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IMPORTANCE OF RESPIRATORY DISEASES AS A CAUSE OF DISABILITY AMONG INDUSTRIAL WORKERS [1]

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A 10-year record of disabling illnesses among employees of the Edison Electric Illuminating Co. of Boston showed that 54 per cent of the absences on account of sickness among the men was caused by the respiratory [2] group of diseases. This record is of especial interest because it includes all disabilities lasting one working day or longer during the decade ending December 31, 1924.[3]

From the reports of a group of industrial sick-benefit associations, of cases of illness causing disability for eight consecutive days or longer among the male members of the associations, it was found that respiratory diseases caused 47 per cent of the illnesses. In these reports, which covered the period from 1921 to 1926, inclusive, the number of men included averaged nearly 100,000 annually, or a total of approximately 570,000 years of life under observation during the six-year period.[4]

Thus, whether we consider all cases of disabling sickness or only those which caused disability for a period longer than one week, we find that respiratory diseases constituted approximately one-half of the cases. From the standpoint of effect upon the absence rate in industry, no other disease group approached in importance the respiratory diseases. Among employees of the Edison Co. diseases of the respiratory system caused more absences from work than all other diseases put together.

TIME LOSSES CAUSED BY THE RESPIRATORY DISEASES

The sickness records of the Edison Co. revealed an annual loss of 3.23 calendar days of disability [5] from respiratory diseases per male employee, compared with 6.92 calendar days of disability from all

[1] From the Office of Industrial Hygiene and Sanitation in cooperation with the Office of Statistical Investigations of the United States Public Health Service.

[2] Including influenza and grippe, tuberculosis of the lungs, diseases of the pharynx and tonsils, colds and other diseases of the nasal fossae, etc., i. e. title numbers 11, 31, 109, and 97–107 in the International List of the Causes of Death, third revision, Paris, 1920.

[3] For details of this study, see "A Ten-Year Record of Absences from Work on Account of Sickness and Accidents." Pub. Health Rep., vol. 42, No. 8 (Feb. 25, 1927), pp. 529–550. (Reprint No. 1142.)

[4] For more detailed information in regard to the reporting sick-benefit associations, see "Sickness Among Industrial Employees." Pub. Health Rep., Vol. 41, No. 4 (Jan. 22, 1926), pp. 113–131. (Reprint No. 1060.)

[5] Number of calendar days intervening from the date disability began to the date of return to work.

causes of sickness per man on the pay roll. Diseases of the respiratory system, accordingly, accounted for 47 per cent of the time lost; and, as has been mentioned, for 54 per cent of the number of absences due to illness.

The records of the reporting sick-benefit associations show a smaller proportion of time lost from the respiratory diseases. In the associations having a benefit period of 13 weeks, this disease group caused 34 per cent of total calendar days of disability from all diseases; in the associations with a benefit period of 26 weeks the percentage was 35; and in those associations in which the maximum period of benefit payments is 52 weeks, respiratory diseases caused 32 per cent of the total number of days of disability. In the sick-benefit associations, however, no record is kept of the time lost after the close of the benefit period for those members who are still disabled after they have drawn maximum benefits, and hence these time-lost percentages are not as accurate as those based on the number of days lost among employees of the Edison Co.

TABLE 1.—*Respiratory diseases causing absence from work for one day or longer among employees of the Edison Electric Illuminating Co. of Boston in the 10 years ending December 31, 1924*

Respiratory diseases causing disability (with corresponding title numbers in parentheses from the International List of the Causes of Death, Third Revision, Paris, 1920)	Number of absences	Number of days of disability [1]	Annual number of absences per 1,000 on the pay roll	Calendar days per absence [1]	Annual number of days of disability per person on the pay roll
MALES					
(18,172 years of life under observation)					
Sickness, exclusive of accidents (1–136, 151–158, 205)	18,879	125,694	1,039	6.66	6.917
Respiratory diseases (11, 31, 97–107, 109)	10,254	58,702	564	5.72	3.230
Diseases of the nasal fossae and their annexa (97)	7,266	24,817	400	3.42	1.366
Bronchitis—acute and chronic (99)	336	4,421	18	13.16	.243
Diseases of the larynx (98)	101	529	6	5.24	.029
Diseases of the pharynx and tonsils (109)	1,261	6,812	69	5.40	.375
Influenza and grippe (11)	919	9,023	51	9.82	.496
Tuberculosis of the respiratory system (31)	41	6,699	2	163.39	.369
Pneumonia, all forms (100, 101)	107	4,261	6	39.82	.234
Pleurisy (102)	169	1,300	9	7.69	.072
Other diseases of the respiratory system (103–107)	54	840	3	15.56	.046
FEMALES					
(3,749 years of life under observation)					
Sickness, exclusive of accidents (1–158, 205)	8,191	48,333	2,185	5.90	12.892
Respiratory diseases (11, 31, 97–107, 109)	3,686	20,687	983	5.61	5.519
Diseases of the nasal fossae and their annexa (97)	2,572	8,046	686	3.13	2.146
Bronchitis—acute and chronic (99)	99	1,967	26	19.87	.525
Diseases of the larynx (98)	77	306	21	3.97	.082
Diseases of the pharynx and tonsils (109)	640	3,437	171	5.37	.917
Influenza and grippe (11)	222	3,535	59	15.92	.943
Tuberculosis of the respiratory system (31)	11	1,783	3	162.09	.476
Pneumonia, all forms (100, 101)	18	867	5	48.17	.231
Pleurisy (102)	32	204	8	6.38	.054
Other diseases of the respiratory system (103–107)	15	542	4	36.13	.145

[1] Number of calendar days from the date disability began to the date of return to work.

TABLE 2.—*Respiratory diseases causing disability for eight consecutive days or longer among a group of men employed in several different industries. Average annual frequency, 1921–1926, inclusive*

(Number of years of life under observation 570,042)

Respiratory diseases (with corresponding title numbers in parentheses from the International List of the Causes of Death, third revision, Paris, 1920)	Annual number of cases per 1,000 men	Number of cases
Sickness, exclusive of accidents [1]	90.9	51,823
Respiratory diseases (11, 31, 97–107, 109)	43.1	24,549
Bronchitis—acute and chronic (99)	5.7	3,238
Diseases of the pharynx and tonsils (109)	6.4	3,619
Influenza and grippe (11)	20.8	11,869
Tuberculosis of the respiratory system (31)	1.5	837
Pneumonia, all forms (100, 101)	3.3	1,884
Other diseases of the respiratory system (103–107)	5.4	3,102

[1] An understatement of the number of cases causing disability for more than one week, because most of the reporting industrial mutual associations do not pay sick benefits for the venereal diseases, for illness resulting from the violation of any civil law, for the results of willful or gross negligence, and for certain other causes. Some associations do not pay for chronic diseases contracted prior to the date of joining the organization, nor for disabilities caused by or growing out of specific physical defects.

RELATIVE FREQUENCY OF THE DIFFERENT RESPIRATORY DISEASES CAUSING DISABILITY

The record of disabilities of one day or longer during the 10 years from 1915 to 1924, inclusive, showed that the common cold was by far the worst offender in the family of respiratory diseases as a cause of disability among a group of male employees. Diseases of the nasal fossae (mostly colds) occurred at nearly six times the rate of diseases of the pharynx and tonsils, which was the next most frequent respiratory disease group. Influenza and grippe occupied third place, and bronchitis fourth. The rates as shown in Table 1 were as follows:

Relative frequency of different respiratory diseases causing disability for one day or longer—Experience of male employees of the Edison Electric Illuminating Co. of Boston, 1915–1924, inclusive

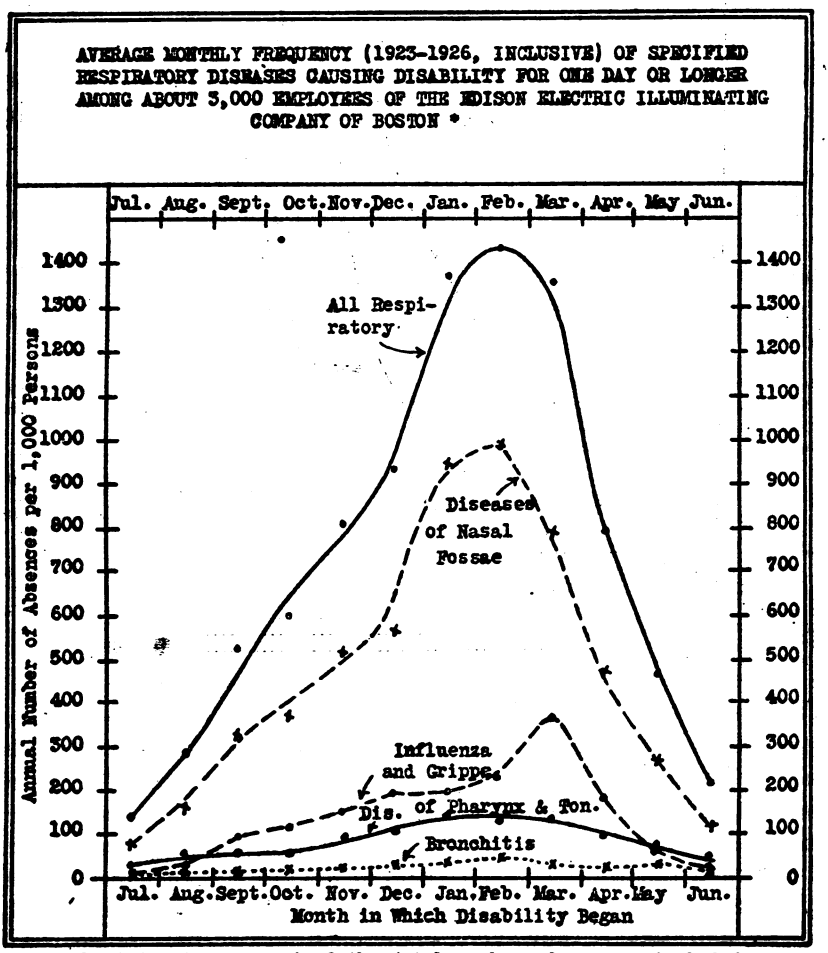
Respiratory diseases	Annual number of absences per 1,000 men	Per cent of total respiratory cases
All respiratory diseases	564	100
1. Colds and other diseases of nasal fossæ	400	71
2. Diseases of the pharynx and tonsils	69	12
3. Influenza and grippe	51	9
4. Bronchitis	18	3
All other respiratory diseases	26	5

The respiratory picture is rather different when one leaves out of account the disabilities lasting one week or less, as is done in the data of the sick-benefit organizations. The common cold, which caused 71 per cent of the absences from diseases of the respiratory system, disabling 4 out of 10 men for 3.4 days annually and 7 out of 10 women for 3.1 days each year, drops out of the picture when only the eight-day and longer illnesses are considered. Diseases of the pharynx and tonsils, however, again occupied second place. The incidence rate of bronchitis was third from the highest, and of pneumonia (all forms) fourth, in this array. The rates as shown in

Table 2 were as given below. The large number of respiratory cases which cause disability for less than eight days is indicated from a comparison of the rates shown in the table above with those given in the following table:

Relative frequency of different respiratory diseases causing disability for eight consecutive days or longer—Experience of male members of sick-benefit associations which reported their cases to the United States Public Health Service, 1921–1926, inclusive

Respiratory diseases	Annual number of cases per 1,000 men	Per cent of total respiratory cases
All respiratory diseases	43.1	100
1. Influenza and grippe	20.8	48
2. Diseases of the pharynx and tonsils	6.4	15
3. Bronchitis	5.7	13
4. Pneumonia (all forms)	3.3	8
All other respiratory diseases	6.9	16

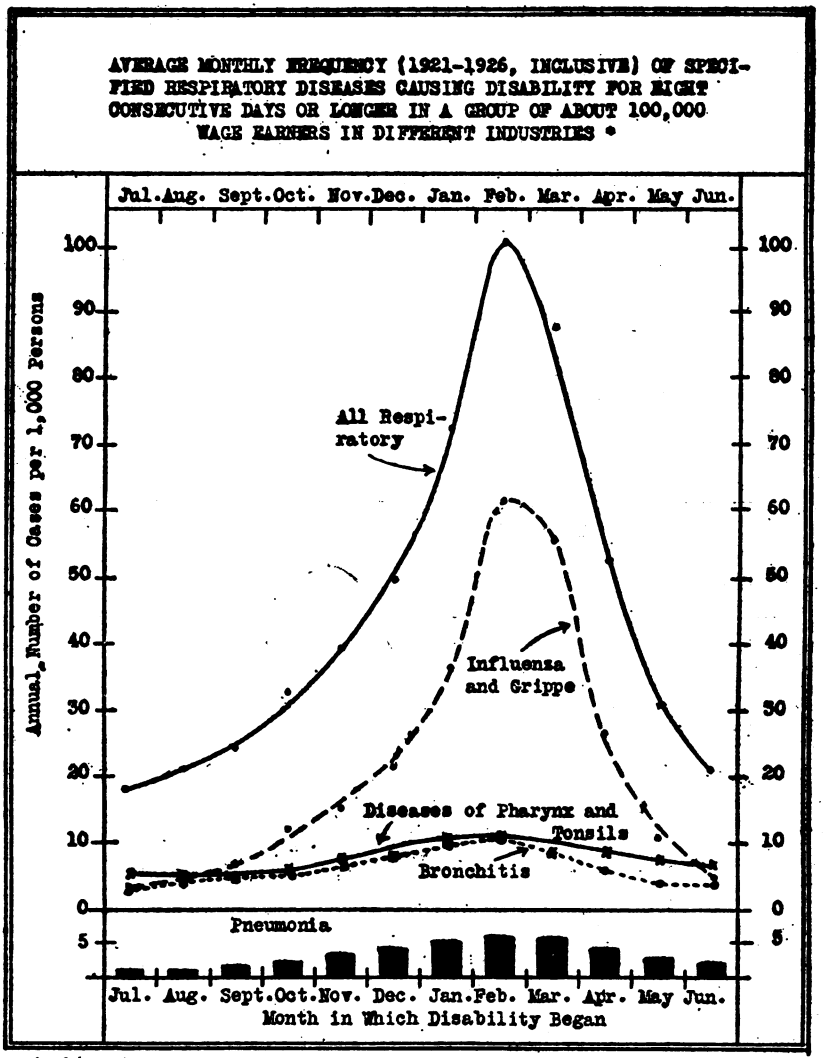


* About twenty per cent of the total number of persons included in this record were women.

