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## GEOGRAPHICAL DISTRIBUTIONS OF MORTALITY FROM TUBERCULOSIS, CANCER, APPENDICITIS, AND TYPHOID FEVER IN THE WHITE POPULATION OF THE UNITED STATES *

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In recent publications [1] the geographical, or regional, distribution of tuberculosis mortality in the United States has been discussed. In this article consideration is given, especially for purposes of comparison, to the geographical distributions of mortality from (*a*) tuberculosis (all forms), (*b*) cancer and other malignant tumors, (*c*) appendicitis, and (*d*) typhoid fever, by States, among white persons in this country for the 5-year period 1929–33. The distributions of recorded mortality from these four diseases stand out in striking contrast. It seems that the method used in this article might be applied to advantage to studies of other groups of diseases.

Table 1 shows the average annual death rates for the 5-year period, the age distribution of the population for the census year 1930, and the rank of the States in the mortality rates and in the population age-grouping.

Maps 1, 2, 3, and 4 show in round numbers, by shading, the death rates from tuberculosis, cancer and other malignant tumors, appendicitis, and typhoid fever, respectively, in the States. The mortality rates presented in the table and the maps are based on population figures of the United States Census for 1930, and on mortality records of the respective State health departments. All except those for Texas and South Dakota are for the 5-year period 1929–33. Because of the wide range in racial composition of the populations of the different States, the data throughout this article are confined to the white population.

*Received for publication May 1, 1937.

[1] A survey of tuberculosis in Louisiana. By L. L. Lumsden. Public Health Bulletin No. 219.

Some features of tuberculosis mortality distribution in the United States. By L. L. Lumsden and C. C. Dauer. Public Health Bulletin No. 225.

The distribution of tuberculosis mortality in Southeastern United States. By C. C. Dauer and L. L. Lumsden. The American Review of Tuberculosis, vol. XXXV, no. 1 (January 1937) pp. 43-61.

Distribution of tuberculosis mortality in the white population of the United States. By C. C. Dauer Public Health Reports, vol. 52, no. 3, (Jan. 15, 1937), pp. 70-75.

TABLE 1.—*Average annual death rates from (a) tuberculosis (all forms), (b) cancer and other malignant tumors, (c) appendicitis, and (d) typhoid fever among white persons in the 5-year period 1929–33, and the age distribution of the white population in 1930, by States, in the United States*

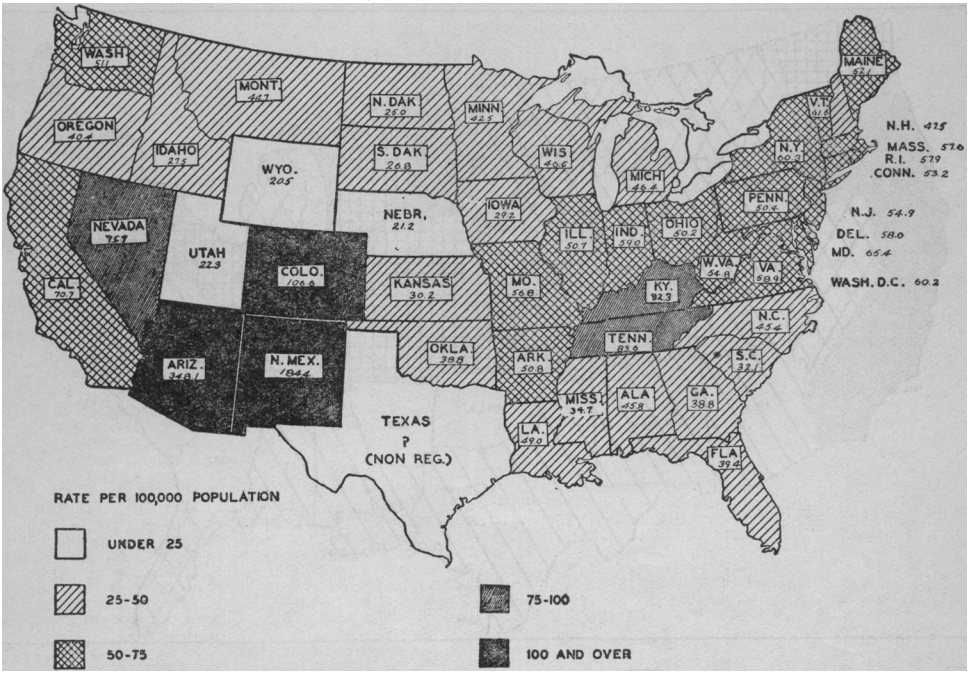
| State | Death rates per 100,000 from— | | | | White population (U. S. Census of 1930) | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Tuberculosis (all forms) | Cancer and other malignant tumors | Appendicitis | Typhoid fever | Total | Percentage | | | |
| | | | | | | Under 20 years of age | 20–39 years of age | 40–59 years of age | 60 years of age and over |
| Alabama | 45.8(31) | 60.0(42) | 12.2(41) | 5.05(15) | 1,700,187 | 47.00 (3) | 29.86(32) | 17.01(47) | 6.12(47) |
| Arizona | 348.1 (1) | 73.1(35) | 17.0(15) | 8.33 (9) | 264,045 | 37.26(30) | 34.26 (2) | 21.62(23) | 6.85(38) |
| Arkansas | 50.8(23) | 47.8(48) | 16.4(17) | 12.43 (1) | 1,374,374 | 46.36 (5) | 28.97(43) | 17.75(41) | 6.91(37) |
| California | 70.7 (7) | 137.0 (5) | 14.4(33) | 1.40(40) | 5,028,089 | 28.88(48) | 34.06 (3) | 26.11 (2) | 10.95 (8) |
| Colorado | 106.6 (3) | 106.9(22) | 24.7 (4) | 4.95(16) | 960,483 | 37.23(31) | 30.51(25) | 22.45(11) | 9.81(15) |
| Connecticut | 53.2(20) | 123.5 (9) | 12.0(42) | 0.83(45) | 1,575,765 | 36.99(34) | 31.20(17) | 22.27(19) | 9.50(18) |
| Delaware | 58.0(14) | 118.5(12) | 10.0(46) | 3.01(24) | 205,576 | 35.69(40) | 30.84(21) | 22.43(13) | 11.03 (6) |
| Florida | 39.4(36) | 88.2(26) | 14.0(35) | 3.44(19) | 1,034,443 | 38.98(22) | 31.22(15) | 20.75(29) | 9.04(21) |
| Georgia | 38.8(37) | 59.8(44) | 12.4(39) | 8.59 (8) | 1,836,012 | 45.11(10) | 30.41(26) | 17.84(39) | 6.64(42) |
| Idaho | 27.5(43) | 77.8(30) | 20.8 (7) | 3.79(17) | 437,358 | 42.83(16) | 28.67(44) | 20.51(31) | 7.98(32) |
| Illinois | 50.7(24) | 115.7(16) | 17.1(14) | 1.62(35) | 7,259,698 | 35.08(43) | 33.38 (5) | 22.53(10) | 8.99(22) |
| Indiana | 59.0(11) | 111.7(19) | 16.0(22) | 3.10(22) | 3,114,220 | 36.69(36) | 29.87(31) | 22.30(17) | 11.14 (5) |
| Iowa | 29.2(42) | 118.0(13) | 17.5(12) | 1.55(36) | 2,447,184 | 37.36(28) | 29.70(36) | 21.70(22) | 11.23 (4) |
| Kansas | 30.2(41) | 100.3(24) | 17.6(11) | 2.23(29) | 1,792,203 | 38.18(25) | 29.97(30) | 21.75(21) | 10.10(12) |
| Kentucky | 82.3 (5) | 72.8(36) | 13.5(37) | 10.88 (4) | 2,387,234 | 44.65(11) | 28.42(45) | 18.59(36) | 8.33(26) |
| Louisiana | 49.0(27) | 75.0(34) | 16.4(18) | 8.79 (7) | 1,317,720 | 43.73(14) | 31.95(10) | 18.03(38) | 6.28(45) |
| Maine | 52.1(21) | 144.3 (2) | 15.8(25) | 2.79(26) | 794,594 | 37.33(29) | 27.50(48) | 22.29(18) | 12.87 (2) |
| Maryland | 65.4 (8) | 120.6(10) | 11.2(43) | 3.08(23) | 1,351,730 | 36.83(35) | 31.77(11) | 21.81(20) | 9.58(17) |
| Massachusetts | 57.6(16) | 140.0 (3) | 14.6(32) | 0.75(47) | 4,189,978 | 35.17(42) | 31.21(16) | 23.36 (6) | 10.25(11) |
| Michigan | 46.4(30) | 98.1(25) | 16.0(23) | 1.47(38) | 4,647,595 | 37.90(27) | 32.90 (8) | 20.86(28) | 8.32(27) |
| Minnesota | 42.5(34) | 124.9 (8) | 16.3(19) | 0.72(48) | 2,538,026 | 38.25(24) | 30.85(20) | 21.20(26) | 9.69(16) |
| Mississippi | 34.7(39) | 63.3(39) | 13.6(36) | 5.48(13) | 996,483 | 45.81 (7) | 29.74(35) | 17.59(43) | 6.85(39) |
| Missouri | 56.8(17) | 112.2(18) | 16.2(20) | 5.88(12) | 3,396,571 | 36.05(39) | 30.94(19) | 22.37(16) | 10.63 (9) |
| Montana | 44.7(33) | 88.0(27) | 22.5 (5) | 3.01(25) | 517,037 | 38.79(23) | 29.41(39) | 23.75 (5) | 8.04(29) |
| Nebraska | 21.2(47) | 102.7(23) | 19.2 (8) | 1.52(37) | 1,352,977 | 39.23(20) | 30.74(23) | 20.57(30) | 9.45(20) |
| Nevada | 75.7 (6) | 87.0(28) | 32.4 (1) | 2.46(27) | 81,383 | 31.48(47) | 32.75 (9) | 26.98 (1) | 8.78(23) |
| New Hampshire | 47.5(28) | 148.4 (1) | 15.7(26) | 1.42(39) | 464,109 | 35.23(41) | 28.08(46) | 23.32 (7) | 13.37 (1) |
| New Jersey | 54.9(18) | 113.8(17) | 14.1(34) | 0.99(43) | 3,826,918 | 36.20(38) | 33.11 (6) | 22.40(14) | 8.27(28) |
| New Mexico | 184.4 (2) | 60.0(43) | 21.4 (6) | 12.30 (2) | 331,626 | 45.39 (8) | 30.17(28) | 17.68(42) | 6.75(41) |
| New York | 60.3(10) | 129.0 (7) | 16.0(24) | 1.08(42) | 12,140,490 | 33.77(44) | 34.60 (1) | 22.89 (8) | 8.73(24) |
| North Carolina | 45.4(32) | 54.3(46) | 10.0(47) | 3.39(20) | 2,233,773 | 48.07 (1) | 29.49(37) | 16.28(48) | 6.15(46) |
| North Dakota | 25.0(45) | 71.8(37) | 17.2(13) | 1.97(33) | 670,860 | 45.34 (9) | 29.00(42) | 18.71(35) | 6.95(35) |
| Ohio | 50.2(26) | 111.0(20) | 14.9(30) | 2.24(28) | 6,328,396 | 36.29(37) | 31.40(13) | 22.44(12) | 9.86(14) |
| Oklahoma | 38.8(38) | 57.0(45) | 16.1(21) | 8.92 (6) | 2,122,602 | 43.94(13) | 31.62(12) | 17.82(40) | 6.61(43) |
| Oregon | 40.4(35) | 120.0(11) | 15.2(28) | 1.99(31) | 936,627 | 33.13(46) | 31.02(18) | 24.89 (3) | 10.96 (7) |
| Pennsylvania | 50.4(25) | 107.3(21) | 12.4(40) | 1.98(32) | 9,188,063 | 39.78(19) | 30.34(27) | 21.27(24) | 8.61(25) |
| Rhode Island | 57.9(15) | 137.5 (4) | 15.1(29) | 0.83(46) | 676,806 | 37.00(33) | 30.84(22) | 22.69 (9) | 9.46(19) |
| South Carolina | 32.1(40) | 50.5(47) | 8.4(48) | 7.88(11) | 943,822 | 47.60 (2) | 29.47(38) | 17.05(46) | 5.87(48) |
| South Dakota [1] | 26.8(44) | 81.7(29) | 18.3 (9) | 3.25(21) | 669,117 | 42.28(17) | 29.99(29) | 19.69(32) | 8.03(30) |
| Tennessee | 83.6 (4) | 61.6(41) | 12.5(38) | 9.79 (5) | 2,136,063 | 44.48(12) | 29.76(33) | 18.38(37) | 7.38(33) |
| Texas [2] | 58.9(12) | 75.3(32) | 17.0(16) | 8.17(10) | 4,280,782 | 41.30(18) | 33.02 (7) | 18.75(34) | 6.92(36) |
| Utah | 22.3(46) | 75.3(33) | 25.8 (3) | 2.09(30) | 495,757 | 46.15 (6) | 29.39(40) | 17.39(45) | 7.06(34) |
| Vermont | 61.6 (9) | 129.3 (6) | 17.9(10) | 1.22(41) | 358,847 | 37.01(32) | 27.71(47) | 22.40(15) | 12.87 (3) |
| Virginia | 58.9(13) | 76.9(31) | 10.5(44) | 5.17(14) | 1,769,614 | 43.28(15) | 29.76(34) | 18.97(33) | 7.99(31) |
| Washington | 51.1(22) | 116.4(14) | 14.7(31) | 1.80(34) | 1,519,351 | 33.59(45) | 31.34(14) | 24.77 (4) | 10.30(10) |
| West Virginia | 54.8(19) | 62.9(40) | 10.5(45) | 11.03 (3) | 1,613,363 | 46.54 (4) | 29.08(41) | 17.54(44) | 6.84(40) |
| Wisconsin | 46.6(29) | 116.1(15) | 15.4(27) | 0.84(44) | 2,912,254 | 38.12(26) | 30.74(24) | 21.23(25) | 9.90(13) |
| Wyoming | 20.5(48) | 65.5(38) | 27.0 (2) | 3.46(18) | 213,903 | 39.16(21) | 33.49 (4) | 20.95(27) | 6.39(44) |

[1] Rates for 4-year period 1930–33.
[2] Rates for 1933.

