duluth | 0 | 1 | ..... |
| Faribault | ..... | 2 | ..... |
| Hibbing | 0 | 1 | ..... |
| Minneapolis | 20 | 17 | ..... |
| St. Paul | 6 | 21 | ..... |
| Missouri: | | | |
| Kansas City | 8 | 5 | 6 |
| Montana: | | | |
| Billings | 0 | 1 | ..... |
| Great Falls | 2 | 1 | ..... |
| Nebraska: | | | |
| Omaha | 15 | 1 | ..... |
| New Jersey: | | | |
| Paterson | ..... | 1 | ..... |
| North Carolina: | | | |
| Wilmington | 0 | 3 | ..... |
| Grand Forks | 5 | 1 | ..... |
| Ohio: | | | |
| Canton | 1 | 2 | ..... |
| Dayton | 1 | 11 | ..... |
| Fremont | 0 | 4 | ..... |
| Springfield | 0 | 12 | ..... |
| Youngstown | 1 | 1 | ..... |
| Oklahoma: | | | |
| Oklahoma City | 3 | 5 | ..... |
| Tulsa | 3 | 2 | ..... |
| Oregon: | | | |
| Portland | 2 | 24 | ..... |
| South Dakota: | | | |
| Sioux Falls | 0 | 2 | ..... |
| Tennessee: | | | |
| Knoxville | 1 | 3 | ..... |
| Memphis | 3 | 4 | ..... |
| Texas: | | | |
| Dallas | 14 | 1 | ..... |
| El Paso | 0 | 2 | ..... |
| Fort Worth | 6 | 1 | ..... |
| Utah: | | | |
| Salt Lake City | 8 | 3 | ..... |
| Virginia: | | | |
| Alexandria | 0 | 1 | ..... |
| Danville | 0 | 1 | ..... |
| Washington: | | | |
| Seattle | 8 | 3 | ..... |
| Spokane | 22 | 5 | ..... |
| Tacoma | 1 | 13 | ..... |
| West Virginia: | | | |
| Bluefield | 0 | 1 | ..... |
| Wisconsin: | | | |
| Manitowoc | 0 | 3 | ..... |
| Milwaukee | 9 | 4 | ..... |
| Superior | 0 | 18 | ..... |

### TETANUS.

| City. | Cases. | Deaths. |
|---|---|---|
| Florida: | | |
| Tampa | ..... | 1 |
| New York: | | |
| Elmira | ..... | 1 |
| Poughkeepsie | 1 | 1 |
| South Carolina: | | |
| Charleston | ..... | 1 |
| West Virginia: | | |
| Charleston | ..... | 1 |

### TUBERCULOSIS.

See p. 369; also Telegraphic weekly reports from States, p. 358.

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

### TYPHOID FEVER.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding weeks of the years 1915 to 1921, inclusive. In instances in which data for the full seven years are incomplete, the median is that for the number of years for which information is available.

| City. | Median for previous years. | Week ended Jan. 28, 1922. | |
|---|---|---|---|
| | | Cases. | Deaths. |
| Alabama: | | | |
| Birmingham | 0 | 1 | ..... |
| Mobile | 0 | 1 | ..... |
| California: | | | |
| Los Angeles | 2 | 2 | ..... |
| Oakland | 0 | 1 | ..... |
| Sacramento | 0 | 1 | ..... |
| San Francisco | 2 | 2 | ..... |
| Santa Ana | 0 | ..... | 1 |
| Colorado: | | | |
| Denver | 1 | 1 | ..... |
| Connecticut: | | | |
| Waterbury | 0 | 3 | ..... |
| District of Columbia: | | | |
| Washington | 1 | 2 | 1 |
| Florida: | | | |
| Tampa | ..... | 4 | 2 |
| Georgia: | | | |
| Macon | 0 | 1 | ..... |
| Savannah | 1 | 1 | ..... |
| Illinois: | | | |
| Chicago | 6 | 5 | 3 |
| Quincy | 0 | 1 | ..... |
| Springfield | 0 | 1 | ..... |
| Indiana: | | | |
| Logansport | 0 | 1 | ..... |
| Louisiana: | | | |
| New Orleans | 1 | 7 | 1 |
| Maine: | | | |
| Bangor | 0 | 1 | ..... |
| Maryland: | | | |
| Cumberland | 0 | ..... | 1 |
| Massachusetts: | | | |
| Boston | 1 | 3 | ..... |
| Fall River | 0 | 1 | ..... |
| Peabody | 0 | 1 | ..... |
| Michigan: | | | |
| Detroit | 1 | 2 | ..... |
| Port Huron | 0 | 1 | ..... |
| Minnesota: | | | |
| Minneapolis | 0 | 1 | ..... |
| St. Paul | 0 | 1 | ..... |
| Missouri: | | | |
| Independence | 2 | 4 | 1 |
| St. Louis | 2 | 1 | 1 |
| New Jersey: | | | |
| Asbury Park | 0 | 1 | ..... |
| New York: | | | |
| Albany | 0 | 2 | ..... |
| Buffalo | 2 | ..... | 1 |
| Hudson | 0 | 2 | ..... |
| Lackawanna | 2 | 1 | ..... |
| New York | 14 | 7 | 2 |
| Rochester | 0 | 1 | 1 |
| Syracuse | 0 | 2 | ..... |
| Troy | 0 | 1 | ..... |
| Ohio: | | | |
| Cleveland | 1 | 1 | 1 |
| Columbus | 0 | 1 | ..... |
| Oregon: | | | |
| Portland | 0 | 2 | ..... |
| Pennsylvania: | | | |
| Beaver Falls | 0 | 1 | ..... |
| Canonsburg | 0 | 2 | ..... |
| Erie | 0 | 1 | ..... |
| Farrell | 0 | 1 | ..... |
| Lancaster | 0 | 1 | ..... |
| Philadelphia | 5 | 2 | 3 |
| Pittsburgh | 1 | 1 | ..... |
| Rhode Island: | | | |
| Providence | 0 | 1 | ..... |
| Tennessee: | | | |
| Knoxville | 0 | 1 | 1 |
| Texas: | | | |
| Beaumont | 0 | 1 | ..... |
| Dallas | 0 | 1 | ..... |
| El Paso | 0 | 1 | ..... |
| Virginia: | | | |
| Alexandria | 0 | 1 | ..... |
| Portsmouth | 0 | 1 | ..... |
| Wisconsin: | | | |
| Eau Claire | 0 | 1 | ..... |
| Milwaukee | 1 | 1 | ..... |
| Superior | 0 | 1 | ..... |

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

| City. | Population January 1, 1920, subject to correction. | Total deaths from all causes. | Diphtheria. | | Measles. | | Scarlet fever. | | Tuberculosis. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| Alabama: | | | | | | | | | | |
| Anniston | 17,734 | ..... | 1 | ..... | 1 | ..... | ..... | ..... | 2 | ..... |
| Birmingham | 178,270 | 43 | ..... | ..... | ..... | ..... | 3 | ..... | 1 | 3 |
| Mobile | 60,151 | 15 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 4 |
| Montgomery | 43,464 | 16 | ..... | ..... | ..... | ..... | ..... | ..... | 3 | 2 |
| Tuscaloosa | 11,996 | ..... | 2 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Arizona: | | | | | | | | | | |
| Tucson | 20,292 | 21 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 11 |
| Arkansas: | | | | | | | | | | |
| Fort Smith | 28,811 | 4 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hot Springs | 11,695 | 6 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | 1 |
| Little Rock | 64,997 | ..... | 1 | ..... | ..... | ..... | 1 | ..... | 1 | ..... |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