FIG. 1

SEASONAL NATURE OF RESPIRATORY DISEASES

The tendency for respiratory disease incidence to vary in accordance with the season of the year is measured in Tables 3 and 4, and the rates are plotted in Figures 1 and 2. The records for disabilities of one



* About ten per cent of the total number of persons included in the record were women.

FIG. 2

day or longer and of eight days or longer both showed the minimum respiratory incidence rate in the month of July and the maximum rate in February.

An interesting difference was revealed in the curve for all respiratory diseases in the two sets of data. Respiratory disabilities lasting

longer than one week occurred oftener in March than in January, and more frequently in April than in December. In contrast, the record for disabilities of one day or longer indicated practically the same respiratory rate in March as in January, and a lower rate in April than in December. Attacks of respiratory sickness having their onset in the late winter and early spring evidently tend to be more prolonged than those which begin in the early part of winter. From this it appears that industrial workers possess less resistance to respiratory infections toward the end of winter than at its beginning.

TABLE 3.—*Average monthly frequency (1923–1926, inclusive) of specified respiratory diseases causing disability for one day or longer among employees (approximately 3,000) of the Edison Electric Illuminating Co. of Boston* [1]

Month in which disability began	Annual number of absences per 1,000 persons							
	Sickness and non-industrial accidents	Nonrespiratory diseases	Respiratory diseases					
			Total	Colds and other diseases of the nasal fossæ	Diseases of the pharynx and tonsils	Influenza and grippe	Bronchitis	Other respiratory diseases [2]
July	842	696	146	80	34	11	4	17
August	985	702	283	165	64	27	13	14
September	1,089	568	521	328	65	95	12	21
October	1,152	555	597	371	59	116	20	31
November	1,423	619	804	520	95	153	18	18
December	1,575	649	926	570	101	194	29	32
January	2,077	713	1,364	947	143	198	27	49
February	2,128	695	1,433	990	129	227	42	45
March	2,059	701	1,358	785	136	367	28	42
April	1,432	641	791	470	98	176	21	26
May	1,093	628	465	273	77	67	26	22
June	937	712	225	122	51	25	10	17

[1] About 20 per cent of the total number of persons included in this table were women.
[2] Disease numbers 31, 98, 100–107 in the International List of the Causes of Death, third revision, Paris, 1920.

TABLE 4.—*Average monthly frequency (1921–1926, inclusive) of specified respiratory diseases causing disability for eight consecutive days or longer in a group of about 100,000 wage earners in different industries* [1]

Month in which disability began	Annual number of cases per 1,000 persons							
	Sickness and non-industrial accidents	Nonrespiratory diseases [2]	Respiratory diseases					
			Total	Influenza and grippe	Diseases of the pharynx and tonsils	Bronchitis, acute and chronic	Pneumonia, all forms	Other respiratory diseases [3]
July	76.8	58.4	18.4	3.7	5.2	3.0	1.0	5.5
August	83.7	62.3	21.4	5.0	5.1	3.9	1.0	6.4
September	83.1	58.6	24.5	6.8	4.8	4.5	1.6	6.8
October	86.5	53.9	32.6	12.0	6.2	5.6	2.2	6.6
November	94.5	54.8	39.7	15.4	7.4	6.3	3.1	7.5
December	106.0	56.4	49.6	21.5	8.1	7.8	4.0	8.2
January	141.6	68.9	72.7	36.3	10.7	9.3	5.0	11.4
February	168.1	67.4	100.7	61.5	11.0	10.9	5.8	11.5
March	150.9	62.9	88.0	55.7	9.0	8.6	5.6	9.1
April	117.0	64.3	52.7	26.5	8.7	5.7	4.0	7.8
May	92.1	61.2	30.9	10.8	7.3	3.9	2.5	6.4
June	80.6	59.6	21.0	4.5	6.3	3.5	1.7	5.0

[1] About 10 per cent of the total number of persons included in this table were women.
[2] Nonindustrial accidents included.
[3] Disease numbers 31, 97, 98, 102–107 in the International List of the Causes of Death, third revision, Paris, 1920.

The tremendous upswing from September to February, and the even more abrupt decline from February to May, in the frequency of diseases of the respiratory system causing absence from work for one day or longer, results largely from the seasonal characteristic of the common cold. There were twelve times as many disabilities from colds and other diseases of the nasal fossæ in midwinter as in midsummer. (See Table 3.)

The seasonal extremes in sickness incidence were not so wide when the more serious respiratory cases only were considered, i. e., those which kept employees away from work for more than one week. The curve for such cases, however, was decidedly steep, largely on account of the marked seasonal tendency in the incidence of the eight-day or longer cases of influenza and grippe. Diseases of the pharynx and tonsils, and bronchitis exhibited no such abrupt rise and decline according to season as was shown for influenza and grippe, and, to a lesser extent, for the pneumonias. (See Table 4 and fig. 2.)

VARIATION IN THE FREQUENCY OF RESPIRATORY DISEASES IN DIFFERENT COMPANIES

The frequency of disability lasting eight days or longer on account of diseases of the respiratory system varied greatly among the 26 industrial sick-benefit associations which reported their claims to the United States Public Health Service throughout the three years ending December 31, 1926. In the establishment showing the lowest respiratory rate for these three years, the incidence was only 17 cases a year per 1,000 men; in the establishment having the highest respiratory rate there were 85 cases a year per 1,000 men. There were thus just five times as many cases of respiratory disease causing disability for a period longer than one week per 1,000 men on the pay roll in the establishment having the most respiratory sickness as in the plant showing the lowest respiratory frequency rate.

TABLE 5.—*Frequency of respiratory diseases causing disability for eight consecutive days or longer among males during the three years ending December 31, 1926, by establishments which reported to the United States Public Health Service throughout this period*

Establishments arrayed according to the size of the respiratory incidence rate	Years of life under observation, 1924–1926, inclusive	Number of respiratory cases	Annual number of respiratory cases per 1,000 men	Establishments arrayed according to the size of the respiratory incidence rate	Years of life under observation, 1924–1926, inclusive	Number of respiratory cases	Annual number of respiratory cases per 1,000 men
Total	317,334	13,616	42.9	No. 13	3,583	162	45.2
				No. 14	5,514	240	43.5
No. 1	15,106	1,284	85.0	No. 15	5,122	219	42.8
No. 2	13,038	1,010	77.5	No. 16	7,829	326	41.6
No. 3	2,156	153	71.0	No. 17	4,257	145	34.1
No. 4	1,610	107	66.5	No. 18	32,000	1,034	32.3
No. 5	13,756	886	64.4	No. 19	9,207	291	31.6
No. 6	6,951	438	63.0	No. 20	10,200	318	31.2
No. 7	6,584	409	62.1	No. 21	45,442	1,372	30.2
No. 8	14,398	838	58.2	No. 22	3,506	105	29.9
No. 9	4,048	233	57.6	No. 23	10,397	293	28.2
No. 10	42,139	2,310	54.8	No. 24	20,802	462	22.2
No. 11	1,409	67	47.6	No. 25	34,259	744	21.7
No. 12	3,371	159	47.2	No. 26	650	11	16.9

Wide differences in death rates as well as in rates of sickness from the respiratory diseases as a whole and from specific diseases of the respiratory system are found in different States, cities, and communities. To cite only one example, the death rate from pneumonia (all forms) in Akron, Ohio, during the 11 years ending December 31, 1920, was 138 per 100,000 population; in Youngstown, which is only 53 miles from Akron, the pneumonia death rate was 268 per 100,000; and in East Youngstown the rate was 484 per 100,000 population during these 11 years.

It is evident that the causes of wide differences in the incidence of respiratory diseases and in the severity of such illnesses as measured by the death rate should be investigated and thoroughly understood before any considerable measure of success is to be expected in the prevention or control of these diseases among large groups of the industrial population. In view of the frequency of disability and the amount of time lost from work on account of the respiratory diseases, even a small degree of success in their prevention would contribute enormously to the sum total of physical and mental energy, to the number of days that the industrial population is physically able to work, and, accordingly, to an enhanced national prosperity. It appears that there is not only a field, but an urgent need, for study of the factors which cause such wide variations in the frequency of respiratory diseases among different groups of industrial workers. One such study is being made of a specific respiratory disease. The United States Public Health Service is attempting to measure and evaluate the more important factors affecting the incidence and severity of lobar pneumonia. Records are being kept of the pneumonia cases and the conditions under which they occur in certain groups of industrial employees known to have a high rate, and in other groups experiencing average or less than average pneumonia frequency. Analysis of the records, it is believed, will cast light upon the influence of some of the more important causes of high sickness and death rates from the disease, and contribute something to that knowledge which, obviously, is prerequisite to real control and prevention of the respiratory diseases.

RAT-FLEA SURVEY OF THE PORT OF SAN JUAN, PORTO RICO—A PRELIMINARY REPORT

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A rat-flea survey was in progress in the port of San Juan, Porto Rico, during the fiscal year 1927, as a part of a general program of the United States Public Health Service to make rat-flea surveys in the principal seaports of the United States as an aid in estimating their plague infectibility. The survey is still under way and will be continued until sufficient data are secured to substantiate definite conclusions. This paper briefly records the results of the first year's work. Although the total numbers are not very large, the trend appears to be sufficiently definite to warrant publication at this time, and will be followed in time by a full report of the completed survey.

The survey in San Juan is a cooperative effort between the United States Public Health Service Office of Maritime Quarantine for the Island of Porto Rico and the Bureau of Plague Prevention of the Insular Health Department.

METHODS

Specific procedures prescribed for flea surveys in seaports and as used at the New York quarantine station have been closely followed. These are, in general, the methods adopted by Fox and Sullivan of the Public Health Service in their rat-flea surveys in several American seaports (see Public Health Reports, September 11, 1925), and are based upon the experience of Public Health Service officers in plague-eradicative campaigns at San Francisco, New Orleans, and other cities.

Rats, trapped alive in cage traps, were brought to the laboratory without removing them from the traps and without covering the traps. At the laboratory the rats were killed by a blow on the head and each was then suspended over night, separately, in deep glass jars containing some water. In the morning the rats' fur was thoroughly ruffled, or combed within the jar, to dislodge any remaining fleas, and all the fleas from each rat were then collected from the surface of the water and kept in separate groups. Each group of fleas was cleared in potassium hydroxide, passed through water and alcohol to xylol, and finally mounted in balsam on a slide, scattered under a cover glass. Each slide was definitely marked to identify it with its rat host and the location where caught, and the fleas were then identified under the microscope. Sample specimens and doubtful fleas were sent to Surg. Carroll Fox at the New York quaran-

tine station for confirmatory determination. Careful record was kept of the locations where the rats were caught, the numbers of traps set, the species and sex of the rats caught, and the fleas recovered from each rat. Records were also maintained of the variations obtaining in temperature and humidity during the period of the survey.

The city was divided into four zones. Zone I included all docks; Zone II, the water front, including all structures adjacent to the docks; Zone III, the commercial district not on the water front; and Zone IV all other portions of the city. The area of San Juan is extensive in comparison with the population and includes some rather sparsely settled areas, particularly in Zone IV.

It should be stated that the insular government has for several years been trapping rats (in snap traps) for the purpose of lowering the rat population of the city. This has probably tended to decrease the number of live rats caught and to modify their apparent distribution.

While the results reported cover the fiscal year 1927, beginning July 1, 1926, the actual trapping of live rats began July 12, 1926. The numbers for the first month, therefore, are small.

RESULTS

During the fiscal year ended June 30, 1927, there were trapped 360 live rats, from 193 of which were secured 2,575 fleas. Of these fleas, 2,539 were *Xenopsylla cheopis*, 35 were *Echidnophaga gallinacea*, and 1 was *Ctenocephalus canis*. On the basis of these figures we have a total flea index of 7.15 (fleas per rat) and an *X. cheopis* index of 7.05.

For plague-preventive purposes it is almost as important to know where the fleas are as to know how many and what kinds there are. In Table 1 the total flea index of the different zones is given. Since 95 per cent of the fleas are *X. cheopis*, this table very nearly represents the *X. cheopis* index.

TABLE 1.—*Flea index in the various zones*

	Zone I	Zone II	Zone III	Zone IV
Percentage of rats with fleas	85.7	36.3	70.0	25.2
Number of fleas per rat (average)	14.4	2.8	6.2	1.8

It will be at once noted that in Zone I, which includes the docks, the index is much higher than in any other zone, both in percentage of rats with fleas and in numbers of fleas per rat. In this zone was secured the rat with the largest number (124) of fleas, a female Norway, captured at the insular dock. The next highest figures are in Zone III, the commercial district.

