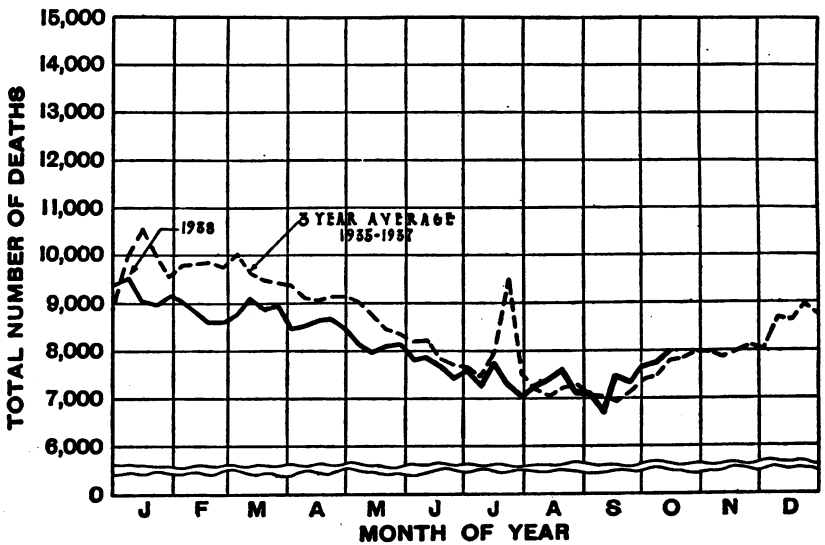
PUBLIC HEALTH REPORTS

VOL. 53 NOVEMBER 4, 1938 NO. 44

HEALTH CONDITIONS IN THE UNITED STATES AS INDICATED BY MORTALITY RATES, 1929–38

Unless a considerable and unusual seasonal rise occurs in mortality in the United States during the months of November and December of the current year, the present indications are that the mortality rate for 1938 may be close to the minimum established in 1933, namely, 10.7 per 1,000 population.

The graphs in the accompanying chart, taken from the Weekly Health Index (Vol. 9, No. 41), issued by the Bureau of the Census,



Total deaths, by weeks, in 88 large cities in the United States.

show the total numbers of deaths, plotted by weeks, in 88 large cities of the United States for 1938 up to October 15, and a comparison with the 3-year average, 1935–37, inclusive. For the first 7 months of 1938 the figures, as shown by the solid line, were well below the 3-year average. The mortality rate rose slightly above the average early in August, dropped below again during the latter part of the month and the first 2 weeks of September, and since that time has remained slightly above the 3-year average. For the week ended October 15, these 88 large cities reported 7,980 deaths, which amounted

to an increase of 240 over the 7,740 reported during the preceding week. The accumulated total number of deaths in these cities for the first 41 weeks of 1938 (ending October 15) was 332,697, as compared with 356,913 for the corresponding period of 1937. The accompanying table presents a comparison of the mortality rates for large cities for the first 41 weeks of the years 1929–38. These figures show that the accumulated mortality rate for the current period is lower than that for any other corresponding period in the past 10 years, with the exception of 1933.

Annual death rates per 1,000 estimated population in certain large cities, first 41 weeks of the years 1929 [1]–38

Year	Number of cities	Death rate per 1,000 estimated population	Remarks
1929	77	12.8	
1930	82	12.0	Same for 77 cities.
1931	85	11.9	82 cities, 12.0.
1932	85	11.1	
1933	86	10.8	Same for 85 cities.
1934	86	11.4	
1935	86	11.4	
1936	86	12.1	
1937	86	11.9	Same for 88 cities.
1938	88	11.0	

[1] Comparative rates for 1928 not readily available.

The same indications regarding favorable mortality conditions in 1938 are shown in the figures supplied by the industrial insurance companies. The death claims rate of these companies, covering approximately 70,000,000 policy holders, for the week ended October 15, 1938, was 7.3 per 1,000 policies in force, as compared with 7.4 for the corresponding week of 1937; and the accumulated rate for the first 41 weeks of 1938 was 9.3 per 1,000, as compared with 9.8 in 1937. (All rates are computed on an annual basis.) The insurance company rates are not strictly comparable in the time element with the general mortality rates, as about 75 percent of the weekly claims relate to deaths which occurred in an earlier week than that covered by the mortality reports from cities. There is also some selection in the insurance groups, especially with reference to age. One large insurance company reported 10 percent lower mortality for the first half of 1938 than for the corresponding period of 1937; and reports to the Public Health Service of disabling sickness among male industrial employees during the first 6 months of 1938 show a rate 28 percent lower than that for the same period in 1937, and 13 percent below the average rate for the first halves of the years 1933–37.

Whether or not the final mortality rate for 1938 reaches a new low mark, the figures available to date show that, so far, health conditions in the United States, as interpreted on the basis of mortality, have

been remarkably good and continue to reflect a period of great achievement in public health. It would appear that there is adequate justification for assuming that decreased mortality is accompanied by some decrease in the amount of sickness, although certain factors, such as changes which bring about decreased virulence and decreased fatality rates of disease, render unjustifiable the assumption that morbidity rates necessarily decrease in the same ratio as mortality rates.

It is of interest to reflect on the fact that the lowest death rates in the United States have prevailed during what may be termed depression years. In 1928 the death rate in the death registration area was 12.1 per 1,000 estimated population, 11.9 in 1929, and 11.3 in 1930. This latter rate has been exceeded only once since that year—11.5 in 1936—while 1933 experienced the lowest mortality ever recorded in this country, with a rate of 10.7 per 1,000 population. It might have been expected (and was anticipated by many persons) that the health of the country would react unfavorably to widespread unemployment and unfavorable economic conditions which could be assumed to bring about lowered standards of living. Instead of any untoward results being reflected in mortality, however, low death rates have continued each year since and including 1929 (11.9 per 1,000). Apparently the depression, with its train of social and economic ills, has not resulted in increasing the general death rate of the country, which is an important index of the state of the public health.

This somewhat surprising condition brings up interesting speculations and suggests the consideration of various possibly contributory factors. Among these may be mentioned the absence of any major epidemics with high mortality, the expansion of public health activities, the improvement of State and local health departments, the initiation of various plans to provide more nearly adequate care for economic groups least able financially to secure needed medical care and treatment, the expansion of health education activities by official and nonofficial health agencies and by private physicians, and the increasing interest manifested by private medicine in the medical needs of the lower economic groups.

NOTIFIABLE DISEASES IN STATES, 1937

Summary of Morbidity and Mortality for Certain Important Communicable Diseases

The United States Public Health Service issues annually a tabular compilation of morbidity and mortality reports of the notifiable diseases furnished by the State health officers. These annual summaries of notifiable diseases by States present the total numbers of cases and deaths of the important notifiable diseases, received by

months, and the total numbers of cases and deaths of each disease reported by States. For certain important communicable diseases case rates and death rates are compiled and, for some diseases, the estimated expectancy, based on the reports of recent preceding years. These rates, which will appear in the notifiable disease summary for 1937,[1] are printed here as being of special interest to health officers and others interested in vital statistics and public health.

The specific mortality rates are based on the final figures supplied by the State health officers and on estimated populations; therefore they may not agree with the final figures to be published by the Bureau of the Census, as some diagnoses may be changed later and some delayed death certificates may be included in the later reports. The mortality figures presented here will be found to differ also from the provisional figures published in the PUBLIC HEALTH REPORTS for May 6, 1938, as they include practically all of the States in most instances, whereas the earlier figures were based on reports from a smaller number of States.

With reference to both the morbidity and mortality figures, it will be noted that the numbers of States included vary with the different diseases and with respect to the different items presented for a particular disease. Cases of some diseases are not reported by some States, or are incompletely reported, while other States may report more deaths from some diseases than cases. In such instances the cases are not included and no case fatality rates are computed.

The populations used are those estimated by the Bureau of the Census as of July 1, 1937.

The estimated expectancy, given for some of the diseases, represents an attempt to ascertain from the experience of recent years how many cases of the disease under consideration might have been expected in 1937. As used here it is based on the median number of cases reported for the years 1930 to 1936, inclusive.

In comparing the figures for 1937 with the estimated expectancy or with figures for prior years, it should be borne in mind that there has been a gradual improvement in the reporting of notifiable diseases in recent years, and an increase in the number of cases reported, or in the rate, may be due in part to better reporting. A large increase, however, is quite likely to be due to an actual increase in the prevalence of the disease.

TYPHOID FEVER (1) AND PARATYPHOID FEVER (3)*

48 States:[1]	
Cases reported, 1937 (population 129,257,000)	16,033
Estimated expectancy based on years 1930-36	21,316
Cases per 1,000 inhabitants, 1937	0.124
Cases per 1,000 inhabitants, estimated expectancy	0.169
Deaths registered, 1937	2,695
Deaths per 1,000 inhabitants, 1937	0.021
Cases reported for each death registered, 1937	6

* Figures in parentheses are disease title numbers from the International List of Causes of Death, 1929.
[1] The District of Columbia is also included.

[1] Supplement No. 147 to the PUBLIC HEALTH REPORTS.