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

| City. | Population January 1, 1920, subject to correction. | Total deaths from all causes. | Diphtheria. | | Measles. | | Scarlet fever. | | Tuberculosis. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| California: | | | | | | | | | | |
| Alameda | 28,806 | 6 | 3 | ..... | 1 | ..... | 2 | ..... | 1 | ..... |
| Eureka | 12,923 | 4 | 3 | ..... | ..... | ..... | 1 | ..... | ..... | 1 |
| Long Beach | 55,593 | 20 | 4 | ..... | ..... | ..... | 1 | ..... | 1 | ..... |
| Los Angeles | 576,673 | 213 | 74 | 3 | 4 | ..... | 29 | ..... | 54 | 25 |
| Oakland | 216,361 | 41 | 20 | 1 | ..... | ..... | 2 | ..... | 2 | 4 |
| Pasadena | 45,354 | 17 | ..... | ..... | 2 | ..... | ..... | ..... | ..... | 1 |
| Richmond | 16,843 | 8 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Riverside | 19,341 | 4 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Sacramento | 65,857 | 22 | 5 | ..... | ..... | ..... | ..... | ..... | 3 | 1 |
| San Bernardino | 18,721 | 10 | 3 | 1 | 1 | ..... | 2 | ..... | ..... | 2 |
| San Diego | 74,683 | 36 | 3 | 1 | ..... | ..... | 8 | 1 | 11 | 3 |
| San Francisco | 508,410 | 173 | 80 | 8 | ..... | 1 | 11 | ..... | 32 | 17 |
| Santa Ana | 15,485 | 4 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | 1 |
| Stockton | 40,296 | 10 | 8 | ..... | ..... | ..... | 9 | ..... | ..... | ..... |
| Vallejo | 21,107 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Colorado: | | | | | | | | | | |
| Denver | 256,369 | 97 | 16 | 1 | 2 | ..... | 16 | ..... | ..... | 17 |
| Greeley | 10,583 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Pueblo | 42,908 | 9 | 6 | 1 | ..... | ..... | 5 | ..... | ..... | 1 |
| Connecticut: | | | | | | | | | | |
| Bridgeport | 143,538 | 34 | 4 | ..... | 3 | ..... | 8 | ..... | 1 | ..... |
| Bristol | 20,620 | 4 | 1 | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Derby | 11,238 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Fairfield (town) | 11,475 | 2 | 1 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Greenwich (town) | 22,123 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 1 | 1 |
| Hartford | 138,036 | 39 | 10 | 1 | 15 | ..... | 5 | ..... | 6 | 1 |
| Meriden (city) | 29,842 | ..... | 6 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Milford (town) | 10,193 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| New Haven | 162,519 | 59 | 8 | 1 | 4 | ..... | 14 | 1 | 9 | 6 |
| New London | 25,688 | 8 | 1 | ..... | 1 | ..... | 1 | ..... | 2 | 1 |
| Norwalk | 27,700 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Norwich (city) | 22,304 | ..... | 2 | ..... | 2 | ..... | 1 | ..... | ..... | ..... |
| Stonington (town) | 10,236 | 3 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Waterbury | 91,410 | 25 | 1 | 1 | ..... | ..... | 3 | ..... | 2 | 2 |
| Delaware: | | | | | | | | | | |
| Wilmington | 110,168 | 30 | 1 | ..... | ..... | ..... | 50 | ..... | ..... | 2 |
| District of Columbia: | | | | | | | | | | |
| Washington | 437,571 | 141 | 22 | ..... | 3 | ..... | 24 | ..... | 26 | 11 |
| Florida: | | | | | | | | | | |
| Tampa | 51,252 | 39 | ..... | ..... | ..... | ..... | 1 | ..... | 9 | 2 |
| Georgia: | | | | | | | | | | |
| Albany | 11,555 | 2 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Atlanta | 200,616 | 61 | 3 | 1 | ..... | ..... | 4 | ..... | 4 | 7 |
| Augusta | 52,548 | ..... | 2 | ..... | 1 | ..... | 1 | ..... | 2 | ..... |
| Brunswick | 14,413 | 2 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Macon | 52,995 | ..... | 2 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Rome | 13,252 | ..... | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Savannah | 83,252 | 36 | 1 | ..... | ..... | ..... | ..... | ..... | 6 | 6 |
| Valdosta | 10,783 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | 1 |
| Idaho: | | | | | | | | | | |
| Boise | 21,393 | 5 | ..... | ..... | 1 | ..... | 3 | ..... | ..... | ..... |
| Pocatello | 15,001 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Illinois: | | | | | | | | | | |
| Alton | 24,682 | 9 | 4 | ..... | 1 | ..... | 2 | ..... | ..... | ..... |
| Aurora | 36,397 | 11 | 1 | ..... | 9 | ..... | ..... | ..... | ..... | 1 |
| Bloomington | 28,725 | 10 | 1 | ..... | ..... | ..... | ..... | ..... | 2 | 1 |
| Blue Island | 11,424 | 6 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Centralia | 12,491 | 3 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Chicago | 2,701,705 | 596 | 208 | 21 | 145 | 1 | 103 | 3 | 216 | 40 |
| Cicero | 44,995 | 10 | 7 | 1 | 2 | ..... | 3 | ..... | 2 | ..... |
| Decatur | 43,818 | 12 | 5 | ..... | 1 | ..... | 1 | ..... | ..... | 1 |
| East St. Louis | 66,740 | 15 | 2 | ..... | ..... | ..... | ..... | ..... | 2 | 1 |
| Elgin | 27,454 | 11 | ..... | ..... | ..... | ..... | ..... | ..... | 2 | 1 |
| Evanston | 37,215 | 9 | ..... | ..... | 1 | ..... | 5 | ..... | ..... | ..... |
| Forest Park | 10,768 | ..... | 2 | ..... | 5 | ..... | ..... | ..... | ..... | ..... |
| Freeport | 19,669 | 7 | 10 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Galesburg | 23,834 | 5 | 2 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Jacksonville | 15,713 | 6 | ..... | ..... | ..... | ..... | 3 | ..... | ..... | 1 |
| Kewanee | 16,026 | 8 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| La Salle | 13,050 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Mattoon | 13,552 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Oak Park | 39,830 | 17 | 2 | ..... | 7 | ..... | 4 | ..... | ..... | ..... |
| Pekin | 12,086 | ..... | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

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

| City. | Population January 1, 1920, subject to correction. | Total deaths from all causes. | Diphtheria. | | Measles. | | Scarlet fever. | | Tuberculosis. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| Illinois—Continued. | | | | | | | | | | |
| Peoria | 76,121 | 27 | 3 | 2 | 3 | ..... | 1 | ..... | ..... | 1 |
| Quincy | 35,978 | 8 | 1 | 1 | ..... | ..... | 9 | ..... | ..... | ..... |
| Rock Island | 35,177 | 11 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Springfield | 59,183 | 17 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Indiana: | | | | | | | | | | |
| Anderson | 29,767 | 6 | 10 | 2 | ..... | ..... | ..... | ..... | ..... | 2 |
| Crawfordsville | 10,139 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Fort Wayne | 36,549 | 14 | 10 | ..... | ..... | ..... | 1 | ..... | 11 | 1 |
| Frankfort | 11,585 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gary | 55,378 | 11 | 2 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Hammond | 36,004 | 12 | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... |
| Huntington | 14,000 | 2 | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Indianapolis | 314,194 | 99 | 15 | 1 | 4 | ..... | 10 | ..... | 7 | 4 |
| Kokomo | 30,067 | 7 | ..... | ..... | ..... | ..... | 2 | ..... | 1 | 2 |
| La Fayette | 22,486 | 6 | ..... | ..... | ..... | ..... | 1 | ..... | 1 | 1 |
| Logansport | 21,626 | 7 | 1 | ..... | ..... | ..... | 3 | ..... | 1 | 1 |
| Mishawaka | 15,195 | 5 | 2 | ..... | ..... | ..... | 3 | ..... | ..... | ..... |
| Muncie | 36,624 | 5 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Newcastle | 14,458 | 7 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| South Bend | 70,983 | 13 | 1 | 1 | ..... | ..... | 1 | ..... | ..... | ..... |
| Terre Haute | 66,083 | 21 | 5 | 1 | ..... | ..... | 3 | ..... | ..... | ..... |
| Iowa: | | | | | | | | | | |
| Burlington | 24,057 | 9 | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Davenport | 56,727 | ..... | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Dubuque | 39,141 | ..... | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Marshalltown | 15,731 | ..... | ..... | ..... | ..... | ..... | 5 | ..... | ..... | ..... |
| Mason City | 20,065 | 3 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Muscatine | 16,068 | 7 | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Sioux City | 71,227 | ..... | 9 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Waterloo | 36,230 | ..... | 2 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Kansas: | | | | | | | | | | |
| Atchison | 12,630 | ..... | 5 | ..... | ..... | ..... | 3 | ..... | ..... | ..... |
| Coffeyville | 13,452 | 4 | 2 | ..... | ..... | ..... | ..... | ..... | 6 | ..... |
| Fort Scott | 10,693 | 5 | 2 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Hutchinson | 23,293 | ..... | 3 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Kansas City | 101,177 | ..... | 6 | ..... | ..... | ..... | 4 | ..... | 2 | ..... |
| Lawrence | 12,456 | 2 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Leavenworth | 16,912 | ..... | 1 | ..... | ..... | ..... | 1 | ..... | 1 | ..... |
| Parsons | 16,028 | 7 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Salina | 15,085 | 4 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Topeka | 50,022 | 25 | 8 | ..... | 1 | ..... | 2 | ..... | ..... | ..... |
| Wichita | 72,128 | 26 | 8 | ..... | ..... | ..... | 9 | ..... | 6 | ..... |
| Kentucky: | | | | | | | | | | |
| Covington | 57,121 | 20 | 1 | ..... | 11 | ..... | 1 | ..... | ..... | 1 |
| Lexington | 41,534 | 16 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2 |
| Louisville | 234,891 | 79 | 14 | 4 | 93 | ..... | 3 | ..... | 14 | 8 |
| Owensboro | 17,424 | ..... | 1 | ..... | 1 | ..... | ..... | ..... | ..... | ..... |
| Paducah | 24,735 | ..... | ..... | ..... | 1 | ..... | ..... | ..... | ..... | ..... |
| Louisiana: | | | | | | | | | | |
| New Orleans | 387,219 | 131 | 15 | ..... | ..... | ..... | 12 | ..... | 27 | 2 |
| Maine: | | | | | | | | | | |
| Auburn | 16,985 | 8 | ..... | ..... | ..... | ..... | 11 | ..... | ..... | ..... |
| Bath | 14,731 | 5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Biddeford | 18,008 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Lewiston | 31,791 | 9 | 1 | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Portland | 69,272 | 25 | 2 | ..... | ..... | ..... | 7 | ..... | ..... | 1 |
| Sanford | 10,691 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Waterville | 13,351 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Maryland: | | | | | | | | | | |
| Baltimore | 733,826 | 227 | 38 | 4 | 89 | ..... | 59 | ..... | 30 | 24 |
| Cumberland | 29,837 | 9 | ..... | ..... | 1 | ..... | 2 | ..... | 1 | 1 |
| Massachusetts: | | | | | | | | | | |
| Amesbury | 10,036 | 3 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | ..... |
| Arlington | 18,665 | 2 | ..... | ..... | 2 | ..... | 3 | ..... | ..... | ..... |
| Attleboro | 19,731 | 6 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Belmont | 10,749 | 2 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Beverly | 22,561 | 6 | 1 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Boston | 748,060 | 226 | 60 | 6 | 96 | ..... | 50 | 2 | 28 | 17 |
| Braintree | 10,580 | 2 | 1 | ..... | ..... | ..... | 2 | ..... | ..... | 1 |
| Brookline | 37,748 | 5 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Cambridge | 109,694 | 27 | 4 | ..... | 18 | ..... | 9 | ..... | 5 | 6 |
| Chelsea | 43,184 | 13 | 2 | ..... | 1 | ..... | 5 | ..... | ..... | 1 |
| Chicopee | 36,214 | 8 | 2 | ..... | ..... | ..... | ..... | ..... | 2 | 1 |
| Clinton | 12,979 | 5 | ..... | ..... | ..... | ..... | 2 | ..... | 2 | ..... |
| Danvers | 11,108 | ..... | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