The flea index for the different months of the year is set forth in Table 2.

TABLE 2.—*Flea indices for the various months*

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Percentage of rats with fleas	100	60	65	72	93	51	62	52	30	40	48	55
Number of fleas per rat (average)	7	4	8.1	6.3	9	6.2	7.8	5	4.3	5.3	14.4	11

For the year:
Percentage of rats with fleas 54.0
Fleas per rat (average) 7.2

On Chart 1 is plotted the number of fleas per rat and the temperature and humidity curves.

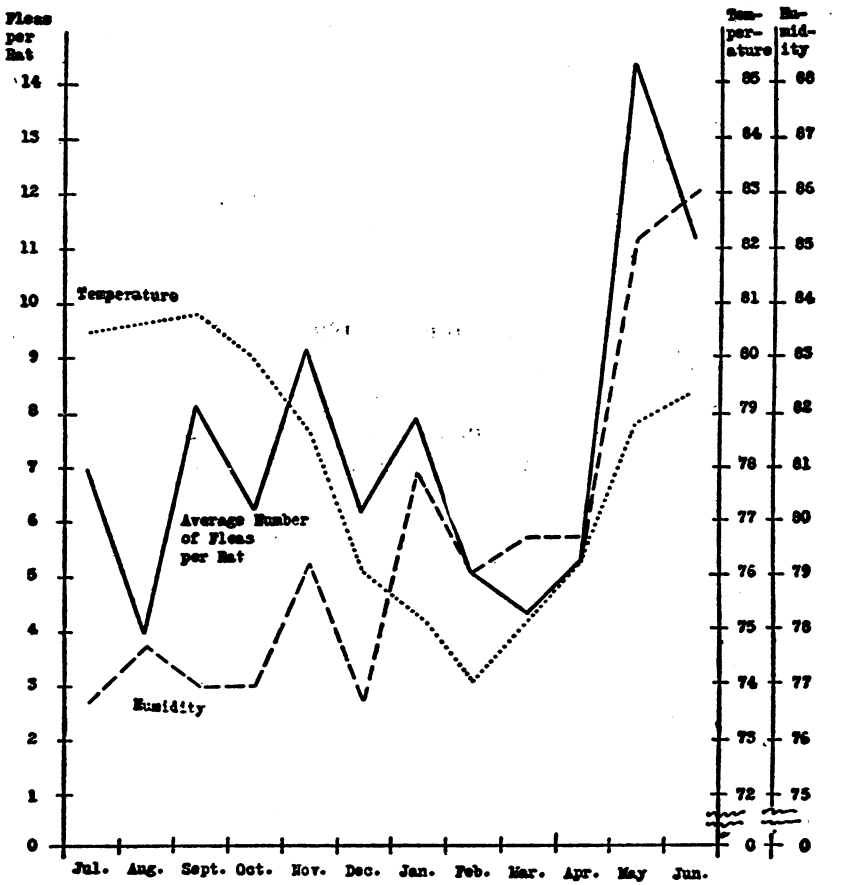

CHART 1.—Graphs showing the average number of fleas found per rat, the temperature, and the humidity in the port of San Juan, Porto Rico, July, 1926-June, 1927

As will be seen, there is no great variation except in May and June. In apportioning the relatively few rats among the different months the numbers become too small to have much meaning. However, the concurrence of a sharp rise in fleas per rat with a similar sharp

rise in humidity and a rise in temperature is probably significant. It agrees with similar observations in many other parts of the world. A study of the temperature and humidity curves reveals, however, that climatic conditions are favorable for the breeding of *X. cheopis* throughout the entire year.

The flea indices for the different species of rat are given in Table 3.

TABLE 3.—*Flea indices for different species of rats*

	Rattus norwegicus [1]	Rattus rattus	Rattus alexandrinus	Totals
Number of rats	287	41	32	360
Number of fleas	2,094	352	129	2,575
Percentage of rats with fleas	48	83	66	53.61
Fleas per rat (average)	7.3	8.6	4	7.15

[1] This rat, the common rat of seaports in the Western Hemisphere, has been given many names, such as the "brown rat," the "Norway rat," "*Mus decumanus*," "*Epimys decumanus*," etc.

It is to be remarked that the total flea index found for the black rat (*Rattus rattus*) is higher than that for the Norway rat. This is not in agreement with observations made in other tropical countries where the total flea index for the Norway rat is usually twice that for the black rat. The *Rattus alexandrinus* is generally regarded as a variety of the *Rattus rattus* and harbors, as a rule, about the same number of fleas. The total number of rats is rather small, which may possibly account for these results.

DISTRIBUTION OF RATS

From Zone I were secured 39 per cent of all the rats. This was due largely to more intensive trapping in this area. Zones IV, II, and III followed, respectively, with 34 per cent, 21 per cent, and 6 per cent.

Records of the numbers of traps set are available only between the dates July 12, 1926, and February 8, 1927. From these records has been compiled Table 4.

TABLE 4.—*Number of rats per 1,000 traps in the various zones*

	Zone I	Zone II	Zone III	Zone IV
Total number of traps set	9,546	1,118	2,286	5,606
Number of rats caught	75	30	13	54
Number of rats per 1,000 traps set	7.9	26.8	5.7	9.6

Zone II is apparently by far the most heavily rat infested, which is surprising in view of the low flea index in this zone.

The Norway rat was found to be markedly predominant. This was to be expected, for two reasons: First, this is the predominant rat

in seaports in the Western Hemisphere; and, second, it is much more easily caught in cage traps than is the black rat or the alexandrian rat, which is notoriously shy of this type of trap. In Chart 2 is shown graphically the apparent concentration of the different varieties in the various zones.

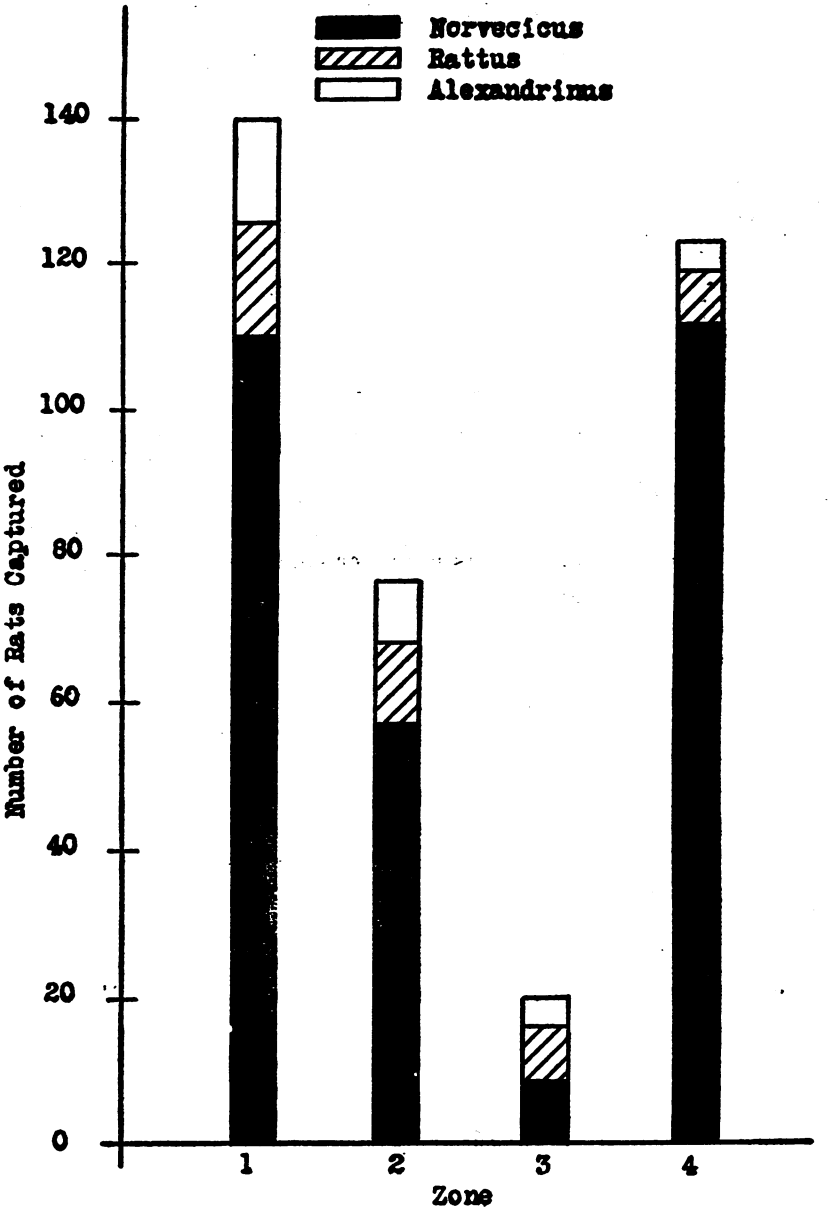

CHART 2.—Graphic representation of relative numbers of rats of different species captured in the different zones in the port of San Juan, Porto Rico, July, 1926–June, 1927

CONCLUSIONS

(1) A rat-flea survey of San Juan, P. R., carried on during the fiscal year 1927, resulted in the capture of 360 live rats, from which were secured 2,575 fleas, 95 per cent of which were *Xenopsylla cheopis*.

(2) On these figures a total rat-flea index of 7.15 is indicated, and an *X. cheopis* index of 7.05.

(3) The total flea index on the docks is much higher than elsewhere in the city, the commercial district being next, then the water front, and last all other portions of the city. The respective figures are 14.4, 6.2, 2.8, and 1.8.

(4) Temperature and humidity conditions are favorable for flea breeding throughout the year. There was a marked rise of the index in May and June, coincident with a similar rise in humidity and a rise of temperature.

(5) *Rattus norvegicus* is the predominant rat.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Phosphorus poisoning held not compensable under workmen's compensation act.—(Virginia Supreme Court of Appeals; Turner *v.* Virginia Fireworks Co. et al., 141 S. E. 142; decided January 19, 1928.) An employee of a fireworks company sought compensation for phosphorus poisoning contracted in the course of her employment. The State industrial commission found that it was her duty to handle white phosphorus, and that, in rubbing an aching tooth with her fingers, she conveyed the poison to her mouth. The workmen's compensation statute provided:

"Injury" and "personal injury" shall mean only injury by accident arising out of and in the course of the employment and shall not include a disease in any form, except where it results naturally and unavoidably from the accident.

Compensation was denied by the commission on the ground that the claimant had not sustained an accident within the meaning of the compensation law. On appeal the supreme court of appeals upheld the action of the commission, stating as follows in the opinion:

* * * Whether or not the rubbing of the aching tooth with her fingers and getting poison in her mouth was an accident, within the meaning of the workmen's compensation act, we deem it unnecessary to decide. If it be admitted that it was an accident, it does not follow that the phosphorus poison from which she suffered was the natural and unavoidable result of the accident. The diseased tooth was exposed to phosphorus fumes before she rubbed it, and it is equally probable that the poison resulted from the phosphorus fumes to which it was exposed rather than the rubbing of the tooth * * *.

If claimant's injuries were the natural and unavoidable result of an accident, she should be allowed compensation, but if they resulted from an occupational

disease, without an accident, there can be no recovery. Since the disease may have resulted from either of the two causes, for one of which the employer is liable and for the other of which he is not liable, the burden was on the claimant to show that the injuries resulted from the former.

* * * * * * *

There being no proof that the injury to the claimant resulted naturally and unavoidably from the rubbing of the phosphorus upon her tooth, the judgment of the commission will be affirmed.

Convictions for taking clams from proscribed area upheld.—(Massachusetts Supreme Judicial Court; Commonwealth *v.* St. John, and six other cases, 159 N. E. 599; decided January 5, 1928.) Several persons were found guilty of taking clams illegally from certain tidal waters and flats which had been examined by the State department of public health, acting under a State law, and determined to be contaminated, and also were found guilty of possessing clams so taken. One of the defendants was also convicted of transporting clams so taken. On appeal, the supreme court overruled the exceptions of the defendants and sustained the convictions.

Attempt of venereally-infected husband to force wife to have sexual intercourse held extreme cruelty.—(New Jersey Court of Chancery; Lazarwitz *v.* Lazarwitz, 139 A. 881; decided January 13, 1928.) In a divorce proceeding it was held that the attempt of a husband, who, to his own knowledge, was suffering from syphilis, the Wassermann test resulting in a four plus report, to force his wife to have sexual intercourse with him against her will constituted extreme cruelty under the terms of an act authorizing divorce from the bonds of matrimony for extreme cruelty.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Sewerage Systems, with Special Reference to Run-Off of Surface Waters. M. H. Limb. *The Surveyor*, vol. 72, No. 1872, December 9, 1927, pp. 567–570. (Abstract by H. W. Streeter.)

A concise résumé of present-day practice in the design of sewerage systems, as based on British experience. A general description is given of the types of sewerage systems, materials of construction, and methods of determining the flow of domestic sewage, trades wastes, and storm water. The remainder of the paper is devoted to describing, with illustrative examples, methods of determining maximum storm-water flows and times of concentration at specified points. The description is illustrated by charts and sketches showing typical layouts; a particularly useful diagram being one (fig. 4) showing the relation between rainfall intensity and time of concentration. The various formulæ for this relation are discussed and practical methods, both analytical and graphical, for applying these formulæ to the design of storm-water sewers are described. The author notes that so many variable factors are involved in each problem that it is impossible to reduce the subject to the mathematical precision possible with other engineering subjects.