SMALLPOX (6)

48 States: [1]	
Cases reported, 1937 (population 129,257,000)	11,673
Estimated expectancy based on years 1930–36	8,487
Cases per 1,000 inhabitants, 1937	0.090
Cases per 1,000 inhabitants, estimated expectancy	0.067
Deaths registered, 1937	30
Deaths per 1,000 inhabitants, 1937	0.0002
Cases reported for each death registered, 1937	389

MEASLES (7)

48 States: [1]	
Cases reported, 1937 (population 129,257,000)	321,510
Cases per 1,000 inhabitants, 1937	2.487
Deaths registered, 1937	1,395
Deaths per 1,000 inhabitants, 1937	0.011
Cases reported for each death registered, 1937	230

SCARLET FEVER (8)

48 States: [1]	
Cases reported, 1937 (population 129,257,000)	228,887
Estimated expectancy based on years 1930–36	198,250
Cases per 1,000 inhabitants, 1937	1.771
Cases per 1,000 inhabitants, estimated expectancy	1.576
Deaths registered, 1937	1,765
Deaths per 1,000 inhabitants, 1937	0.014
Cases reported for each death registered, 1937	130

WHOOPING COUGH (9)

48 States: [1]	
Cases reported, 1937 (population 129,257,000)	214,652
Estimated expectancy based on years 1930–36	173,658
Cases per 1,000 inhabitants, 1937	1.661
Cases per 1,000 inhabitants, estimated expectancy	1.381
Deaths registered, 1937	4,929
Deaths per 1,000 inhabitants, 1937	0.038
Cases reported for each death registered, 1937	44

DIPHTHERIA (10)

48 States: [1]	
Cases reported, 1937 (population 129,257,000)	28,536
Estimated expectancy based on years 1930–36	45,553
Cases per 1,000 inhabitants, 1937	0.221
Cases per 1,000 inhabitants, estimated expectancy	0.362
Deaths registered, 1937	2,615
Deaths per 1,000 inhabitants, 1937	0.020
Cases reported for each death registered, 1937	11

INFLUENZA (11)

48 States: [1]	
Deaths registered, 1937 (population 129,257,000)	39,198
Deaths per 1,000 inhabitants, 1937	0.303
42 States: [1]	
Cases reported, 1937 (population 95,285,000)	446,239
Cases per 1,000 inhabitants, 1937	4.683
Deaths registered, 1937	32,983
Deaths per 1,000 inhabitants, 1937	0.346
Cases reported for each death registered, 1937	14

DYSENTERY (AMOEBIC) (13a)

44 States: [1]	
Deaths registered, 1937 (population 123,900,000)	350
Deaths per 1,000 inhabitants, 1937	0.003
30 States: [1]	
Cases reported, 1937 (population 84,694,000)	2,045
Cases per 1,000 inhabitants, 1937	0.024
27 States: [1]	
Cases reported, 1937 (population 79,847,000)	2,025
Cases per 1,000 inhabitants, 1937	0.025
Deaths registered, 1937	254
Deaths per 1,000 inhabitants, 1937	0.003
Cases reported for each death registered, 1937	8

POLIOMYELITIS (16)

48 States: [1]	
Cases reported, 1937 (population 129,257,000)	9,511
Estimated expectancy based on years 1930–36	4,208
Cases per 1,000 inhabitants, 1937	0.074
Cases per 1,000 inhabitants, estimated expectancy	0.033
Deaths registered, 1937	1,433
Deaths per 1,000 inhabitants, 1937	0.011
Cases reported for each death registered, 1937	7

[1] The District of Columbia is also included.

ENCEPHALITIS, EPIDEMIC OR LETHARGIC (17)

46 States:[1]	
Deaths registered, 1937 (population 127,891,000)	932
Deaths per 1,000 inhabitants, 1937	0.007
29 States:[1]	
Cases reported, 1937 (population 79,827,000)	956
Cases per 1,000 inhabitants, 1937	0.012
28 States:[1]	
Cases reported, 1937 (population 78,971,000)	955
Cases per 1,000 inhabitants, 1937	0.012
Deaths registered, 1937	600
Deaths per 1,000 inhabitants, 1937	0.008
Cases reported for each death registered, 1937	2

MENINGOCOCCUS MENINGITIS (18)

47 States:[1]	
Deaths registered, 1937 (population 129,022,000)	2,183
Deaths per 1,000 inhabitants, 1937	0.017
44 States:[1]	
Cases reported, 1937 (population 126,388,000)	5,484
Estimated expectancy based on years 1930–36	4,127
Cases per 1,000 inhabitants, 1937	0.043
Cases per 1,000 inhabitants, estimated expectancy	0.034
43 States:[1]	
Cases reported, 1937 (population 126,153,000)	5,473
Estimated expectancy based on years 1930–36	4,108
Cases per 1,000 inhabitants, 1937	0.043
Cases per 1,000 inhabitants, estimated expectancy	0.033
Deaths registered, 1937	2,151
Deaths per 1,000 inhabitants, 1937	0.017
Cases reported for each death registered, 1937	3

TUBERCULOSIS (RESPIRATORY SYSTEM) (23)

45 States:[1]	
Deaths registered, 1937 (population 127,086,000)	61,345
Deaths per 1,000 inhabitants, 1937	0.483

TUBERCULOSIS (ALL FORMS) (23–32)

48 States:[1]	
Deaths registered, 1937 (population 129,257,000)	68,865
Deaths per 1,000 inhabitants, 1937	0.533

SYPHILIS (34)

46 States:[1]	
Cases reported, 1937 (population 128,921,000)	425,062
Cases per 1,000 inhabitants, 1937	3.297

GONORRHEA (35)

46 States:[1]	
Cases reported, 1937 (population 128,921,000)	200,657
Cases per 1,000 inhabitants, 1937	1.556

MALARIA (38)

48 States:[1]	
Deaths registered, 1937 (population 129,257,000)	2,700
Deaths per 1,000 inhabitants, 1937	0.021
36 States:	
Cases reported, 1937 (population 114,416,000)	107,583
Cases per 1,000 inhabitants, 1937	0.940
Deaths registered, 1937	2,580
Deaths per 1,000 inhabitants, 1937	0.023
Cases reported for each death registered, 1937	42

CHICKENPOX (44a)

48 States:[1]	
Cases reported, 1937 (population 129,257,000)	281,107
Estimated expectancy based on years 1930–36	239,130
Cases per 1,000 inhabitants, 1937	2.175
Cases per 1,000 inhabitants, estimated expectancy	1.901
Deaths registered, 1937	116
Deaths per 1,000 inhabitants, 1937	0.001
Cases reported for each death registered, 1937	2,423

MUMPS (PART 44c)

46 States:[1]	
Deaths registered, 1937 (population 125,334,000)	60
Deaths per 1,000 inhabitants, 1937	0.0005
45 States:	
Cases reported, 1937 (population 109,527,000)	153,380
Estimated expectancy based on years 1930–36	108,302
Cases per 1,000 inhabitants, 1937	1.400
Cases per 1,000 inhabitants, estimated expectancy	1.017

[1] The District of Columbia is also included.

MUMPS (PART 44C)—continued

43 States:	
Cases reported, 1937 (population 105,604,000)	152,307
Estimated expectancy based on years 1930-36	106,296
Cases per 1,000 inhabitants, 1937	1.442
Cases per 1,000 inhabitants, estimated expectancy	1.035
Deaths registered, 1937	57
Deaths per 1,000 inhabitants, 1937	0.0005
Cases reported for each death registered, 1937	2,672

PELLAGRA (62)

48 States: [1]	
Deaths registered, 1937 (population 129,257,000)	3,162
Deaths per 1,000 inhabitants, 1937	0.024

PNEUMONIA (ALL FORMS) (107-109)

48 States: [1]	
Deaths registered, 1937 (population 129,257,000)	110,068
Deaths per 1,000 inhabitants, 1937	0.852
25 States: [1]	
Cases reported, 1937 (population 72,933,000)	[2] 119,613
Cases per 1,000 inhabitants, 1937	[2] 1.640
Deaths registered, 1937	60,861
Deaths per 1,000 inhabitants, 1937	0.834
Cases reported for each death registered, 1937	2

SEPTIC SORE THROAT (115a)

43 States: [1]	
Deaths registered, 1937 (population 114,263,000)	2,282
Deaths per 1,000 inhabitants, 1937	0.020
33 States:	
Cases reported, 1937 (population 81,639,000)	6,329
Cases per 1,000 inhabitants, 1937	0.078
30 States:	
Cases reported, 1937 (population 71,498,000)	5,203
Cases per 1,000 inhabitants, 1937	0.073
Deaths registered, 1937	854
Deaths per 1,000 inhabitants, 1937	0.012
Cases reported for each death registered, 1937	6

[1] The District of Columbia is also included.
[2] Exclusive of 5,322 cases of lobar pneumonia reported in Massachusetts and 4,422 cases of lobar pneumonia reported in California.

THE ISOLATION OF *Actinomyces bovis* FROM TONSILLAR GRANULES

By C. W. EMMONS, *Senior Mycologist, United States Public Health Service*

The commonest type of actinomycosis is caused by *Actinomyces bovis*, a micro-aerophilic micro-organism named in 1877 by Harz (*14*), who, with Bollinger (*7*), studied its parasitic phase in material from "lumpy jaw" of cattle. Ponfick (*27*) showed that human and bovine actinomycosis have a common etiology, and Wolff and Israel (*32*), in 1891, described cultures from human cases of the disease.

It is still a disputed point whether or not this fungus has a natural habitat outside the animal body. It has not yet been isolated from soil or plants. On the other hand, it is known to have both a saprophytic and a parasitic existence in the body. Israel found a micro-organism resembling *A. bovis* associated with carious teeth in some of his cases of human actinomycosis. Wright (*33*) and others have also shown that dental caries is often associated with maxillary actinomycosis. Bjerrum and Hansen (*6*) found anaerobic actinomyces in pus from abscesses of the gums, in periodontitis and in chronic and acute cervico-facial inflammatory processes. In individuals without actinomycosis, Lord (*16*) (*17*) demonstrated the presence in dental

scum, dental caries, and tonsils of an organism with the morphology and staining reactions of *Actinomyces*, but he did not then secure cultures. Lord and Trevett (*19*), in 1936, reported the cultivation from the mouths of 4 of 90 persons without actinomycosis of four strains of an organism resembling *A. bovis*, except that it was able to grow in the presence of air as well as in its absence. Naeslund (*22*) (*23*) (*24*) isolated *Actinomyces* from the normal mouth and inoculated animals with the culture. He isolated three types of *Actinomyces*, namely, (*a*) those growing aerobically which he believed to be chance contaminants, (*b*) those growing anaerobically, which he believed were part of the normal mouth flora, and (*c*) those growing both aerobically and anaerobically. Emmons (*10*) obtained pure cultures of a micro-aerophilic species of *Actinomyces* from the surface of discolored teeth, from carious teeth, and from tonsillar crypts. When first isolated, these strains grew more rapidly and the hyphae were coarser than strains from clinical actinomycosis. Upon repeated subculture, they became like *A. bovis* in morphology. The pathogenicity for guinea pigs was increased by repeated inoculation of the same animal, but no progressive infection was produced. He later (*11*) (*12*) examined the tonsils from 100 consecutive tonsillectomies, and in 47 found filaments with the morphology and staining reactions of *A. bovis*. In cultures from 23 percent of the tonsils a microaerophilic species of *Actinomyces* was found and in 10 percent it was obtained in pure culture. A few of these strains had coarse hyphae which branched dichotomously, but this character tended to be lost upon subculture.

These studies indicate that the pathogen probably is harbored by normal individuals and that only under extraordinary conditions does it invade the tissues. Wright (*33*), Colebrook (*9*), Epstein and Schoenholz (*13*), Negroni (*25*), and others also subscribe to this theory of the endogenous origin of the infection.