NOTE.—Figures in parenthesis in rate and percentage columns indicate rank of States.

## TUBERCULOSIS

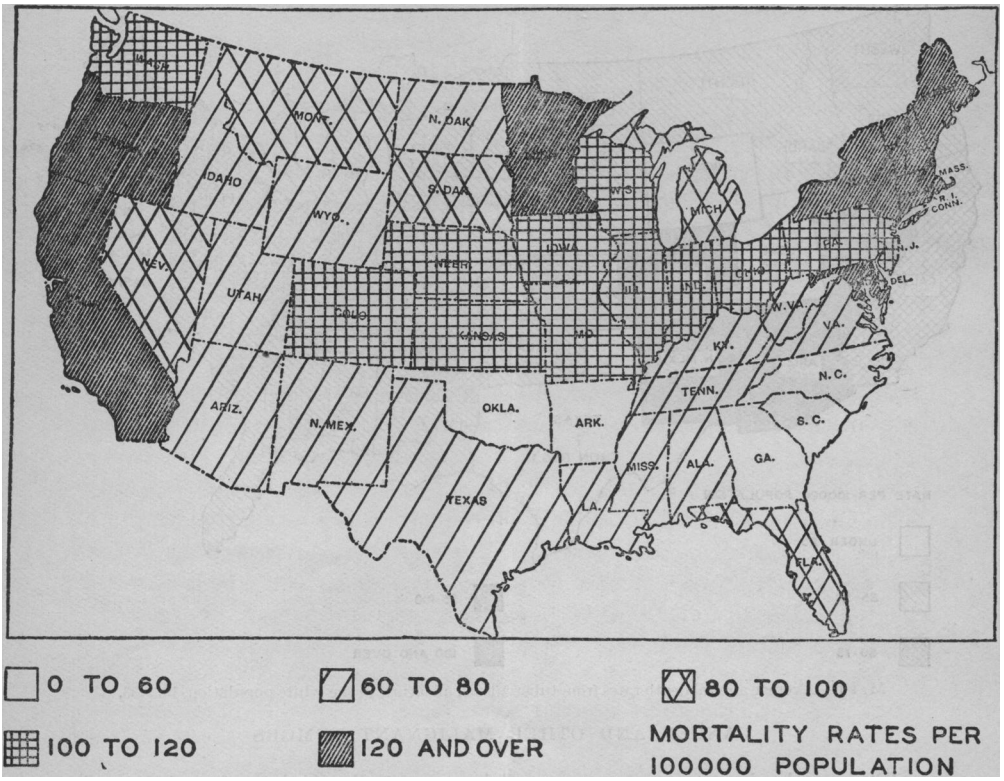
The distribution of mortality from tuberculosis in the United States has been presented in detail and discussed at considerable length in previous publications (references in footnote 1). Map 1 in this article is a reproduction of map 2 in Public Health Bulletin No. 225.




MAP 1.—Average annual death rates from tuberculosis, all forms, in the white population, 1929–33.

## CANCER AND OTHER MALIGNANT TUMORS

The crude death rates presented in map 2 show that, for the total white populations of the States, cancer mortality averages much higher in two unbroken groups of contiguous States—one extending from Maine to Maryland on the east and to Colorado on the west, and one comprising the Pacific Coast States—than in other parts of the country. As cancer mortality affects mainly persons of advanced age and, as is shown in table 1, the States generally but not uniformly with the higher crude cancer death rates have a comparatively large proportion of the population composed of persons over 60 years of age, it is evident that standardization of the death rates would make a considerable difference in the figures. The difference, however, would not be enough to change much the comparative shading on map 2. In this connection, the data in table 2 are of interest. These five States were selected for comparison of the death rates in persons of the same age-sex groups because the basic data for them are available, and because three of them—Massachusetts, Connecticut,




MAP 2.—Mortality from cancer and other malignant tumors in the white population, 1929–33.

and New Jersey—are fairly representative of one of the high cancer death rate zones, and two of them—Virginia and Alabama—are fairly representative of one of the low cancer death rate zones.

TABLE 2.—*Average annual death rates from cancer and other malignant tumors by age and sex in white populations per 100,000 for the 3-year period 1931–33 in Massachusetts, for the 2-year period 1933–34 in Alabama, and for the 3-year period 1932–34 in Connecticut, New Jersey, and Virginia*

| Age groups | Death rates by States | | | | |
|---|---|---|---|---|---|
| | Massachusetts | Connecticut | New Jersey | Virginia | Alabama |
| Male: | | | | | |
| 0–30 | 6.3 | 5.5 | 5.3 | 5.6 | 6.2 |
| 30–50 | 52.3 | 50.2 | 51.3 | 38.0 | 33.4 |
| 50–60 | 260.0 | 273.0 | 325.0 | 165.0 | 157.1 |
| 60–70 | 668.0 | 639.0 | 691.0 | 400.0 | 421.0 |
| 70 and over | 1,292.0 | 1,273.0 | 1,319.0 | 913.0 | 857.0 |
| Female: | | | | | |
| 0–30 | 6.1 | 5.9 | 5.9 | 5.4 | 6.0 |
| 30–50 | 112.0 | 102.0 | 130.0 | 86.5 | 93.4 |
| 50–60 | 380.0 | 382.0 | 367.0 | 273.0 | 301.0 |
| 60–70 | 683.0 | 640.0 | 685.0 | 500.0 | 515.0 |
| 70 and over | 1,202.0 | 1,238.0 | 1,227.0 | 1,013.0 | 801.0 |

In each group of 30 years of age and over the rates for Massachusetts, Connecticut, and New Jersey are consistently and impressively higher than those for Virginia and Alabama.

In some of the States with high cancer death rates, hospital and other facilities for diagnosis and treatment are generally regarded as more nearly adequate for most of the population than those in some of the States with low cancer death rates. Sufficient detailed data on such facilities are not available to furnish a basis for an estimate of the influence of this factor on recorded cancer mortality. Better and earlier diagnosis and treatment, of course, should effect a reduction in actual mortality from cancer in a given community or State and thereby operate to some extent as an offset factor to better reporting.

In a highly interesting statistical analysis of crude cancer death rates in the United States published in the Bulletin of the Metropolitan Life Insurance Co. for June 1935, the correlation between low death rates from cancer and high death rates from senility, ill-defined, and unknown causes, based on the official records of deaths for the different States or regions, is emphasized. There appears no reason to doubt that in the States generally with low recorded cancer death rates many deaths actually caused by cancer are unreported or reported under erroneous diagnoses. Such faultiness of reporting probably applies also, but to less degree, to the States generally with comparatively high recorded cancer death rates. From the fragmentary evidence available, however, it is open to question whether, if radical improvements were made in our medical and public health services so as to bring about proper reporting and recording of 90 percent or more of all deaths actually caused by cancer, the rank of the States generally in cancer mortality as indicated in table 1 and map 2 of this article would be greatly changed.

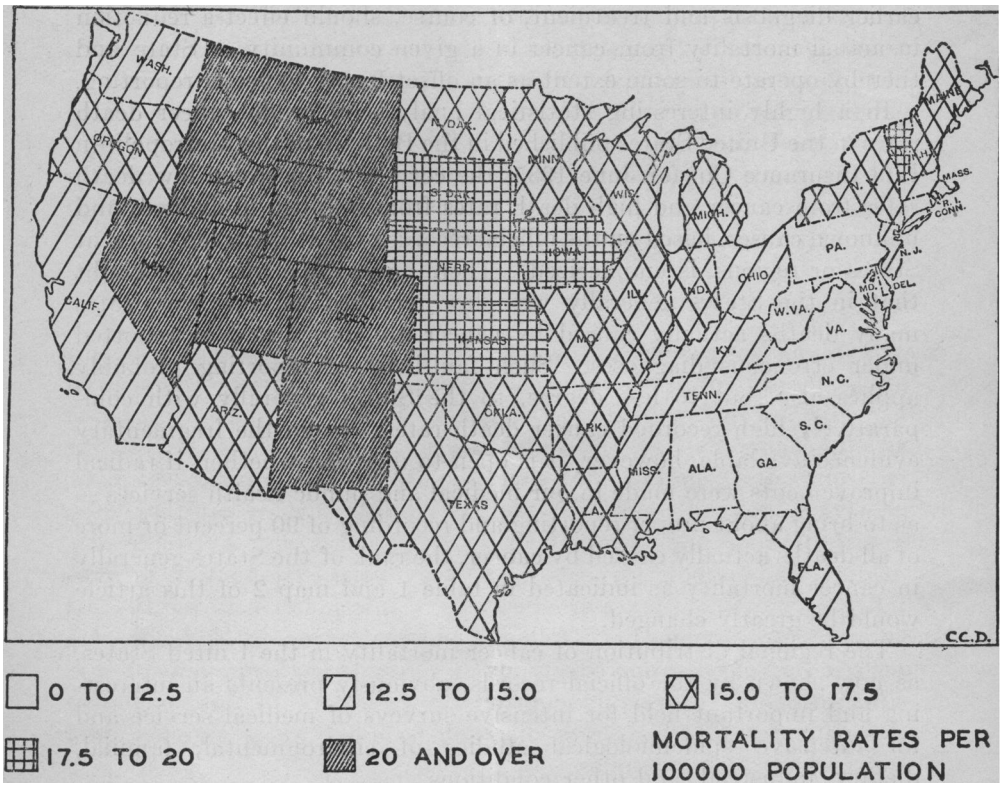
The regional distribution of cancer mortality in the United States, as now shown by the official records, obviously presents an interesting and important field for intensive surveys of medical service and for intensive epidemiological studies of environmental, familial, dietary, industrial, and other conditions.

## APPENDICITIS

The concentration of high recorded mortality rates from appendicitis in the group of 11 contiguous western States, as shown by map 3, is striking and, notwithstanding the distribution of age-grouping of the State populations and the usually higher case fatality and mortality rates from this disease among middle-aged and elderly persons, stands out in sharp contrast with the high-rate cancer regions shown by map 2. The distribution of appendicitis mortality is strikingly different also from that of tuberculosis. How much of the regional distribution of appendicitis mortality is due to difference in

hospital and other medical and surgical facilities and in reporting and recording of deaths is problematical. It would appear hazardous to guess that treatment of appendicitis is over twice as good in South Carolina and Virginia as it is in Nebraska and Colorado, or that the proper reporting and recording of deaths from the disease are more than twice as nearly complete in Wyoming, Utah, and Nevada as in Maryland, Delaware, and North Carolina.

It is interesting to note the consistent decrease in the recorded death




MAP 3.—Mortality from appendicitis in the white population, 1929-33.

rates from appendicitis from State to State in lines extending eastward from the Rocky Mountain region—the rates for the States in two such lines being as follows: (*a*) Nevada, 32.4; Utah, 25.8; Colorado, 24.7; Kansas, 17.6; Missouri, 16.2; Kentucky, 13.5; Virginia, 10.5; and (*b*) Wyoming, 27.0; Nebraska, 19.2; Iowa, 17.5; Illinois, 17.1; Indiana, 16.0; Ohio, 14.9; Pennsylvania, 12.4. It is interesting also to note the markedly lower rates for the Pacific Coast States as compared with those for the Rocky Mountain States. Such geographical distribution, taken alone, suggests at least the possibility

of the operation of some geological, soil, or climatic factors upon the incidence of the disease.

Dauer and Lilly have shown in an article [2] dealing with appendicitis death rates by age groups in various geographical areas of the United States that the rates for all age groups are much higher in the Rocky Mountain area and for all age groups under 55 years are considerably lower in the South Atlantic area than in any of the other areas of this country.

The surmise or probability that the incidence rate of appendicitis is much higher in the region comprising the Rocky Mountain States and South Dakota, Nebraska, Kansas, and Iowa than in any other region of three or more contiguous States in this country is supported in considerable degree by data collected for the United States Army during the World War.[3]

In view of all the evidence yet available, it appears that appendicitis is not only a medical and surgical problem but is also an epidemiological and public health problem of importance.