Digestion of Sewage Screenings. H. Heukelekian. *Public Works*, vol, 58, No. 12, December, 1927, pp. 455–457. (Abstract by A. S. Bedell.)

The digestion of screenings from a fine screen, seeded with ripe sludge, was tried out with and without fresh solids. "Fresh solids" is material collected by sinking pails in flow chamber of an Imhoff tank, thus securing settled solids of the screened sewage. Lime was added to a duplicate series to adjust and maintain the reaction to a pH value of 7.4. To a 2:1 mixture of fresh solids and ripe sludge 11.2 per cent screenings were added on the basis of volatile matter. The mixture of screenings and ripe sludge had a ratio of 1:1 on the basis of volatile matter. Frequent gas measurements and occasional gas analyses were made. Solids and ash were determined in the beginning and at the end.

The results indicate that the digestion of screenings, either separately or in conjunction with fresh solids, is feasible. The rate of digestion of screenings was as rapid as that of the screened fresh solids. The volume of gas produced from screenings was as high as that from fresh solids. About equal amounts of lime were necessary for the digestion of screenings and of fresh solids. In general, the effects of liming were practically negligible.

Paper Wastes: Investigation of the Recirculation and Treatment of Waste Waters from the Process of Paper Making. I. R. Riker. *Public Health News*, New Jersey State Department of Health, vol. 12, No. 10–11, September–October, 1927, pp. 290–303. (Abstract by G. H. Hazlehurst.)

Pollution of streams in New Jersey by paper-mill wastes has been a serious problem for the past decade. No type treatment in the State has been entirely successful. Mill owners objected to the recirculation and reuse of water (closed system), because water soured and slime was produced, hindering the process of paper making.

The mill investigated and reported on had four paper-making machines. All waste white water was being reused. Two recirculating systems were operated. One used chemical precipitation of wastes, and this water was used for felt showers with make-up waste rates of 3 to 1. The other system returned waste white water direct from pits to breakers or beaters. Chemical precipitation plant handles all water over and above that used by breakers or beaters. "Boothall," a balanced coagulant, is used. Reclaimed stock from precipitation plant makes up 20 per cent of the material used by No. 1 machine; that is, 15 tons of finished material is procured from 12 tons of old newspaper stock (raw material).

After the investigation was made it was reported that all waste white water was being used and that for long periods it was unnecessary to pollute the creek with this waste.

The Development of Tanks for the Bacterial Treatment of Sewage. A. C. Hewitt. *The Commonwealth Engineer*, vol. 15, No. 4, November 1, 1927, pp. 157–158. (Abstract by E. C. Sullivan.)

This article outlines the development of the Cameron tank in 1895, the Travis tank in 1903, and the Imhoff tank in 1907. The particular advantages or claims made for these various types of tanks are given, as well as the principles involved in their designs.

The development of the activated sludge process is also traced. Mention is made of research conducted during the past four years to obtain information about various points as follows: (*a*) Deciding what preliminary treatment, if any, should be given to the sewage before aeration; (*b*) endeavoring to reduce operation costs by perfecting the method of aeration; (*c*) ascertaining the best method of treating the large amount of sludge which results from activation.

Details of studies on these particular points are given, including the addition of an activated sludge plant to the existing Imhoff tank plant at Essen, Germany, and the digestion of excess sludge in the Imhoff tanks; the use of mechanical

agitators at Sheffield, England, to obtain oxygen from the air; and of the measures taken for the conditioning of sludge at Chicago, Ill., Milwaukee, Wis., and Houston, Tex.

Annual Report, Department of Health, Government of Palestine, 1926. 92 pages. (Abstract by I. W. Mendelsohn.)

Typhoid fever.—Epidemics occurred in Emek Jezriel, Tel Aviv, and Jerusalem, with 206, 223, and 280 cases, respectively. The total incidence for the country was 1,402, as compared with 705 in 1925.

There was no evidence to incriminate water as the definite cause, nor could the outbreaks be attributed to milk or other foods, though in some towns the sale of vegetables fertilized with sewage constituted a constant possible means of spreading infection. Infection from carriers and by contact from cases was regarded as an important factor assisted by late notification, delayed hospitalization of cases, and overcrowding in insanitary quarters of towns and in new settlements.

Malaria control.—The decrease in malaria incidence in the country has continued. At the end of the year, 21,000 of the 60,000 possible breeding places on record in towns had been permanently mosquito-proofed, while over 12,000 (or a total of 23,000) such places in the villages had been dealt with. Seven thousand and thirty nine pumps had been fitted to cisterns. Oil and Paris green were used in control measures.

The 12 demonstration areas controlled by the malaria research unit were the same as in 1925, the methods of control consisting of hand collection or "smoking" out of mosquitoes in January and February, before the breeding season started; examination of potential larval breeding places at the end of March after the heavy rains; and institution of antilarval measures (Paris green or oil) and minor drainage and clearance work. In some regions mosquito flights of 6 kilometers, with *A. elutus* as the mosquito, are mentioned.

Usually there is a rise of benign tertian malaria in June and July and then a decline, and a marked rise of malignant tertian malaria in October and November. In 1926 the amount of benign tertian malaria was less than usual in June and July, but instead of decreasing subsequently it increased steadily until it reached its maximum in November. The difference in malaria incidence between 1925 and 1926 is ascribed to abnormally heavy breeding in uncontrolled areas during 1926 and to an influx of mosquitoes from these areas into the controlled areas.

Water supplies.—Due to deficient supply of pure water in Jerusalem, contaminated surface supplies were resorted to after chlorination. The supply of water varied from 50,000 to 230,000 gallons per day. A large number of villages improved their water supplies.

Sanitary engineer's section.—The activities of this section included supervision of plans of sanitary arrangements of Government buildings; new public establishments; drainage, sewage disposal, water supply, and malaria-control works; and house sanitation and plumbing. This section acts in an advisory capacity to all municipal authorities; maintains supervision over sanitary services, submitting recommendations regarding financial provisions for these services; specifies the technical requirements in matters affecting water supply, house drainage, sewerage and town planning; and controls conditions for licensing food and drink establishments.

Sewage disposal.—Tests made on raw sewage from Jerusalem subjected to a few hours, sedimentation indicated that the addition of not less than 30 p. p. m. of chlorine in the form of bleaching powder would deodorize the sewage, which had the following composition in p. p. m.: Free ammonia, 650; albuminoid am-

monia, 140; total organic nitrogen, 210; oxygen absorbed (3 hours at 37° C.), 1,010; chlorine, 2,120; suspended matter, 4,850.

Ventilation Experiments in the Moffat Tunnel. G. E. McElroy and C. A. Betts. *Engineering News-Record*, vol. 99, No. 24, December 15, 1927, pp. 956–959. (Abstract by Leonard Greenburg.)

The Moffat tunnel pierces the Continental Divide in Colorado. Prior to the completion of this tunnel it was found necessary to prepare specifications for the fans and ventilating equipment necessary so that the tunnel might be used by steam locomotives. The tunnel is single track, approximately 32,250 feet in length, and has an average cross section of 400 square feet. One-half of the tunnel will be provided with heavy timber or steel lining while the remaining half is of rock construction.

In order to determine the requirements for mechanical ventilation it was necessary to estimate the volume of flow and the necessary pressure in order to circulate this quantity of air through the tunnel. The primary purpose of the ventilation is to dilute and remove the noxious gases produced by coal in the locomotives, and the second purpose is to reduce the high temperatures which would ordinarily be found in the locomotive engine cab. It was estimated that the maximum quality of air required for dilution to 5 parts of carbon monoxide per 10,000 of air would be approximately 360,000 cubic feet per minute.

To determine the pressure required to force the air through the tunnel way, tests were conducted to determine the friction factor, and this was found to average 0.0000000005. The resistance of the clear tunnel was calculated to be 5.03 inches of water and, likewise, the resistance of the fan connection was found to be 0.02 inch of water, and for a train moving at a speed of 10 miles per hour against the flow, the resistance was found to be 1.31 inches of water, yielding a total of 6.36 inches of pressure required.

Due to the difference in elevation between the two ends of the tunnel the barometric pressures are not the same, and it was determined that there would be a strong draft of air from west to east during the winter season and a variable and reversing draft during the remainder of the year. Natural draft pressures play an important part in this problem and increase the maximum demand on the ventilation equipment, since during the winter season the fan must act against strong adverse natural draft. Experimental determinations of friction factors in the uncompleted tunnel were made in order to estimate the tunnel resistance. Interferences were frequent, because tunneling operations were still in progress. For this reason but 20 per cent of the observations escaped interference.

The determination of friction factors involves the simultaneous measurement of air flow and the difference in static pressure between the two ends of the section under test. The air velocity measurements were made with calibrated anemometers. Static pressure observations were made by means of the Bureau of Mines static tube with a Wahlen gauge. Good agreement of average results was secured and the average value of the factor was found to be 0.000000007 for velocities ranging from 57 to 80 feet a minute in the rock section of the tunnel. In the timbered section the average friction factor was found to be 0.0000000053. In a second timbered section of the Pioneer tunnel (a separate portion of the Moffat tunnel) tests of air velocities of from 250 to 700 feet a minute gave a friction factor of 0.0000000052, and at 171 feet a minute the factor was found to be 0.0000000073.

The authors point out that more data are needed on the interrelated effects of area, low velocity flow, and timber spacing as related to friction factors.

Development of Water Treatment at Indianapolis. Harry E. Jordan. *Engineering News-Record*, vol. 99, No. 19, November 10, 1927, pp. 762–764. (Abstract by D. E. Kepner.)

In 1872, when the Indianapolis Water Co. began operation, the public water supply of Indianapolis was derived from infiltration wells and galleries. This supply was later augmented by deep wells.

In 1902, three slow sand filters of 1.6 acres each, uncovered, were constructed. In 1905, central dividing walls were constructed in these, making 6 filters of 0.776 acre each, and they were then covered with flat slab roofs. The capacity of this plant was 11.7 m. g. d. following the reconstruction, but was increased to 20 m. g. d. by the addition of preliminary settling basins and by improved operation. With prechlorination this plant is now operated at the rate of 6.2 m. g. d. per acre.

In 1925, construction was started on a new rapid sand filter plant, comprising six 2 m. g. d. units with a twin coagulation basin of 6-hour total retention capacity. It has several new and interesting features, including two separate perforated pipe collecting systems for each filter unit, hydrometer and orifice-controlled alum solution application, very complete operating tables with baked enamel panels, slate tops, filtered water turbidity indicators, etc.

The filtered water turbidity, averaging 0.17 p. p. m. and never exceeding 0.3 p. p. m., and other operating results of the new plant are very gratifying.

The Problem of Rural Water Supplies. James J. Paterson. *The Journal of State Medicine*, vol. 35, No. 9, September, 1927, pp. 535–540. (Abstract by L. M. Fisher.)

The Public Health (Water) Act of 1878 provides that rural sanitary authorities shall require a sufficient water supply for every occupied dwelling; shall keep houses not so supplied from being occupied; and shall make periodical inspections. The cost of providing such a supply shall not exceed a capital sum the interest on which at 5 per cent per annum exceeds 3 pence per week. No standards of purity or adequacy can be set. Local health authorities may require cesspools to meet certain requirements, but have no authority over wells.

Private water companies are given exclusive rights in certain areas, but can not be made to supply everybody in the area if it is not profitable.

The remedy suggested is a rural water board with adequate powers, such as the Metropolitan Water Board or the Thames Conservancy Board, which have jurisdiction over the entire watersheds.

Rural Water Supplies—The Advantages of Decentralization. D. T. Worger. *The Surveyor*, vol. 72, No. 1870, November 25, 1927, pp. 513–514. (Abstract by C. C. Ruchhoft.)

The Bruston patent autopneumatic water supply system, which, briefly, consists of an automatically controlled gas engine or electric motor and a pressure tank, is recommended in decentralized units for use in rural districts where the expense of a centralized water supply system is prohibitive. The advantages of such a system are illustrated in the case of a rural district which contained 25 small parishes varying in population from less than 100 to 1,000 and having a total population of 8,439. This district may be divided into four groups of villages, two groups to be served by one pumping station and the other two groups to be served by one pumping station each. Comparison of costs for such a decentralization system for the above district with a centralized system was favorable toward the decentralized system.

Refuse Disposal in England. Anon. *Public Works*, vol. 58, No. 12, December, 1927, pp. 453–454. (Abstract by A. S. Bedell.)

This article is a summary of a section of the 1925–26 report of the Ministry of Health of England. It is pointed out that the returns from the questionnaire

are not entirely satisfactory, owing to differences in methods of accounting and in misinterpretation of the questions.

The returns from 79 towns, representing a population of 12,600,000, are tabulated in the report. Mixed collection of garbage, ashes, and rubbish is practiced in England and the average quantity collected for all towns was 1.66 pounds per capita per day, or 606 pounds per year. The average net expenditure, including depreciation and renewal charges, per ton for collection was $2.27; for disposal $1.06, or the cost per capita per annum was 65 cents for collection and 28 cents for disposal.