Some investigators, however, claim that the etiologic agent of actinomycosis grows in the environment of man and animals and is introduced into the body upon particles of vegetable material. Bostroem's (*8*) cultures, inoculated with pus from bovine actinomycosis and yielding aerobic species of *Actinomyces*, seemed to support this explanation of the etiology of the disease. However, Bostroem obtained only 12 colonies in about 700 cultures, and those were of rapidly growing and easily cultivatable *Actinomyces* such as often appear on exposed plates and can always be grown from soil. Most critical students today believe that Bostroem's fungi were contaminants without etiologic significance.

These contradictory claims, arising from what was probably an error, regarding the etiology of actinomycosis, are responsible in part for the confusing nomenclature of this anaerobic species of *Actino-*

myces. The culture characters of the particular strains seen by Harz will never be known; but there is an increasing volume of evidence furnished by critical first-hand studies of comparatively long series of cases (Wright (*33*), Colebrook (*9*), Magnusson (*20*), Topley and Wilson (*30*), Henrici (*15*), Vawter (*31*), Negroni (*25, 26*)) to indicate that in the type of actinomycosis under discussion (i. e., "lumpy jaw" in cattle (excluding actino-bacillosis), the similar disease in man, and pulmonary and abdominal actinomycosis in man), a microaerophilic species (or a minor variant of this species) is the etiologic agent; and that the type of *Actinomyces* grown by Bostroem is not present in a causal relationship. Granted that this be true, there is no reason to doubt that the species of fungus cultured and described by Wolff and Israel was the same as the species previously seen in pus and tissues and described and named by Harz. The descriptions supplement each other. There are many analogous cases in mycology. A majority of the names of fungi were based originally, or are still based, on incomplete studies of them in their natural habitat. Many fungi are still known only outside the laboratory, and some are obligate parasites of plants and do not grow on artificial media. When identity can be established, the subsequent observation of a fungus in pure culture does not invalidate a name previously based on studies of its parasitic phase or its growth in nature.[1]

The improper use of the name by Bostroem and by numerous later writers, cited and accepted by Puntoni and Leonardi (*28*) and by Baldacci (*2, 3, 4, 5*), among others, does not invalidate it. The fact that easily grown aerobic soil species of *Actinomyces* are held in various culture collections under the name *A. bovis* means only that these strains have been incorrectly identified.

If it were necessary to reject the name given by Harz, the most satisfactory substitution would appear to be that of *A. israeli* Kruse 1896, as recommended by Negroni and Bonfiglioli (*26*) in a recent excellent paper. However, the evidence at hand indicates that *Actinomyces bovis* is a valid name and is clearly referable to the fungus, of which Harz described the parasitic, and Wolff and Israel the saprophytic, phase.

The search cited above (*11, 12*) for anaerobic strains of *Actinomyces* in tonsils was made in Puerto Rico. It seemed desirable to find whether this organism can be found as frequently in temperate climates. A similar survey in Washington was made possible by the cooperation of Dr. G. B. Trible, Dr. Ella M. A. Enlows, and of Dr. S. J. Eisenman, Dr. Richard A. Kearney and other members of the staff at Garfield Hospital, from whose services the tonsils were secured.

All tonsils examined were from routine tonsillectomies, and there was no selection of cases. The tonsils were placed in sterile Petri

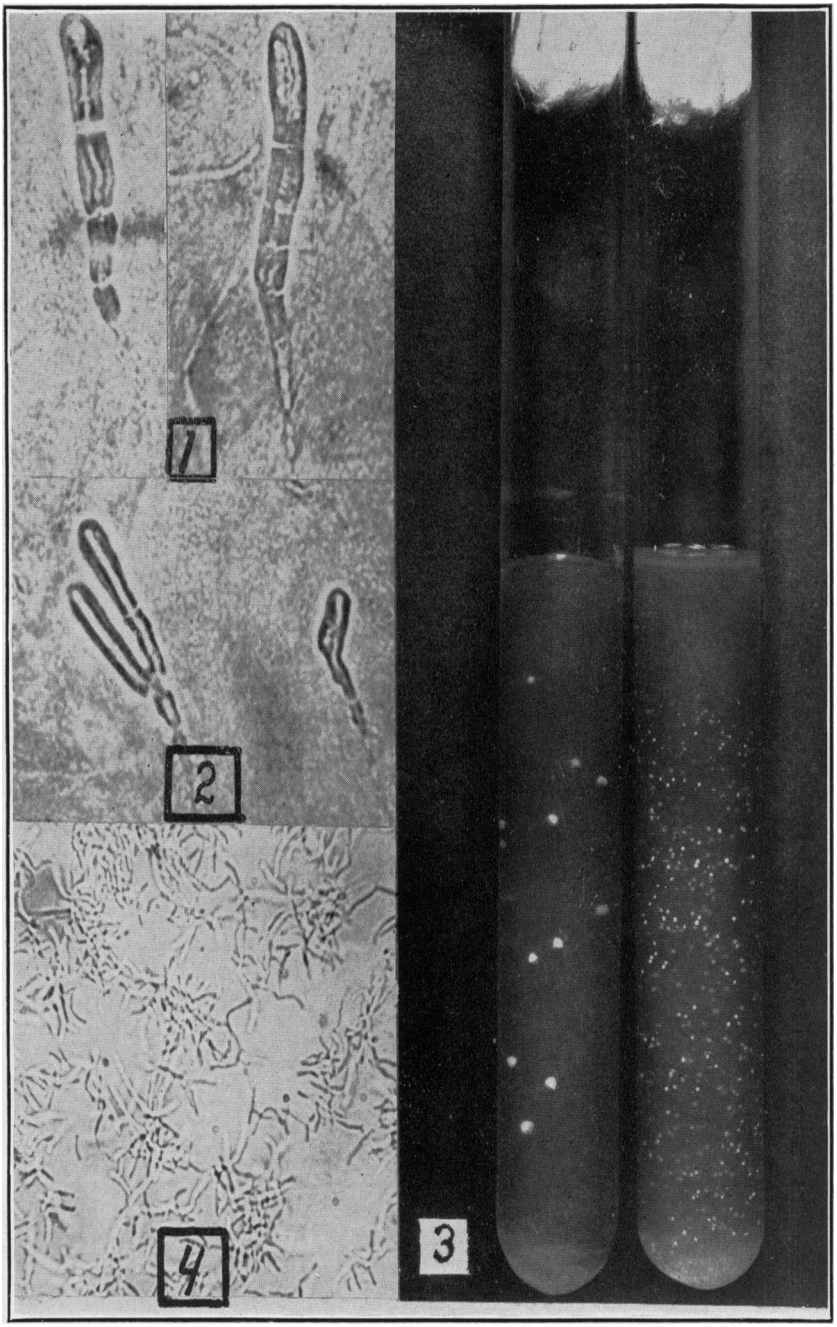
[1] The transfer of one of the *Fungi imperfecti* to an ascomycetous genus falls in a different category.

dishes and taken promptly to the laboratory, where they were cut into sections a few millimeters in thickness with sterile scalpels. Cheesy, subspherical, or lobulated masses from microscopical size up to 2 or 3 mm in diameter were found in many of the tonsillar crypts. All such masses, when large enough, were divided. One part was put on a microscope slide, crushed under a cover slip, and examined with the microscope to determine whether the characteristic tangled, branching hyphae of *Actinomyces* were present. If such hyphae were found, the cover slip was removed and the smear stained by Gram's method. The remaining part of the mass was used in preparation of cultures.

A variety of micro-organisms could be found in most of the granules examined, but often one type predominated. Some were made up mainly of cocci, in others, *Leptotrichia racemosa*, *L. falciformis*, fusiform bacilli, spirillae, and spirochetes were dominant. In many, a network of the hyphae of *Actinomyces* could be discerned when the granule was crushed; and in a few cases this was the principal component, few other micro-organisms being apparent. The hyphae of *Actinomyces* were found in the granules from 74 or 37 percent of the 200 pairs of tonsils examined. None of the patients had actinomycosis, but club-like structures were found in two of the granules (figs. 1 and 2).

Cultures were made in dextrose veal infusion agar adjusted to pH 7.4 in tubes filled to a depth of about 9 cm. The granule was not washed, because washing appears to reduce the vitality of the *Actinomyces* present, and surface contamination of the granule was not an important source of error under the conditions attained. It was, however, freed of as much extraneous material as possible by rolling it across the bottom of the sterile Petri dish. It was then quickly transferred with a sterile spatula to the inner surface of a tube of melted agar, where it was crushed and thoroughly dispersed throughout the agar. Several dilution tubes were then inoculated by transferring to each of them from the first tube, with a platinum wire, a very small amount of the inoculated agar. This method reduces the exposure of the anaerobic *Actinomyces* to air and other deleterious influences, and a higher proportion of *Actinomyces* could be recovered than by any other methods attempted. After 3 to 5 days' incubation at 35°–37° C., isolated colonies of *Actinomyces* were withdrawn from the dilution cultures with a sterile Pasteur pipette having a bore of 1 to 2 mm.

The strains of *Actinomyces* isolated grow, without exception, in the bottom of dextrose veal infusion agar shake cultures, but do not grow in the upper one or two centimeters of such culture (fig. 3). Subculture at 10- to 20-day intervals for over a year has not altered the oxygen requirements of these strains. This has been true also in my



EXPLANATION OF FIGURES.

1 and 2.—Club-like structures in tonsillar granules containing *Actinomyces*.
3.—Cultures of *Actinomyces* from tonsillar granules.
4.—*Actiuomyces* from tonsillar granules. Diphtheroid and hyphal elements from a pure culture.

experience of strains of *A. bovis* isolated from clinical actinomycosis. Unlike some other investigators, I have observed no tendency in an anaerobic species of *Actinomyces* to become aerobic upon repeated subculture, although on some special media some strains have produced a very scanty growth in the presence of free air.

In this series anaerobic strains of *Actinomyces* were found in the primary cultures from 28 (14 percent) and were recovered in pure culture from 22 (11 percent) of the pairs of tonsils. Failure to obtain pure cultures from the remaining granules in which the hyphae of *Actinomyces* were seen was due to the difficulty of cultivating this organism on artificial media, and to the more rapid growth of cocci and other bacteria present. It is possible, also, that some of the filamentous organisms seen and listed as *Actinomyces* were not correctly identified. It was not possible to identify with absolute certainty some of the hyphae seen.