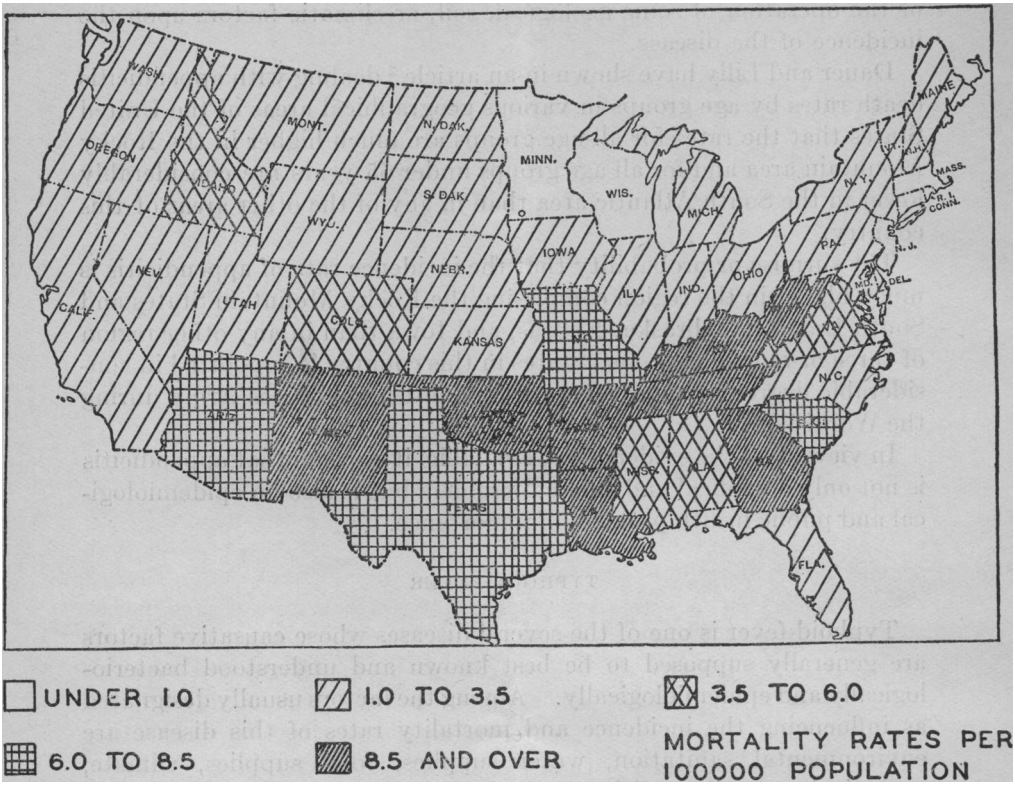
## TYPHOID FEVER

Typhoid fever is one of the several diseases whose causative factors are generally supposed to be best known and understood bacteriologically and epidemiologically. Among the factors usually designated as influencing the incidence and mortality rates of this disease are environmental sanitation, water supplies, food supplies, climate, geological and soil conditions, popular education along sanitary lines, distribution of population, bedside prophylaxis and public health, medical and nursing services. The very marked reduction in mortality from typhoid fever in all regions of this country during the last 30 years appears to have followed, with convincing evidence of a relationship of cause and effect, advance in sanitary improvement or in elimination of the readily controllable causative factors, including especially insanitary excreta disposal, polluted water supplies, and contaminated food supplies.

Map 4, showing the distribution of typhoid fever mortality, presents features which, in general, are interestingly different from those presented in each of the other three maps. Here it seems we are dealing more with the known and less with the unknown. There are breaks in the groups of States or regions with the higher rates. For example, Mississippi, Alabama, Florida, Virginia, and North Carolina are adjacent to and in the same region with States to the north, east, south, or west of them which have considerably higher rates and

[2] Appendicitis mortality rates. By C. C. Dauer and G. D. Lilly. Am. J. Surg., New Series, vol. XXX, no. 1, pp. 119–124.

[3] Medical Department of the U. S. Army in the World War, vol. 15, pt. 2, 1925.




MAP 4.—Mortality from typhoid fever in the white population, 1929-33.

therefore are out of line with what otherwise might be defined a high-rate zone.

From all the evidence at hand it appears highly probable that the geographical distribution of typhoid fever mortality in the United States is largely, if not entirely, explicable by regional and local differences in the application of general sanitary measures and in climatic and soil conditions. The possibility must be admitted, however, that there are factors in the causation of this disease which are not yet known. Therefore, typhoid fever, which we are pleased to list among the vanishing enemies of mankind, still appears to present a field for important epidemiological work.

## CONCLUSION

The regional distributions of mortality, and inferentially of morbidity, from tuberculosis, cancer, appendicitis, and even typhoid fever are not yet satisfactorily explicable and present important fields for detailed surveys of medical service and for practical epidemiological studies on a broad scale.

# THE NEED FOR INDUSTRIAL HYGIENE COURSES IN PUBLIC HEALTH CURRICULA

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It is only within the last few years that the necessity for industrial hygiene has been generally conceded, although active cooperation has been given to the United States Public Health Service in connection with its various studies in industrial establishments throughout the country. For many years the State and Provincial Health Authorities of North America have endeavored to sustain an interest in this subject through their Committee on Industrial Hygiene. It is desired to indicate briefly why the present interest in the subject is fully justified.

It is known that there are approximately 50,000,000 persons in gainful pursuits in the United States, and that of this number there are approximately 15,000,000 workers employed in industries, many of which are associated with health hazards. We are also cognizant of the fact that there are numerous specific occupational diseases associated with the industrial environment, which give rise to excessive morbidity and mortality rates in the industrial population. More important than these specific occupational diseases is the fact that the incidence of other diseases, such as tuberculosis, pneumonia, and degenerative conditions, are greater among industrial workers than among the general population. Attention has also been directed, from time to time, to the fact that the life expectancy of the industrial worker is less than that of the nonindustrial worker. It is of interest to note that, years ago, Dr. Osler said:

> It is the tragedy of today that man is so indifferent to the life of man. Yes; we surround the babe unborn with premonitory protection, deal wisely and gently with infancy and childhood, and then hurl the product of a reasonably healthy youth into a maelstrom of blind chances, of dusts, fumes, and fatigues, which wear down the stoutest body and cripple the most willing worker.

Other authoritative statements indicating the importance of industrial hygiene could be cited; however, it is believed that today everyone is convinced of the fact that industrial hygiene is indeed an important health function, and one which can best be handled through a governmental agency, such as a State or local department of health, in cooperation with industry and labor.

Prior to the passage of the Social Security Act, approved August 14, 1935, industrial hygiene work was being conducted by the Public Health Service, the Bureau of Mines, one or two universities, two or three State departments of health, and one or two State departments of labor. Although the research work conducted by the Federal Government and the universities was productive of considerable

knowledge concerning industrial health hazards, practically no application of these findings was in practice in the States. In all probability this limited work in industrial hygiene accounted for the few schools giving instruction in this phase of public health.

With the passage of the Social Security Act, when funds were made available for the development and extension of all branches of public health work in the various States, the Public Health Service, in cooperation with the Industrial Hygiene Committee of the State and Provincial Health Authorities, inaugurated a program designed for the purpose of establishing active industrial hygiene work in State and city health departments. In the short period elapsing since the passage of the act, the development of industrial hygiene activities has been rapid; and if our progress continues at the same pace it may in time attain an importance commensurate with its value to the national economy. At the present time there is an intense interest in the subject throughout the country, and there are now 23 industrial hygiene units in State and city health departments actively engaged in this work. Where less than 2 years ago the small sum of $30,000 or $40,000 was being budgeted for this activity in health departments, today nearly half a million dollars are being expended in this work. Where 2 years ago only 2 or 3 million gainfully employed persons were receiving some sort of industrial hygiene service, today approximately 35 million workers have an opportunity to be given some consideration with reference to industrial health hazards.

The progress indicated, however, has not reached its maximum. Simply compare the 15 mills per worker being expended on industrial hygiene activities in health departments to the amount of money spent per capita for other public health activities. Bear in mind the large industrial population which has been cited, the numerous problems still unsolved, the fact that it is estimated that we are spending 5 billions of dollars annually in compensation and other costs for industrial injuries and diseases, and it will readily be admitted that, phenomenal as our present growth has been, we are still only at the beginning.

However gratifying this interest and development have been, the satisfaction was not unalloyed; for, like all development, industrial hygiene expansion brought its own particular problems. In this case, the chief one was lack of trained personnel to evaluate, study, and control the inevitable health hazards arising from industrial pursuits.

The burden of this problem fell upon the Public Health Service, for two reasons—its long experience in industrial hygiene work and its administration of social security funds for this purpose. Realizing the urgency of the problem, and believing that some standard method of procedure should be set up for the guidance of industrial hygiene workers, the Public Health Service decided to give a short course of

instruction to personnel selected by the various State health departments for work in this field. Accordingly, a 4-week seminar was held during the summer of 1936, which consisted of lectures on industrial hygiene administration, health hazards, control methods, and similar subjects, as well as laboratory demonstrations of instruments used for investigative and control work.

However, where last year 36 persons were engaged in industrial hygiene work, today the number of persons active in this field in health departments exceeds 100, and we are again faced with the problem of giving some limited amount of training to the new personnel which have been employed within the last year. For this reason the Public Health Service is planning to conduct its second seminar during May and June.

There is no reason to feel that the demand for trained industrial hygiene workers will not continue for some time to come. It is now conceded that industrial hygiene is a profession in itself, an entity more or less separate and distinct from all other branches of public health. In this connection it may be well to quote the duties and qualifications established by the Committee on Industrial Hygiene of the State and Provincial Health Authorities for an industrial physician and engineer:

Under administrative direction to plan, correlate, and direct the activities of the Bureau of Occupational Diseases of the Department of Health; and to do related work as required.

For minimum qualifications this committee gave the following requirements:

Graduation in medicine from an institution of recognized standing, preferably with specialization in industrial hygiene and training in public health; a license to practice medicine; and 2 years' graduate work in industrial hygiene including ventilation, illumination, industrial toxicology, and methods of dust determinations; and 3 years' experience in public health work in relation to effect of industrial environment on health—at least one of which shall have been in directive capacity, or any equivalent combination of education and experience; advanced knowledge of the principles and practices of medicine and surgery, with particular reference to the control and elimination of industrial hazards and occupational diseases; especial ability to diagnose occupational diseases and to ascertain the specific causes of such diseases; ability to make comprehensive analyses of health conditions in industries; to draw adequate conclusions; and to prepare clear and informative reports for publication; initiative; tact; good judgment; and good address.

The duties and qualifications of the industrial hygienist or industrial hygiene engineer were given as follows:

To determine under direction the necessity of making specific studies of particular industrial conditions; to conduct surveys and supervise studies of factory conditions predisposing to occupational diseases; to prepare comprehensive reports of findings with recommendations for control of occupational disease hazards; to

supervise the work of field and laboratory workers; and to do related work as required.

The minimum qualifications call for graduation in chemical engineering, with 2 years' graduate work in industrial hygiene—to include ventilation, illumination, industrial toxicology, dust determinations; 3 years' experience in surveys and studies of industrial conditions for occupational disease control; or any equivalent combination of education and experience; familiarity with materials and processes used in industry; thorough knowledge of physical and chemical procedures for necessary determination of occupational disease hazards and of methods of control of these hazards; ability to recognize industrial processes and materials presenting potential occupational disease hazards; ability to enlist cooperation of plant executives, foremen, and laborers; initiative; tact; good judgment; and good address.

It goes without saying that a public health background is highly desirable for those undertaking industrial hygiene work.

It is apparent, therefore, that in view of the widespread interest in industrial hygiene, which in turn creates a demand for trained personnel, and because of the especial qualifications necessary to conduct industrial hygiene work successfully, adequate instruction should be available for those wishing to prepare themselves for a career in this field. In addition to the personnel now needed in State and city departments of health, there is also a demand for trained industrial hygienists in industry. It is evident that trained personnel will be in demand for many years to come.

It is not the purpose of this discussion to present in detail the type of instruction which should be given in our universities to industrial hygiene students. However, it is felt that at least 1 year's work should be devoted to the various topics coming within the scope of industrial hygiene. There should be sufficient laboratory work to acquaint the student with the various instruments and methods used in evaluating health hazards in industry, and, most important of all, practical training should be given to the students in the field. This could often be accomplished by detailing a student to a health department actively engaged in industrial hygiene.

Since any courses given by the Public Health Service would necessarily be of a limited nature, the logical solution is the institution of industrial hygiene courses in colleges and universities as a part of their regular or post-graduate curricula. Too much stress cannot be given to the necessity for such instruction, in order that industrial hygiene workers may deal with the problems concerning the health of workers in a manner that will produce substantial improvement and real progress in industrial life with the greatest efficiency and economy.

## EVALUATION OF THE INDUSTRIAL HYGIENE PROBLEMS OF A STATE

Only within the last few years has it been generally conceded that industrial hygiene is an important public health problem and as such should be the concern of State and local health departments. In view of the great interest now being shown in this subject and the progress being made in this activity throughout the United States, the need for a program which may be followed by those inaugurating industrial hygiene work becomes obvious.