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

| City. | Population January 1, 1920, subject to correction. | Total deaths from all causes. | Diphtheria. | | Measles. | | Scarlet fever. | | Tuberculosis. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| Massachusetts—Continued. | | | | | | | | | | |
| Dedham | 10,792 | 2 | 1 | | 1 | | | | 2 | |
| Everett | 40,120 | 8 | 3 | 2 | 7 | | 4 | | 1 | |
| Fall River | 120,485 | 32 | 9 | 1 | | | 6 | | | 1 |
| Framingham | 17,033 | 3 | 1 | | | | | | | |
| Gardner | 16,971 | 3 | | | | | 3 | | | 1 |
| Greenfield | 15,462 | 2 | | | 21 | | | | 1 | |
| Haverhill | 53,884 | 7 | 4 | 1 | 1 | | 1 | | | |
| Holyoke | 60,203 | 19 | 1 | | | | 2 | | | 2 |
| Lawrence | 94,270 | 27 | 3 | | 22 | | 1 | | 3 | 2 |
| Leominster | 19,744 | 6 | | | | | 1 | | | 1 |
| Lowell | 112,479 | 39 | 3 | | 3 | | 1 | | 1 | 3 |
| Lynn | 99,148 | 22 | 9 | 1 | 2 | | 1 | | 1 | |
| Malden | 49,103 | 13 | 8 | | 2 | | 7 | | 3 | |
| Medford | 39,038 | 9 | | | 23 | | 3 | | | 2 |
| Melrose | 18,204 | 3 | 1 | | | | | | | |
| Methuen | 15,189 | 3 | | | 13 | | | | 1 | |
| Newburyport | 15,618 | 7 | | | | | | | | 1 |
| Newton | 46,054 | 14 | 5 | | | | 1 | | | |
| North Adams | 22,282 | 6 | | | | | 2 | | 1 | |
| Northampton | 21,951 | 3 | 2 | | | | 1 | | 1 | |
| Peabody | 19,552 | 4 | | | 3 | | | | 1 | |
| Pittsfield | 41,751 | 9 | 1 | | | | 2 | | 2 | 2 |
| Plymouth | 13,045 | 7 | | 1 | | | | | | |
| Quincy | 47,876 | 14 | 2 | | 28 | | 7 | | 1 | |
| Somerville | 93,091 | 25 | 4 | | 19 | | 1 | | 3 | 2 |
| Southbridge | 14,245 | 2 | | | | | | | 2 | |
| Springfield | 129,563 | 30 | 3 | 1 | 5 | | 7 | | 3 | 1 |
| Wakefield | 13,025 | 3 | 3 | | | | | | | |
| Waltham | 30,915 | 5 | 2 | 1 | 15 | | 1 | | | |
| Watertown | 21,457 | 2 | 1 | | 2 | | | | 1 | |
| Webster | 13,258 | 2 | 1 | | | | 5 | | | |
| West Springfield | 13,443 | 3 | | | | | | | | 1 |
| Westfield | 18,604 | 2 | | | 2 | | | | | |
| Weymouth | 15,057 | 1 | | | | | | | | |
| Winthrop | 15,455 | 1 | | | | | | | | |
| Woburn | 16,574 | 4 | | | | | | | | |
| Worcester | 179,754 | 47 | 4 | 1 | 2 | | 9 | 1 | 6 | 1 |
| Michigan: | | | | | | | | | | |
| Alpena | 11,101 | | 1 | | | | 4 | | | |
| Ann Arbor | 19,516 | 11 | 1 | | | | | | 3 | |
| Battle Creek | 36,164 | | | | 7 | | 3 | | | |
| Benton Harbor | 12,233 | 1 | | | | | 4 | | | |
| Detroit | 993,739 | 208 | 97 | 7 | 237 | 1 | 81 | | 36 | 15 |
| Flint | 91,599 | 13 | 23 | 1 | 1 | | 9 | | | 1 |
| Hamtramck | 48,615 | 6 | 4 | | | | | | 1 | |
| Jackson | 48,374 | 11 | 3 | | | | 14 | | | |
| Kalamazoo | 48,858 | 20 | 8 | | 1 | | 17 | 2 | 1 | 1 |
| Marquette | 12,718 | 3 | | | | | | | | |
| Muskegon | 36,570 | 3 | 1 | | | | 1 | | | |
| Pontiac | 34,273 | 11 | 1 | | | | 1 | | | 1 |
| Port Huron | 25,944 | 3 | 1 | | | | 1 | | | |
| Sault Ste. Marie | 12,096 | 4 | | | | | | | | |
| Minnesota: | | | | | | | | | | |
| Duluth | 98,917 | 19 | 12 | 1 | | | 7 | | | 1 |
| Faribault | 11,089 | 5 | | | | | | | | |
| Hibbing | 15,089 | 5 | 1 | | | | | | | |
| Minneapolis | 380,582 | 79 | 25 | | 20 | | 32 | 1 | 20 | 7 |
| Rochester | 13,722 | 6 | | | | | 1 | | | |
| St. Cloud | 15,873 | | 1 | | | | 4 | | | |
| St. Paul | 234,595 | 71 | 6 | | | | 30 | 1 | 22 | 5 |
| Virginia | 14,022 | | | | | | 2 | | 1 | |
| Winona | 19,143 | | | | | | 2 | | | |
| Missouri: | | | | | | | | | | |
| Independence | 11,686 | 14 | 2 | 1 | | | | | | |
| Joplin | 29,855 | | 2 | | | | | | | |
| Kansas City | 324,410 | 126 | 21 | 4 | | | 9 | | 18 | 9 |
| Saint Joseph | 77,939 | 39 | 3 | | | | 2 | | | 2 |
| Saint Louis | 772,897 | 202 | 80 | 4 | 2 | | 15 | | 32 | 10 |
| Springfield | 39,631 | 20 | | | | | | | | 1 |
| Montana: | | | | | | | | | | |
| Anaconda | 11,668 | | | | | | | | | 1 |
| Billings | 15,100 | 8 | 1 | | | | 1 | | | |
| Great Falls | 24,121 | 6 | | | 2 | | | | | |
| Missoula | 12,668 | 4 | | | | | | | 2 | |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

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

| City. | Population January 1, 1920, subject to correction. | Total deaths from all causes. | Diphtheria. | | Measles. | | Scarlet fever. | | Tuberculosis. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| Nebraska: | | | | | | | | | | |
| Lincoln | 54,934 | 12 | 2 | ..... | 10 | ..... | 4 | ..... | ..... | 1 |
| Omaha | 191,601 | 50 | 10 | 1 | 30 | ..... | 1 | ..... | ..... | 3 |
| Nevada: | | | | | | | | | | |
| Reno | 12,016 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| New Hampshire: | | | | | | | | | | |
| Berlin | 16,104 | 5 | ..... | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Concord | 22,167 | 12 | ..... | ..... | ..... | ..... | 3 | ..... | ..... | ..... |
| Dover | 13,029 | 3 | ..... | ..... | 5 | ..... | ..... | ..... | ..... | ..... |
| Keene | 11,210 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... |
| New Jersey: | | | | | | | | | | |
| Asbury Park | 12,400 | 3 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Atlantic City | 50,682 | 10 | ..... | ..... | 2 | ..... | 4 | ..... | 1 | 1 |
| Bayonne | 76,754 | ..... | 4 | ..... | ..... | ..... | 3 | ..... | 4 | ..... |
| Belleville | 15,660 | ..... | 2 | ..... | ..... | ..... | 9 | ..... | 1 | ..... |
| Bloomfield | 22,019 | 3 | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... |
| Clifton | 26,470 | 1 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Elizabeth | 95,682 | ..... | 12 | ..... | 2 | ..... | 17 | ..... | 1 | ..... |
| Englewood | 11,627 | 2 | ..... | ..... | ..... | ..... | 5 | ..... | ..... | ..... |
| Garfield | 19,381 | 1 | 1 | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Hoboken | 68,166 | 17 | 4 | ..... | 1 | ..... | 1 | ..... | 2 | ..... |
| Jersey City | 297,864 | ..... | 21 | ..... | 23 | ..... | 23 | ..... | 8 | ..... |
| Kearny | 26,724 | 5 | ..... | ..... | 1 | ..... | 7 | ..... | 1 | 1 |
| Montclair | 28,810 | 5 | ..... | ..... | ..... | ..... | 8 | ..... | ..... | ..... |
| Morristown | 12,548 | 10 | ..... | ..... | ..... | ..... | 10 | ..... | ..... | ..... |
| Newark | 414,216 | 102 | 26 | 2 | 48 | ..... | 71 | ..... | 21 | 7 |
| Orange | 33,268 | 7 | 4 | ..... | ..... | ..... | 2 | ..... | 1 | 1 |
| Passaic | 63,824 | 23 | 4 | ..... | 1 | ..... | 3 | ..... | 3 | 2 |
| Paterson | 135,866 | ..... | 8 | ..... | 25 | ..... | 6 | ..... | 5 | ..... |
| Perth Amboy | 41,707 | 6 | 12 | ..... | 8 | ..... | 3 | ..... | ..... | 1 |
| Phillipsburg | 16,923 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Plainfield | 27,700 | 26 | 1 | ..... | 7 | ..... | 5 | ..... | 1 | ..... |
| Rahway | 11,042 | 3 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Summit | 10,174 | 2 | ..... | ..... | ..... | ..... | 4 | ..... | ..... | ..... |
| Trenton | 119,289 | 51 | 5 | 2 | 3 | ..... | 8 | ..... | 7 | 3 |
| Union | 20,651 | ..... | ..... | ..... | ..... | ..... | 5 | ..... | ..... | ..... |
| West Hoboken | 40,068 | 3 | 2 | ..... | 3 | ..... | 3 | ..... | 1 | ..... |
| West New York | 29,926 | 1 | ..... | ..... | ..... | ..... | 4 | ..... | 1 | ..... |
| West Orange | 15,573 | 2 | ..... | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| New Mexico: | | | | | | | | | | |
| Albuquerque | 15,157 | 11 | ..... | ..... | ..... | ..... | 11 | ..... | 8 | 3 |
| New York: | | | | | | | | | | |
| Albany | 113,344 | ..... | 5 | ..... | 13 | ..... | ..... | ..... | 2 | ..... |
| Auburn | 36,192 | 17 | 4 | 1 | ..... | ..... | 1 | 1 | ..... | ..... |
| Buffalo | 506,775 | 135 | 18 | 2 | 3 | ..... | 40 | 1 | 20 | 10 |
| Cortland | 13,294 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | 2 | ..... |
| Elmira | 45,305 | 13 | ..... | ..... | 9 | ..... | 4 | ..... | ..... | ..... |
| Fulton | 13,043 | 4 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Geneva | 14,648 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Glens Falls | 16,638 | 6 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hornell | 15,025 | 4 | 1 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hudson | 11,745 | 5 | 2 | ..... | 21 | ..... | 1 | ..... | ..... | ..... |
| Ithaca | 17,004 | 5 | 1 | ..... | 2 | ..... | 1 | ..... | 1 | ..... |
| Jamestown | 38,917 | 10 | 7 | ..... | 15 | ..... | 7 | ..... | ..... | 1 |
| Lackawanna | 17,918 | 3 | 3 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Lockport | 21,308 | 8 | ..... | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Middletown | 18,420 | ..... | ..... | ..... | ..... | ..... | 1 | ..... | 1 | ..... |
| Mount Vernon | 42,726 | 11 | 2 | ..... | ..... | ..... | 13 | ..... | 2 | ..... |
| Newburgh | 30,366 | 6 | ..... | ..... | 1 | ..... | 1 | ..... | ..... | ..... |
| New York | 5,621,151 | 1,523 | 236 | 18 | 565 | 17 | 375 | 5 | 259 | 116 |
| Niagara Falls | 50,760 | 6 | 4 | ..... | ..... | ..... | 7 | ..... | ..... | ..... |
| North Tonawanda | 15,482 | 3 | 7 | ..... | ..... | ..... | 2 | ..... | ..... | ..... |
| Ogdensburg | 14,609 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Peekskill | 15,868 | 4 | 1 | ..... | ..... | ..... | 1 | ..... | ..... | ..... |
| Port Chester | 16,573 | 4 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Poughkeepsie | 35,000 | 9 | 2 | ..... | 12 | ..... | 2 | ..... | 1 | ..... |
| Rochester | 295,750 | 66 | 13 | 1 | ..... | ..... | 3 | ..... | 10 | ..... |
| Rome | 26,341 | 11 | 7 | ..... | 2 | ..... | ..... | ..... | ..... | ..... |
| Saratoga Springs | 13,181 | 4 | 1 | ..... | ..... | ..... | 1 | ..... | 1 | ..... |
| Schenectady | 88,723 | 24 | 10 | ..... | ..... | ..... | 4 | ..... | 1 | ..... |
| Syracuse | 171,717 | 53 | 26 | 3 | 4 | ..... | 16 | ..... | 8 | 2 |
| Troy | 72,013 | 14 | 6 | ..... | 1 | ..... | 2 | ..... | 4 | ..... |
| Watertown | 31,285 | 6 | ..... | ..... | ..... | ..... | 5 | ..... | 1 | ..... |
| Watervliet | 16,073 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| White Plains | 21,031 | 6 | ..... | ..... | 36 | ..... | 4 | ..... | ..... | ..... |
| Yonkers | 100,226 | 17 | 6 | ..... | 4 | 1 | 13 | ..... | ..... | ..... |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