As to the method of disposal, 15 of the municipalities used incineration alone, and 42 incineration combined with one of the other methods. Fourteen used dumping on land alone and 34 used dumping in combination with some other method. Five used dumping at sea alone, and 3 in combination with some other method. Twelve used separation in combination with some other method, and 8 used pulverization combined with some other method. One reported land reclamation in connection with incineration and dumping. Average costs, including depreciation and renewals, were: Dumping at sea $2.24, ranging from $1.70 to $2.72; dumping on land $2.30, ranging from $1.06 to $3.85; incineration $3.70, ranging from $2.33 to $5.58.

Cleansing. W. Weaver. *The Surveyor*, vol. 72, No. 1872, December 9, 1927, p. 579. (Abstract by H. W. Streeter.)

The causes of present high yield of house refuse are: (*a*) Thriftlessness; (*b*) poor design of ranges and fire grates in older houses; (*c*) waste of coal fuels, where coal is cheap or of low grade; (*d*) inclusion, in some instances, of excrement with refuse; (*e*) seasonal variation in amount produced; (*f*) climatic conditions influencing yield of refuse. The quantity of house refuse varies greatly, but averages about 18 hundredweight per day per 1,000 people. If suitable precautions were taken in homes, 40 per cent of the refuse would be preventable, effecting a saving, in Great Britain, of 20,000,000 pounds.

Measures for increasing the amount of home destruction of refuse are discussed, including (*a*) installation of double bins as public property, with separation of combustible from noncombustible portions at home, and (*b*) payment of a bonus to householders attaining a prescribed standard. Methods for dealing with seasonable variations in refuse also are suggested.

The Treatment of Municipal Offal by Fermentation in Closed Cells. Jean Bordas. *Ann. d'hyg. publ. industr. et soc.*, vol. 5, No. 3, 1927, pp. 142–150. Translation of an abstract by Kamman in *Zentralblatt für die gesamte Hygiene*, vol. 15, No. 11–12, August 10, 1927, pp. 496–497. (Tr. by J. K. Hoskins.)

The Beccari system is used in many Italian cities, Florence, Naples, Bologna, Carrara, Novarra, for treating stable manure. The plant consists of closed chambers of about 5 cubic meters capacity, in which the manure undergoes fermentation for about 60 days. Of the evolved gases, ammonia, being the greatest, is recovered in absorption towers by means of iron sulphate and phosphate of lime. The temperature rises to from 70° to 75° C., by this method of fermentation. Nitrogen losses are also reduced to a minimum. Similar treatment of municipal organic wastes requires only 40 days. A disadvantage of treating this latter material in this way is that approximately 50 per cent of it is not fermentable.

DEATHS DURING WEEK ENDED MARCH 3, 1928

Summary of information received by telegraph from industrial insurance companies for the week ended March 3, 1928, and corresponding week of 1927. (From the Weekly Health Index, March 8, 1928, issued by the Bureau of the Census, Department of Commerce)

	Week ended Mar. 3, 1928	Corresponding week, 1927
Policies in force	70, 380, 930	66, 911, 607
Number of death claims	15, 679	13, 415
Death claims per 1,000 policies in force, annual rate	11. 6	10. 5

Deaths from all causes in certain large cities of the United States during the week ended March 3, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, March 8, 1928, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Mar. 3, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Mar. 3, 1928 [2]
	Total deaths	Death rate [1]		Week ended Mar. 3, 1928	Corresponding week 1927	
Total (68 cities)	8, 387	14. 5	13. 7	900	871	[3] 74
Akron	37			8	3	87
Albany [4]	35	15. 2	16. 1	2	3	41
Atlanta	94	19. 3	18. 8	10	12	
White	48		14. 0	6	5	
Colored	46	(5)	30. 3	4	7	
Baltimore [4]	273	17. 2	17. 6	21	26	67
White	212		15. 2	19	14	76
Colored	61	(5)	31. 6	2	12	31
Birmingham	78	18. 3	14. 4	13	7	111
White	46		9. 4	6	1	83
Colored	32	(5)	22. 2	7	6	158
Boston	260	17. 0	14. 5	35	27	97
Bridgeport	28			6	4	110
Buffalo	166	15. 6	14. 3	18	20	77
Cambridge	31	12. 9	16. 8	4	7	71
Camden	34	13. 1	13. 3	4	8	64
Canton	23	10. 3	13. 8	2	6	48
Chicago [4]	830	13. 8	12. 6	84	92	72
Cincinnati	152	19. 2	15. 7	21	10	127
Cleveland	210	10. 9	10. 8	28	34	76
Columbus	86	15. 1	15. 2	7	5	65
Dallas	56	13. 5	11. 1	8	6	
White	46		10. 8	6	5	
Colored	10	(5)	13. 3	2	1	
Denver	93	16. 5	17. 8	10	6	
Des Moines	37	12. 7	7. 4	1	2	17
Detroit	320	12. 1	12. 3	54	61	83
Duluth	19	8. 5	7. 3	2	2	47
El Paso	48	21. 3	18. 4	7	4	
Erie	21			3	2	62
Fall River [4]	32	12. 5	13. 4	4	2	60
Flint	34	11. 9	13. 9	5	7	64
Fort Worth	38	11. 8	10. 5	2	1	
White	25		10. 5	1	1	
Colored	13	(5)	10. 6	1	0	
Grand Rapids	39	12. 4	10. 3	3	4	45
Houston	56			5	8	
White	33			4	5	
Colored	23	(5)		1	3	
Indianapolis	105	14. 4	13. 7	7	5	53
White	88		13. 5	3	4	26
Colored	17	(5)	15. 1	4	1	213
Jersey City	80	12. 9	13. 1	10	11	75
Kansas City, Kans	29	12. 8	11. 1	1	3	21
White	20		9. 2	0	0	0
Colored	9	(5)	19. 7	1	3	145
Kansas City, Mo	115	15. 4	13. 2	12	8	85

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended March 3, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, March 8, 1928, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Mar. 3, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Mar. 3, 1928
	Total deaths	Death rate		Week ended Mar. 3, 1928	Corresponding week 1927	
Knoxville	32	15.9	12.3	4	2	87
White	21		10.4	3	1	73
Colored	11	(3)	25.6	1	1	213
Los Angeles	251			21	23	60
Lowell	23	10.9	15.1	1	5	21
Lynn	26	12.9	9.5	1	2	25
Memphis	68	18.7	21.9	4	5	47
White	33		14.9	2	3	37
Colored	35	(3)	32.1	2	2	63
Milwaukee	103	9.9	11.9	20	13	89
Minneapolis	88	10.1	13.2	8	7	48
Nashville	55	20.7	19.3	6	4	94
White	34		19.0	3	2	64
Colored	21	(3)	20.1	3	2	180
New Bedford	26	11.4	10.0	1	7	22
New Haven	48	13.4	11.3	6	2	85
New Orleans	166	20.2	20.8	10	18	48
White	93		15.4	5	7	36
Colored	73	(3)	35.9	5	11	73
New York	1,692	14.7	13.2	185	187	75
Bronx Borough	231	12.7	10.9	20	17	60
Brooklyn Borough	577	13.1	11.2	73	65	73
Manhattan Borough	649	19.4	18.6	73	76	87
Queens Borough	189	11.6	9.4	18	24	72
Richmond Borough	46	16.0	14.9	1	5	18
Newark, N. J	123	13.6	11.1	20	10	103
Oakland	76	14.5	11.3	5	5	54
Oklahoma City	24			2	4	
Omaha	53	12.4	15.5	5	3	58
Paterson	49	17.7	17.4	4	4	69
Philadelphia	605	15.3	13.4	64	60	86
Pittsburgh	180	14.0	15.8	25	29	82
Portland, Oreg	79			2	0	21
Providence	78	14.2	14.5	8	14	70
Richmond	63	16.9	12.5	4	4	52
White	34		9.6	3	2	61
Colored	29	(3)	19.7	1	2	37
Rochester	84	13.4	11.6	5	9	41
St. Louis	292	18.0	14.6	19	15	64
St. Paul	48	10.0	14.2	3	5	29
Salt Lake City [4]	37	14.0	17.3	8	3	131
San Antonio	116	27.8	16.8	15	11	
San Diego	47	20.5	14.9	2	2	38
San Francisco	153	13.7	15.3	6	9	38
Schenectady	27	15.1	8.4	2	1	63
Seattle	78	10.6	9.9	4	1	41
Somerville	23	11.7	8.2	3	0	104
Spokane	43	20.6	12.9	0	3	0
Springfield, Mass	37	12.9	13.1	6	0	95
Syracuse	63	16.5	13.8	7	6	85
Tacoma	26	12.3	12.6	3	0	77
Toledo	88	14.7	14.9	15	9	144
Trenton	35	13.2	16.0	9	6	153
Utica	36	18.1	17.6	3	4	68
Washington, D. C	144	13.6	17.9	14	6	80
White	99		14.1	7	2	58
Colored	45	(3)	29.1	7	4	129
Waterbury	17			2	4	58
Wilmington, Del	21	8.5	11.1	1	1	26
Worcester	56	14.8	17.1	10	6	121
Yonkers	33	14.2	12.7	6	5	137
Youngstown	29	8.7	13.2	3	9	40

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 68 cities.
Deaths for week ended Friday, Mar. 2, 1928.
[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

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

Reports for Weeks Ended March 12, 1927, and March 10, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended March 12, 1927, and March 10, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928
New England States:								
Maine	1	10	15	10	213	53	0	0
New Hampshire	----	3	----	9	----	17	----	0
Vermont	----	1	----	----	47	47	0	0
Massachusetts	98	90	19	8	238	1,655	2	2
Rhode Island	8	10	1	----	2	69	1	0
Connecticut	37	23	27	175	77	377	0	0
Middle Atlantic States:								
New York	407	354	[1] 87	[1] 49	670	1,910	4	18
New Jersey	92	124	42	22	67	996	3	1
Pennsylvania	163	184	----	----	852	924	1	3
East North Central States:								
Ohio	----	70	----	39	----	934	----	1
Indiana	47	31	41	21	243	175	1	0
Illinois	123	154	63	51	2,539	149	4	13
Michigan	90	70	----	6	314	780	0	1
Wisconsin	34	30	76	104	584	120	7	5
West North Central States:								
Minnesota	30	12	5	2	173	41	1	1
Iowa [2]	28	10	----	----	787	36	1	1
Missouri	46	56	3	86	244	239	1	6
North Dakota	4	3	----	3	216	4	2	2
South Dakota	1	----	4	2	141	20	0	0
Nebraska	7	10	1	14	416	8	0	1
Kansas	10	14	13	47	938	48	0	7
South Atlantic States:								
Delaware	2	2	----	----	9	10	0	0
Maryland [1]	43	44	455	51	54	951	0	1
District of Columbia	24	----	18	----	7	----	0	----
Virginia	----	----	----	----	----	----	----	----
West Virginia	12	17	69	18	228	197	0	0
North Carolina	22	36	----	----	386	3,662	0	0
South Carolina	11	22	1,352	1,194	95	1,256	0	0
Georgia	15	16	374	128	162	236	2	0
Florida	35	7	68	25	134	32	0	0

[1] New York City only.

[2] Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended March 12, 1927, and March 10, 1928—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928
East South Central States:								
Kentucky		15				128		0
Tennessee	9	20	264	170	173	338	0	1
Alabama	39	16	133	282	167	369	2	2
Mississippi	8	13						1
West South Central States:								
Arkansas	5	2	93	579	75	539	1	0
Louisiana	21	33	24	157	164	315	2	1
Oklahoma [2]	19	37	157	283	263	395	0	1
Texas	41	45	329	685	133	439	0	1
Mountain States:								
Montana	5				42		8	
Idaho	6	1			61		0	2
Wyoming	1				41	110	0	2
Colorado	11	10	1	1	402	41	1	10
New Mexico	3	9	3	8	32	121	0	0
Arizona	1	7		1	139	17	0	6
Utah [2]	6	3	8	2	166	4	2	1
Pacific States:								
Washington	14	22	1		282	308	6	4
Oregon	18	17	210	32	119	24	1	4
California	127	127	86	48	3,735	284	2	5

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928
New England States:								
Maine	0	2	26	40	0	0	2	2
New Hampshire		0		10		0		0
Vermont	0	0	4	13	0	0	0	0
Massachusetts	1	1	559	329	0	0	9	2
Rhode Island	1	0	30	38	0	0	0	0
Connecticut	0	0	109	71	0	4	0	1
Middle Atlantic States:								
New York	2	5	1,286	864	15	13	27	17
New Jersey	0	0	379	285	0	0	6	4
Pennsylvania	0	0	643	513	0	0	10	6
East North Central States:								
Ohio		0		272		24		3
Indiana	0	1	265	144	150	79	1	5
Illinois	0	3	348	409	29	47	11	4
Michigan	0	0	391	284	46	37	14	5
Wisconsin	0	0	173	245	5	42	4	5
West North Central States:								
Minnesota	1	0	261	173	2	1	5	5
Iowa [2]	0	0	120	88	16	68	1	4
Missouri	0	1	155	161	28	53	6	3
North Dakota	2	1	54	73	1	0	1	0
South Dakota	0	0	71	42	9	10	1	1
Nebraska	0	2	85	126	20	51	2	0
Kansas	1	1	196	149	58	70	1	0
South Atlantic States:								
Delaware	0	0	18	11	0	0	0	0
Maryland [2]	0	0	64	70	0	4	4	2
District of Columbia	0		14		0		0	
Virginia	0				2			
West Virginia	0	1	47	54	34	76	15	8
North Carolina	0	0	46	39	54	93	4	4
South Carolina	2	1	13	5	37	14	2	0
Georgia	0	0	23	19	73	15	5	1
Florida	1	1	29	7	32	7	17	1
East South Central States:								
Kentucky		0		54		32		3
Tennessee	0	0	60	32	11	26	6	4
Alabama	0	0	21	16	40	12	16	4
Mississippi	0	0	10	21	7	4	5	3

[2] Week ended Friday.