The United States census for 1930 shows that, at that time, there were approximately 49 million persons gainfully employed in the United States. Of this number, manufacturing and mechanical and mineral industries accounted for nearly 15 million workers. If the term "industrial hygiene" means protection of the health of the worker, it is at once apparent that this is a major problem in public health.

More important than specific occupational diseases associated with the industrial environment is the fact that the incidence of other diseases, such as tuberculosis, pneumonia, and degenerative conditions, is greater among industrial workers than the general population. It has also been shown that the life expectancy of the industrial worker is less than that of the nonindustrial worker.

In recent years large industrial establishments have contributed much toward protecting the health of their workers. However, as nearly 90 percent of the plants in the United States employ less than 100 persons, many establishments are not prepared to cope effectively with the problems of industrial hygiene alone. It would seem, therefore, that the protection of the health of our workers is indeed an important health function and one which should be handled through a governmental agency, such as a State or local department of health, cooperating with the employers, workers, and other agencies concerned with this problem.

There has been a realization upon the part of those responsible for the administration of industrial hygiene that one of the first steps in the inauguration of a program is to obtain a comprehensive conception of the extent of the problem as it exists today. Such a conception, in the absence of definite industrial morbidity and mortality statistics, may be approximated by a preliminary survey of the industrial establishments of a locality. A procedure which may be followed by a State organization in initiating a program in this field is presented in detail in Public Health Bulletin No. 236,[1] issued by the Public Health Service.

[1] The Evaluation of the Industrial Hygiene Problems of a State. By J. J. Bloomfield and Mary F. Peyton. Public Health Bulletin No. 236. Government Printing Office, Washington, D. C., 1937.

This bulletin presents the results of a preliminary survey of industrial establishments recently made in the State of Maryland. It is felt that the procedure followed in Maryland could be applied in other States confronted with similar problems. Factual information on industrial welfare facilities in the establishments surveyed in Maryland is presented in this bulletin, and the number of persons exposed to the various materials in these industries which may be hazardous to health is also shown. Such data should prove very useful to that agency whose duty it will be to conduct a future program of prevention.

The various forms used in obtaining the information in industry are presented in appendix A to this Bulletin, which also contains the numerous forms used in tabulating the information, a manual for conducting plant surveys, and an explanation of the methods employed in analysis and presentation of the data. Appendix B contains a detailed list of equipment useful in conducting medical and engineering studies in industrial hygiene, while appendix C presents information with reference to the development of a library on industrial hygiene. This appendix also contains references to the literature arranged by subject.

## PROVISIONAL MORTALITY STATISTICS FOR 1936 [1]

According to provisional tabulations by the Bureau of the Census, there were 1,474,177 registered deaths in 1936 in the United States. This figure indicates an increase of 81,425 over the 1,392,752 deaths reported for 1935. It is a reflection of a general increase in mortality in most of the States. In 43 States and the District of Columbia there was an increase in the number of deaths in 1936 over that reported in 1935. Only the States of comparatively small population, Montana, New Hampshire, New Mexico, North Dakota, and South Dakota, showed decreases.

The increase of 81,425 deaths has advanced the death rate from 10.9 per 1,000 in 1935 to 11.5 in 1936. This 1936 death rate is the highest death rate recorded for the mortality registration area since 1929.

As may be expected from the increase in the number of deaths, practically every State experienced a comparable increase in the death rate. Greatest increases in the rate were in Mississippi, Missouri, Nevada, and Louisiana.

The highest death rates are for Arizona, 15.5; District of Columbia, 14.7; Nevada, 14.4; New Mexico, 13.8; and Maine, 13.3. The lowest death rates are for North Dakota, 8.0; South Dakota, 8.7; Oklahoma, 9.2; Arkansas, 9.2; and Utah, 9.9. Certain cautions must be exer-

[1] Vital Statistics—Special Reports, vol. 3, no. 22, p. 109, June 7, 1937. Bureau of the Census, Department of Commerce.

cised in interpreting differences in the crude death rate as indicating differences in health conditions. All areas do not have the same age, sex, and racial distributions of the population, and these factors, among others, influence the death rate. Full explanation of the 1936 mortality increase cannot be given until a detailed tabulation of the causes of death is completed. Cause of death tabulations are now being made but will not be completed until late in 1937.

All data for the years prior to 1936 are final tabulations. Figures for 1936 are based on hand counts of copies of death certificates received from State offices of vital statistics. For the States for which the shipment of copies to the Bureau of the Census is complete, these provisional figures will agree closely with the final tabulations. In other States it may be expected that a few delayed certificates will be added before final tabulations are completed. For Colorado, Illinois, Rhode Island, and New York State (excepting New York City which has made complete returns), transcripts for only 11 months, have been received; while for Arizona transcripts for only 10 months have been received. In such cases the 1936 provisional figure is based on the available 1936 data and 1935 data for the months for which 1936 data are lacking. The State total for Massachusetts is taken from the State tabulations.

*Number of deaths (exclusive of stillbirths) from all causes in each State, 1932–36*

| State | 1936 [1] | 1935 | 1934 | 1933 | 1932 |
|---|---|---|---|---|---|
| Registration States | 1,474,177 | 1,392,752 | 1,396,903 | 1,342,106 | 1,308,529 |
| Alabama | 30,417 | 28,585 | 29,361 | 27,104 | 27,680 |
| Arizona | 6,307 | 6,077 | 5,647 | 5,539 | 5,420 |
| Arkansas | 18,515 | 16,176 | 16,888 | 16,597 | 16,315 |
| California | 75,869 | 72,456 | 68,095 | 68,036 | 67,680 |
| Colorado | 13,520 | 13,134 | 12,497 | 11,961 | 12,599 |
| Connecticut | 17,859 | 17,659 | 17,438 | 17,444 | 16,962 |
| Delaware | 3,317 | 3,208 | 3,354 | 3,309 | 3,178 |
| District of Columbia | 9,093 | 8,483 | 8,274 | 7,872 | 7,937 |
| Florida | 20,960 | 20,046 | 20,357 | 18,759 | 18,288 |
| Georgia | 37,272 | 34,288 | 35,580 | 31,194 | 32,128 |
| Idaho | 4,918 | 4,531 | 4,377 | 4,056 | 3,942 |
| Illinois | 91,541 | 85,518 | 87,205 | 82,513 | 83,180 |
| Indiana | 42,471 | 39,515 | 40,650 | 38,009 | 38,756 |
| Iowa | 28,303 | 26,364 | 26,758 | 25,665 | 25,786 |
| Kansas | 21,673 | 20,334 | 19,951 | 19,613 | 19,512 |
| Kentucky | 31,716 | 29,370 | 30,148 | 28,520 | 29,059 |
| Louisiana | 25,946 | 23,711 | 23,254 | 23,112 | 23,311 |
| Maine | 11,334 | 11,024 | 10,937 | 11,102 | 10,719 |
| Maryland | 21,960 | 21,182 | 20,946 | 20,610 | 21,038 |
| Massachusetts | 51,435 | 50,237 | 50,580 | 50,811 | 49,446 |
| Michigan | 54,782 | 51,050 | 50,442 | 48,536 | 49,585 |
| Minnesota | 28,633 | 26,247 | 26,570 | 25,306 | 25,591 |
| Mississippi | 24,134 | 21,339 | 21,832 | 21,666 | 20,311 |
| Missouri | 48,770 | 43,201 | 46,639 | 42,521 | 43,738 |
| Montana | 6,256 | 6,291 | 5,617 | 5,212 | 5,294 |
| Nebraska | 13,758 | 13,181 | 13,372 | 12,924 | 12,922 |
| Nevada | 1,440 | 1,324 | 1,297 | 1,233 | 1,342 |
| New Hampshire | 6,439 | 6,532 | 6,397 | 6,491 | 6,329 |
| New Jersey | 44,959 | 43,284 | 43,819 | 43,497 | 42,914 |
| New Mexico | 5,807 | 6,272 | 6,115 | 5,824 | 5,968 |

[1] 1936 figures are provisional.

*Number of deaths (exclusive of stillbirths) from all causes in each State, 1932–36*—Continued

| State | 1936 | 1935 | 1934 | 1933 | 1932 |
|---|---|---|---|---|---|
| New York | 153,475 | 148,462 | 149,088 | 148,455 | 147,824 |
| North Carolina | 35,616 | 33,485 | 35,180 | 30,547 | 31,051 |
| North Dakota | 5,599 | 5,860 | 5,844 | 5,463 | 5,153 |
| Ohio | 80,947 | 77,356 | 77,101 | 73,054 | 76,286 |
| Oklahoma | 23,261 | 21,091 | 21,373 | 20,309 | 19,285 |
| Oregon | 12,372 | 11,430 | 10,540 | 10,450 | 10,277 |
| Pennsylvania | 112,727 | 108,555 | 109,601 | 106,109 | 109,204 |
| Rhode Island | 8,101 | 7,838 | 7,703 | 7,895 | 8,080 |
| South Carolina | 21,316 | 20,353 | 21,312 | 19,356 | 19,884 |
| South Dakota | 6,033 | 6,316 | 6,455 | 6,104 | 5,725 |
| Tennessee | 32,532 | 30,002 | 30,312 | 28,123 | 28,628 |
| Texas | 65,614 | 61,663 | 59,731 | 58,948 | [2] |
| Utah | 5,113 | 5,066 | 4,841 | 4,384 | 4,420 |
| Vermont | 4,961 | 4,777 | 4,878 | 4,621 | 4,753 |
| Virginia | 32,201 | 30,358 | 30,559 | 28,454 | 28,898 |
| Washington | 19,349 | 18,203 | 17,552 | 16,705 | 16,581 |
| West Virginia | 19,909 | 18,340 | 17,941 | 16,605 | 17,912 |
| Wisconsin | 33,242 | 30,694 | 30,399 | 29,513 | 30,321 |
| Wyoming | 2,405 | 2,284 | 2,096 | 1,975 | 2,057 |

[2] Not in registration area.

*Death rates (number of deaths per 1,000 estimated population) for each State, 1927–36*

| State | 1936[1] | 1935 | 1934 | 1933 | 1932 | 1931 | 1930 | 1929 | 1928 | 1927 |
|---|---|---|---|---|---|---|---|---|---|---|
| Registration, States | 11.5 | 10.9 | 11.0 | 10.7 | 10.9 | 11.1 | 11.3 | 11.9 | 12.1 | 11.4 |
| Alabama | 10.6 | 10.1 | 10.5 | 9.8 | 10.1 | 10.5 | 11.4 | 12.4 | 12.3 | 10.5 |
| Arizona | 15.5 | 15.0 | 13.9 | 13.4 | 12.9 | 14.3 | 15.4 | 15.9 | 15.4 | 14.4 |
| Arkansas | 9.2 | 8.1 | 8.5 | 8.5 | 8.5 | 9.4 | 10.2 | 10.5 | 10.9 | 10.0 |
| California | 12.5 | 12.1 | 11.5 | 11.6 | 11.6 | 11.7 | 11.6 | 11.9 | 12.5 | 12.1 |
| Colorado | 12.7 | 12.4 | 11.8 | 11.4 | 12.0 | 11.9 | 12.7 | 12.5 | 13.8 | 13.0 |
| Connecticut | 10.3 | 10.3 | 10.3 | 10.4 | 10.2 | 10.5 | 10.7 | 11.5 | 11.4 | 10.8 |
| Delaware | 12.8 | 12.5 | 13.3 | 13.2 | 12.9 | 13.6 | 13.6 | 13.2 | 13.6 | 12.8 |
| District of Columbia | 14.7 | 14.3 | 14.8 | 14.5 | 15.1 | 15.2 | 15.0 | 15.4 | 15.1 | 14.7 |
| Florida | 12.8 | 12.4 | 12.8 | 12.0 | 11.9 | 12.0 | 12.4 | 12.7 | 13.7 | 13.6 |
| Georgia | 12.2 | 11.3 | 11.8 | 10.4 | 10.8 | 11.2 | 12.1 | 12.2 | 12.4 | [2] |
| Idaho | 10.1 | 9.5 | 9.3 | 8.7 | 8.6 | 8.8 | 9.3 | 9.2 | 9.4 | 8.6 |
| Illinois | 11.7 | 10.9 | 11.2 | 10.6 | 10.8 | 11.2 | 10.9 | 11.6 | 12.1 | 11.3 |
| Indiana | 12.3 | 11.5 | 12.0 | 11.3 | 11.6 | 11.8 | 12.1 | 12.7 | 12.7 | 11.9 |
| Iowa | 11.1 | 10.4 | 10.6 | 10.2 | 10.3 | 10.3 | 10.6 | 10.4 | 10.3 | 10.0 |
| Kansas | 11.5 | 10.8 | 10.7 | 10.5 | 10.4 | 9.9 | 10.4 | 10.4 | 11.2 | 10.0 |
| Kentucky | 11.0 | 10.3 | 10.7 | 10.3 | 10.7 | 10.8 | 11.2 | 12.0 | 11.8 | 10.6 |
| Louisiana | 12.2 | 11.2 | 11.0 | 10.9 | 11.0 | 11.1 | 11.7 | 11.9 | 12.2 | 11.8 |
| Maine | 13.3 | 13.0 | 13.1 | 13.4 | 13.1 | 13.0 | 13.9 | 14.3 | 13.9 | 13.9 |
| Maryland | 13.1 | 12.7 | 12.6 | 12.4 | 12.7 | 13.2 | 13.2 | 13.5 | 13.6 | 13.3 |
| Massachusetts | 11.6 | 11.5 | 11.7 | 11.8 | 11.5 | 11.4 | 11.6 | 12.3 | 12.2 | 11.9 |
| Michigan | 11.5 | 10.8 | 10.8 | 10.3 | 10.4 | 10.3 | 10.7 | 11.8 | 11.8 | 11.2 |
| Minnesota | 10.9 | 10.0 | 10.1 | 9.7 | 9.9 | 9.8 | 10.0 | 10.1 | 10.3 | 9.8 |
| Mississippi | 12.0 | 10.6 | 10.9 | 10.8 | 10.1 | 11.0 | 12.0 | 13.0 | 13.1 | 11.9 |
| Missouri | 12.3 | 11.0 | 12.1 | 11.1 | 11.6 | 11.9 | 11.8 | 12.3 | 12.6 | 11.4 |
| Montana | 11.8 | 11.8 | 10.6 | 9.8 | 9.9 | 9.9 | 10.1 | 10.7 | 10.7 | 9.9 |
| Nebraska | 10.1 | 9.7 | 9.8 | 9.4 | 9.4 | 9.4 | 9.7 | 9.8 | 10.0 | 9.1 |
| Nevada | 14.4 | 13.4 | 13.2 | 12.8 | 14.1 | 14.5 | 12.7 | 13.3 | [2] | [2] |
| New Hampshire | 12.7 | 13.0 | 12.9 | 13.3 | 13.1 | 12.5 | 13.5 | 14.1 | 14.0 | 13.8 |
| New Jersey | 10.4 | 10.1 | 10.3 | 10.4 | 10.3 | 10.8 | 10.7 | 11.6 | 11.6 | 11.1 |
| New Mexico | 13.8 | 14.9 | 14.5 | 13.8 | 14.1 | 14.6 | 15.6 | 15.4 | [2] | [2] |
| New York | 11.9 | 11.5 | 11.6 | 11.6 | 11.6 | 11.7 | 11.7 | 12.4 | 12.4 | 11.7 |
| North Carolina | 10.3 | 9.8 | 10.4 | 9.2 | 9.5 | 10.2 | 11.2 | 11.8 | 11.8 | 10.9 |