Two types of *Actinomyces* were secured in pure cultures. Type *a* (fig. 4) is morphologically like strains of *A. bovis* isolated from clinical actinomycosis. It is micro-aerophilic; it does not grow readily on ordinary media; it must be subcultured at 10- to 20-day intervals; and it forms smooth, white, cuneiform or lobulated colonies in the deeper portions of a dextrose veal infusion agar shake culture. No colonies develop in the upper 1 or 2 cm of the agar column. The colonies reach a diameter of 1 or 2 mm. This type forms true branching hyphae 0.4 to 0.6μ in diameter, but these fragment so readily that they are difficult to demonstrate. The hyphae break up into diphtheroid elements, which are often seen in a V-arrangement. These are Gram positive and not acid fast. No spores are formed. Of the strains, when first isolated, 60 percent were of type *a*.

Type *b* is also micro-aerophilic. It grows more rapidly than type *a*, colonies being discernible with a lens after 48 hours at 35°–37° C. These may reach a diameter of 3 mm, but have the general appearance of those of type *a*. The hyphae reach a diameter of 0.6 to 1μ and branch very freely, dichotomy being a conspicuous feature. A short hyphal fragment may bear dichotomous branches at both ends. These appear even in young cultures. Evidence of a genetic relationship with type *a* is furnished by the spontaneous transformation of the strains of type *b* into type *a*. This occurred after the strains had been kept for several months in pure cultures. It appears that the two types are varieties of one species, *A. bovis*. Vawton (*31*), Magnusson (*20*), Negroni and Bonfiglioli (*26*), and others have noted as great variations in strains from clinical actinomycosis when many strains have been compared. The diameters of hyphae and their length vary, for example, between strains, and these measurements vary also in a given strain, depending upon the interval during which it has been kept in culture. Of the strains, when first isolated, 40

percent were of type *b*. In three cases both types were isolated from the same tonsillar granule.

ANIMAL INOCULATIONS

It is difficult to produce experimental actinomycosis in the small laboratory animals even when a culture or pus from clinical actinomycosis is used as the inoculum. In those cases in which successful inoculations have been reported the lesion has been small and there has been little if any proliferation of the inoculum. Nevertheless, attempts were made in this study to produce lesions in guinea pigs, a variety of other animals having been used in previous studies. Both tonsillar strains and strains from actinomycosis have been used.

Several methods of inoculation have been attempted. The introduction of the inoculum on a foreign body, such as a splinter, has not been successful. The preparation of the experimental animal by the injection of calcium phosphate (as recommended by Sedlemeier) did not prove useful in these attempts. There are, however, two methods of inoculation which seem to offer some promise.

Other organisms are often associated with *Actinomyces* in the early lesion of actinomycosis. As the infection becomes established, these are usually eliminated, although *B. actinomycetem comitans* often remains associated. It is possible that some of these associated organisms (leptotrichia, staphylococcus, streptococcus, fusiform bacilli, spirochetes, etc.) may play a role in initiating the actinomycotic lesion in previously traumatized tissue. Auxhausen (*1*) states that, in maxillary actinomycosis, the fungus is at first of secondary importance, while the pyogenic infection is dominant. Later the fungus assumes primary importance. In these studies a number of guinea pigs were inoculated with mixtures of *Actinomyces* and various types of bacteria. No progressive lesions were produced, and usually only the bacteria could be recovered in culture. Failure may have been due to incorrect dosage or improper choice of organisms.

The second method depends upon sensitizing the animal. Mathieson et al. (*21*), using strains of *A. bovis* from human actinomycosis, were able to produce lesions in animals only after repeated inoculations; and pus containing the characteristic granules was more effective as inoculum than pure cultures. The demonstration of viable colonies of *Actinomyces* in pus from guinea pigs given repeated intramuscular inoculations had been noted in the study previously referred to (Emmons (*10*)).

That observation was confirmed in this series, but progressive lesions were not produced.[2] Some of the animals were first prepared

[2] Pathological sections of suspected lesions were studied by Dr. L. L. Ashburn. Lesions typical of actinomycosis were not found.

according to Sedlmeier's technique, by the injection of calcium phosphate, and one or two days later were given a double injection of 1 cc intraperitoneally and 0.5 cc subcutaneously of a pure culture of *Actinomyces*. Others received only the double inoculation. This double inoculation was repeated, in some animals, as many as eight times, at intervals varying from 4 days to 2 weeks. Small abscesses were found in some of the animals sacrificed, and *Actinomyces* could be recovered in culture as long as 10 days after the last inoculation; but no progressive lesions were produced, either by strains from tonsillar granules or by those from actinomycosis.

SENSITIZATION

The guinea pigs included in this series were inoculated with three strains of *Actinomyces* from tonsils and one from bovine actinomycosis. They were subsequently skin-tested with preparations of these strains and with old tuberculin. Although low dilutions of the vaccines were used, only slight erythema, and in some cases a barely palpable area two or three mm in diameter, was noted at the site of the intracutaneous injection. The animals did not react to either the homologous strain or heterologous strains of *Actinomyces*, or to old tuberculin. They were later tested by the injection of a heavy dose (0.5 cc undiluted old tuberculin) into the peritoneal cavity. They did not react. These results are in accord with those reported by Henrici and his associates.

DISCUSSION

The crypts of the tonsils are excellent culture chambers for a variety of anaerobic microorganisms. These organisms form compact colonies appearing as cheesy granules from microscopic size up to 2 or 3 mm in diameter. A variety of organisms usually make up any particular granule, but sometimes one form predominates. *Actinomyces*, fusiform bacilli, spirillae and *Streptococcus*, among others, are forms which are commonly present in these granules and are also present in certain pathological conditions. Granules are now and then forced out of the crypts and may be swallowed or drawn into the bronchi. In view of the fact that in actinomycosis of the abdominal organs the primary lesion is often in the appendix, it appears possible that these granules and material from the teeth may serve as the inoculum in such cases. It may be, too, that this material occasionally passes into the respiratory tract. Proof of this hypothesis is not furnished in this study; but the demonstration, in the normal oral cavity, of a species of *Actinomyces* not distinguishable from *A. bovis* at least makes it unnecessary to postulate the introduction of this organism on straws and other foreign bodies from an external nidus in which it has never been demonstrated.

SUMMARY

In an unselected series of 200 pairs of tonsils from routine tonsillectomies a micro-aerophilic species of *Actinomyces*, not distinguishable from *A. bovis*, was observed in 37 percent of the pairs; it was obtained in culture from 11 percent. None of the patients had actinomycosis.

These tonsillar strains, like those from clinical actinomycosis, are avirulent for guinea pigs. Repeated inoculations of the same animal, however, increased the severity and duration of lesions produced.

Sensitization to homologous and heterologous strains and to old tuberculin could not be demonstrated in experimental guinea pigs.

It seems probable that *Actinomyces bovis* is commonly present in the normal mouth and throat, and becomes pathogenic only under extraordinary conditions. The tonsillar crypts serve as an important reservoir for the saprophytic phase of this pathogenic fungus.

REFERENCES

(1) Axhausen, G.: Das Frühbild der Kieferaktinomykose. Deutsche Med. Wochenschr., Nr. 36, s. 1449 (1936).
(2) Baldacci, E.: La denomination "Actinomyces bovis" Harz doit etre supprimée comme "nomen dubium." Boll. Sez. ital. Soc. int. Microbiol., 8 (5): 99–101 (1936).
(3) ———— Histoire, synomimie et caracteres culturaux de l'"Actinomyces sulphureus" Gasperini. Ibid., 102–105 (1936).
(4) ———— La conception d'espèce chez les actinomycetes par rapport à leur classification et à leur détermination. Ibid., **9**: 138–146 (1937).
(5) ———— Revisione di alcune specie del G. actinomyces. Mycopathologia, **1** (1): 68–76 (1938).
(6) Bjerrum, Oluf & Hansen, Svend: Undersøgelser over forekomsten af aktinomyceter i mundhulen og deres betydning for den akute form af aktinomykose. Ugeskrift f. Laeger., **94**: 1075–8 (1932). (Abst. in J. Am. Med. Assoc., **100**: 232 (1933)).
(7) Bollinger, O.: Ueber eine neue Pilzkrankheit beim Rinde. Centralb. f. med. Wissensch., **15**: 481–485 (1877).
(8) Bostroem: Untersuchungen über die Aktinomykose des Menschen. Beitr. path. Anat. u. allg.Path., **9**: 1–240 (1891).
(9) Colebrook, Leonard: A report upon 25 cases of actinomycosis, with especial reference to vaccine therapy. Lancet, **200**: 893–899 (1921).
(10) Emmons, C. W.: Actinomyces and actinomycosis. Puerto Rico J. Pub. Health and Trop. Med., **11**: 63–76 (1935).
(11) ———— Strains of Actinomyces bovis isolated from tonsils. Ibid., **11**: 720–727 (1936).
(12) ———— Microaerophilic strains of Actinomyces isolated from tonsils. Mycologia, **29**: 377–382 (1937).
(13) Epstein, N., and Schoenholz, P.: Actinomycosis. Report of cases. Calif. and Western Med., **30**: 395–399 (1929).
(14) Harz, C. O.: *In* Bollinger. Ref. 7.
(15) Henrici, A. T.: Molds, yeasts, and actinomycetes. John Wiley & Sons, 1930.
(16) Lord, Frederick T.: The etiology of actinomycosis. J. Am. Med. Assoc., **55**: 1261–1263 (1910).
(17) ———— A contribution to the etiology of actinomycosis. Boston Med. & Surg. J., **163**: 82–85 (1910).
(18) ———— The etiology, pathogenisis, and diagnosis of actinomycosis. Med. Clinics N. Amer., **16**: 829–844 (1933).
(19) Lord, F. T. and Trevett, L. D.: The pathogenesis of actinomycosis. Jour. Infect. Dis., **58**: 115–120 (1936.)