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

| City. | Population January 1, 1920, subject to correction. | Total deaths from all causes. | Diphtheria. | | Measles. | | Scarlet fever. | | Tuberculosis. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| North Carolina: | | | | | | | | | | |
| Durham | 21,719 | 2 | 1 | | | | 2 | | | 1 |
| Greensboro | 19,861 | 5 | | | | | | | 2 | |
| Raleigh | 24,418 | 16 | 1 | | | | | | | |
| Rocky Mount | 12,742 | 1 | | | | | | | | |
| Salisbury | 13,884 | 7 | | | | | | | | 2 |
| Wilmington | 33,372 | 18 | 1 | | | | | | | |
| Winston-Salem | 48,395 | 20 | | | | | 3 | | 9 | 5 |
| North Dakota: | | | | | | | | | | |
| Fargo | 21,961 | 0 | 3 | | | | 4 | | | |
| Grand Forks | 14,010 | | | | | | 3 | | | |
| Ohio: | | | | | | | | | | |
| Akron | 208,435 | 35 | 5 | | 8 | | 16 | | 19 | |
| Alliance | 21,603 | 4 | | | | | 1 | | | 1 |
| Ashtabula | 22,082 | 5 | | | | | 2 | | | |
| Barberton | 18,811 | 8 | 2 | 1 | | | 1 | | | |
| Bucyrus | 10,425 | 2 | | | | | | | | |
| Canton | 87,091 | 15 | 10 | | 1 | | 4 | | | |
| Chillicothe | 15,831 | 6 | 1 | | | | 1 | | | 1 |
| Cincinnati | 401,247 | 145 | 15 | 3 | 54 | | 12 | | 19 | 15 |
| Cleveland | 796,836 | 157 | 24 | 2 | 73 | | 53 | 2 | 37 | 8 |
| Columbus | 237,031 | 68 | 15 | 1 | 1 | | 5 | | 4 | 2 |
| Coshocton | 10,847 | | 1 | | | | 3 | | | |
| Dayton | 152,559 | 32 | 3 | | 1 | | 3 | | | |
| East Cleveland | 27,292 | 2 | | | 1 | | 4 | | 3 | |
| Findlay | 17,021 | 5 | | | 1 | | 1 | | | |
| Fremont | 12,468 | 2 | 1 | | | | | | 1 | |
| Hamilton | 39,675 | 13 | 2 | | | | 1 | | | 1 |
| Kenmore | 12,683 | | 8 | | | | | | | |
| Lakewood | 41,732 | 6 | 1 | | | | 5 | | | |
| Lancaster | 14,706 | 5 | 3 | | | | | | | 1 |
| Lima | 41,306 | 11 | 5 | | 2 | | 2 | | | 1 |
| Lorain | 37,295 | | | | 1 | | 3 | | | |
| Mansfield | 27,824 | 6 | | | | | 1 | | 1 | |
| Marion | 27,891 | | 3 | | | | | | | |
| Martins Ferry | 11,634 | 3 | 3 | | | | | | | |
| Newark | 26,718 | 20 | 6 | 1 | | | 3 | | | 3 |
| New Philadelphia | 10,718 | | 1 | | | | 1 | | | |
| Niles | 13,080 | 8 | 2 | | | | 1 | | | |
| Norwood | 24,966 | 3 | | | 1 | | 2 | | | |
| Piqua | 15,044 | 5 | | | | | | | 1 | |
| Salem | 10,305 | 3 | | | | | 2 | | | |
| Springfield | 60,840 | 15 | 7 | | 2 | | | | | |
| Steubenville | 28,508 | 5 | | | | | 1 | | | |
| Tiffin | 14,375 | 4 | | | | | | | | |
| Toledo | 243,109 | 63 | 22 | | 1 | | 9 | | 9 | 1 |
| Youngstown | 132,358 | 38 | 11 | | 4 | 1 | 8 | | | |
| Zanesville | 29,569 | 11 | 2 | | | | 1 | | | 3 |
| Oklahoma: | | | | | | | | | | |
| Oklahoma City | 91,258 | 33 | 3 | | | | 2 | | 4 | 1 |
| Tulsa | 72,075 | | | | 2 | | 1 | | | |
| Oregon: | | | | | | | | | | |
| Portland | 258,288 | 56 | 14 | | | | 2 | | 2 | 3 |
| Pennsylvania: | | | | | | | | | | |
| Allentown | 73,502 | | 4 | | | | 4 | | 3 | |
| Altoona | 60,331 | | 3 | | | | 2 | | | |
| Ambridge | 12,730 | | 2 | | | | | | | |
| Beaver Falls | 12,802 | | | | | | 1 | | | |
| Berwick | 12,181 | | | | 3 | | 1 | | | |
| Bethlehem | 50,358 | | 5 | | 2 | | 8 | | | |
| Braddock | 20,879 | | 3 | | | | | | | |
| Bradford | 15,525 | | | | | | 1 | | | |
| Butler | 23,778 | | 1 | | | | | | | |
| Canonsburg | 10,632 | | | | | | 1 | | | |
| Carnegie | 11,516 | | 1 | | | | | | | |
| Chambersburg | 13,171 | | 2 | | | | | | | |
| Charleroi | 11,516 | | 1 | | | | | | 4 | |
| Chester | 58,030 | | | | 1 | | 3 | | 1 | |
| Connellsville | 13,804 | | 2 | | 1 | | 2 | | 2 | |
| Dickson City | 11,049 | | 1 | | | | | | | |
| Donora | 14,131 | | 1 | | | | | | 1 | |
| Dubois | 18,681 | | 1 | | | | | | | |
| Duquesne | 19,011 | | 1 | | | | 1 | | | |
| Easton | 33,813 | | 1 | | | | 1 | | 1 | |
| Erie | 93,372 | | 3 | | | | | | 1 | |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