[1] 1936 figures are provisional.
[2] Not in registration area.

*Death rates (number of deaths per 1,000 estimated population) for each State, 1927–36*—Continued

| State | 1936 | 1935 | 1934 | 1933 | 1932 | 1931 | 1930 | 1929 | 1928 | 1927 |
|---|---|---|---|---|---|---|---|---|---|---|
| North Dakota | 8.0 | 8.4 | 8.4 | 7.9 | 7.5 | 7.5 | 7.9 | 8.0 | 8.2 | 7.8 |
| Ohio | 12.1 | 11.5 | 11.5 | 10.9 | 11.4 | 11.3 | 11.5 | 12.4 | 12.3 | 11.5 |
| Oklahoma | 9.2 | 8.4 | 8.6 | 8.2 | 7.9 | 7.7 | 8.2 | 9.0 | 9.0 | (1) |
| Oregon | 12.2 | 11.3 | 10.6 | 10.6 | 10.5 | 10.6 | 11.0 | 11.3 | 11.3 | 11.2 |
| Pennsylvania | 11.1 | 10.8 | 11.0 | 10.7 | 11.1 | 11.5 | 11.6 | 12.3 | 12.6 | 11.9 |
| Rhode Island | 11.9 | 11.5 | 11.3 | 11.6 | 11.8 | 11.6 | 11.7 | 13.1 | 12.5 | 11.9 |
| South Carolina | 11.5 | 11.1 | 11.7 | 10.7 | 11.1 | 11.9 | 12.9 | 13.3 | 14.1 | 12.6 |
| South Dakota | 8.7 | 9.1 | 9.3 | 8.8 | 8.3 | 8.5 | 8.5 | (1) | (1) | (1) |
| Tennessee | 11.4 | 10.6 | 10.9 | 10.2 | 10.6 | 10.7 | 11.4 | 12.2 | 12.2 | 11.4 |
| Texas | 10.7 | 10.1 | 9.9 | 9.8 | (1) | (1) | (1) | (1) | (1) | (1) |
| Utah | 9.9 | 9.8 | 9.4 | 8.5 | 8.6 | 8.8 | 9.9 | 10.1 | 10.3 | 9.6 |
| Vermont | 13.1 | 12.7 | 13.0 | 12.5 | 12.9 | 12.3 | 13.0 | 14.7 | 13.6 | 13.6 |
| Virginia | 12.1 | 11.5 | 11.7 | 11.1 | 11.5 | 12.1 | 12.5 | 13.0 | 12.6 | 12.0 |
| Washington | 11.8 | 11.1 | 10.8 | 10.4 | 10.4 | 10.4 | 10.6 | 10.6 | 10.9 | 10.6 |
| West Virginia | 10.9 | 10.1 | 10.0 | 9.3 | 10.1 | 10.0 | 10.5 | 10.6 | 10.4 | 10.2 |
| Wisconsin | 11.4 | 10.6 | 10.5 | 10.1 | 10.4 | 10.3 | 10.4 | 10.7 | 11.0 | 10.4 |
| Wyoming | 10.3 | 9.8 | 9.1 | 8.6 | 9.0 | 8.9 | 9.2 | 9.0 | 9.8 | 9.1 |

[1] Not in registration area.

## ORGANIZATION OF ANTITUBERCULOSIS CAMPAIGN IN COLOMBIA

A law passed by the Colombian Congress and signed by the President on March 5, 1937, outlines the antituberculosis campaign and places it under the direction of the National Department of Health. The following are the principal provisions of the law:

The establishment of dispensaries in the capital of each department and other places as needed, new hospitals or sections of existing hospitals, where dispensaries are located, with separate rooms for incurables and patients under treatment, sanatoriums in localities with suitable climate and in proximity to centers of infection and preventoria to care for subnormal children likely to become infected and those lightly infected. The National Department of Health is authorized, after a study of the problem, to provide antituberculosis vaccination.

In order to further the campaign, the Government will issue an antituberculosis stamp and create antituberculosis associations such as those established in other countries; and for carrying on the campaign, a sum of not less than 300,000 pesos is authorized to be appropriated annually for the next 10 consecutive years.

Compulsory instruction in the prophylaxis of infectious diseases, especially tuberculosis, is to be required in the primary and secondary schools, and annual chest examination of teachers in all schools and colleges is made compulsory, as well as of children where there is an official medical service.

# DEATHS DURING WEEK ENDED MAY 29, 1937

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

| | Week ended May 29, 1937 | Corresponding week, 1936 |
|---|---|---|
| Data from 86 large cities in the United States: | | |
| Total deaths | 8,452 | 7,792 |
| Average for 3 prior years | 8,329 | |
| Total deaths, first 21 weeks of year | 202,987 | 198,834 |
| Deaths under 1 year of age | 529 | 524 |
| Average for 3 prior years | 577 | |
| Deaths under 1 year of age, first 21 weeks of year | 12,468 | 12,318 |
| Data from industrial insurance companies: | | |
| Policies in force | 69,764,846 | 68,309,902 |
| Number of death claims | 13,172 | 13,560 |
| Death claims per 1,000 policies in force, annual rate | 9.8 | 10.4 |
| Death claims per 1,000 policies, first 21 weeks of year, annual rate | 11.1 | 10.9 |

# 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 WEEKLY STATE REPORTS

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

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended June 5, 1937, and June 6, 1936*

| Division and State | Diphtheria | | Influenza | | Measles | | Meningococcus meningitis | |
|---|---|---|---|---|---|---|---|---|
| | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 |
| New England States: | | | | | | | | |
| Maine | ---- | 1 | ---- | ---- | 25 | 699 | 0 | 0 |
| New Hampshire | ---- | ---- | ---- | ---- | 157 | 30 | 0 | 0 |
| Vermont | ---- | ---- | ---- | ---- | 2 | 274 | 0 | 0 |
| Massachusetts | 3 | 7 | ---- | ---- | 647 | 1,362 | 3 | 8 |
| Rhode Island | ---- | 1 | ---- | ---- | 81 | 63 | 0 | 0 |
| Connecticut | 9 | 2 | ---- | 3 | 149 | 218 | 0 | 3 |
| Middle Atlantic States: | | | | | | | | |
| New York | 35 | 38 | [1] 6 | [1] 3 | 1,653 | 2,746 | 11 | 8 |
| New Jersey | 7 | 16 | 6 | 9 | 1,741 | 605 | 1 | 3 |
| Pennsylvania | 24 | 48 | ---- | ---- | 2,058 | 919 | 8 | 10 |
| East North Central States: | | | | | | | | |
| Ohio | 15 | 19 | 22 | 5 | 2,977 | 610 | 5 | 9 |
| Indiana | 7 | 11 | 16 | 16 | 935 | 9 | 1 | 2 |
| Illinois [2] | 32 | 51 | 15 | 57 | 454 | 32 | 2 | 8 |
| Michigan | 11 | 13 | 1 | ---- | 181 | 43 | 2 | 2 |
| Wisconsin | 2 | 3 | 23 | 10 | 98 | 241 | 0 | 0 |
| West North Central States: | | | | | | | | |
| Minnesota | 4 | 2 | 1 | ---- | 17 | 311 | 1 | 1 |
| Iowa | 2 | ---- | 2 | ---- | 7 | 3 | 0 | 1 |
| Missouri | 15 | 24 | 36 | 26 | 71 | 21 | 1 | 6 |
| North Dakota | 2 | ---- | 36 | ---- | 2 | 7 | 0 | 1 |
| South Dakota | ---- | 4 | ---- | ---- | 4 | 8 | 0 | 0 |
| Nebraska | ---- | 7 | ---- | ---- | 27 | 19 | 0 | 0 |
| Kansas | 3 | 8 | 3 | 1 | 19 | 10 | 1 | 1 |
| South Atlantic States: | | | | | | | | |
| Delaware | ---- | ---- | ---- | ---- | 37 | 23 | 1 | 0 |
| Maryland [3] [4] | 5 | 4 | 2 | ---- | 259 | 322 | 3 | 5 |
| District of Columbia | 4 | 10 | 1 | ---- | 110 | 100 | 4 | 2 |
| Virginia [4] | 8 | 8 | ---- | 38 | 379 | 72 | 12 | 13 |
| West Virginia | 7 | 14 | 11 | 18 | 59 | 46 | 3 | 6 |
| North Carolina [2] | 12 | 8 | 1 | 2 | 309 | 70 | 5 | 6 |
| South Carolina | 2 | 4 | 63 | 63 | 64 | 24 | 1 | 2 |
| Georgia [2] | ---- | 9 | ---- | ---- | ---- | ---- | 0 | 4 |
| Florida [2] | 10 | ---- | 3 | 2 | ---- | 14 | 1 | 3 |
| East South Central States: | | | | | | | | |
| Kentucky | 10 | 5 | 8 | 12 | 475 | ---- | 5 | 9 |
| Tennessee | 3 | 9 | 20 | 18 | 120 | 15 | 5 | 2 |
| Alabama [2] | 11 | 7 | 27 | 15 | 33 | 6 | 8 | 3 |
| Mississippi | 2 | 6 | ---- | ---- | ---- | ---- | 0 | 0 |

See footnotes at end of table.