[3] Exclusive of Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended March 12, 1927, and March 10, 1928—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928	Week ended Mar. 12, 1927	Week ended Mar. 10, 1928
West South Central States:								
Arkansas	0	0	15	30	4	7	10	4
Louisiana	1	0	19	19	17	32	12	6
Oklahoma [3]	0	1	71	59	47	181	20	5
Texas	0	0	64	134	62	65	3	3
Mountain States:								
Montana	0		93		8		1	
Idaho	0	0	17	9	5	0	0	0
Wyoming	0	0	25	30	4	15	0	0
Colorado	0	1	107	130	2	12	1	1
New Mexico	0	0	7	25	11	2	0	1
Arizona	0	0	57	11	0	25	0	0
Utah [2]	0	0	9	6	2	13	0	0
Pacific States:								
Washington	0	1	82	62	70	79	1	1
Oregon	0	2	58	23	37	64	2	4
California	0	6	246	185	17	19	2	6

[2] Week ended Friday. [3] Exclusive of Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
January, 1928										
Kansas	13	100	25		110		3	775	470	5
South Carolina		135	5,356	566	4,075	115	13	67	76	31
South Dakota		9	19		138		1	294	67	1
Virginia	6	194	3,185	41	1,755	8	1	281	34	37
February, 1928										
Arizona	14	42	5		40		0	25	101	2
Connecticut	4	138	32		1,267		1	378	16	7
Nebraska	8	61	13	2	16		3	391	132	7

January, 1928

	Cases
Chicken pox:	
Kansas	893
South Carolina	248
South Dakota	70
Virginia	628
Conjunctivitis:	
Kansas	3
Dengue:	
South Carolina	10
Dysentery:	
Virginia	60
German measles:	
Kansas	13
Hookworm disease:	
South Carolina	98
Virginia	2
Mumps:	
Kansas	207
South Carolina	8
South Dakota	97
Ophthalmia neonatorum:	
South Carolina	20
Paratyphoid fever:	
South Carolina	3
Pink eye:	
Kansas	7
Rabies in animals:	
South Carolina	15
Scabies:	
Kansas	4
Septic sore throat:	
Kansas	2
Tetanus:	
Kansas	1
Trachoma:	
South Dakota	1
Tularæmia:	
Kansas	1
Whooping cough:	
Kansas	431
South Carolina	244
South Dakota	39
Virginia	469

February, 1928

	Cases
Chicken pox:	
Arizona	82
Connecticut	404
Nebraska	343
Favus:	
Connecticut	2
German measles:	
Arizona	2
Connecticut	9
Nebraska	3
Lethargic encephalitis:	
Connecticut	5
Mumps:	
Arizona	44
Connecticut	541
Nebraska	275
Ophthalmia neonatorum:	
Connecticut	1
Paratyphoid fever:	
Connecticut	5
Rabies in animals:	
Connecticut	6
Septic sore throat:	
Connecticut	6
Nebraska	9
Trachoma:	
Arizona	15
Whooping cough:	
Arizona	19
Connecticut	642
Nebraska	75

PLAGUE IN SANTA CRUZ COUNTY, CALIF.

A case of bubonic plague occurred at Santa Cruz, Santa Cruz County, Calif., January 23, 1928. The case was reported as suspected tularaemia by the attending physician, diagnosed clinically as plague, and diagnosis confirmed by bacteriological examinations, February 7 and 8, 1928.

Steps are being taken for intensive rodent-control work, including squirrel and rat extermination in the vicinity of Santa Cruz. The plague-control measures contemplate a 5-mile rodent-free zone.

The last case of human plague in Santa Cruz County occurred in July, 1922, and plague has not been reported in rodents from that county since September 27, 1922.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 101 cities reporting cases used in the following table are situated in all parts of the country, and have an estimated aggregate population of more than 31,650,000. The estimated population of the 95 cities reporting deaths is more than 30,960,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended February 25, 1928, and February 26, 1927

	1928	1927	Estimated expectancy
Cases reported			
Diphtheria:			
43 States	1,826	1,777	
101 cities	1,055	1,063	964
Measles:			
42 States	16,184	14,480	
101 cities	6,040	5,133	
Poliomyelitis:			
43 States	35	19	
Scarlet fever:			
43 States	4,591	6,192	
101 cities	1,787	2,523	1,461
Smallpox:			
43 States	1,174	945	
101 cities	148	146	125
Typhoid fever:			
43 States	211	224	
101 cities	32	47	36
Deaths reported			
Influenza and pneumonia:			
95 cities	1,080	1,079	
Smallpox:			
95 cities	0	0	

City reports for week ended February 25, 1928

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresp onding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1919 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	76,400	5	1	0	0	0	2	1	3
New Hampshire:									
Concord	[1] 22,546	0	0	0	0	0	0	0	0
Manchester	84,000	0	2	0	0	0	0	0	6
Vermont:									
Barre	[1] 10,008	1	0	0	0	0	0	0	0
Burlington	[1] 24,089	0	0	0	0	0	0	0	2
Massachusetts:									
Boston	787,000	51	48	17	5	1	543	6	17
Fall River	131,000	2	4	4	0	0	0	0	4
Springfield	145,000	8	3	12	1	1	4	73	4
Worcester	193,000	8	4	8	0	0	17	63	1
Rhode Island:									
Pawtucket	71,000	0	1	1	0	0	2	15	4
Providence	275,000	7	9	9	0	1	44	12	6
Connecticut:									
Bridgeport	[2]	3	8	3	0	0	0	0	8
Hartford	164,000	5	8	4	1	0	0	1	7
New Haven	182,000	13	2	2	0	0	218	66	10
MIDDLE ATLANTIC									
New York:									
Buffalo	544,000	24	13	14	----	1	533	57	21
New York	5,921,000	197	211	313	55	33	433	0	166
Rochester	321,000	16	10	13	----	1	8	9	5
Syracuse	185,000	15	4	7	----	0	56	8	2
New Jersey:									
Camden	131,000	5	5	5	0	0	3	1	5
Newark	459,000	41	13	10	7	0	337	20	20
Trenton	134,000	4	3	5	1	0	12	1	5
Pennsylvania:									
Philadelphia	2,008,000	106	76	56	1	14	166	106	69
Pittsburgh	637,000	35	22	33	----	0	251	130	23
Reading	114,000	12	3	3	----	0	2	0	3
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	411,000	12	9	4	0	2	289	0	16
Cleveland	960,000	45	30	65	3	0	48	196	21
Columbus	285,000	13	4	0	0	0	15	6	9
Toledo	295,000	58	7	4	6	6	274	8	8
Indiana:									
Fort Wayne	99,900	1	2	3	0	0	1	0	4
Indianapolis	367,000	28	8	13	0	1	20	84	12
South Bend	81,700	2	1	0	0	0	0	0	2
Terre Haute	71,900	1	1	0	0	0	1	0	2
Illinois:									
Chicago	3,048,000	119	87	116	15	11	21	58	98
Springfield	64,700	8	1	0	0	0	0	13	2

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended February 25, 1928—Continued

Division, State, and city	Population July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Michigan:									
Detroit	1,290,000	36	59	37	7	6	437	56	53
Flint	136,000	14	5	0	0	0	10	165	7
Grand Rapids	156,000	1	3	0	0	1	19	7	0
Wisconsin:									
Kenosha	52,700	29	2	0	0	0	1	1	3
Madison	47,600	15	0	0	0	0	0	3	4
Milwaukee	517,000	51	17	17	0	0	1	31	8
Racine	69,400	6	2	0	0	0	0	5	0
Superior	[1] 39,671	1	0	3	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	113,000	1	0	0	0	0	0	4	2
Minneapolis	434,000	59	16	9	0	1	2	35	5
St. Paul	248,000	19	14	3	0	0	0	59	8
Iowa:									
Davenport	[1] 52,469	3	1	1	0	-------	0	0	-------
Des Moines	146,000	0	3	1	0	-------	0	0	-------
Sioux City	78,000	6	2	0	0	-------	7	9	-------
Waterloo	36,900	2	1	0	0	-------	0	2	-------
Missouri:									
Kansas City	375,000	31	7	7	0	0	13	156	9
St. Joseph	78,400	1	2	0	0	0	0	16	5
St. Louis	830,000	30	46	42	3	0	107	14	-------
North Dakota:									
Fargo	[1] 26,403	4	0	0	0	0	0	5	0
Grand Forks	[1] 14,811	0	0	0	0	-------	0	0	-------
South Dakota:									
Aberdeen	[1] 15,036	1	0	0	0	-------	0	0	-------
Sioux Falls	[1] 30,127	0	0	0	0	-------	0	0	-------
Nebraska:									
Lincoln	62,000	34	1	1	0	0	0	32	0
Omaha	216,000	7	4	0	0	0	1	2	4
Kansas:									
Topeka	56,500	44	1	1	0	0	0	3	1
Wichita	92,500	9	3	2	0	0	1	0	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	124,000	3	2	0	0	0	2	5	
Maryland:									
Baltimore	808,000	120	30	32	43	4	587	22	35
Cumberland	[1] 33,741	0	0	1	0	0	0	0	1
Frederick	[1] 12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	528,000	30	17	38	2	2	54	0	22
Virginia:									
Lynchburg	30,500	1	0	2	0	0	27	0	0
Norfolk	174,000	23	2	1	0	0	35	1	7
Richmond	189,000	3	3	3	0	4	117	4	11
Roanoke	61,900	16	1	2	0	0	9	1	0
West Virginia:									
Charleston	50,700	1	0	0	0	0	0	0	2
Wheeling	[1] 56,208	3	1	1	0	0	1	1	6
North Carolina:									
Raleigh	[1] 30,371	4	0	0	0	0	96	0	1
Wilmington	37,700	2	1	0	0	0	26	0	3
Winston-Salem	71,800	6	0	2	0	0	261	16	7
South Carolina:									
Charleston	74,100	0	0	0	19	0	2	0	6
Columbia	41,800	14	1	1	0	0	56	23	6
Greenville	[1] 27,311	1	0	0	0	0	36	8	0
Georgia:									
Atlanta	[2]	3	3	1	35	5	4	6	14
Brunswick	[1] 16,809	0	0	0	0	0	44	6	1
Savannah	94,900	1	0	3	8	1	15	0	2
Florida:									
Miami	[1] 69,754	6	3	2	2	0	0	7	1
St. Petersburg	[1] 28,847	-------	0	-------	-------	0	-------	-------	1
Tampa	102,000	15	2	2	0	0	0	3	4

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended February 25, 1928—Continued

Division, State, and city	Population July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,500	1	0	0	0	1	18	0	8
Lexington	47,500	0	-------	0	0	0	4	0	2
Louisville	311,000	2	5	2	1	0	74	7	13
Tennessee:									
Memphis	177,000	5	4	0	0	0	93	40	5
Nashville	137,000	0	1	4	0	0	22	4	4
Alabama:									
Birmingham	211,000	6	3	1	21	2	31	7	9
Mobile	66,800	0	1	0	6	3	0	0	3
Montgomery	47,000	4	1	0	4	-------	3	1	-------
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	[1] 31,643	2	0	0	0	-------	3	0	-------
Little Rock	75,900	1	1	1	13	1	234	1	1
Louisiana:									
New Orleans	419,000	2	12	16	5	3	1	0	19
Shreveport	59,500	7	0	3	0	1	105	1	2
Oklahoma:									
Oklahoma City	[2]	2	2	3	7	0	15	3	10
Tulsa	133,000	20	1	1	0	-------	0	32	-------
Texas:									
Dallas	203,000	36	6	4	4	3	1	0	7
Fort Worth	159,000	25	2	2	0	2	0	3	8
Galveston	49,100	0	1	4	0	0	7	1	3
Houston	[1] 164,954	3	3	13	4	1	26	1	7
San Antonio	205,000	1	2	6	4	9	113	0	27
MOUNTAIN									
Montana:									
Billings	[1] 17,971	0	1	0	0	0	0	0	0
Great Falls	[1] 29,383	7	0	0	0	2	1	1	1
Helena	[1] 12,037	0	0	0	0	0	0	0	1
Missoula	[1] 12,668	0	1	0	0	0	0	0	0
Idaho:									
Boise	[1] 23,042	0	0	0	0	0	0	1	0
Colorado:									
Denver	285,000	57	11	3	-------	2	15	85	15
Pueblo	43,900	9	1	1	0	0	3	9	9
New Mexico:									
Albuquerque	[1] 21,000	0	1	0	0	0	38	1	1
Utah:									
Salt Lake City	133,000	22	2	2	0	0	0	0	2
Nevada:									
Reno	[1] 12,665	0	0	2	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	[2]	23	7	4	0	-------	196	13	-------
Spokane	109,000	26	3	0	0	-------	0	0	-------
Tacoma	106,000	12	2	1	0	0	37	18	2
Oregon:									
Portland	[1] 282,383	34	8	2	1	1	7	9	8
California:									
Los Angeles	[2]	64	35	37	40	4	21	50	23
Sacramento	73,400	7	2	1	0	0	11	2	4
San Francisco	567,000	96	21	29	2	2	28	46	5