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

| City. | Population January 1, 1920, subject to correction. | Total deaths from all causes. | Diphtheria. | | Measles. | | Scarlet fever. | | Tuberculosis. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| Pennsylvania—Continued. | | | | | | | | | | |
| Farrell | 15,586 | | | | 4 | | 1 | | | |
| Harrisburg | 75,917 | | 10 | | | | 6 | | | |
| Hazleton | 22,277 | | 3 | | 4 | | 1 | | | |
| Jeannette | 10,627 | | 1 | | | | 1 | | | |
| Johnstown | 67,327 | | 2 | | 1 | | | | | |
| Lancaster | 53,150 | | 3 | | 6 | | 6 | | | |
| Lebanon | 24,643 | | | | | | 1 | | 2 | |
| McKeesport | 45,975 | | 1 | | | | 2 | | | |
| McKee's Rocks | 16,713 | | 2 | | 1 | | 3 | | | |
| Mahanoy City | 15,509 | | 1 | | | | | | | |
| Monessen | 18,179 | | 5 | | | | 1 | | | |
| Mount Carmel | 17,469 | | 1 | | | | | | | |
| Nanticoke | 22,614 | | 6 | | | | | | | |
| New Castle | 44,938 | | 3 | | | | 5 | | | |
| New Kensington | 11,987 | | | | 3 | | 1 | | | |
| Norristown | 32,319 | | 1 | | | | 3 | | | |
| North Braddock | 14,928 | | 1 | | | | | | | |
| Oil City | 21,274 | | | | | | 2 | | | |
| Old Forge | 12,237 | | 1 | | | | | | | |
| Philadelphia | 1,828,158 | 551 | 73 | 5 | 6 | | 144 | 6 | 75 | 46 |
| Phoenixville | 10,484 | | | | | | 1 | | | |
| Pittsburgh | 588,193 | | 29 | | 21 | | 61 | | 15 | |
| Plymouth | 16,500 | | 3 | | 1 | | | | | |
| Pottstown | 17,431 | | 2 | | 1 | | 19 | | | |
| Pottsville | 21,876 | | 1 | | 7 | | | | | |
| Reading | 107,784 | | 12 | | 4 | | 1 | | | |
| Scranton | 137,783 | | 8 | | 1 | | 8 | | | |
| Shamokin | 21,204 | | | | | | 1 | | | |
| Sharon | 21,747 | | | | 8 | | 3 | | | |
| Shenandoah | 24,726 | | 1 | | | | | | | |
| Steelton | 13,428 | | 1 | | | | 1 | | | |
| Sunbury | 15,721 | | | | 13 | | | | | |
| Swissvale | 10,908 | | 4 | | | | | | | |
| Uniontown | 15,692 | | 1 | | | | 1 | | | |
| Warren | 14,256 | | 1 | | | | 1 | | | |
| Washington | 21,480 | | 1 | | 12 | | 1 | | | |
| West Chester | 11,717 | | | | | | 1 | | | |
| Wilkes-Barre | 73,833 | | 8 | | 23 | | 1 | | | |
| Wilkinsburg | 24,403 | | | | 2 | | | | | |
| Williamsport | 36,198 | | 2 | | | | | | | |
| York | 47,512 | | 2 | | | | | | 1 | |
| Rhode Island: | | | | | | | | | | |
| Cranston | 29,407 | 7 | | | | | 1 | | | 1 |
| Cumberland (town) | 10,077 | | 1 | | | | | | | |
| Newport | 30,255 | 4 | | | | | 13 | 1 | | |
| Pawtucket | 64,248 | 21 | 13 | 1 | | | | | | |
| Providence | 237,595 | 75 | 12 | 1 | 1 | | 2 | | | 7 |
| South Carolina: | | | | | | | | | | |
| Charleston | 67,957 | 31 | 1 | | | | 6 | | | 1 |
| Columbia | 37,524 | | 3 | | 1 | | | | | |
| Greenville | 23,127 | 1 | | | | | 1 | | | |
| South Dakota: | | | | | | | | | | |
| Sioux Falls | 25,176 | 5 | | | | | 1 | | | |
| Tennessee: | | | | | | | | | | |
| Knoxville | 77,818 | | 1 | 1 | 6 | | 1 | | 1 | 1 |
| Memphis | 162,351 | 23 | 6 | | | | | 1 | 9 | 8 |
| Texas: | | | | | | | | | | |
| Beaumont | 40,422 | 9 | | | | | | | | 1 |
| Corpus Christi | 10,522 | 4 | 1 | | | | | | | 1 |
| Dallas | 158,976 | 56 | 10 | | 46 | | 4 | | 5 | 1 |
| El Paso | 77,543 | 38 | 1 | | | | 2 | | | 5 |
| Fort Worth | 106,482 | 16 | | | | | 2 | | | |
| Galveston | 44,255 | 7 | | | | | | | | 1 |
| Houston | 138,076 | 44 | 1 | 1 | | | | | 3 | 1 |
| Waco | 38,500 | 13 | 2 | | | | | | 1 | |
| Utah: | | | | | | | | | | |
| Salt Lake City | 118,110 | 32 | 3 | | | | 9 | | | 1 |
| Vermont: | | | | | | | | | | |
| Barre | 10,008 | | | | | | 2 | | | |
| Burlington | 22,779 | 8 | 5 | | 2 | | 3 | | | |
| Rutland | 14,954 | 5 | | | | | | | | |

## CITY REPORTS FOR WEEK ENDED JAN. 28, 1922—Continued.

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

| City. | Population January 1, 1920, subject to correction. | Total deaths from all causes. | Diphtheria. | | Measles. | | Scarlet fever. | | Tuberculosis. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. | Cases. | Deaths. |
| Virginia: | | | | | | | | | | |
| Alexandria | 18,060 | 4 | | | | | | | | |
| Danville | 21,539 | 7 | | | 6 | | | | 1 | |
| Lynchburg | 29,956 | 8 | | | | | | | | 2 |
| Norfolk | 115,777 | | 1 | 1 | | | 2 | | 4 | 3 |
| Petersburg | 31,002 | 10 | | | | | | | | |
| Portsmouth | 54,387 | 18 | 1 | | | | 1 | | 1 | 3 |
| Richmond | 171,667 | 47 | 18 | 2 | 21 | | 4 | | 10 | 5 |
| Roanoke | 50,842 | 15 | 2 | 1 | | | | | 1 | |
| Washington: | | | | | | | | | | |
| Seattle | 315,652 | | 4 | | 1 | | 5 | | | |
| Spokane | 104,437 | | 6 | | 1 | | 3 | | | |
| Tacoma | 96,965 | | 6 | | | | 1 | | 2 | |
| West Virginia: | | | | | | | | | | |
| Bluefield | 15,282 | 8 | 2 | 1 | 1 | | | | | |
| Charleston | 39,608 | 24 | 2 | | | | | | | 2 |
| Clarksburg | 27,869 | 6 | 2 | | | | 1 | | | |
| Fairmont | 17,851 | | 3 | | 2 | | 2 | | | |
| Huntington | 50,177 | 16 | | | | | | | | 1 |
| Morgantown | 12,127 | | 3 | | | | | | | |
| Moundsville | 10,669 | 3 | | | 2 | | 5 | | | |
| Wheeling | 54,322 | 19 | 2 | | | | 4 | | | |
| Wisconsin: | | | | | | | | | | |
| Appleton | 19,561 | | 4 | | | | 1 | | | |
| Ashland | 11,334 | | | | | | | | 1 | |
| Beloit | 21,284 | 5 | 1 | 1 | | | 4 | | | |
| Fond du Lac | 23,427 | 7 | 3 | | | | | | 7 | |
| Green Bay | 31,017 | 7 | 3 | | | | 3 | | | |
| Janesville | 18,293 | 6 | 1 | | | | | | | 1 |
| Kenosha | 40,472 | 8 | 4 | | 1 | | 3 | | 2 | |
| La Crosse | 30,363 | | 1 | | 1 | | 2 | | | |
| Madison | 38,378 | | | | 1 | | 4 | | | |
| Manitowoc | 17,563 | | | | | | | | 1 | |
| Marinette | 13,610 | | | | | | 1 | | | |
| Milwaukee | 457,147 | | 11 | | 3 | | 17 | | 16 | |
| Oshkosh | 33,162 | 7 | 2 | | | | 2 | | 1 | 1 |
| Racine | 58,593 | 10 | 3 | | 1 | | 20 | | 1 | 1 |
| Sheboygan | 30,955 | | 4 | | | | 1 | | | |
| Superior | 39,624 | 9 | 1 | | | | 8 | | | |
| Waukesha | 12,558 | | | | | | 4 | | 1 | |
| Wausau | 18,661 | | | | | | | | 1 | |
| West Allis | 13,765 | | 2 | | | | 1 | | | |
| Wyoming: | | | | | | | | | | |
| Cheyenne | 13,829 | 2 | | | | | 1 | | | |

# FOREIGN AND INSULAR.

## PLAGUE ON VESSEL.

### Steamship "Polycarp"—At Para, Brazil.

On February 3, 1922, a case of pneumonic plague was reported removed at Para, Brazil, from the steamship *Polycarp*, from Ceara, Brazil, via Manaos, Maranham, and Para for New York.

## AUSTRALIA.

### Plague—Brisbane—Sydney.

Plague has been reported in Australia as follows: New South Wales, Sydney, two weeks ended February 11, 1922, two cases; Queensland, Brisbane, week ended January 28, 1922, one case.

## BARBADOS.

### Typhoid Fever.

Typhoid fever has been reported in Barbados as follows: Week ended January 14, 1921, 182 cases; week ended January 21, 1921, 30 cases.

## CHINA.

### Smallpox—Shanghai.

Smallpox has been reported prevalent at Shanghai, China, with 45 cases occurring among the for eign population and 156 fatal cases among the native population, during the period December 5 to 31, 1921. On January 14, 1922, smallpox was stated to be still seriously prevalent.

### Vaccination and Vaccination Histories.

The report of the health department for November, 1921, published in the Municipal Gazette, December 22, 1921, of Shanghai, China, shows that smallpox appeared at Shanghai in October, 1921, and manifested sharp increase in November. The only reported cases occurred among the foreign population. In 45 investigated cases the vaccination history showed that 14 had never been vaccinated, 17 had not been vaccinated since infancy, 10 had not been vaccinated within three years, and 4 cases vaccinated within three years gave a history of doubtful result. Of 12 fatal cases, 5 had never been vaccinated, 4 had not been vaccinated since infancy, 1 was stated to have been unsuccessfully vaccinated previous to arrival at Shanghai, and of 2 there was no history.

The last previously reported outbreak of smallpox at Shanghai was in 1917. This outbreak was stated to have led to a vigorous campaign of vaccination. During 1919 and 1920 there were no reported deaths from smallpox among Chinese, and this led to neglect of vaccination.

## ECUADOR.

### Plague—Guayaquil.

During the period December 16 to 31, 1921, 11 cases of plague with 3 deaths were reported at Guayaquil, Ecuador.

### Plague-Infected Rats Found.

During the period under report, out of 3,000 rats examined at Guayaquil, 50 rats were found plague-infected.

## MADAGASCAR.

### Plague—Tananarive.

Plague was reported at Tananarive, Madagascar. February 4, 1922.