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended June 5, 1937, and June 6, 1936*—Continued

| Division and State | Diphtheria | | Influenza | | Measles | | Meningococcus meningitis | |
|---|---|---|---|---|---|---|---|---|
| | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 |
| West South Central States: | | | | | | | | |
| Arkansas | 3 | 1 | 12 | 7 | 3 | 3 | 0 | 0 |
| Louisiana | 8 | 14 | 9 | 4 | 9 | 13 | 0 | 3 |
| Oklahoma | 6 | 1 | 6 | 43 | 48 | 15 | 1 | 3 |
| Texas [2] | 36 | 26 | 156 | 83 | 389 | 241 | 5 | 1 |
| Mountain States: | | | | | | | | |
| Montana [4] | | 1 | | 2 | 3 | 2 | 0 | 1 |
| Idaho [4] | | | 4 | | 25 | 11 | 2 | 0 |
| Wyoming [4] | | 1 | | | 5 | 4 | 0 | 1 |
| Colorado [4] | 1 | 4 | | | 23 | 31 | 1 | 1 |
| New Mexico | 1 | 7 | 1 | 6 | 52 | 47 | 0 | 2 |
| Arizona | 1 | | 21 | 22 | 33 | 86 | 0 | 0 |
| Utah [3] | | | | 6 | 80 | 50 | 0 | 0 |
| Pacific States: | | | | | | | | |
| Washington | 10 | | | 3 | 40 | 299 | 0 | 0 |
| Oregon [4] | | | 8 | 10 | 4 | 97 | 0 | 0 |
| California [4] | 24 | 37 | 50 | 538 | 305 | 1,603 | 3 | 3 |
| Total | 332 | 431 | 570 | 1,022 | 14,169 | 11,424 | 96 | 133 |
| First 22 weeks of year | 10,330 | 11,423 | 271,027 | 135,726 | 191,060 | 226,472 | 3,428 | 5,023 |

| Division and State | Poliomyelitis | | Scarlet fever | | Smallpox | | Typhoid fever | |
|---|---|---|---|---|---|---|---|---|
| | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 |
| New England States: | | | | | | | | |
| Maine | 0 | 0 | 22 | 8 | 0 | 0 | 2 | 3 |
| New Hampshire | 0 | 0 | 32 | 11 | 0 | 0 | 0 | 0 |
| Vermont | 0 | 0 | 6 | 5 | 0 | 0 | 0 | 0 |
| Massachusetts | 1 | 4 | 217 | 235 | 0 | 0 | 1 | 2 |
| Rhode Island | 0 | 0 | 45 | 21 | 0 | 0 | 1 | 0 |
| Connecticut | 0 | 0 | 107 | 42 | 0 | 0 | 2 | 1 |
| Middle Atlantic States: | | | | | | | | |
| New York | 4 | 3 | 566 | 655 | 0 | 0 | 8 | 2 |
| New Jersey | 0 | 0 | 131 | 248 | 0 | 0 | 2 | 3 |
| Pennsylvania | 0 | 2 | 434 | 436 | 0 | 0 | 6 | 7 |
| East North Central States: | | | | | | | | |
| Ohio | 2 | 1 | 508 | 186 | 2 | 0 | 3 | 10 |
| Indiana | 0 | 0 | 137 | 73 | 30 | 7 | 1 | 6 |
| Illinois [3] | 0 | 5 | 401 | 453 | 22 | 12 | 8 | 6 |
| Michigan | 1 | 1 | 418 | 205 | 2 | 0 | 5 | 0 |
| Wisconsin | 0 | 1 | 207 | 301 | 2 | 16 | 3 | 0 |
| West North Central States: | | | | | | | | |
| Minnesota | 0 | 0 | 117 | 221 | 26 | 6 | 0 | 0 |
| Iowa | 0 | 0 | 107 | 121 | 22 | 15 | 0 | 0 |
| Missouri | 1 | 0 | 196 | 104 | 30 | 3 | 9 | 2 |
| North Dakota | 0 | 0 | 23 | 38 | 21 | 6 | 0 | 1 |
| South Dakota | 0 | 0 | 24 | 41 | 2 | 8 | 0 | 0 |
| Nebraska | 2 | 0 | 54 | 47 | 4 | 27 | 0 | 0 |
| Kansas | 0 | 1 | 87 | 155 | 13 | 20 | 3 | 2 |
| South Atlantic States: | | | | | | | | |
| Delaware | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 |
| Maryland [3 4] | 0 | 0 | 20 | 49 | 0 | 0 | 7 | 2 |
| District of Columbia | 0 | 0 | 3 | 12 | 0 | 0 | 2 | 0 |
| Virginia [4] | 0 | 0 | 10 | 26 | 0 | 0 | 7 | 6 |
| West Virginia | 0 | 0 | 56 | 31 | 1 | 0 | 3 | 4 |
| North Carolina [3] | 0 | 1 | 20 | 20 | 1 | 0 | 3 | 5 |
| South Carolina | 1 | 0 | 5 | 3 | 0 | 0 | 12 | 5 |
| Georgia [3] | 1 | 0 | 6 | 17 | 0 | 3 | 6 | 11 |
| Florida [3] | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 4 |

See footnotes at end of table.

*Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended June 5, 1937, and June 6, 1936*—Continued

| Division and State | Poliomyelitis | | Scarlet fever | | Smallpox | | Typhoid fever | |
|---|---|---|---|---|---|---|---|---|
| | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 | Week ended June 5, 1937 | Week ended June 6, 1936 |
| East South Central States: | | | | | | | | |
| Kentucky | 2 | 0 | 35 | 21 | 0 | 0 | 8 | 8 |
| Tennessee | 0 | 0 | 15 | 17 | 0 | 0 | 4 | 6 |
| Alabama [3] | 0 | 0 | 4 | 2 | 0 | 0 | 2 | 5 |
| Mississippi | 9 | 0 | 1 | 8 | 0 | 1 | 2 | 7 |
| West South Central States: | | | | | | | | |
| Arkansas | 1 | 0 | 6 | 2 | 0 | 0 | 10 | 1 |
| Louisiana | 1 | 0 | 15 | 3 | 0 | 0 | 16 | 16 |
| Oklahoma | 0 | 0 | 19 | ------- | 8 | 1 | 7 | 2 |
| Texas [3] | [5]3 | 1 | 84 | 31 | 5 | 1 | 24 | 6 |
| Mountain States: | | | | | | | | |
| Montana [4] | 0 | 0 | 12 | 59 | 15 | 8 | 0 | 3 |
| Idaho [4] | 0 | 0 | 10 | 11 | 1 | 3 | 3 | 0 |
| Wyoming [4] | 0 | 0 | 10 | 39 | 3 | 7 | 2 | 0 |
| Colorado [4] | 0 | 2 | 30 | 73 | 3 | 1 | 0 | 0 |
| New Mexico | 0 | 1 | 14 | 59 | 0 | 0 | 3 | 10 |
| Arizona | 0 | 0 | 13 | 14 | 0 | 0 | 0 | 1 |
| Utah [3] | 0 | 0 | 8 | 26 | 0 | 19 | 0 | 0 |
| Pacific States: | | | | | | | | |
| Washington | 0 | 0 | 29 | 54 | 1 | 4 | 1 | 1 |
| Oregon [4] | 1 | 0 | 29 | 30 | 20 | 0 | 4 | 10 |
| California [4] | 6 | 3 | 175 | 296 | 8 | 3 | 11 | 14 |
| Total | 36 | 26 | 4,470 | 4,514 | 242 | 171 | 192 | 172 |
| First 22 weeks of year | 468 | 382 | 145,153 | 158,689 | 6,750 | 4,863 | 2,606 | 2,567 |

[1] New York City only.
[2] Typhus fever, week ended June 5, 1937, 38 cases, as follows: Illinois, 1; North Carolina, 1; Georgia, 14; Florida, 2; Alabama, 10; Texas, 10.
[3] Week ended earlier than Saturday.
[4] Rocky Mountain spotted fever, week ended June 5, 1937, 29 cases, as follows: Maryland, 2; Virginia, 1; Montana, 2; Idaho, 1; Wyoming, 14; Colorado, 1; Oregon, 7; California, 1.
[5] Under date of June 11 the State health officer of Texas, correcting previous reports, states that investigation of reported cases of poliomyelitis shows the occurrence of only 25 cases in Texas from Jan. 1 to May 29, 1937, instead of a total of 47 cases as shown by the weekly reports.

## SUMMARY OF MONTHLY REPORTS FROM STATES

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

| State | Meningococcus meningitis | Diphtheria | Influenza | Malaria | Measles | Pellagra | Poliomyelitis | Scarlet fever | Smallpox | Typhoid fever |
|---|---|---|---|---|---|---|---|---|---|---|
| *April 1937* | | | | | | | | | | |
| Massachusetts | 29 | 11 | ------- | ------- | 2,984 | 1 | 0 | 1,175 | 0 | 4 |
| Tennessee | 26 | 34 | 475 | 32 | 131 | 27 | 2 | 117 | 0 | 14 |
| *May 1937* | | | | | | | | | | |
| Arkansas | 1 | 13 | 168 | 191 | 31 | 66 | 2 | 50 | 13 | 6 |
| Connecticut | ------- | 15 | 5 | ------- | 1,088 | ------- | 0 | 633 | 0 | 1 |
| Delaware | ------- | ------- | ------- | ------- | 123 | ------- | 0 | 17 | 0 | 3 |
| Iowa | ------- | 16 | 11 | ------- | 21 | ------- | 0 | 695 | 128 | 2 |
| North Carolina | 22 | 49 | 48 | 1 | 1,104 | 65 | 3 | 130 | 0 | 14 |

## *Summary of monthly reports from States*—Continued

*April 1937*

| | Cases |
|---|---|
| Massachusetts: | |
| Anthrax | 2 |
| Chickenpox | 1,493 |
| German measles | 157 |
| Hookworm disease | 2 |
| Lead poisoning | 3 |
| Mumps | 785 |
| Ophthalmia neonatorum | 121 |
| Paratyphoid fever | 34 |
| Rabies in animals | 20 |
| Septic sore throat | 22 |
| Tetanus | 3 |
| Trachoma | 2 |
| Trichinosis | 2 |
| Undulant fever | 3 |
| Whooping cough | 1,421 |
| Tennessee: | |
| Chickenpox | 143 |
| Dysentery (amoebic) | 1 |
| Dysentery (bacillary) | 5 |
| German measles | 61 |
| Impetigo contagiosa | 3 |
| Mumps | 139 |
| Ophthalmia neonatorum | 2 |
| Puerperal septicemia | 1 |
| Septic sore throat | 6 |
| Tetanus | 2 |
| Tularaemia | 3 |
| Undulant fever | 2 |
| Vincent's infection | 1 |
| Whooping cough | 247 |

*May 1937*

| | Cases |
|---|---|
| Chickenpox: | |
| Arkansas | 76 |
| Connecticut | 917 |
| Delaware | 73 |
| Iowa | 173 |
| North Carolina | 418 |
| Conjunctivitis, infectious: | |
| Connecticut | 7 |
| Dysentery: | |
| Arkansas (amoebic) | 13 |
| Arkansas (bacillary) | 1 |
| Connecticut (bacillary) | 1 |
| Iowa (bacillary) | 1 |
| Encephalitis, epidemic or lethargic: | |
| Arkansas | 2 |
| German measles: | |
| Connecticut | 68 |
| Delaware | 12 |
| Iowa | 10 |
| North Carolina | 690 |
| Hookworm disease: | |
| Arkansas | 2 |
| Mumps: | |
| Arkansas | 47 |
| Connecticut | 489 |
| Delaware | 48 |
| Iowa | 74 |
| Ophthalmia neonatorum: | |
| Arkansas | 1 |
| Connecticut | 1 |
| North Carolina | 1 |

*May 1937*—Continued

| | Cases |
|---|---|
| Paratyphoid fever: | |
| Connecticut | 4 |
| North Carolina | 1 |
| Rabies in animals: | |
| Connecticut | 8 |
| Delaware | 5 |
| Septic sore throat: | |
| Arkansas | 90 |
| Connecticut | 17 |
| Iowa | 1 |
| North Carolina | 8 |
| Trichinosis: | |
| Connecticut | 1 |
| Tularemia: | |
| Arkansas | 3 |
| North Carolina | 1 |
| Typhus fever: | |
| North Carolina | 1 |
| Undulant fever: | |
| Arkansas | 5 |
| Connecticut | 9 |
| Iowa | 17 |
| North Carolina | 2 |
| Whooping cough: | |
| Arkansas | 66 |
| Connecticut | 198 |
| Delaware | 43 |
| Iowa | 153 |
| North Carolina | 705 |

## WEEKLY REPORTS FROM CITIES

### *City reports for week ended May 29, 1937*

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table. Weekly reports are received from about 700 cities, from which the data are tabulated and filed for reference.

| State and city | Diphtheria cases | Influenza | | Measles cases | Pneumonia deaths | Scarlet fever cases | Smallpox cases | Tuberculosis deaths | Typhoid fever cases | Whooping cough cases | Deaths, all causes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cases | Deaths | | | | | | | | |
| Data for 90 cities: | | | | | | | | | | | |
| 5-year average | 195 | 109 | 36 | 6,337 | 576 | 2,050 | 17 | 423 | 35 | 1,401 | ----- |
| Current week [1] | 137 | 56 | 33 | 4,217 | 547 | 2,343 | 25 | 403 | 21 | 1,390 | ----- |
| Maine: | | | | | | | | | | | |
| Portland | 0 | 1 | 0 | 1 | 5 | 2 | 0 | 0 | 0 | 0 | 22 |
| New Hampshire: | | | | | | | | | | | |
| Concord | 0 | ----- | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 6 |
| Manchester | 0 | ----- | 0 | 1 | 5 | 3 | 0 | 0 | 0 | 0 | ----- |
| Nashua | 0 | ----- | ----- | 0 | ----- | 1 | 0 | ----- | 0 | 1 | 10 |
| Vermont: | | | | | | | | | | | |
| Barre | 0 | ----- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Burlington | 0 | ----- | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 5 |
| Rutland | 0 | ----- | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| Massachusetts: | | | | | | | | | | | |
| Boston | 6 | ----- | 1 | 68 | 11 | 53 | 0 | 9 | 0 | 58 | 235 |
| Fall River | 0 | ----- | 0 | 69 | 0 | 1 | 0 | 0 | 0 | 0 | 29 |
| Springfield | 0 | ----- | 0 | 2 | 1 | 7 | 0 | 3 | 0 | 10 | 34 |
| Worcester | 0 | ----- | 0 | 18 | 3 | 3 | 0 | 1 | 0 | 20 | 48 |
| Rhode Island: | | | | | | | | | | | |
| Pawtucket | 0 | ----- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 |
| Providence | 0 | ----- | 1 | 57 | 4 | 49 | 0 | 1 | 0 | 34 | 46 |
| Connecticut: | | | | | | | | | | | |
| Bridgeport | 0 | ----- | 0 | 1 | 0 | 71 | 0 | 1 | 0 | 1 | 29 |
| Hartford | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| New Haven | 0 | ----- | 0 | 4 | 3 | 4 | 0 | 0 | 0 | 1 | 47 |
| New York: | | | | | | | | | | | |
| Buffalo | 0 | ----- | 0 | 97 | 12 | 16 | 0 | 6 | 0 | 17 | 120 |
| New York | 27 | 7 | 5 | 798 | 115 | 326 | 0 | 79 | 3 | 78 | 1,578 |
| Rochester | 0 | ----- | 0 | 4 | 2 | 6 | 0 | 1 | 0 | 9 | 60 |
| Syracuse | 0 | ----- | 0 | 27 | 4 | 29 | 0 | 1 | 0 | 18 | 57 |

[1] Figures for Hartford, Fort Wayne, and Boise estimated; reports not received.