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended February 25, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	3	3	0	0	0	0	0	0	0	1	17
New Hampshire:											
Concord	0	1	0	0	0	0	0	0	0	0	8
Manchester	3	4	0	0	0	1	0	0	0	0	14
Vermont:											
Barre	0	3	0	0	0	2	0	0	0	0	2
Burlington	1	1	0	0	0	0	0	0	0	0	19
Massachusetts:											
Boston	80	87	0	0	0	12	2	0	0	70	265
Fall River	3	12	0	0	0	2	0	2	0	1	25
Springfield	8	20	0	0	0	2	1	0	0	3	40
Worcester	10	10	0	0	0	7	0	0	0	4	60
Rhode Island:											
Pawtucket	1	5	0	0	0	0	0	0	0	0	20
Providence	10	23	0	0	0	1	0	0	0	4	57
Connecticut:											
Bridgeport	13	3	0	0	0	5	0	0	0	2	46
Hartford	6	8	0	0	0	2	0	0	0	0	47
New Haven	11	5	0	0	0	0	0	1	0	35	53
MIDDLE ATLANTIC											
New York:											
Buffalo	25	45	1	0	0	10	0	0	0	38	157
New York	297	440	1	0	0	105	7	3	1	149	1,714
Rochester	15	11	0	0	0	3	1	1	0	6	74
Syracuse	12	15	0	0	0	3	0	0	0	24	57
New Jersey:											
Camden	7	1	0	0	0	1	0	0	0	0	33
Newark	30	33	0	0	0	5	0	0	0	24	154
Trenton	5	4	0	0	0	0	1	0	0	3	45
Pennsylvania:											
Philadelphia	95	87	0	0	0	41	2	2	0	62	577
Pittsburgh	34	24	0	0	0	17	0	4	0	19	188
Reading	3	28	0	0	0	0	0	0	0	2	28
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	19	24	2	0	0	9	0	0	0	6	149
Cleveland	51	46	0	0	0	8	0	0	1	70	182
Columbus	10	18	1	0	0	4	0	0	0	0	72
Toledo	14	8	1	0	0	6	0	1	0	7	80
Indiana:											
Fort Wayne	5	3	0	1	0	1	0	0	0	0	29
Indianapolis	11	22	13	8	0	6	1	0	0	7	112
South Bend	3	0	1	1	0	0	0	0	0	0	13
Terre Haute	3	1	1	3	0	0	0	0	0	0	18
Illinois:											
Chicago	142	117	3	1	0	61	3	1	0	114	795
Springfield	2	10	0	0	0	0	0	0	0	3	21
Michigan:											
Detroit	99	103	2	3	0	34	1	0	0	59	331
Flint	8	28	1	0	0	1	0	0	0	7	23
Grand Rapids	11	7	0	0	0	1	0	0	0	0	32
Wisconsin:											
Kenosha	3	1	0	3	0	0	0	1	0	6	11
Madison	4	2	0	0	0	0	0	0	0	0	12
Mailwaukee	29	49	2	0	0	8	0	0	0	16	100
Racine	5	7	0	0	0	2	0	0	0	6	11
Superior	4	0	1	0	0	1	0	0	0	0	8
WEST NORTH CENTRAL											
Minnesota:											
Duluth	7	8	1	0	0	2	0	0	0	13	20
Minneapolis	61	27	5	0	0	2	1	0	0	13	106
St. Paul	36	15	5	0	0	5	0	0	0	2	

City reports for week ended February 25, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL—contd.											
Iowa:											
Davenport	2	9	2	1			0	0		0	
Des Moines	6	20	1	23			0	0		0	
Sioux City	1	1	1	1			0	0		1	
Waterloo	2	10	0	5			0	0		0	
Missouri:											
Kansas City	12	15	3	7	0	7	0	1	0	12	114
St. Joseph	3	4	0	14	0	2	0	1	0	0	35
St. Louis	43	38	4	3	0	14	0	0	0	14	273
North Dakota:											
Fargo	3	5	0	0	0	0	0	0	0	6	11
Grand Forks	0	4	1	0			0	0		0	
South Dakota:											
Aberdeen	2	0	0	0			0	0		6	
Sioux Falls	3	1	0	0			0	0		0	6
Nebraska:											
Lincoln	2	8	0	4	0	0	0	0	0	11	17
Omaha	4	5	10	3	0	0	0	0	0	0	55
Kansas:											
Topeka	1	5	0	0	0	1	0	0	0	5	15
Wichita	2	8	1	14	0	2	0	0	0	8	19
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	1	0	0	0	0	0	1	0	0	21
Maryland:											
Baltimore	43	43	1	1	0	23	2	3	0	29	248
Cumberland	1	0	0	0	0	0	0	0	0	0	12
Frederick	0	0	0	0	0	0	0	0	0	0	2
District of Col.:											
Washington	27	49	1	0	0	9	0	1	0	3	150
Virginia:											
Lynchburg	0	2	0	0	0	2	0	0	0	12	13
Norfolk	1	34	0	0	0	3	0	0	0	4	
Richmond	4	8	0	0	0	5	0	0	0	0	59
Roanoke	1	1	0	0	0	0	0	0	0	1	15
West Virginia:											
Charleston	0	1	0	5	0	0	1	0	0	0	15
Wheeling	2	2	0	0	0	1	1	0	0	0	25
North Carolina:											
Raleigh	0	2	0	1	0	0	0	0	0	0	13
Wilmington	0	0	0	0	0	0	0	0	0	5	10
Winston-Salem	0	1	3	0	0	1	0	0	0	0	26
South Carolina:											
Charleston	0	2	0	3	0	1	0	0	0	0	37
Columbia	0	2	0	0	0	1	0	0	0	13	27
Greenville	0	0	0	0	0	1	0	0	0	2	11
Georgia:											
Atlanta	4	11	7	0	0	5	0	0	0	0	86
Brunswick	0	0	0	0	0	0	0	0	0	0	6
Savannah	1	1	0	5	0	0	1	0	0	0	36
Florida:											
Miami	1	0		0	0	1	1	0	0	2	34
St. Petersburg	0		0		0	0	0		0		23
Tampa	1	1	0	0	0	2	1	0	0	0	34
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	0	0	0	0	1	0	0	0	2	29
Lexington		0		0	0	1		0	0	2	15
Louisville	6	23	0	1	0	4	1	0	0	0	88
Tennessee:											
Memphis	4	9	2	3	0	15	1	2	1	1	86
Nashville	5	2	1	1	0	1	0	1	0	2	58
Alabama:											
Birmingham	3	2	6	2	0	4	1	0	1	2	73
Mobile	1	1	1	1	0	1	1	1	0	0	36
Montgomery	0	0	1	0			0	0		0	

City reports for week ended February 25, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	1	0	0			0	0		1	
Little Rock	2	0	0	0	0	2	0	0	0	0	
Louisiana:											
New Orleans	7	6	1	0	0	14	2	3	0	1	169
Shreveport	0	2	1	1	0	1	0	1	0	1	21
Oklahoma:											
Oklahoma City	3	4	3	12	0	0	0	0	0	2	39
Tulsa	2	4	0	3			0	3		3	
Texas:											
Dallas	3	17	4	1	0	1	0	0	0	1	50
Fort Worth	1	11	2	1	0	1	0	0	0	0	
Galveston	0	0	0	0	0	1	0	0	0	0	11
Houston	1	2	3	0	0	2	0	0	0	1	65
San Antonio	1	2	0	0	0	8	0	0	0	0	86
MOUNTAIN											
Montana:											
Billings	0	2	0	1	0	0	0	0	0	1	7
Great Falls	2	1	1	0	0	2	0	0	0	1	11
Helena	0	0	0	1	0	1	0	0	0	0	10
Missoula	0	0	0	0	0	2	0	0	0	0	6
Idaho:											
Boise	0	0	1	0	0	0	0	0	0	0	5
Colorado:											
Denver	14	8	2	1	0	11	1	0	0	12	100
Pueblo	0	11	1	0	0	0	0	0	0	3	18
New Mexico:											
Albuquerque	2	0	0	0	0	4	0	0	0	0	11
Utah:											
Salt Lake City	3	1	2	4	0	3	0	0	0	13	
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	2
PACIFIC											
Washington:											
Seattle	11	5	5	4			0	0		4	
Spokane	6	14	6	45			0	0		0	
Tacoma	2	5	4	0	0	1	1	0	0	6	26
Oregon:											
Portland	7	3	10	14	0	4	1	0	0	0	80
California:											
Los Angeles	33	24	7	0	0	36	2	1	1	7	284
Sacramento	2	4	0	0	0	2	0	1	0	0	
San Francisco	15	39	5	0	0	14	0	0	0	11	154

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Fall River	0	0	0	0	0	0	0	1	0
Worcester	0	1	1	1	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	7	2	7	2	0	0	1	3	1
New Jersey:									
Newark	0	1	0	0	0	0	0	0	0
Pennsylvania:									
Philadelphia	1	0	0	0	0	0	1	0	0
Pittsburgh	2	0	0	0	0	0	0	0	0

City reports for week ended February 25, 1928—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	1	0	0	0	0	0	0	0
Columbus	0	0	2	2	0	0	0	0	0
Toledo	3	1	0	0	0	0	0	0	0
Illinois:									
Chicago	6	4	1	0	0	0	0	0	0
Michigan:									
Detroit	2	0	1	0	0	0	0	0	0
Grand Rapids	4	0	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee	1	1	1	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	1	0	0	0	0	0	0
St. Paul	2	0	0	0	0	0	0	0	0
Missouri:									
St. Louis	0	1	0	0	0	0	0	0	0
North Dakota:									
Fargo	0	0	0	1	0	0	0	0	0
Nebraska:									
Omaha	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	0	2	1	0	0	1	0	0
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
Winston-Salem	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	1	0	0	0	0
EAST SOUTH CENTRAL									
Alabama:									
Birmingham	0	0	0	0	0	1	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	0	0	1	1	0	0	0	0	0
Shreveport	0	0	1	0	0	1	0	0	0
Texas:									
Dallas	0	0	0	0	1	1	0	0	0
Fort Worth	0	0	0	0	0	1	0	0	0
Houston	2	1	0	0	1	1	0	0	0
MOUNTAIN									
Montana:									
Missoula	0	0	1	0	0	0	0	0	0
Colorado:									
Denver	6	2	0	1	0	0	0	0	0
Pueblo	1	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	1	2	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	0	-------	0	-------	0	-------	0	1	-------
Tacoma	1	1	0	0	0	0	0	0	0
Oregon:									
Portland	1	1	0	0	0	0	0	0	0
California:									
Sacramento	0	1	0	0	0	0	0	0	0
San Francisco	1	1	0	0	0	0	0	0	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended February 25, 1928, compared with those for a like period ended February 26, 1927. The population figures used in computing the rates are approximate estimates as of July 1, 1927 and 1928, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 31,050,000 in 1927 and 31,657,000 in 1928. The 95 cities reporting deaths had nearly 30,370,000 estimated population in 1927 and nearly 30,961,000 in 1928. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below:

Summary of weekly reports from cities, January 22 to February 25, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Jan. 29, 1927	Jan. 28, 1928	Feb. 5, 1927	Feb. 4, 1928	Feb. 12, 1927	Feb. 11, 1928	Feb. 19, 1927	Feb. 18, 1928	Feb. 26, 1927	Feb. 25, 1928
101 cities	177	[2] 193	194	190	177	167	203	175	179	174
New England	163	172	146	193	174	136	133	172	149	138
Middle Atlantic	194	251	229	278	188	230	277	234	199	224
East North Central	175	186	201	145	179	175	168	169	198	169
West North Central	127	131	123	113	154	99	164	125	109	125
South Atlantic	198	146	143	167	222	112	191	149	191	156
East South Central	101	[2] 87	127	55	61	55	86	55	117	35
West South Central	203	164	232	152	149	128	170	124	194	188
Mountain	197	124	188	106	152	44	161	186	72	71
Pacific	167	161	217	156	167	133	188	82	151	161

MEASLES CASE RATES

101 cities	425	[2] 583	570	724	652	791	810	892	862	998
New England	323	1,078	379	1,508	339	1,614	181	1,657	228	1,908
Middle Atlantic	46	483	41	618	45	647	68	700	74	877
East North Central	536	368	695	359	786	440	1,009	531	1,015	565
West North Central	297	138	453	222	683	216	564	240	960	255
South Atlantic	256	1,533	536	1,822	359	1,959	792	2,246	651	2,406
East South Central	188	[2] 1,621	269	1,192	451	1,132	467	1,347	461	1,202
West South Central	376	500	562	916	451	1,304	562	1,899	591	1,959
Mountain	4,447	88	7,217	115	7,845	186	9,665	97	10,624	168
Pacific	1,504	434	1,538	708	2,220	718	2,774	692	2,865	749

SCARLET FEVER CASE RATES

101 cities	386	[2] 278	403	270	390	300	438	291	424	295
New England	539	372	509	359	537	432	470	441	542	414
Middle Atlantic	378	288	433	295	423	333	581	330	531	335
East North Central	347	301	324	289	325	310	322	280	366	285
West North Central	487	273	521	247	499	290	540	265	445	275
South Atlantic	253	200	245	207	258	231	249	228	218	282
East South Central	319	[2] 116	243	130	223	135	243	190	183	185
West South Central	112	128	124	132	74	100	66	116	116	120
Mountain	1,605	301	1,515	380	1,246	540	1,246	345	1,192	203
Pacific	326	296	436	217	389	192	340	230	313	233

[1] The figures given in this table are rates per 100,000 population annual basis and not the number of cases reported. Populations used are estimated as of July 1, 1927 and 1928, respectively.
[2] Louisville, Ky., not included.