## PANAMA.

### Smallpox.

Smallpox was reported present, in the Republic of Panama, January 26, 1922, in Bocas del Toro and Chiriqui Provinces. In Bocas del Toro Province ten cases were reported, January 18, at the village of Sursuba, about 21 miles from Almirante, an important fruit center. In Chiriqui Province the center of prevalence was stated to be in the vicinity of Boquete Bajo. Smallpox was previously reported present in Chiriqui Province December 22, 1921.[1]

## SIBERIA.

### Epidemic Typhus—Chita.

Typhus fever was reported epidemic at Chita, Siberia, December 26, 1921.

## SWITZERLAND.

### Influenza—Basel—Zurich.

Influenza has been reported in Switzerland as follows: Week ended January 14, 1922, at Basel, 1,326 cases; at Zurich, 243 cases with 6 deaths, with a total for Zurich from November 13 to December 31, 1921, of 88 cases with three deaths, and from January 1 to 14, 1922, of 294 cases with three deaths.

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[1] Public Health Reports, Jan. 13, 1922, page 76.

## TURKEY.

### Plague—Constantinople.

A case of plague was reported at Constantinople during the week ended January 7, 1922.

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

### Reports Received During Week Ended Feb. 17, 1922.[1]

#### CHOLERA.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| India: | | | | |
| Calcutta | Dec. 18-24 | 8 | 8 | |
| Madras | Dec. 25-31 | 1 | | |
| Philippine Islands: | | | | |
| Manila | Dec. 18-31 | 35 | 16 | |

#### PLAGUE.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Australia: | | | | |
| New South Wales— | | | | |
| Sydney | Jan. 29-Feb. 11 | 2 | | |
| Queensland— | | | | |
| Brisbane | Jan. 22-28 | 1 | | |
| Brazil: | | | | |
| Bahia | Dec. 11-17 | 3 | 2 | |
| Ceylon: | | | | |
| Colombo | ....do | 4 | 4 | |
| Ecuador: | | | | |
| Guayaquil | Dec. 16-31 | 11 | 3 | Rats examined, 3,000; found infected, 50. |
| Egypt | | | | Jan. 1-12, 1922: Cases, 5; deaths, 2. |
| City— | | | | |
| Suez | Jan. 2 | 1 | | |
| Province— | | | | |
| Girgeh | Jan. 12 | 1 | | Septicemic. |
| India: | | | | |
| Bombay | Dec. 11-17 | 2 | 2 | |
| Karachi | Dec. 25-31 | 2 | 2 | |
| Madras Presidency | Dec. 18-31 | 284 | 201 | |
| Java: | | | | |
| East Java— | | | | |
| Soerabaya | Dec. 4-10 | 6 | 6 | |
| Madagascar: | | | | |
| Tananarive | Feb. 4 | | | Present. |
| Turkey: | | | | |
| Constantinople | Jan. 1-7 | 1 | | |
| On vessel: | | | | |
| S. S. Polycarp | Feb. 3 | 1 | | At Para, Brazil, from Ceara, via Manaos, Maranham, and Para, for New York. |

#### SMALLPOX.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Arabia: | | | | |
| Aden | Dec. 25-31 | | 1 | |
| Brazil: | | | | |
| Bahia | Dec. 11-17 | 1 | | |
| Canada: | | | | |
| Ontario— | | | | |
| Niagara Falls | Jan. 15-Feb. 4 | 11 | | A larger number unofficially reported. |
| Ottawa | Jan. 22-Feb. 4 | 10 | | |
| Toronto | Jan. 22-28 | 3 | | |
| China: | | | | |
| Amoy | Dec. 18-31 | | 3 | |
| Foochow | Dec. 11-31 | | | Present. |
| Do | Jan. 1-7 | | | Do. |
| Hongkong | Dec. 18-31 | 2 | | |
| Shanghai | Dec. 26-31 | 3 | 54 | Cases, foreign. Dec. 5-31, 1921: Cases, foreign, 45; deaths, native, 156. |
| Do | Jan. 2-8 | 6 | 43 | Cases, foreign, deaths, native. Jan. 14, 1922: Seriously prevalent. |

[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 Week Ended Feb. 17, 1922—Continued.

#### SMALLPOX—Continued.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Cuba: | | | | |
| Antilla | Jan. 22-28 | 2 | | At Preston. |
| Cienfuegos | do | 1 | | From outside city limits. |
| Dominican Republic: | | | | |
| San Pedro de Macoris | Dec. 25-31 | 4 | 1 | Present in vicinity. |
| Ecuador: | | | | |
| Guayaquil | Dec. 16-31 | 3 | | |
| Great Britain: | | | | |
| Manchester | Jan. 1-7 | 4 | | |
| Nottingham | Dec. 4-31 | 18 | | |
| Do | Jan. 8-14 | 2 | | |
| Haiti | | | | Jan. 22-28: Present with a few cases. |
| Cape Haitien | Jan. 1-14 | 8 | | |
| Port au Prince | Jan. 15-21 | 2 | | |
| India: | | | | |
| Calcutta | Dec. 18-24 | 4 | 3 | |
| Karachi | Dec. 25-31 | 4 | 3 | |
| Madras | Dec. 18-31 | 83 | 30 | |
| Java: | | | | |
| West Java— | | | | |
| Batavia | Dec. 16-22 | 7 | 4 | Province. |
| Panama: | | | | |
| Province— | | | | |
| Bocas del Toro— | | | | |
| Sursuba | Jan. 18 | 10 | | Village 21 miles from Almirante. |
| Chiriqui | Jan. 26 | | | Present, with center of prevalence at Bosquete Bajo. Present in December, 1921. |
| Russia: | | | | |
| Esthonia | Nov. 1-30 | 9 | | |
| Latvia | do | 24 | | |
| Spain: | | | | |
| Barcelona | Jan. 8-14 | | 1 | |
| Straits Settlements: | | | | |
| Singapore | Dec. 11-17 | 8 | 1 | |
| Syria: | | | | |
| Adana | Jan. 1-7 | | | Present. |
| Aleppo | do | | | Do. |
| Alexandretta | do | | | Do. |
| Diarbekir | do | | | Do. |
| Mersina | do | | | Do. |
| Urfa | do | | | Do. |
| Turkey: | | | | |
| Constantinople | Jan. 1-14 | 5 | 4 | |
| Union of South Africa: | | | | |
| Southern Rhodesia | Dec. 15-21 | 2 | | |
| Transvaal— | | | | |
| Johannesburg | Nov. 1-30 | 3 | | |

#### TYPHUS FEVER.

| | | | | |
|---|---|---|---|---|
| Algeria: | | | | |
| Oran | Jan. 1-10 | | 1 | |
| China: | | | | |
| Harbin | Dec. 19-25 | 3 | | |
| Mexico: | | | | |
| San Luis Potosi | Jan. 22-28 | | | Present. |
| Palestine: | | | | |
| Jerusalem | Dec. 27-Jan. 2 | 4 | | |
| Portugal: | | | | |
| Oporto | Jan. 8-14 | 1 | 1 | |
| Russia: | | | | |
| Esthonia | Nov. 1-30 | 1 | | |
| Latvia | Nov. 1-30 | 40 | | |
| Siberia: | | | | |
| Chita | Dec. 26 | | | Epidemic. |
| Turkey: | | | | |
| Constantinople | Jan. 1-7 | 6 | | |
| Yugoslavia: | | | | |
| Zagreb | Jan. 1-7 | 1 | | |

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

### Reports Received from Dec. 31, 1921, to Feb. 10, 1922.

#### CHOLERA.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| India | | | | Oct. 2-22, 1921: Deaths, 15,017. |
| Bombay | Oct. 30-Nov. 5 | 1 | | |
| Calcutta | Oct. 23-Dec. 10 | 54 | 43 | |
| Karachi | Nov. 6-12 | | 1 | |
| Madras | Dec. 11-17 | 2 | 1 | |
| Rangoon | Oct. 1-Dec. 10 | 21 | 15 | |
| Indo-China: | | | | |
| Saigon | Nov. 6-12 | 1 | 1 | |
| Java: | | | | |
| West Java— | | | | |
| Batavia | Nov. 1-7 | 2 | 2 | At Lebak. |
| Philippine Islands: | | | | |
| Manila | Nov. 13-Dec. 22 | 26 | 9 | |
| Poland | | | | Aug. 14-Sept. 10, 1921. Cases, 4; deaths, 1. |
| Siam: | | | | |
| Bangkok | Oct. 23-Nov. 26 | 4 | 3 | |

#### PLAGUE.

| | | | | |
|---|---|---|---|---|
| Asia Minor: | | | | |
| Smyrna | Nov. 27-Dec. 3 | 1 | 1 | |
| Australia: | | | | |
| New South Wales— | | | | |
| Sydney | do | 2 | 1 | Dec. 7-13, 1921: Four plague rats. |
| Queensland— | | | | |
| Brisbane | Oct. 30-Dec. 24 | 27 | 18 | Total, Aug. 22-Dec. 24, 1921: Cases, 39; deaths, 25. Total infected rats, 53. |
| Do | Jan. 21 | 2 | | |
| Cairns | Oct. 30-Dec. 10 | 6 | 3 | Plague rats: Eight. |
| Cooktown | Oct. 30-Nov. 5 | 1 | | Pestis minor. |
| Ingham | | | | Nov. 6-Dec. 24, 1921: Plague rats, 14. |
| Inisfail | | | | Nov. 27-Dec. 3, 1921: One plague rat. |
| Ipswich | Dec. 11-17 | 1 | 1 | |
| Port Douglas | Nov. 13-19 | 1 | 1 | |
| Townsville | Nov. 20-Dec. 3 | 2 | 2 | Total cases, 27; deaths, 18. |
| Azores: | | | | |
| St. Michael Island | | | | Nov. 27-Dec. 31, 1921: Cases, 23; deaths, 9. |
| Arrifes | Dec. 25-31 | 1 | 1 | Present. |
| Fenaes d'Ajuda | Nov. 27-Dec. 3 | | | |
| Ribeira Grande | Nov. 13-Dec. 10 | 19 | 8 | |
| Livramonto | Dec. 4-10 | 2 | | Vicinity of Ponta Delgada. |
| Ponta Delgada | do | 1 | | |
| Brazil: | | | | |
| Bahia | Oct. 30-Dec. 3 | 6 | 7 | |
| British East Africa: | | | | |
| Uganda | Aug. 1-Sept. 30 | 85 | 58 | Reports of inspectors, deaths, 142; reports of chiefs, deaths, 641. |
| Ceylon: | | | | |
| Colombo | Oct. 30-Dec. 10 | 6 | 5 | Oct. 30-Dec. 10, 1921: Rodent plague, 5. |
| China: | | | | |
| Hongkong | Nov. 20-Dec. 17 | 6 | | |
| Ecuador: | | | | |
| Guayaquil | Nov. 16-Dec. 15 | 7 | 3 | Rats examined, 2,958; found infected, 90. Total, July-Dec. 15, 1921: Cases, 28. |
| Egypt | | | | Jan. 1-Dec. 31, 1921: Cases, 356; deaths, 153. |
| City— | | | | |
| Alexandria | Dec. 5-30 | 7 | 2 | |
| Port Said | Dec. 20 | 1 | | |
| Suez | Nov. 22-Dec. 31 | 16 | 9 | |
| Province— | | | | |
| Keneh | Dec. 1 | 1 | 1 | Septicemic. |
| India | | | | Oct. 23-Dec. 10, 1921: Cases, 6,918; deaths, 5,122. |
| Bombay | Oct. 23-Dec. 3 | 4 | 3 | |
| Karachi | Nov. 6-Dec. 24 | 3 | 3 | |
| Madras | Dec. 11-17 | 1 | | |
| Madras Presidency | Nov. 13-Dec. 17 | 1,763 | 1,237 | |
| Rangoon | Oct. 1-Dec. 10 | 74 | 70 | |