(20) Magnusson, Hilding: The commonest forms of actinomycosis in domestic animals and their etiology. Acta. Path. Microbiol. Scandinavica, 5(2/3):170–245 (1928).
(21) Mathieson, Don R.; Harrison, Ruth; Hammond, Carolyn; and Henrici, Arthur T.: Allergic reactions of Actinomycetes. Amer. Jour. Hygiene, 21(2): 405–421 (1935).
(22) Naeslund, Carl: Studies of Actinomyces from the oral cavity. Acta Path. et Microbiol. Scand., 2: 110–140. 1925.
(23) ———— Studies of tartar formation. Acta Path. et Microbiol. Scand., 3: 637–677 (1926).
(24) ———— Experimentelle Studien über die Ätiologie und Pathogenese der Aktinomykose. Acta Path. Microbiol. Scandinavica. Suppl. VI, 8: 1–156 (1931).
(25) Negroni, Pablo: Cincuenta casos de actinomicosis y resultados de la vacunoterapia. Rev. Inst. Bact. Dept. Nac. Hig. Buenos Aires., 7(4):662–695 (1936).
(26 Negroni, P. and Bonfiglioli, H.: Morphology and biology of *Actinomyces israeli* Kruse 1896. Jour. Trop. Med. & Hyg., 40 (19): 226–232, 240–246 (1937).
(27) Ponfick: Die Aktinomykose des Menschen. Berlin 1882.
(28) Puntoni, V., and Leonardi, D.: Sulla sistematica degli Attinomiceti "Asteroides" n. g. Boll. Atti R. Acad. Med. Rome., 61: 90–94 (1935).
(29) Sedlmeier, Hans: Kulturelle und experimentelle Untersuchungen uber die aetiologie der Aktinomykose des Rindes. Zeitschr. f. Infektkrh. Haustiere, 50: 129–164 (1936).
(30) Topley, W. W. C., and Wilson, G. S.: The Principles of Bacteriology and Immunity. Wm. Wood & Co., New York (1929).
(31) Vawter, L. R.: A study of actinomycosis. Cornell Veterinarian, 23(2):126–149 (1933).
(32) Wolff, Max, and Israel, James: Ueber Reincultur des Actinomyces und seine Uebertragbarkeit auf Thiere. Archiv. Path. Anat. Physiol. Klin. Med. (Virchow), 126:11–59 (1891).
(33) Wright, J. H.: The biology of the microorganisms of actinomycosis. Jour. Med. Res., 8: 349–404 (1905).

SOME RESOLUTIONS OF THE TENTH PAN AMERICAN SANITARY CONFERENCE IN BOGOTÁ, COLOMBIA, SEPTEMBER 4–14, 1938

All American republics except one were represented at the Tenth Pan American Sanitary Conference held in Bogotá, Colombia, September 4–14, 1938. Just before the time of meeting, Paraguay unfortunately found it impossible to send representatives, although they had previously been appointed. The directors of health of the majority of the 21 American republics were present, and the following other health organizations were represented: Pan American Sanitary Bureau, Rockefeller Foundation, Health Organization of the League of Nations, International Office of Public Health of Paris, and the International Labor Office. Dr. Eduardo Santos, President of the Republic of Colombia presided at the formal opening of the inaugural session.

Surg. Gen. Thomas Parran, chairman of the delegation from the United States, characterized the Conference as "outstanding," especially "through the completeness of its program, the number and technical character of the delegates attending, the presence for the first

time of women delegates, the newness of certain subjects, such as social security, the emphasis placed on venereal disease control, the enthusiasm evinced by those in attendance," and for many other reasons. Dr. Parran expressed the pride felt by the United States Public Health Service in its share in the organization of the Pan American Sanitary Bureau; and he reiterated his earnest desire "to continue as fully as possible, and even to expand, if practicable and desirable, the long-established cooperation with all our sister republics through the Pan American Sanitary Bureau."

In the following are presented in summary form some of the resolutions [1] passed by the Conference:

The Conference recommends—

That all public health activities be coordinated under a common technical administration and that provision be made for selection, permanence, regular promotion, and adequate remuneration of public health personnel; and it expressed the hope that in countries where public health is not a profession, it be so established on the merit system, following the creation of schools of hygiene for special training of personnel.

That the Pan American Sanitary Bureau appoint a committee to make a thorough study of maritime bills of health of the American republics, that the Bureau seek means to facilitate the adoption of economic methods for the sanitary treatment of vessels, that the Bureau appoint a committee to study and review present health provisions relating to aerial navigation for the purpose of incorporating them in the Pan American Sanitary Code; and that the governments of America establish vaccination facilities for persons residing in areas affected or menaced by jungle yellow fever.

That public health nursing staffs be established in health departments, that bureaus of vital statistics be under such departments, and that institutes of health for research and training be established in the countries that do not now have them.

That, in view of the desirability of preparing minimum bacteriological and chemical standards for drinking water, the experts of the Pan American Sanitary Bureau cooperate with those of the various countries for the purpose of preparing such standards and issue an Instruction Manual to focus attention of public health authorities on water supply problems; that a Pan American Conference of Sanitary Engineers of the various health departments of the American Republics be held under the auspices of the Pan American Sanitary Bureau; and that special courses in sanitary engineering be offered by countries not now providing them.

[1] The "Final Act", containing the names of committee members, the members elected to the Directing Council, and the amendments to the Constitution and Bylaws of the Pan American Sanitary Bureau approved by the Conference will appear in the Bulletin of the Pan American Sanitary Bureau for November 1938.

That the laws of American countries make compulsory the reporting of pregnancy, the reporting of births in countries where not now required, and the endeavor by the public health authorities to provide adequate training for midwives and to supervise their activities.

That public health authorities give consideration to the control methods adopted for the sale of narcotic drugs and report the results to the Pan American Sanitary Bureau in order that other American Republics may be informed.

The Conference included in its resolutions the following suggestions and recommendations with reference to specific diseases:

Commends the venereal disease control work undertaken by the health departments and institutions of various countries and suggests that the reports presented be collected in summarized form to serve as a guide for other nations, and recommends that the importance of laboratories be recognized and that all diagnostic procedures be supervised, directed, and given support by all countries. It recommends that cardiovascular diseases be included in the agenda for the next Conference and suggests that Governments of American Republics give support to research on these diseases from the public health standpoint. It recommends research on amebiasis and leprosy, provision for special study of malaria by a committee of experts, on every phase of the subject, such as vectors, laws and regulations, incidence of the disease, standardization of nomenclature, and native drugs effective against the disease; recommends the continuation of work on the control and prevention of typhus fever in America, especially research in immunological methods for the control of the disease; suggests that research on American trypanosomiasis be further extended, with a view to prevention; and recommends that specialized attention be given to tuberculosis for the purpose of mitigating its ravages, and that sufficient funds be appropriated to make further advance in the control of this disease.

In view of the expansion of the activities of the Pan American Sanitary Bureau and the consequent need for additional funds, the Conference passed a resolution to amend the Constitution and Bylaws, increasing the fund provided for the Bureau to not less than $100,000 annually, and increasing the rate of contribution from each signatory Government from 21 to 40 cents per 1,000 inhabitants.

MEETING OF THE NEXT CONFERENCE

It was unanimously agreed that the Eleventh Pan American Sanitary Conference be held in the city of Rio de Janeiro in 1942, the exact date to be specified by the Government of Brazil.

DEATHS DURING WEEK ENDED OCTOBER 15, 1938

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

	Week ended Oct. 15, 1938	Corresponding week, 1937
Data from 88 large cities of the United States:		
Total deaths	7,980	[1] 7,844
Average for 3 prior years	[1] 7,792	
Total deaths, first 41 weeks of year	332,697	356,913
Deaths under 1 year of age	516	[1] 525
Average for 3 prior years	[1] 515	
Deaths under 1 year of age, first 41 weeks of year	21,639	23,023
Data from industrial insurance companies:		
Policies in force	68,266,941	69,971,510
Number of death claims	9,505	9,942
Death claims per 1,000 policies in force, annual rate	7.3	7.4
Death claims per 1,000 policies, first 41 weeks of year, annual rate	9.3	9.8

[1] Data for 86 cities.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

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.

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

Cases of certain diseases reported by telegraph by State health officers for the week ended Oct. 22, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median

Division and State	Diphtheria				Influenza				Measles			
	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median
NEW ENG.												
Maine	30	5	3	3	----	----	3	----	189	31	18	1
New Hampshire	0	0	0	0	----	----	----	----	----	----	4	2
Vermont	0	0	2	0	----	----	----	----	41	3	3	1
Massachusetts	4	3	0	10	----	----	----	----	84	71	18	38
Rhode Island	8	1	0	1	----	----	----	----	----	----	----	1
Connecticut	6	2	9	2	12	4	2	2	69	23	5	8
MID. ATL.												
New York [2]	8	19	26	26	[1]4	[1]6	[1]12	[1]10	27	66	91	144
New Jersey	5	4	11	17	5	4	5	9	17	14	57	19
Pennsylvania	16	31	27	54	----	----	----	----	69	135	436	52
E. NO. CEN.												
Ohio	47	61	39	60	----	----	4	5	9	11	163	31
Indiana [2]	35	23	25	87	21	14	14	18	15	10	5	5
Illinois	20	30	38	51	5	8	11	10	9	13	127	19
Michigan [2]	29	27	24	13	----	----	----	2	42	39	39	35
Wisconsin	2	1	10	7	66	37	33	27	164	92	19	19
W. NO. CEN.												
Minnesota	28	14	19	17	2	1	----	1	106	54	6	8
Iowa	47	23	2	8	4	2	----	----	27	13	3	3
Missouri	34	26	41	64	13	10	27	27	9	7	107	9
North Dakota	7	1	2	3	74	10	----	----	857	116	----	1
South Dakota	0	0	0	2	----	----	----	----	136	18	----	7
Nebraska	19	5	6	6	4	1	----	----	8	2	1	1
Kansas	28	10	5	18	11	4	3	----	3	1	4	4

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Oct. 22, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued

Division and State	Diphtheria				Influenza				Measles			
	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937 cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median
SO. ATL.												
Delaware	20	1	4	2								1
Maryland [3]	28	9	7	18	19	6	13	10	50	16	3	4
Dist. of Col	8	1	5	6			2	1			3	2
Virginia	289	150	77	77	212	110			8	4	29	11
West Virginia	81	29	47	53	42	15	8	15	6	2	26	5
North Carolina	221	148	122	122	6	4	3	4	128	86	80	10
South Carolina [4]	95	34	15	25	712	256	140	169	17	6	26	3
Georgia [4]	100	59	25	54	57	34			5	3		
Florida [4]	34	11	20	13	12	4	2	2	16	5	2	2
E. SO. CEN.												
Kentucky	87	49	32	59	25	14	9	9	2	1	60	35
Tennessee [4]	108	60	67	88	96	53	27	19	20	11	8	8
Alabama [4]	86	48	30	43	68	38	17	17	7	4	6	6
Mississippi [3 4]	77	30	17	25								
W. SO. CEN.												
Arkansas	66	26	28	19	99	39	13	13	3	1	6	1
Louisiana [4]	73	30	7	26	7	3	9	8	159	65		3
Oklahoma	29	14	17	17	74	36	21	21	2	1	2	2
Texas [4]	41	48	36	57	66	78	123	123	3	4	22	8
MOUNTAIN												
Montana	10	1	0	1	184	19			948	98	2	4
Idaho	0	0	1	0	53	5	1	1	349	33	19	1
Wyoming	22	1	0	0	22	1			22	1		1
Colorado	39	8	10	11	83	17			5	1	29	6
New Mexico	148	12	3	8	12	1	1	1	111	9	30	21
Arizona	63	5	6	4	683	54	40	20	38	3	1	1
Utah [3]	10	1	0	0	10	1			60	6	63	5
PACIFIC												
Washington	6	2	1	1					57	18	6	12
Oregon	5	1	0	1	25	5	15	19	25	5	4	7
California	31	37	42	49	13	15	22	22	179	211	33	116
Total	44	1,101	908	1,328	44	909	580	654	54	1,313	1,566	1,012
42 weeks	21	21,435	19,558	26,026	60	51,626	278,638	144,721	750	767,804	249,260	346,832