*City reports for week ended May 29, 1937*—Continued

| State and city | Diphtheria cases | Influenza | | Measles cases | Pneumonia deaths | Scarlet fever cases | Smallpox cases | Tuberculosis deaths | Typhoid fever cases | Whooping cough cases | Deaths, all causes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cases | Deaths | | | | | | | | |
| New Jersey: | | | | | | | | | | | |
| Camden | 0 | 2 | 1 | 27 | 0 | 8 | 0 | 1 | 0 | 0 | 26 |
| Newark | 0 | ------ | 0 | 75 | 13 | 16 | 0 | 9 | 0 | 9 | 107 |
| Trenton | 0 | ------ | 0 | 13 | 1 | 19 | 0 | 3 | 0 | 3 | 37 |
| Pennsylvania: | | | | | | | | | | | |
| Philadelphia | 4 | ------ | 0 | 40 | 32 | 243 | 0 | 18 | 1 | 33 | 501 |
| Pittsburgh | 3 | ------ | 4 | 252 | 15 | 46 | 0 | 10 | 0 | 37 | 181 |
| Reading | 0 | ------ | 0 | 219 | 2 | 15 | 0 | 1 | 0 | 7 | 28 |
| Scranton | 1 | ------ | -------- | 0 | ------- | 16 | 0 | ------- | 0 | 1 | -------- |
| Ohio: | | | | | | | | | | | |
| Cincinnati | 3 | 1 | 1 | 116 | 7 | 25 | 0 | 6 | 0 | 25 | 135 |
| Cleveland | 2 | 4 | 1 | 597 | 24 | 96 | 0 | 20 | 2 | 45 | 208 |
| Columbus | 1 | 1 | 1 | 17 | 8 | 7 | 0 | 5 | 0 | 42 | 105 |
| Toledo | 1 | ------ | 0 | 439 | 5 | 7 | 0 | 5 | 0 | 48 | 70 |
| Indiana: | | | | | | | | | | | |
| Anderson | 0 | ------ | 0 | 30 | 4 | 9 | 1 | 0 | 0 | 2 | 8 |
| Fort Wayne | ------- | ------ | ------- | ------- | ------- | ------- | ------- | ------- | ------- | ------- | ------- |
| Indianapolis | 1 | ------ | 2 | 387 | 10 | 19 | 0 | 0 | 0 | 26 | 125 |
| South Bend | 0 | ------ | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 15 |
| Terre Haute | 1 | ------ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Illinois: | | | | | | | | | | | |
| Alton | 0 | ------ | 0 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 5 |
| Chicago | 19 | 3 | 1 | 224 | 31 | 272 | 0 | 35 | 0 | 60 | 691 |
| Elgin | 0 | ------ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 14 |
| Moline | 0 | ------ | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 6 | 7 |
| Springfield | 0 | 1 | 0 | 9 | 3 | 5 | 0 | 2 | 0 | 3 | 23 |
| Michigan: | | | | | | | | | | | |
| Detroit | 10 | 1 | 1 | 81 | 24 | 366 | 0 | 18 | 3 | 56 | 266 |
| Flint | 1 | ------ | 0 | 0 | 5 | 26 | 0 | 0 | 0 | 4 | 26 |
| Grand Rapids | 1 | ------ | 2 | 48 | 2 | 11 | 0 | 1 | 0 | 26 | 36 |
| Wisconsin: | | | | | | | | | | | |
| Kenosha | 0 | ------ | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 6 |
| Madison | 0 | ------ | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 5 | 16 |
| Milwaukee | 0 | ------ | 0 | 15 | 4 | 87 | 0 | 7 | 0 | 29 | 104 |
| Racine | 0 | ------ | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 1 | 12 |
| Superior | 0 | ------ | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 4 | 12 |
| Minnesota: | | | | | | | | | | | |
| Duluth | 0 | ------ | 0 | 1 | 0 | 19 | 0 | 0 | 0 | 1 | 24 |
| Minneapolis | 0 | ------ | 2 | 4 | 4 | 26 | 0 | 2 | 0 | 29 | 98 |
| St. Paul | 0 | ------ | 0 | 0 | 5 | 4 | 0 | 2 | 0 | 78 | 70 |
| Iowa: | | | | | | | | | | | |
| Cedar Rapids | 0 | ------ | -------- | 1 | ------- | 6 | 0 | ------- | 0 | 1 | -------- |
| Davenport | 0 | ------ | -------- | 0 | ------- | 3 | 0 | ------- | 0 | 0 | -------- |
| Des Moines | 0 | ------ | -------- | 0 | ------- | 21 | 0 | ------- | 0 | 2 | 36 |
| Sioux City | 0 | ------ | -------- | 0 | ------- | 8 | 2 | ------- | 0 | 1 | -------- |
| Waterloo | 4 | ------ | -------- | 0 | ------- | 41 | 1 | ------- | 0 | 6 | -------- |
| Missouri: | | | | | | | | | | | |
| Kansas City | 1 | ------ | 0 | 1 | 10 | 41 | 1 | 9 | 0 | 13 | 97 |
| St. Joseph | 1 | ------ | 0 | 0 | 4 | 7 | [1]5 | 1 | 0 | 0 | 36 |
| St. Louis | 5 | ------ | 0 | 39 | 5 | 150 | 1 | 18 | 0 | 49 | 210 |
| North Dakota: | | | | | | | | | | | |
| Fargo | 0 | ------ | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 1 | 7 |
| Grand Forks | 0 | ------ | -------- | 0 | ------- | 0 | 0 | ------- | 0 | 8 | -------- |
| Minot | 0 | ------ | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 |
| South Dakota: | | | | | | | | | | | |
| Aberdeen | 0 | ------ | -------- | 0 | ------- | 0 | 0 | ------- | 0 | 0 | -------- |
| Sioux Falls | 0 | ------ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Nebraska: | | | | | | | | | | | |
| Omaha | 1 | ------ | 0 | 2 | 4 | 2 | 0 | 2 | 0 | 9 | 46 |
| Kansas: | | | | | | | | | | | |
| Lawrence | 0 | ------ | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 4 |
| Topeka | 0 | ------ | 1 | 0 | 3 | 1 | 0 | 0 | 0 | 7 | 28 |
| Wichita | 0 | ------ | 0 | 22 | 0 | 2 | 0 | 0 | 0 | 9 | 18 |
| Delaware: | | | | | | | | | | | |
| Wilmington | 0 | ------ | 0 | 2 | 3 | 0 | 0 | 2 | 1 | 1 | 33 |
| Maryland: | | | | | | | | | | | |
| Baltimore | 2 | 2 | 0 | 204 | 16 | 23 | 0 | 10 | 0 | 59 | 232 |
| Cumberland | 0 | ------ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 9 |
| Frederick | 0 | ------ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| District of Columbia: | | | | | | | | | | | |
| Washington | 5 | 1 | 1 | 146 | 12 | 12 | 0 | 15 | 0 | 15 | 143 |

[1] 1 death from smallpox was reported at St. Joseph, Mo.

*City reports for week ended May 29, 1937*—Continued

| State and city | Diphtheria cases | Influenza | | Measles cases | Pneumonia deaths | Scarlet fever cases | Smallpox cases | Tuberculosis deaths | Typhoid fever cases | Whooping cough cases | Deaths, all causes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cases | Deaths | | | | | | | | |
| Virginia: | | | | | | | | | | | |
| Lynchburg | 4 | ---- | 0 | 9 | 3 | 0 | 0 | 1 | 0 | 8 | 17 |
| Norfolk | 0 | ---- | 0 | 7 | 1 | 1 | 0 | 2 | 0 | 0 | 32 |
| Richmond | 0 | ---- | 0 | 1 | 3 | 2 | 0 | 3 | 0 | 0 | 62 |
| Roanoke | 0 | ---- | 0 | 107 | 2 | 0 | 0 | 0 | 0 | 5 | 13 |
| West Virginia: | | | | | | | | | | | |
| Charleston | 0 | ---- | 0 | 0 | 4 | 2 | 0 | 2 | 0 | 0 | 24 |
| Huntington | 1 | ---- | ---- | 0 | ---- | 2 | 0 | ---- | 0 | 0 | ---- |
| Wheeling | 0 | ---- | 0 | 2 | 3 | 2 | 0 | 1 | 0 | 1 | 23 |
| North Carolina: | | | | | | | | | | | |
| Gastonia | 0 | ---- | ---- | 0 | ---- | 0 | 0 | ---- | 0 | 4 | ---- |
| Raleigh | 1 | ---- | 0 | 5 | 2 | 0 | 0 | 1 | 0 | 0 | 22 |
| Wilmington | 0 | ---- | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 11 |
| Winston-Salem | 0 | ---- | 0 | 0 | 0 | 5 | 0 | 1 | 0 | 7 | 12 |
| South Carolina: | | | | | | | | | | | |
| Charleston | 0 | 4 | 0 | 0 | 4 | 1 | 0 | 1 | 0 | 0 | 25 |
| Florence | 0 | ---- | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 21 |
| Greenville | 0 | ---- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Georgia: | | | | | | | | | | | |
| Atlanta | 1 | 2 | 1 | 0 | 7 | 4 | 0 | 2 | 0 | 19 | 81 |
| Brunswick | 0 | ---- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Savannah | 0 | 4 | 0 | 1 | 4 | 0 | 0 | 2 | 1 | 12 | 31 |
| Florida: | | | | | | | | | | | |
| Miami | 0 | 1 | 0 | 1 | 0 | 3 | 0 | 6 | 0 | 1 | 34 |
| Tampa | 1 | ---- | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 9 | 30 |
| Kentucky: | | | | | | | | | | | |
| Ashland | 1 | ---- | 1 | 162 | 1 | 0 | 0 | 0 | 0 | 1 | 24 |
| Covington | 0 | ---- | 0 | 13 | 1 | 1 | 0 | 1 | 0 | 4 | 14 |
| Lexington | 0 | ---- | 0 | 18 | 2 | 2 | 0 | 2 | 0 | 15 | ---- |
| Louisville | 0 | ---- | 0 | 57 | 4 | 27 | 0 | 2 | 0 | 85 | 62 |
| Tennessee: | | | | | | | | | | | |
| Knoxville | 0 | ---- | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 21 |
| Memphis | 1 | ---- | 0 | 57 | 4 | 2 | 0 | 7 | 0 | 59 | 72 |
| Nashville | 0 | ---- | 1 | 11 | 2 | 0 | 0 | 2 | 0 | 9 | 51 |
| Alabama: | | | | | | | | | | | |
| Birmingham | 2 | 2 | 1 | 23 | 5 | 1 | 0 | 4 | 2 | 5 | 74 |
| Mobile | 0 | ---- | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 26 |
| Montgomery | 1 | 1 | ---- | 0 | ---- | 0 | 0 | ---- | 0 | 2 | ---- |
| Arkansas: | | | | | | | | | | | |
| Fort Smith | 0 | ---- | ---- | 1 | ---- | 0 | 0 | ---- | 0 | 0 | ---- |
| Little Rock | 0 | ---- | 1 | 0 | 0 | 4 | 0 | 6 | 0 | 0 | ---- |
| Louisiana: | | | | | | | | | | | |
| Lake Charles | 0 | ---- | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 7 |
| New Orleans | 6 | ---- | 0 | 5 | 18 | 9 | 0 | 12 | 3 | 4 | 156 |
| Shreveport | 0 | ---- | 0 | 0 | 7 | 1 | 0 | 3 | 1 | 0 | 41 |
| Oklahoma: | | | | | | | | | | | |
| Muskogee | 0 | ---- | ---- | 2 | ---- | 0 | 0 | ---- | 0 | 0 | ---- |
| Oklahoma City | 1 | ---- | 0 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 35 |
| Tulsa | 0 | ---- | ---- | 10 | ---- | 2 | 0 | ---- | 0 | 14 | ---- |
| Texas: | | | | | | | | | | | |
| Dallas | 3 | 2 | 2 | 89 | 2 | 17 | 0 | 1 | 0 | 24 | 57 |
| Fort Worth | 0 | ---- | 0 | 12 | 0 | 3 | 0 | 6 | 1 | 22 | 34 |
| Galveston | 2 | ---- | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 21 |
| Houston | 4 | ---- | 0 | 0 | 8 | 0 | 0 | 8 | 0 | 0 | 73 |
| San Antonio | 0 | ---- | 1 | 4 | 5 | 1 | 0 | 4 | 0 | 2 | 74 |
| Montana: | | | | | | | | | | | |
| Billings | 0 | ---- | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Great Falls | 0 | ---- | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 9 | 12 |
| Helena | 0 | ---- | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 3 | 3 |
| Missoula | 0 | ---- | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 11 |
| Idaho: | | | | | | | | | | | |
| Boise | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| Colorado: | | | | | | | | | | | |
| Colorado Springs | 1 | ---- | 0 | 1 | 1 | 2 | 0 | 3 | 0 | 1 | 12 |
| Denver | 1 | ---- | 0 | 10 | 5 | 22 | 4 | 4 | 0 | 29 | 78 |
| Pueblo | 0 | ---- | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 5 |
| New Mexico: | | | | | | | | | | | |
| Albuquerque | 0 | ---- | 0 | 11 | 1 | 1 | 0 | 6 | 0 | 0 | 10 |
| Utah: | | | | | | | | | | | |
| Salt Lake City | 0 | ---- | 0 | 38 | 0 | 10 | 0 | 1 | 0 | 10 | 44 |