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

### Reports Received from Dec. 31, 1921, to Feb. 10, 1922—Continued.

#### PLAGUE—Continued.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Indo-China: | | | | |
| Saigon | | | | Nov. 6-Dec. 10, 1921: Rodent plague, 7. |
| Italy: | | | | |
| Catania | Nov. 27 | 1 | 1 | Total, Oct. 16-Nov. 27, 1921: Cases, 8 (of which 1 doubtful); deaths, 5. |
| Naples (Province)— | | | | |
| Torre Annunziata | Oct. 22-Dec. 27 | 2 | | 17 miles from city of Naples. |
| Venice | Oct. 27 | 1 | | |
| Java | | | | Islands of Java and Madoera, Nov. 1-30, 1921: Deaths, 763. |
| East Java— | | | | |
| Soerabaya | Oct. 30-Dec. 3 | 5 | 6 | |
| Mauritius (Island) | Oct. 30-Nov. 5 | 37 | 31 | |
| Mesopotamia: | | | | |
| Bagdad | Oct. 1-31 | 1 | 1 | |
| Mexico: | | | | |
| Tampico | | | | Dec. 18-31, 1921: Infected rodents found, 5; total, Jan. 1-Dec. 31, 1921; infected rodents, 322; Jan. 1-21, 1922; 5 plague-infected rodents. |
| Vera Cruz | | | | One infected rodent caught Dec. 5, 1921. |
| Peru | | | | Nov. 17-Dec. 15, 1921: Cases, 63; deaths, 22. Occurring in Callao, Huacho, Huaros, Lima, Magdalena Vieja, Paita, Salaverry, and Sechura. |
| Portugal: | | | | |
| Lisbon | Dec. 15 | 1 | 1 | |
| Portuguese West Africa: | | | | |
| Angola— | | | | |
| Loanda | Oct. 9- Nov. 5 | | 2 | |
| Rhodes (Island) (Aegean Sea) | Oct. 13 | 3 | 1 | |
| Siam: | | | | |
| Bangkok | Oct. 23-Nov. 5 | 1 | 1 | |
| Straits Settlements: | | | | |
| Singapore | Nov. 6-12 | 2 | 2 | |
| Syria: | | | | |
| Beirut | Oct. 9-Nov. 20 | 10 | 4 | |
| Union of South Africa: | | | | |
| Orange Free State— | | | | |
| Bothaville | Nov. 19 | | | Plague-infected mouse found. |
| Hoopstead | Dec. 4-10 | 1 | | In native herd boy. |

#### SMALLPOX.

| | | | | |
|---|---|---|---|---|
| Bolivia: | | | | |
| La Paz | Aug. 1-Oct. 31 | 42 | 28 | |
| Brazil: | | | | |
| Bahia | Nov. 6-Dec. 10 | 3 | | |
| Rio de Janeiro | Nov. 13-Dec. 24 | 11 | 2 | |
| Sao Paulo | Oct. 31-Nov. 20 | 2 | | |
| British East Africa: | | | | |
| Uganda | Aug. 1-Sept. 30 | 7 | | Reports of inspectors, cases, 4. |
| Canada: | | | | |
| Manitoba— | | | | |
| Winnipeg | Nov. 20-Dec. 3 | 2 | | |
| New Brunswick— | | | | |
| Charlotte County | | | | Dec. 17, 1921: 31 cases previously reported, occurring at Andersonville and Blacks Harbor. |
| St. Stephen | Dec. 11-17 | 2 | | Dec. 18-24, 1921: Cases, 3. Dec. 25-31, 1921: Cases, 2. |
| Restigouche County | Dec. 11-31 | 3 | | |
| York County | Dec. 11-17 | 1 | | |
| Ontario— | | | | |
| Fort William and Port Arthur | Jan. 1-21 | 3 | | |
| Hamilton | Jan. 22-28 | 3 | | |
| Kingston | Jan. 17-23 | 3 | | Jan. 16-20, 1922: Two cases reported. |
| Niagara Falls | Dec. 11-24 | 2 | | |
| Ottawa | do | 17 | | |
| Do | Jan. 1-14 | 11 | | |
| Sault Ste. Marie | Jan. 15-21 | 1 | | |
| Toronto | Dec. 11-24 | 4 | | |
| Do | Jan. 1-21 | 33 | | |
| Windsor | Jan. 8-14 | 1 | | |

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

### Reports Received from Dec. 31, 1921 to Feb. 10, 1922—Continued.

#### SMALLPOX—Continued.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Canada—Continued. | | | | |
| Quebec— | | | | |
| Montreal | Dec. 11-24 | 1 | | |
| Saskatchewan— | | | | |
| Regina | Jan. 1-7 | 1 | | |
| Saskatoon | Dec. 1-18 | 6 | | |
| Ceylon: | | | | |
| Colombo | Nov. 27-Dec. 3 | 1 | | Port case. |
| Chile | | | | Nov. 15-21, 1921: Diffused in southern provinces; not epidemic. |
| Concepcion | Nov. 23-Dec. 19 | | 22 | Nov. 15-21, 1921: Present. In vicinity, at Hualqui, cases 32; deaths, 5. Dec. 4-17, 1921: Present. |
| Coronel | Nov. 15-Dec. 17 | | | Present. |
| Curanilahue | Nov. 15-21 | 4 | | |
| Talcahuano | Nov. 15-Dec. 24 | 6 | | |
| Temuco | Nov. 15-21 | 9 | | |
| Valparaiso | Oct. 23-Dec. 31 | | 94 | |
| China: | | | | |
| Amoy | Nov. 16-Dec. 17 | | 4 | Nov. 23-29, 1921: Present. |
| Antung | Nov. 28-Dec. 18 | 4 | 1 | |
| Chungking | Nov. 6-Dec. 10 | | | Present. |
| Foochow | Nov. 6-Dec. 10 | | | Do. |
| Hankow | Nov. 13-Dec. 31 | | | Do. |
| Harbin | Nov. 14-Dec. 11 | 5 | | |
| Hongkong | Dec. 3-17 | 3 | | |
| Mukden | Nov. 20-Dec. 31 | | | Do. |
| Nanking | Nov. 20-Dec. 17 | | | Do. |
| Shanghai | Oct. 31-Dec. 25 | 64 | 140 | Cases, foreign: Deaths, Chinese and foreign. Jan. 14, 1922: Conditions serious. |
| Tientsin | Dec. 11-17 | 2 | | In Mission Hospital. |
| Colombia: | | | | |
| Cartagena | Nov. 22-28 | | 1 | |
| Cuba | | | | Dec. 4-10, 1921: Cases, 151; in two provinces. |
| Antilla | Dec. 12-31 | 3 | | At Preston. |
| Do | Jan. 8-21 | 10 | 1 | |
| Czechoslovakia: | | | | |
| Prague | Dec. 18-24 | | 42 | |
| Dominican Republic: | | | | |
| San Pedro de Macoris | Nov. 20-Dec. 24 | 27 | | Estimate of about 500 cases of smallpox in the district of Macoris; of this amount 50 within the city limits. |
| Santo Domingo | Nov. 15-Dec. 5 | | | In district 401 cases estimated. Dec. 17-24, 1921: Present in vicinity. Jan. 9-16, 1922: In surrounding country, 1,745 cases, (estimated). |
| Fiume | | | | Dec. 27, 1921-Jan. 2, 1922: Cases, 2. |
| Ecuador: | | | | |
| Guayaquil | Nov. 16-Dec. 15 | 4 | | And vicinity. |
| Egypt: | | | | |
| Alexandria | Nov. 26-Dec. 2 | 1 | 1 | |
| Port Said | Dec. 20-26 | 1 | | |
| Finland | | | | Nov. 16-30, 1921: 1 case. |
| Haiti: | | | | |
| Cape Haitien | Dec. 11-24 | 8 | | |
| Port au Prince | Dec. 11-31 | | | Present. |
| India | | | | Oct. 2-8, 1921: Deaths, 28. |
| Bombay | Oct. 23-Dec. 10 | 2 | 1 | |
| Calcutta | Nov. 13-Dec. 17 | 22 | 16 | |
| Karachi | Nov. 11-24 | 24 | 6 | |
| Madras | Nov. 13-Dec. 17 | 100 | 29 | |
| Rangoon | Oct. 1-Nov. 19 | 2 | | |
| Italy: | | | | |
| Genoa | Nov. 10-20 | 1 | | |
| Messina— | | | | |
| Messina | Nov. 28-Dec. 4 | 1 | | |
| Pettineo | Nov. 14-Dec. 4 | 2 | | |
| Japan: | | | | |
| Taiwan Island | Dec. 1-20 | 2 | 1 | |