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median
NEW ENG.												
Maine	6	1	0	0	0	0	3	3	97	16	12	14
New Hampshire	0	0	0	0	0	0	1	1	20	2	2	3
Vermont	0	0	0	0	0	0	0	0	54	4	5	7
Massachusetts	1.2	1	1	1	1.2	1	6	4	85	72	106	136
Rhode Island	0	0	0	0	0	0	0	0	54	7	23	14
Connecticut	3	1	0	0	0	0	4	3	69	23	31	24
MID. ATL.												
New York [3]	3	8	10	8	2	5	29	29	75	187	215	215
New Jersey	0	0	0	0	1.2	1	5	5	47	39	51	71
Pennsylvania	1	2	1	4	0	0	6	8	107	208	230	297

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Oct. 22, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued

Division and State	Meningitis, meningococcus				Poliomyelitis				Scarlet fever			
	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median
E. NO. CEN.												
Ohio	2.3	3	9	7	0	0	2	16	173	224	186	186
Indiana [3]	1.5	1	0	2	1.5	1	0	3	180	120	120	125
Illinois	2	3	3	6	1.3	2	10	10	148	224	194	306
Michigan [3]	2.2	2	1	1	1.1	1	12	12	310	287	267	184
Wisconsin	5	3	0	0	0	0	13	5	232	130	76	126
W. NO. CEN.												
Minnesota	0	0	0	0	2	1	20	4	104	53	78	53
Iowa	0	0	0	0	2	1	11	7	121	59	76	66
Missouri	1.3	1	2	2	0	0	10	2	88	67	163	108
North Dakota	0	0	1	1	0	0	2	2	192	26	14	16
South Dakota	0	0	0	0	8	1	2	0	234	31	10	15
Nebraska	0	0	1	0	4	1	14	1	88	23	13	18
Kansas	0	0	0	1	0	0	6	1	238	85	107	80
SO. ATL.												
Delaware	0	0	0	0	0	0	0	0	200	10	6	5
Maryland [3]	3	1	3	2	6	2	1	2	87	28	44	63
Dist. of Col	0	0	3	0	8	1	1	0	108	13	5	10
Virginia	10	5	0	0	10	5	1	1	73	38	42	60
West Virginia	2.8	1	2	2	0	0	1	3	240	86	72	121
North Carolina	3	2	2	2	0	0	3	2	149	100	68	95
South Carolina [4]	2.8	1	1	0	0	0	2	1	42	15	14	14
Georgia [4]	0	0	0	1	3	2	0	1	47	28	37	25
Florida [4]	0	0	1	0	3	1	0	0	25	8	8	2
E. SO. CEN.												
Kentucky	4	2	7	2	0	0	2	4	168	94	85	85
Tennessee [4]	1.8	1	3	1	0	0	3	3	85	47	55	78
Alabama [4]	0	0	2	1	4	2	1	1	56	31	12	33
Mississippi [3 4]	2.6	1	1	0	0	0	12	1	46	18	10	28
W. SO. CEN.												
Arkansas	0	0	0	0	0	0	8	2	59	23	20	12
Louisiana [4]	5	2	0	1	0	0	5	1	20	8	8	10
Oklahoma	2	1	1	0	0	0	2	0	63	31	35	11
Texas [4]	1.7	2	2	2	0	0	12	3	38	45	66	62
MOUNTAIN												
Montana	0	0	0	0	0	0	0	0	184	19	16	28
Idaho	0	0	0	0	0	0	1	1	180	17	32	21
Wyoming	0	0	0	0	0	0	1	0	155	7	10	10
Colorado	0	0	3	2	0	0	6	1	131	27	20	21
New Mexico	0	0	1	0	12	1	2	0	334	27	20	16
Arizona	0	0	0	0	0	0	0	0	76	6	7	7
Utah [3]	0	0	1	0	20	2	0	1	50	5	25	25
PACIFIC												
Washington	0	0	2	1	9	3	3	3	63	20	21	39
Oregon	0	0	0	0	0	0	2	4	112	22	10	43
California	0	0	3	3	1.7	2	17	17	132	156	169	165
Total	1.8	45	67	67	1.5	36	242	242	114	2,816	2,896	3,746
42 weeks	2.4	2,450	4,672	4,672	1.4	1,480	8,675	6,487	146	151,570	180,486	180,486

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Oct. 22, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued

Division and State	Smallpox				Typhoid and paratyphoid fever				Whooping cough	
	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases
NEW ENG.										
Maine	0	0	0	0	12	2	2	2	426	70
New Hampshire	0	0	0	0	10	1	2	1	102	10
Vermont	0	0	0	0	0	0	1	0	1,430	105
Massachusetts	0	0	0	0	2	2	3	4	128	109
Rhode Island	0	0	0	0	8	1	1	0	253	33
Connecticut	0	0	0	0	0	0	2	2	288	96
MID. ATL.										
New York [2]	0	0	0	0	9	22	18	25	203	504
New Jersey	0	0	0	0	2	2	3	3	277	231
Pennsylvania	0	0	0	0	35	68	37	42	110	215
E. NO. CEN.										
Ohio	0	0	1	0	9	12	17	19	54	70
Indiana [3]	6	4	2	1	5	3	8	7	69	46
Illinois	1	1	0	1	6	9	11	17	336	508
Michigan [3]	2	2	0	0	3	3	1	14	246	228
Wisconsin	0	0	0	1	2	1	4	3	560	314
W. NO. CEN.										
Minnesota	8	4	3	3	4	2	0	4	69	35
Iowa	0	0	7	2	2	1	7	7	25	12
Missouri	8	6	7	1	7	5	0	11	22	17
North Dakota	0	0	5	0	15	2	1	1	155	21
South Dakota	8	1	0	1	0	0	1	1	53	7
Nebraska	0	0	0	1	0	0	1	1	54	14
Kansas	0	0	0	1	6	2	0	5	73	26
SO. ATL.										
Delaware	0	0	0	0	40	2	0	1	40	2
Maryland [3]	0	0	0	0	59	19	8	11	37	12
Dist. of Col	0	0	0	0	0	0	3	2	58	7
Virginia	0	0	0	0	46	24	4	24	19	10
West Virginia	0	0	1	0	20	7	10	14	20	7
North Carolina	0	0	0	0	12	8	10	10	161	108
South Carolina	0	0	0	0	8	3	5	6	120	43
Georgia [4]	0	0	0	0	17	10	7	27	37	22
Florida [4]	0	0	0	0	12	4	2	2	109	35
E. SO. CEN.										
Kentucky	0	0	3	3	21	12	3	25	14	8
Tennessee [4]	0	0	3	0	35	21	19	19	59	33
Alabama [4]	2	1	0	0	9	5	3	11	13	7
Mississippi [3] [4]	3	1	0	0	18	7	6	6	------	------
W. SO. CEN.										
Arkansas	3	1	0	0	43	17	7	7	10	4
Louisiana [4]	0	0	0	0	46	19	14	14	42	17
Oklahoma	4	2	1	0	25	12	13	22	4	2
Texas [4]	1	1	1	2	18	21	46	38	51	60
MOUNTAIN										
Montana	135	14	3	2	106	11	1	3	213	22
Idaho	0	0	3	1	32	3	3	1	11	1
Wyoming	0	0	0	0	44	2	1	0	67	3
Colorado	19	4	1	1	49	10	3	3	122	25
New Mexico	0	0	0	0	185	15	19	19	99	8
Arizona	0	0	0	0	38	3	5	5	139	11
Utah [3]	0	0	0	0	0	0	2	0	181	18

See footnotes at end of table.

Cases of certain diseases reported by telegraph by State health officers for the week ended Oct. 22, 1938, rates per 100,000 population (annual basis), and comparison with corresponding week of 1937 and 5-year median—Continued

Division and State	Smallpox				Typhoid and paratyphoid fever				Whooping cough	
	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases	Oct. 23, 1937, cases	1933–37 median	Oct. 22, 1938, rate	Oct. 22, 1938, cases
PACIFIC										
Washington	0	0	30	4	3	1	3	4	75	24
Oregon	30	6	4	0	0	0	3	2	10	2
California	3	3	15	2	4	5	10	12	129	152
Total	2	51	90	78	15	379	330	422	136	3,314
42 weeks	13	13,060	8,546	5,606	12	12,344	12,966	14,931	169	173,038

[1] New York City only.
[2] Rocky Mountain spotted fever, week ended Oct. 22, 1938, 2 cases, as follows: New York, 1; Indiana, 1.
[3] Period ended earlier than Saturday.
[4] Typhus fever, week ended Oct. 22, 1938, 48 cases, as follows: South Carolina, 2; Georgia, 18; Florida, 1; Tennessee, 1; Alabama, 12; Mississippi, 1; Louisiana, 1; Texas, 12.