*City reports for week ended May 29, 1937*—Continued

| State and city | Diphtheria cases | Influenza | | Measles cases | Pneumonia deaths | Scarlet fever cases | Smallpox cases | Tuberculosis deaths | Typhoid fever cases | Whooping cough cases | Deaths, all causes |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Cases | Deaths | | | | | | | | |
| Washington: | | | | | | | | | | | |
| Seattle | 3 | | 0 | 5 | 2 | 6 | 0 | 9 | 0 | 39 | 87 |
| Spokane | 0 | | 0 | 25 | 4 | 14 | 3 | 0 | 0 | 13 | 28 |
| Tacoma | 0 | | 0 | 0 | 2 | 6 | 0 | 0 | 0 | 1 | 32 |
| Oregon: | | | | | | | | | | | |
| Portland | 0 | | 2 | 2 | 9 | 18 | 0 | 2 | 0 | 2 | 86 |
| Salem | 0 | | | 0 | | 2 | 0 | | 1 | 0 | |
| California: | | | | | | | | | | | |
| Los Angeles | 11 | 15 | 1 | 34 | 15 | 45 | 1 | 22 | 0 | 136 | 263 |
| Sacramento | 0 | | 0 | 27 | 1 | 0 | 0 | 0 | 0 | 12 | 24 |
| San Francisco | 2 | 2 | 0 | 17 | 8 | 22 | 0 | 4 | 0 | 33 | 139 |

| State and city | Meningococcus meningitis | | Poliomyelitis cases | State and city | Meningococcus meningitis | | Poliomyelitis cases |
|---|---|---|---|---|---|---|---|
| | Cases | Deaths | | | Cases | Deaths | |
| Massachusetts: | | | | West Virginia: | | | |
| Boston | 2 | 0 | 0 | Huntington | 1 | 0 | 0 |
| New York: | | | | Wheeling | 0 | 1 | 0 |
| Buffalo | 1 | 0 | 0 | North Carolina: | | | |
| New York | 2 | 1 | 0 | Wilmington | 1 | 0 | 0 |
| New Jersey: | | | | Alabama: | | | |
| Newark | 1 | 0 | 0 | Birmingham | 8 | 1 | 0 |
| Pennsylvania: | | | | Mobile | 0 | 1 | 0 |
| Philadelphia | 2 | 1 | 0 | Louisiana: | | | |
| Pittsburgh | 0 | 1 | 0 | New Orleans | 1 | 0 | 0 |
| Ohio: | | | | Texas: | | | |
| Cincinnati | 3 | 0 | 0 | Fort Worth | 0 | 0 | 1 |
| Columbus | 0 | 0 | 1 | Houston | 4 | 0 | 0 |
| Toledo | 1 | 1 | 0 | San Antonio | 0 | 0 | 1 |
| Illinois: | | | | Montana: | | | |
| Chicago | 1 | 0 | 0 | Missoula | 0 | 1 | 0 |
| Michigan: | | | | Colorado: | | | |
| Detroit | 2 | 1 | 0 | Denver | 1 | 1 | 0 |
| Missouri: | | | | California: | | | |
| St. Joseph | 0 | 1 | 0 | Los Angeles | 2 | 3 | 3 |
| St. Louis | 0 | 0 | 1 | Sacramento | 1 | 0 | 0 |
| Maryland: | | | | | | | |
| Baltimore | 4 | 0 | 0 | | | | |

*Encephalitis, epidemic or lethargic.*—Cases: New York, 4; Philadelphia, 1.
*Pellagra.*—Cases: Boston, 1; Winston-Salem, 2; Charleston, S. C., 1; Savannah, 4; Knoxville, 1; Los Angeles, 1.
*Smallpox.*—Deaths: St. Joseph, 1.
*Typhus fever.*—Cases: Wilmington, N. C., 1; Atlanta, 1; Savannah, 1; Birmingham, 1; Fort Worth, 1; Houston, 2; Los Angeles, 1.

# FOREIGN AND INSULAR

## CANADA

*Provinces—Communicable diseases—2 weeks ended May 22, 1937.*—During the 2 weeks ended May 22, 1937, cases of certain communicable diseases were reported by the Department of Pensions and National Health of Canada, as follows:

| Disease | Prince Edward Island | Nova Scotia | New Brunswick | Quebec | Ontario | Manitoba | Saskatchewan | Alberta | British Columbia | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Cerebrospinal meningitis | 1 | | | 4 | 3 | | | | | 8 |
| Chicken pox | | 2 | 2 | 250 | 596 | 17 | 65 | 24 | 114 | 1,070 |
| Diphtheria | | 1 | 1 | 37 | 17 | 3 | | 1 | | 60 |
| Dysentery | | | | | 1 | | | | | 1 |
| Erysipelas | | | | 10 | 8 | 2 | 4 | 2 | 4 | 30 |
| Influenza | 6 | 11 | | 26 | 13 | 21 | 9 | | 9 | 95 |
| Measles | 36 | 98 | 6 | 801 | 1,233 | 353 | 146 | 137 | 623 | 3,433 |
| Mumps | | 2 | 21 | | 414 | 9 | 11 | 45 | 66 | 568 |
| Paratyphoid fever | | 1 | | | | | | | | 1 |
| Pneumonia | 12 | 1 | | | 36 | | 12 | | 15 | 76 |
| Poliomyelitis | | | | | 2 | | | | | 2 |
| Scarlet fever | | 10 | 5 | 169 | 221 | 46 | 41 | 156 | 55 | 703 |
| Trachoma | | | | | | | 4 | | | 4 |
| Tuberculosis | 15 | 40 | 43 | 145 | 65 | 18 | 18 | 2 | 30 | 376 |
| Typhoid fever | 1 | | 4 | 31 | 1 | | 3 | | 4 | 44 |
| Undulant fever | | | | | 8 | | 2 | 1 | | 11 |
| Whooping cough | | 1 | 1 | 255 | 153 | 82 | 33 | 2 | 12 | 539 |

## CZECHOSLOVAKIA

*Communicable diseases—March 1937.*—During the month of March 1937, certain communicable diseases were reported in Czechoslovakia as follows:

| Disease | Cases | Deaths | Disease | Cases | Deaths |
|---|---|---|---|---|---|
| Anthrax | 5 | | Paratyphoid fever | 15 | 1 |
| Cerebrospinal meningitis | 33 | 6 | Poliomyelitis | 2 | 1 |
| Chicken pox | 160 | 1 | Puerperal fever | 34 | 11 |
| Diphtheria | 1,802 | 116 | Scarlet fever | 1,762 | 38 |
| Dysentery | 153 | 1 | Trachoma | 83 | |
| Influenza | 982 | 30 | Tularaemia | 48 | |
| Lethargic encephalitis | 3 | 3 | Typhoid fever | 310 | 29 |
| Malaria | 53 | | Typhus fever | 35 | 1 |

## DENMARK

*Notifiable diseases—January–March 1937.*—During the months of January, February, and March 1937, cases of certain notifiable diseases were reported in Denmark as follows:

| Disease | January | February | March | Disease | January | February | March |
|---|---|---|---|---|---|---|---|
| Cerebrospinal meningitis | 6 | 6 | 6 | Poliomyelitis | 1 | 2 | 4 |
| Chicken pox | 39 | 13 | 44 | Puerperal fever | 12 | 15 | 11 |
| Diphtheria and croup | 149 | 153 | 121 | Scabies | 1,235 | 901 | 1,076 |
| Epidemic encephalitis | 4 | 2 | 7 | Scarlet fever | 595 | 570 | 560 |
| Erysipelas | 217 | 214 | 217 | Syphilis | 58 | 55 | 70 |
| German measles | 6 | 58 | 72 | Tetanus, neonatorum | 4 | ---- | 3 |
| Gonorrhea | 844 | 709 | 713 | Tetanus, traumatic | 1 | ---- | 1 |
| Influenza | 52,063 | 11,134 | 7,597 | Typhoid fever | 8 | 8 | 1 |
| Malaria | 9 | 5 | 6 | Undulant fever (Bact. abort. Bang) | 39 | 46 | 50 |
| Measles | 87 | 60 | 68 | Weil's disease | ---- | ---- | 4 |
| Mumps | 1,196 | 1,377 | 1,608 | Whooping cough | 1,576 | 1,327 | 1,382 |
| Paradysentery | 13 | 14 | 16 | | | | |
| Paratyphoid fever | 19 | 14 | 8 | | | | |

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

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for May 28, 1937, pp. 709-722. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued June 25, 1937, and thereafter, at least for the time being, in the issue published on the last Friday of each month.

### Cholera

*On steamship Ellenga.*—According to information dated June 3, 1937, six deaths from cholera were reported on the steamship *Ellenga* arriving at Penang from the port of Negapatam on June 2, 1937.

### Plague

*Ceylon—Chilaw District.*—On May 26, 1937, 1 case of plague was reported in Chilaw District, Ceylon.

*Peru.*—During the month of April 1937, plague was reported in Peru as follows: Department of Huancabamba, 3 cases; Lambayeque Department, 1 case; Libertad Department, 4 cases, 3 deaths; Lima Department, 1 case, 1 death.

*Syria—Ras el Ain Region.*—On May 31, 1937, 12 fatal cases of pneumonic plague were reported in Ras el Ain Region, Syria.

### Typhus Fever

*Morocco—Casablanca.*—According to information dated June 3, 1937, typhus fever has appeared in Casablanca, Morocco, and adjacent regions principally among the natives where at least 200 cases and some deaths have been reported. Preventive measures have been taken.

### Yellow Fever

*Brazil.*—Yellow fever has been reported in Brazil as follows: Matto Grosso State—Corumba, May 2, 1937, 1 death (first appearance); Dourados, April 29, 1 death (first appearance); Maracaju, March 27, 1937, 1 case; Tres Lagoas, May 1, 1 death; Minas Geraes State—Bom Successo, April 22, 1 death.

*Gold Coast.*—Yellow fever has been reported in Gold Coast as follows: On May 26, 1937, 1 fatal case at Apesi, and 1 fatal case at Nugo.

### Yellow Fever (Jungle Type)

*Peru.*—An outbreak of undetermined fever was reported in the Perené (Pampa Whaley) region of Peru, with 5 deaths occurring in 2 days and 5 other cases reported on April 7, 1937, and 23 cases with 8 deaths reported on April 11.

On April 19, Dr. Henry Hanson, traveling representative of the Pan American Sanitary Bureau, reported after investigation that, in his opinion, the disease was the jungle type of yellow fever. He stated that this opinion was concurred in by an official of the Rockefeller Foundation. Dr. Hanson's report stated that he had not found either *Anopheles* or *Aëdes* (*Stegomyia*) mosquitoes in the region of the outbreak; but that he had caught *Culex*, and that *Simulium* were abundant and would bite both in the sunlight and in the shade. Later Dr. Hanson found breeding places of *Anopheles* and collected larvae and pupae which, because of their small size, he suspected to be a new species. He also later found larvae which he thought to be *Aëdes aegypti*, although this was not definitely determined.

On June 12, the Assistant to the Director of the Pan American Sanitary Bureau, Dr. B. J. Lloyd, cabled the Director of Health of Peru, asking whether the disease in the Perené region should be regarded as positive or suspicious of yellow fever. His reply stated that the disease was "jungle fever." This is interpreted by Dr. Lloyd to mean the jungle type of yellow fever.

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