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

### Reports Received from Dec. 31, 1921, to Feb. 10, 1922—Continued.

#### SMALLPOX—Continued.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Java: | | | | |
| West Java— | | | | |
| Bandoeng | Nov. 18–Dec. 8 | 2 | | |
| Batavia | Nov. 18–Dec. 15 | 4 | 5 | Province: Cases, 10. |
| Buitenzorg | Nov. 25–Dec. 8 | 7 | 1 | 13 cases with 3 deaths not locally stated. |
| Krawang | Nov. 18–24 | 1 | | |
| Lebak | Nov. 18–Dec. 8 | 7 | 4 | |
| Pandegang | Nov. 25–Dec. 1 | | 1 | |
| Tangerang | Nov. 18–Dec. 8 | 5 | 1 | |
| Mesopotamia: | | | | |
| Bagdad | Oct. 1–Nov. 30 | 117 | 50 | Epidemic with high mortality in November, 1921. |
| Mexico: | | | | |
| Chihuahua | Dec. 5–11 | | 1 | |
| Guadalajara | Nov. 1–Dec. 31 | 6 | | |
| Mexico City | Nov. 20–Dec. 24 | 51 | | |
| San Luis Potosi | Dec. 18–24 | | 2 | |
| Do | Jan. 8–14 | | 2 | |
| Torreon | Dec. 1–31 | 134 | | |
| Panama: | | | | |
| Ancon | | | | Admitted to hospital by transfer from Panama, Nov. 30, 1921, 1 case. Arrived on sailing vessel from a village on south coast. |
| Chiriqui Province | Dec. 22 | | | Present. |
| Panama | Dec. 14 | 1 | | On Dec. 21, 1921: 1 additional case from country district of Sabanas, admitted to hospital. Total admissions, Jan. 1–Dec. 21, 1921, 207. |
| Peru: | | | | |
| Lima | Nov. 1–30 | | 2 | |
| Poland | | | | Aug. 14–Oct. 8, 1921: Cases, 161; deaths, 33. Exclusive of Brest-Litovsk, Minsk, and Wilno districts. |
| Portugal: | | | | |
| Lisbon | Nov. 13–Dec. 31 | 48 | 12 | |
| Portuguese East Africa: | | | | |
| Lourenco Marques | Oct. 1–Nov. 5 | 2 | 4 | |
| Portuguese West Africa: | | | | |
| Angola— | | | | |
| Loanda | Oct. 9–Nov. 3 | | 3 | |
| Russia: | | | | |
| Esthonia | Oct. 1–31 | 20 | | |
| Latvia | do | 31 | | Corrected report. |
| Serbia: | | | | |
| Belgrade | Oct. 2–Nov. 26 | 16 | 4 | |
| Siam: | | | | |
| Bangkok | Oct. 23–Nov. 5 | 1 | | |
| Spain: | | | | |
| Huelva | Oct. 1–Nov. 30 | | 2 | |
| Malaga | Nov. 1–Dec. 31 | | 60 | |
| Seville | Nov. 16–Dec. 31 | | 7 | |
| Do | Jan. 8–14 | | 1 | |
| Straits Settlements: | | | | |
| Singapore | Nov. 6–Dec. 10 | 35 | 8 | |
| Switzerland: | | | | |
| Glarus, Canton | Dec. 10 | | | Epidemic. |
| Zurich | do | 2 | | In vicinity. |
| Syria: | | | | |
| Adana | Dec. 18–24 | | | Present. |
| Aleppo | do | | | Do. |
| Beirut | Oct. 9–Nov. 13 | 5 | 2 | |
| Diarbekir | Dec. 18–24 | | | Do. |
| Mersina | do | | | Do. |
| Urfa | do | | | Do. |
| Tunis: | | | | |
| Tunis | Nov. 26–Dec. 23 | 17 | 15 | |
| Do | Jan. 1–7 | | 1 | |
| Turkey: | | | | |
| Constantinople | Nov. 27–Dec. 24 | 20 | 4 | |
| Union of South Africa: | | | | |
| Cape Province | Nov. 5–Dec. 10 | | | Outbreaks. |
| Natal | Oct. 23–Nov. 12 | | | Do. |
| Orange Free State | Oct. 23–29 | | | Do. |
| Transvaal | Oct. 23–Dec. 10 | | | Do. |
| Yugoslavia | | | | July 24–30, 1921: Cases, 26. |

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

### Reports Received from Dec. 31, 1921, to Feb. 10, 1922—Continued.

#### TYPHUS FEVER.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Algeria: | | | | |
| Algiers | Nov. 1-Dec. 31 | 3 | | |
| Oran | Dec. 21-31 | 1 | | |
| Austria: | | | | |
| Vienna | Dec. 4-10 | 2 | | |
| Bolivia: | | | | |
| La Paz | Aug. 1-Oct. 31 | 83 | 65 | |
| Bulgaria: | | | | |
| Sofia | Dec. 18-24 | 1 | | |
| Chile: | | | | |
| Valparaiso | Oct. 23-Nov. 26 | | 6 | |
| Concepcion | Nov. 22-Dec. 4 | | 2 | |
| China: | | | | |
| Harbin | Nov. 7-Dec. 18 | 9 | | Jan. 23, 1922: Reported extending from Soviet Russia, along railway line to maritime Provinces. |
| Egypt: | | | | |
| Alexandria | Nov. 19-Dec. 31 | 3 | 1 | |
| Cairo | Oct. 1-Nov. 4 | 7 | 3 | |
| Germany: | | | | |
| Hamburg | Dec. 11-17 | 4 | | |
| Great Britain: | | | | |
| Glasgow | Dec. 25-31 | 1 | | |
| Mesopotamia: | | | | |
| Bagdad | Oct. 1-Nov. 30 | 2 | 9 | |
| Mexico: | | | | |
| Mexico City | Nov. 20-Dec. 24 | 200 | | Including municipalities in Federal District. |
| San Luis Potosi | Dec. 18-24 | | 1 | Dec. 25-31, 1921: Present. |
| Do | Jan. 8-21 | | | Present. |
| Poland | | | | Aug. 14-Oct. 8, 1921: Cases, 1,431: deaths, 105. Exclusive of Brest-Litovsk, Minsk, and Wilno districts. |
| Russia: | | | | |
| Esthonia | Oct. 1-31 | 14 | | |
| Latvia | do | 87 | | |
| Serbia: | | | | |
| Belgrade | Oct. 2-Nov. 26 | 3 | 2 | |
| Siberia | | | | Jan. 23, 1922: Present in western districts. |
| Turkey: | | | | |
| Constantinople | Nov. 20-Dec. 31 | 19 | | |
| Union of South Africa: | | | | |
| Cape Province | | | | Oct. 23-Dec. 10, 1921: Outbreaks. |
| East London | Oct. 30-Nov. 5 | 1 | | One death in European at Jensenville, Dec. 6, 1921. |
| Natal | Nov. 5-Dec. 10 | | | Outbreaks. Stated to be prevalent only in Newcastle District. |
| Orange Free State | Nov. 13-Dec. 3 | | | Outbreaks. |
| Venezuela: | | | | |
| Maracaibo | Dec. 20-26 | | 1 | |
| Yugoslavia | | | | July 24-30, 1921: Cases, 10. |

#### YELLOW FEVER.

| | | | | |
|---|---|---|---|---|
| Mexico | | | | Year 1921: Cases, 115; deaths, 53. |
| Colima (State) | | | | Total: Cases, 7; deaths, 4. |
| Colima | Oct. 27 | 4 | 3 | |
| Manzanillo | Aug. 21 | 3 | 1 | |
| Jalisco (State) | | | | Total: Cases, 13; deaths, 7. |
| Guadalajara | Nov. 1-30 | 1 | 1 | Imported. |
| Puerta Vallarta (Las Penas). | Oct. 5 | 11 | 5 | Dec. 19, 1921: Present. |
| Tonila | Aug. 31 | 1 | 1 | |
| Quintana Roo (Territory)— | | | | |
| Payo Obispo | Aug. 8 | 1 | 1 | |
| Sinaloa (State) | | | | Total: Cases, 18; deaths, 9. |
| Culiacan | Sept. 17 | 4 | 1 | |
| Guamuchil | Oct. 10 | 1 | | |
| Mazatlan | Aug. 21 | 1 | 1 | Imported. |
| Palmar de los Leales | Sept. 30 | 12 | 7 | |
| Tamaulipas (State) | | | | Total: Cases, 18; Deaths, 9. |
| Tampico | Jan. 11 | 1 | 1 | |

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

### Reports Received from Dec. 31, 1921, to Feb. 10, 1922—Continued.

#### YELLOW FEVER—Continued.

| Place. | Date. | Cases. | Deaths. | Remarks. |
|---|---|---|---|---|
| Mexico—Continued. | | | | |
| Vera Cruz (State) | | | | Total: Cases, 75; deaths, 31. |
| Alamo | June 21 | 4 | 1 | Oil camp. |
| Alvarado | July 3 | 1 | 1 | |
| Barra de Penn | July 18 | 1 | 1 | |
| Cordoba | Sept. 22 | 5 | 3 | |
| Cosamaloapam | July 18 | 14 | 6 | |
| Nogales | Oct. 28 | 1 | 1 | |
| Orizaba | ....do | 1 | | |
| Papantla | Jan. 14 | 6 | 3 | |
| Providencia | Oct. 28 | 3 | | |
| Purga | Feb. 7 | 1 | 1 | |
| Rancho de Santa Rosa | Oct. 8 | 2 | | |
| Rancho "El Jaguey" | Sept. 14 | 2 | 2 | |
| San Pablo (Papantla) | Sept. 12 | 1 | | |
| San Ildefonso | Oct. 17 | 2 | | |
| Tierra Blanca | Sept. 24-Nov. 12 | 4 | 3 | |
| Tlacotalpan | Sept. 14 | 1 | 1 | |
| Tuxpan | Jan. 3 | 8 | 2 | |
| Vera Cruz | Jan. 15 | 18 | 7 | Two of these cases imported. Dec. 20-26, 1921: Cases, 1; deaths, 1. Imported. |

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