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	Meningitis, meningococcus	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid and paratyphoid fever
September 1938										
California	1	114	46	57	525	9	18	301	10	77
Colorado	5	56	102	1	25	----	2	50	13	51
Georgia	4	221	92	613	23	51	5	70	0	80
Idaho	2	1	10	----	18	----	2	25	2	11
Illinois	6	84	45	55	71	4	23	427	12	101
Kentucky	3	111	65	21	30	2	1	234	3	102
Minnesota	0	28	13	2	94	----	14	165	11	24
Mississippi	1	113	1,722	6,998	129	444	7	38	1	19
Montana	2	2	27	----	111	----	1	55	8	20
Nevada	1	0	----	----	3	----	0	3	0	1
New Mexico	0	15	1	4	7	2	3	28	2	56
North Dakota	1	6	9	----	76	----	0	34	2	6
Oklahoma	2	48	100	338	28	12	2	53	6	79
Rhode Island	0	0	1	----	2	----	1	10	0	5
South Dakota	1	28	9	----	25	----	8	48	5	6
Utah	0	1	21	----	12	----	0	16	0	3
Washington	----	7	5	----	30	----	2	58	34	25

Summary of monthly reports from States—Continued

September 1938

	Cases
Anthrax:	
California	3
Washington	1
Botulism:	
California	6
Chickenpox:	
California	333
Colorado	16
Georgia	2
Idaho	5
Illinois	100
Kentucky	22
Minnesota	37
Mississippi	71
Montana	45
Nevada	1
New Mexico	9
North Dakota	12
Oklahoma	8
Rhode Island	5
South Dakota	22
Utah	59
Washington	109
Conjunctivitis, infectious:	
Georgia	2
Washington	2
Dengue:	
Mississippi	2
Diarrhea:	
New Mexico	28
Dysentery:	
California (amoebic)	10
California (bacillary)	45
Colorado (amoebic)	13
Georgia (amoebic)	9
Georgia (bacillary)	20
Illinois (amoebic)	8
Illinois (amoebic carriers)	26
Illinois (bacillary)	70
Kentucky (bacillary)	41
Minnesota (amoebic)	3
Minnesota (bacillary)	3
Mississippi (amoebic)	104
Mississippi (bacillary)	437
Montana (bacillary)	3
New Mexico (amoebic)	1
New Mexico (bacillary)	16
New Mexico (unspecified)	19
North Dakota (bacillary)	2
North Dakota (unspecified)	12
Oklahoma (amoebic)	3
Oklahoma (bacillary)	21
Rhode Island	3
Washington (bacillary)	1
Encephalitis, epidemic or lethargic:	
California	16
Colorado	35
Idaho	2
Illinois	3
Kentucky	3
Minnesota	20
Montana	30
North Dakota	61
Oklahoma	1
Rhode Island	3
South Dakota	2
Washington	1
Food poisoning:	
California	241
German measles:	
California	73
Illinois	17
Montana	6
North Dakota	4
Rhode Island	1
Utah	3
Washington	12
Granuloma, coccidioidal:	
California	12
Hookworm disease:	
Georgia	330
Kentucky	1
Mississippi	571
Impetigo contagiosa:	
Montana	4
South Dakota	8
Washington	1
Jaundice, epidemic:	
California	4
Utah	1
Leprosy:	
California	1
Mumps:	
California	771
Colorado	11
Georgia	29
Idaho	8
Illinois	98
Kentucky	15
Mississippi	55
Montana	11
Nevada	3
New Mexico	2
North Dakota	2
Oklahoma	1
Rhode Island	10
South Dakota	26
Utah	72
Washington	84
Ophthalmia neonatorum:	
Illinois	1
Mississippi	7
Washington	1
Puerperal septicemia:	
Georgia	1
Idaho	2
Mississippi	33
New Mexico	4
Rabies in animals:	
California	62
Illinois	25
Minnesota	6
Mississippi	7
New Mexico	1
Rhode Island	3
Washington	22
Rabies in man:	
Illinois	1
Relapsing fever:	
California	9
Rocky Mountain spotted fever:	
Illinois	3
Mississippi	1
Nevada	1
Scabies:	
Montana	3
South Dakota	4
Septic sore throat:	
California	9
Colorado	5
Georgia	43
Idaho	3
Septic sore throat—Con.	
Kentucky	9
Minnesota	10
Montana	3
New Mexico	8
Oklahoma	36
Rhode Island	6
Washington	3
Tetanus:	
California	4
Georgia	1
Illinois	5
Minnesota	1
North Dakota	1
Oklahoma	1
Washington	1
Trachoma:	
California	48
Georgia	1
Illinois	39
Kentucky	7
Mississippi	4
Montana	25
North Dakota	1
Oklahoma	3
Trichinosis:	
California	2
Tularaemia:	
California	2
Georgia	4
Idaho	1
Illinois	5
Kentucky	1
New Mexico	2
South Dakota	1
Utah	3
Typhus fever:	
Georgia	134
Mississippi	1
Undulant fever:	
California	24
Georgia	10
Illinois	27
Kentucky	3
Minnesota	8
Mississippi	4
North Dakota	1
Oklahoma	151
Rhode Island (delayed report)	1
Utah	2
Washington	5
Vincent's infection:	
Idaho	1
North Dakota	10
Oklahoma	5
Whooping cough:	
California	583
Colorado	151
Georgia	72
Idaho	19
Illinois	1,681
Kentucky	164
Minnesota	178
Mississippi	525
Montana	139
Nevada	3
New Mexico	51
North Dakota	140
Oklahoma	35
Rhode Island	49
South Dakota	34
Utah	99
Washington	110

PLAGUE INFECTION IN FLEAS FROM PRAIRIE DOGS IN APACHE COUNTY, ARIZ.

Under date of October 15, 1938, Senior Surg. C. R. Eskey reported plague infection proved in a pool of 98 fleas collected from 18 prairie dogs (*Cynomys gunnisoni zuniensis*) shot September 27, 1938, 7 miles south of St. Johns, Apache County, Ariz.

WEEKLY REPORTS FROM CITIES

City reports for week ended October 15, 1938

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

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Data for 90 cities:											
5-year average	219	97	26	179	404	721	5	347	66	821	-------
Current week [1]	178	59	21	351	414	585	5	308	50	1,110	-------
Maine:											
Portland	0	------	0	0	0	0	0	0	0	5	20
New Hampshire:											
Concord	0	------	0	0	1	0	0	0	0	0	10
Manchester	0	------	0	0	1	0	0	0	0	0	17
Nashua	0	------	1	0	0	1	0	0	0	0	6
Vermont:											
Barre	0	------	0	0	0	0	0	2	0	0	3
Burlington	0	------	0	1	0	1	0	0	0	0	9
Rutland	0	------	0	0	0	0	0	0	0	0	5
Massachusetts:											
Boston	0	------	0	1	6	17	0	7	0	21	208
Fall River	1	------	0	0	2	0	0	0	0	0	32
Springfield	0	------	0	1	1	0	0	3	0	3	33
Worcester	0	------	0	3	6	0	0	0	0	14	42
Rhode Island:											
Pawtucket	0	------	0	0	2	0	0	0	0	6	12
Providence	0	------	0	0	2	3	0	1	0	21	64
Connecticut:											
Bridgeport	0	------	0	0	1	2	0	1	0	0	20
Hartford	1	------	0	0	4	2	0	1	0	3	44
New Haven	0	2	0	4	4	1	0	1	0	5	34
New York:											
Buffalo	0	------	0	2	11	10	0	2	0	24	138
New York	16	8	1	14	73	37	0	64	4	168	1,411
Rochester	1	------	0	1	2	0	0	0	0	3	62
Syracuse	0	------	0	0	1	1	0	1	1	10	39
New Jersey:											
Camden	1	------	0	0	0	3	0	0	0	0	31
Newark	0	------	0	2	4	4	0	2	0	40	106
Trenton	0	------	0	0	3	4	0	1	0	0	31
Pennsylvania											
Philadelphia	4	4	3	4	21	28	0	10	6	63	459
Pittsburgh	2	2	2	0	22	25	0	8	3	15	167
Reading	15	------	0	1	1	2	0	0	1	0	22
Scranton	0	------	-------	1	-------	1	0	-------	0	0	-------
Ohio:											
Cincinnati	9	------	0	0	1	14	0	4	0	2	103
Cleveland	2	6	0	2	12	11	0	9	0	23	177
Columbus	0	------	0	0	3	7	0	5	0	0	103
Toledo	0	------	0	0	2	10	0	0	1	3	64
Indiana:											
Anderson	0	------	0	0	1	4	0	1	1	0	10
Fort Wayne	0	------	0	0	4	0	0	0	0	0	29
Indianapolis	8	------	0	3	10	30	4	5	0	1	102
South Bend	0	------	0	0	4	4	0	0	0	1	23
Terre Haute	7	------	0	0	0	3	0	0	0	0	9
Illinois:											
Alton	0	------	0	0	0	8	0	1	0	0	6
Chicago	16	5	3	7	31	68	0	39	4	279	668
Elgin	0	------	0	1	1	2	0	0	0	0	10
Moline	0	1	1	0	0	1	0	0	0	3	5
Springfield	0	------	0	0	3	1	0	0	1	0	34

[1] Figures for Los Angeles, Calif., estimated; report not received.

City reports for week ended October 15, 1938—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								
Michigan:											
Detroit	9	------	1	3	16	76	0	11	2	94	231
Flint	0	------	0	2	3	18	0	0	0	3	26
Grand Rapids	0	------	0	0	3	8	0	0	0	0	33
Wisconsin:											
Kenosha	0	------	0	1	0	1	0	0	0	7	8
Madison	0	------	0	1	0	1	0	0	0	7	7
Milwaukee	0	------	0	4	4	39	0	0	0	115	108
Racine	0	------	0	0	0	0	0	0	0	5	14
Superior	0	------	0	0	0	3	0	0	0	9	10
Minnesota:											
Duluth	0	------	0	0	1	2	0	0	0	2	21
Minneapolis	1	------	0	48	6	13	0	2	0	7	106
St. Paul	0	------	0	22	6	2	0	0	0	3	52
Iowa:											
Cedar Rapids	0	------	--------	1	-------	1	0	-------	0	0	--------
Davenport	2	------	--------	0	-------	1	0	-------	0	0	--------
Des Moines	0	------	0	0	0	3	0	0	0	0	39
Sioux City	0	------	--------	2	-------	4	0	-------	0	1	--------
Waterloo	16	------	--------	1	-------	3	0	-------	0	1	--------
Missouri:											
Kansas City	1	1	1	1	11	16	0	5	0	7	101
St. Joseph	0	------	0	0	4	0	0	0	0	0	21
St. Louis	14	1	0	1	10	17	0	9	3	9	205
North Dakota:											
Fargo	0	------	0	68	1	1	0	2	0	1	10
Grand Forks	1	------	--------	0	-------	0	0	-------	0	0	--------
Minot	0	------	0	0	0	2	0	0	0	1	9
South Dakota:											
Aberdeen	0	------	--------	0	-------	1	0	0	-------	0	--------
Sioux Falls	0	------	0	0	0	2	0	0	0	0	8
Nebraska:											
Lincoln	0	------	--------	0	-------	6	0	-------	0	2	--------
Omaha	0	------	0	2	2	1	0	1	0	2	43
Kansas:											
Lawrence	0	------	0	0	0	0	0	0	0	0	3
Topeka	0	------	0	0	0	1	0	0	0	1	12
Wichita	0	------	0	0	2	1	0	1	0	1	26
Delaware:											
Wilmington	0	------	0	1	1	5	0	1	1	0	26
Maryland:											
Baltimore	2	3	1	21	12	6	0	7	0	18	187
Cumberland	0	------	0	0	0	0	0	1	0	0	7
Frederick	0	------	0	0	0	0	0	0	0	0	4
Dist. of Col.:											
Washington	6	------	0	3	7	10	0	8	5	16	158
Virginia:											
Lynchburg	6	------	0	0	0	0	0	1	1	1	13
Norfolk	1	------	0	0	2	2	0	0	0	0	29
Richmond	4	------	0	0	6	4	0	3	0	0	54
Roanoke	1	------	0	0	0	3	0	0	0	0	23
West Virginia:											
Charleston	0	------	0	0	1	1	0	0	0	1	30
Huntington	3	------	--------	0	-------	1	0	-------	0	0	--------
Wheeling	0	------	0	1	1	2	0	0	0	3	27
North Carolina:											
Gastonia	0	------	--------	0	-------	0	0	-------	0	0	--------
Raleigh	0	------	0	0	1	0	0	0	0	0	10
Wilmington	1	------	0	0	0	0	0	1	0	0	7
Winston-Salem	6	------	0	2	1	4	0	3	0	5	18
South Carolina:											
Charleston	0	4	0	0	0	1	0	0	0	4	22
Florence	0	------	0	0	1	0	0	0	0	0	8
Greenville	0	------	0	0	3	0	0	0	0	0	22
Georgia:											
Atlanta	7	7	1	0	9	9	0	6	1	2	65
Brunswick	0	------	0	0	0	0	0	1	0	0	6
Savannah	0	1	1	0	2	0	0	3	3	1	35
Florida:											
Miami	0	------	0	0	3	0	0	0	3	2	26
Tampa	0	1	1	0	1	0	0	1	0	0	26
Kentucky:											
Ashland	1	------	0	0	2	0	0	0	1	0	13
Covington	1	------	0	0	0	1	0	0	0	2	5
Lexington	0	------	0	0	0	0	0	2	0	0	22
Louisville	0	1	0	1	7	14	0	1	0	1	57

City reports for week ended October 15, 1938—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								
Tennessee:											
Knoxville	2	3	0	0	1	2	0	0	0	0	27
Memphis	2	------	0	0	2	4	0	5	1	4	72
Nashville	0	------	1	0	1	1	0	4	0	4	47
Alabama:											
Birmingham	3	3	------	0	3	1	0	1	0	0	66
Mobile	1	------	0	0	1	0	0	3	0	0	22
Montgomery	0	------	------	0	------	1	0	------	2	0	------
Arkansas:											
Fort Smith	0	------	------	0	------	2	0	------	0	0	------
Little Rock	0	------	0	1	3	1	0	1	0	0	4
Louisiana:											
Lake Charles	1	------	0	0	0	0	0	0	0	0	7
New Orleans	5	4	1	6	12	6	0	14	0	8	140
Shreveport	0	------	0	0	3	0	0	2	0	1	29
Oklahoma:											
Oklahoma City	0	2	1	0	6	3	0	2	0	0	43
Tulsa	2	------	------	0	------	6	0	------	0	2	------
Texas:											
Dallas	3	------	0	0	4	0	0	3	1	8	55
Fort Worth	2	------	0	0	1	3	0	0	0	3	31
Galveston	0	------	0	0	2	1	0	1	0	0	17
Houston	5	------	0	0	5	2	0	4	1	0	77
San Antonio	1	1	1	0	6	2	1	5	0	1	63
Montana:											
Billings	0	------	0	1	0	0	0	0	0	0	11
Great Falls	0	------	0	1	0	1	0	0	0	0	7
Helena	0	------	0	2	0	0	0	0	0	0	4
Missoula	0	------	0	0	2	0	0	0	3	0	6
Idaho:											
Boise	0	------	0	0	1	1	0	0	0	0	8
Colorado:											
Colorado Springs	0	------	0	0	0	0	0	2	0	1	10
Denver	6	------	0	3	3	6	0	3	0	7	84
Pueblo	0	------	0	0	0	2	0	1	0	0	4
Utah:											
Salt Lake City	0	------	0	3	0	0	0	0	0	1	26
Washington:											
Seattle	0	------	1	3	1	3	0	1	1	1	71
Spokane	0	2	2	0	0	0	0	0	3	0	30
Tacoma	0	------	0	0	0	2	0	0	0	6	22
Oregon:											
Portland	0	1	0	1	2	13	0	1	0	0	69
Salem	0	------	------	0	------	2	1	------	0	0	------
California:											
Los Angeles	------	------	------	------	------	------	------	------	------	------	------
Sacramento	0	------	0	1	3	4	0	1	2	0	26
San Francisco	1	------	0	100	9	4	0	15	1	33	171

State and city	Meningitis, meningococcus		Poliomyelitis cases
	Cases	Deaths	
Massachusetts:			
Springfield	1	1	0
New York:			
New York	3	0	3
Pennsylvania:			
Philadelphia	1	1	2
Illinois:			
Chicago	2	0	1
Wisconsin:			
Kenosha	1	0	0
Minnesota:			
St. Paul	0	0	1
District of Columbia:			
Washington	0	0	1
Virginia:			
Richmond	2	0	3
Alabama:			
Birmingham	0	0	1
Louisiana:			
Lake Charles	1	0	0
New Orleans	1	0	0
Shreveport	0	1	0
Texas:			
Dallas	1	1	0
Colorado:			
Denver	1	0	0
Oregon:			
Portland	1	0	0

Encephalitis, epidemic or lethargic.—Cases: Philadelphia, 1; Pittsburgh, 1; Springfield, Ill., 1; Grand Rapids, 1; Minot, 1; Louisville, 1; Birmingham, 1; Fort Worth, 1.

Pellagra.—Cases: Boston, 2; Atlanta, 7; Savannah 3; Dallas, 1.

Typhus fever.—Cases: Charleston, S. C., 8; Atlanta, 1; Savannah, 2; Miami, 1; Mobile, 2; Houston, 1. Deaths: Houston, 1.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—2 weeks ended October 8, 1938.—During the 2 weeks ended October 8, 1938, 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[1]	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Cerebrospinal meningitis				3	2					5
Chickenpox		3	27	69	91	41	24	56	45	356
Diphtheria		9	6	117	10	15	6	3	2	168
Dysentery				1	32				30	63
Erysipelas				10	4	3		2		19
Influenza		17			26	1			6	50
Measles				19	90	21	4	5	6	145
Mumps		1			18	23	9	23	6	80
Paratyphoid fever					4				2	6
Pneumonia					11		1		10	22
Poliomyelitis			3	3	13	16	3	4	1	43
Scarlet fever		9	21	126	156	69	34	43	38	496
Trachoma					2	1				3
Tuberculosis	3	79	21	91	71	70	7	5	23	370
Typhoid fever		2	8	54	19	5	2	2	2	94
Undulant fever				1	3					4
Whooping cough				102	229	54	1		36	422

[1] For 2 weeks ended Oct. 12, 1938.

VIRGIN ISLANDS

Notifiable diseases—July–September 1938.—During the months of July, August, and September 1938, cases of certain notifiable diseases were reported in the Virgin Islands as follows:

Disease	July	August	September	Disease	July	August	September
Chickenpox	2		1	Mumps		1	
Dysentery	1			Pellagra	4	3	3
Filariasis		6	2	Pneumonia	2	1	1
Gonorrhea	10	13	15	Schistosomiasis	1		1
Hookworm disease	20	1	3	Syphilis	8	6	13
Leprosy			1	Tuberculosis	4	3	1
Malaria	2	3		Typhoid fever	1		
Measles			1	Whooping cough	176	70	

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 October 28, 1938, pages 1946-1959. A similar cumulative table will appear in future issues of the PUBLIC HEALTH REPORTS for the last Friday of each month.

Cholera

China.—For the week ended October 15, 1938, cases of cholera were reported in China as follows: Hong Kong, 16; Macao, 39; Shanghai, 82.

Indochina (French)—Tonkin Province.—During the week ended October 15, 1938, 15 cases of cholera were reported in Tonkin Province, French Indochina.

Plague

Argentina—Correction.—The 2 cases of plague with 1 death reported in Ingenio Santa Ana, Tucuman Province, Argentina, published on page 1853 of the PUBLIC HEALTH REPORTS for October 14, 1938, is an error as later information states that no plague occurred in this place.

Bolivia.—For the period August 1 to September 7, 1938, cases of pneumonic plague were reported in Bolivia as follows: Chuquisaca Department, 1; Santa Cruz Department, 3.

Hawaii Territory—Island of Hawaii—Hamakua District—Paauhau Sector.—Two rats found on October 6, 1938, in Paauhau Sector, Hamakua District, Island of Hawaii, Hawaii Territory, have been proved plague infected.

Tunisia—Tunis.—During the week ended October 22, 1938, 1 case of plague was reported in Tunis, Tunisia.

United States—Arizona—Apache County.—A report of plague-infected fleas in Apache County, Arizona, appears on page 1985 of this issue of PUBLIC HEALTH REPORTS.

Smallpox

Bolivia.—For the period August 1 to September 7, 1938, cases of smallpox were reported in Bolivia as follows: Cochabamba Department, 2; Chuquisaca Department, 3; La Paz Department, 27; Santa Cruz Department, 8.

Typhus Fever

Bolivia.—For the period August 1 to September 7, 1938, cases of typhus fever were reported in Bolivia as follows: Cochabamba Department, 1; La Paz Department, 1; Oruro Department, 1; Potosi Department, 7.

Yellow Fever

Gold Coast.—Yellow fever has been reported in Gold Coast as follows: October 10, Salaga, 1 case; October 14, Tamale, 1 case; October 15, Wangasi Turu, 1 case.

Ivory Coast—Tenkodogo.—On October 13, 1938, 1 case of yellow fever was reported in Tenkodogo, Ivory Coast.

Nigeria—Ikotepkene.—On October 8, 1938, 1 suspected case of yellow fever was reported in Ikotepkene, Nigeria.

×