Summary of weekly reports from cities, January 22 to February 25, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927—Continued

SMALLPOX CASE RATES

	Week ended—									
	Jan. 29, 1927	Jan. 28, 1928	Feb. 5, 1927	Feb. 4, 1928	Feb. 12, 1927	Feb. 11, 1928	Feb. 19, 1927	Feb. 18, 1928	Feb. 26, 1927	Feb. 25, 1928
101 cities	26	[1] 26	25	21	26	21	33	20	25	24
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	17	12	22	9	15	14	28	12	15	13
West North Central	79	121	53	117	71	109	81	101	63	92
South Atlantic	60	14	43	18	63	21	60	26	45	26
East South Central	86	[1] 29	101	20	81	15	132	25	71	49
West South Central	41	20	79	12	66	16	62	20	50	8
Mountain	9	133	9	115	18	44	27	168	0	63
Pacific	71	59	63	59	76	69	94	18	104	125

TYPHOID FEVER CASE RATES

101 cities	7	[1] 8	7	7	7	7	9	5	8	5
New England	5	21	9	14	5	9	2	5	9	7
Middle Atlantic	4	5	9	5	5	6	10	3	1	5
East North Central	2	5	5	3	3	6	4	3	6	1
West North Central	8	8	4	2	6	6	10	4	8	4
South Atlantic	18	7	5	5	18	9	23	7	29	9
East South Central	35	[1] 29	5	15	10	5	30	15	25	20
West South Central	0	40	17	40	12	40	8	12	4	16
Mountain	18	0	0	9	0	0	0	0	18	0
Pacific	21	0	8	10	18	0	3	8	8	5

INFLUENZA DEATH RATES

95 cities	25	[1] 19	19	19	24	17	23	22	22	21
New England	9	7	5	9	2	7	9	11	12	7
Middle Atlantic	22	16	21	14	28	15	25	18	22	24
East North Central	21	12	9	13	22	10	19	12	17	14
West North Central	4	10	12	10	14	4	23	6	10	2
South Atlantic	49	11	27	23	23	30	31	35	41	28
East South Central	32	[1] 101	58	68	37	42	43	37	43	31
West South Central	72	78	64	45	38	57	38	90	25	74
Mountain	72	80	45	53	72	53	27	71	54	35
Pacific	14	20	7	34	21	20	17	27	17	20

PNEUMONIA DEATH RATES

95 cities	158	[1] 159	168	150	147	168	146	174	163	161
New England	158	126	188	126	165	149	102	170	184	147
Middle Atlantic	174	183	197	129	173	200	148	195	176	155
East North Central	132	121	121	129	128	114	121	137	145	156
West North Central	126	98	135	49	95	106	91	94	91	71
South Atlantic	189	210	222	198	168	224	234	216	253	228
East South Central	213	[1] 171	207	131	117	235	175	204	122	220
West South Central	200	267	149	209	144	201	204	279	161	271
Mountain	170	177	143	203	143	150	188	168	134	248
Pacific	107	145	121	128	114	182	176	172	131	116

[1] Louisville, Ky., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1927 and 1928, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1927	1928	1927	1928
Total	101	95	31,050,300	31,657,000	30,369,500	30,960,700
New England	12	12	2,242,700	2,274,400	2,242,700	2,274,400
Middle Atlantic	10	10	10,594,700	10,732,400	10,594,700	10,732,400
East North Central	16	16	7,820,700	7,991,400	7,820,700	7,991,400
West North Central	12	10	2,634,500	2,683,500	2,518,500	2,566,400
South Atlantic	21	21	2,890,700	2,981,900	2,890,700	2,981,900
East South Central	7	6	1,028,300	1,048,300	980,700	1,000,100
West South Central	8	7	1,260,700	1,307,600	1,227,800	1,274,100
Mountain	9	9	581,600	591,100	581,600	591,100
Pacific	6	4	1,996,400	2,046,400	1,512,100	1,548,900

FOREIGN AND INSULAR

THE FAR EAST

Report for the week ended February 11, 1928.—The following report for the week ended February 11, 1928, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Plague, cholera, or smallpox was reported present in the following ports:

PLAGUE

Aden.—Aden.
India.—Bassein, Bombay, Moulmein, Rangoon.
Dutch East Indies.—Makassar.
Straits Settlements.—Singapore.

CHOLERA

India.—Calcutta, Madras, Negapatam, Rangoon.
Straits Settlements.—Singapore.
Siam.—Bangkok.
French Indo-China.—Saigon.

SMALLPOX

Ceylon.—Colombo.
India.—Bassein, Bombay, Calcutta, Madras, Moulmein, Negapatam, Rangoon, Visagapatam.
French India.—Pondicherry.
Dutch East Indies.—Belawan-Deli.
China.—Shanghai.
Kwantung.—Dairen.
Manchuria.—Mukden.

ARABIA

Aden—Further relative to plague—February 8, 1928.—Information received under date of February 8, 1928, shows a total of 152 cases of plague at Aden, Arabia, with 74 deaths, from the date of reported outbreak, January 17, 1928. It was stated that the area of prevalence had not greatly increased.

AZORES

Plague—January 22–February 11, 1928.—During the period January 22 to February 11, 1928, five cases of plague with three deaths were reported in the Azores Islands. Of these, one case with one death occurred at Livramento, and four cases with two deaths at Rabo de Peixe and San Vicente.

BARBADOS

Malaria—1927.—During the month of October, 1927, malaria was found to be present in one Parish of the Island of Barbados, British West Indies, with rapid spread. At the close of the year 1,000 cases were estimated as present in the island, with 20 fatalities occurring among infants and persons of advanced years.

Measures to prevent spread.—Measures to eliminate the anopheline mosquito were enforced and efforts made to improve the living conditions of the laboring classes.

BRAZIL

Porto Alegre—Plague.—Information has been received under date of March 6, 1928, of the occurrence of two cases of plague at Porto Alegre, Brazil. The cases were stated to have been found in the prison.

CANADA

Provinces—Communicable diseases—Week ended February 25, 1928.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended February 25, 1928, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	41			2				43
Lethargic encephalitis				1				1
Poliomyelitis		1					1	2
Smallpox				51		8	3	62
Typhoid fever	4		14	10	1	2	2	33

Quebec Province—Communicable diseases—Week ended February 25, 1928.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended February 25, 1928, as follows:

Disease	Cases	Disease	Cases
Chicken pox	33	Scarlet fever	115
Diphtheria	67	Smallpox	13
German measles	11	Tuberculosis	58
Influenza	7	Typhoid fever	14
Measles	254	Whooping cough	26

CANARY ISLANDS

Plague, bubonic—Las Palmas—Year 1927.—Bubonic plague was reported as occurring at Las Palmas, Canary Islands, during the year 1927 as follows:

Date of notice	Cases	Deaths	Remarks
Jan. 13	1		
Feb. 23	1		
Oct. 11	4		Reported in Isleta Zone.
Nov. 25	1		
Dec. 5	2	1	Pneumonic; in Isleta Zone.
Dec. 16	1		
Dec. 19	1	1	
Dec. 27	1		Reported in Isleta Zone.

Deaths from certain diseases—Las Palmas—Year 1927.—Deaths from certain diseases were reported from Las Palmas, Canary Islands, for the year 1927, as follows:

	Deaths		Deaths
Bronchitis	18	Puerperal septicemia	5
Cancer	49	Syphilis	19
Diarrhea and enteritis	267	Tuberculosis (pulmonary)	149
Diarrhea and enteritis (under 2 years)	23	Tuberculosis (all other forms)	42
Diphtheria	7	Typhoid fever	9
Heart disease	157	Whooping cough	14
Influenza	1	Other communicable diseases	12
Pneumonia	105	Other diseases of the respiratory organs	26

Population: 66,461, census of 1920.

Santa Cruz de Teneriffe—Plague—January 16, 1928.—The occurrence of a fatal case of plague was reported January 16, 1928, at Santa Cruz de Teneriffe, Canary Islands.

CUBA

Habana—Communicable diseases—February, 1928.—During the month of February, 1928, communicable diseases were reported in the city of Habana, Cuba, as follows:

Disease	New cases	Deaths	Remaining under treatment	Disease	New cases	Deaths	Remaining under treatment
Chicken pox	50		45	Measles	5		6
Diphtheria	9	3	1	Paratyphoid fever		1	
Leprosy			18	Scarlet fever	11		7
Malaria [1]	14	2	3	Typhoid fever [1]	19	3	33

[1] Many of these cases from the interior.

EGYPT

Plague—Suez—District of Manfalut—January 29–February 4, 1928.—During the week ended February 4, 1928, four cases of plague were reported in Egypt, of which three cases were reported at Suez and one case in the district of Manfalut.

Summary—January 1–February 4, 1928.—During the period January 1 to February 4, 1928, 6 cases of plague were reported in Egypt, as compared with 13 cases reported for the corresponding period of the year 1927.

GREAT BRITAIN

Open-air school installed—Liverpool.—Information has been received under date of February 10, 1928, of the opening of a free open-air school at Liverpool, England. The school is stated to be the largest open-air school yet erected. It comprises two units built around a central court, which is laid out as a flower garden. The classrooms are situated on the ground floor, the upper part of the building being allotted to administrative uses and library. The buildings are equipped with hot-water heating and are lighted mainly by skylights. Classrooms measure 24 by 20 feet, and each room may be thrown wide open to the air on two sides. There are three

assembly halls. The playgrounds allow an average of 120 feet to each child. The installation of the school is of special interest in view of the prevalence of pulmonary tuberculosis in the community, especially among the poorer classes.

JAPAN

Dysentery—Tokyo, city and prefecture—January 1-28, 1928.—During the period January 1 to 28, 1928, dysentery was reported at Tokyo, Japan, as follows: Tokyo city, cases, 54; deaths, 23; Tokyo Prefecture, outside the city, cases, 74; deaths, 35. Population: City, 1,995,567; prefecture, 2,489,577.

LATVIA

Communicable diseases—December, 1927.—During the month of December, 1927, communicable diseases were reported in the Republic of Latvia, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	2	Poliomyelitis	1
Diphtheria	27	Puerperal fever	2
Erysipelas	12	Scarlet fever	193
Influenza	23	Tetanus	1
Lethargic encephalitis	2	Trachoma	21
Measles	305	Typhoid fever	73
Mumps	7	Whooping cough	18

Population: 1,950,000.

MALTA

Communicable diseases—December, 1927.—During the month of December, 1927, communicable diseases were reported in the island of Malta, as follows:

Disease	Cases	Disease	Cases
Bronchopneumonia	5	Puerperal fever	2
Chicken pox	16	Scarlet fever	2
Diphtheria	2	Trachoma	29
Erysipelas	2	Tuberculosis	13
Influenza	6	Typhoid fever	48
Malta fever (undulant)	42	Whooping cough	1
Pneumonia	2		

Population, estimated, civil, 227,440.

MEXICO

Atotonilco—Further relative to smallpox outbreak[1]*—Vaccination.*—According to information received under date of February 29, 1928, the outbreak of smallpox at Atotonilco, State of Jalisco, Mexico, was under control, few new cases being reported. Indigent patients were being treated in lazarettoes. More than 14,000 persons were stated to have been vaccinated.

SWEDEN

Goteborg—Vital statistics, 1927.—According to statistics prepared by the Goteborg Medical Association, the total number of cases of

[1] PUBLIC HEALTH REPORTS, Mar. 9, 1928, p. 586.

sickness reported by the district physicians during the year 1927 was 14,326, or 6.2 cases for every 100 inhabitants. In the year 1926 the average per 100 inhabitants was 4.4. In 1925, however, the average was 6.4 cases, and a comparison of the figures for the five-year period 1922–1926 shows that the frequency of cases of sickness during 1927 was about normal.

During 1927, 293 cases of diphtheria were reported, an increase over the preceding year of 140 per cent. Scarlet fever accounted for 290 cases and typhoid and paratyphoid fever for 26 cases. The latter figure is the lowest during the past 30 years. In 1925 there were reported 134 cases of diphtheria, 305 cases of scarlet fever, and 143 cases of typhoid and paratyphoid fever.

As compared with the year 1926, the number of cases of influenza increased 150 per cent. An outbreak of measles occurred during 1927, the number of cases reported being 1,286. In 1926 only 4 cases of measles occurred.

The number of deaths reported during the year 1927 was 2,290, or 9.9 for every 1,000 inhabitants. This was an increase of 10 per cent over the figures for the year 1926, which showed the lowest mortality figures recorded for a number of years.

Four hundred and fifty-eight deaths were due to diseases of the heart and blood vessels, while 327 deaths were caused by tuberculosis. Cancer caused 241 deaths, and deaths due to influenza totaled 92, an increase of 185 per cent, as compared with the preceding year. Diphtheria caused 11 deaths.

UNION OF SOUTH AFRICA

Plague—Smallpox—Typhus fever—January 15–21, 1928.—During the week ended January 21, 1928, a fatal case of plague was reported in Cape Province, Union of South Africa. The case occurred in a European and on a farm. During the same period smallpox was reported on two farms in Wodehouse District, Cape Province. Fresh outbreaks of typhus fever were reported for the same period in the Cape Province, occurring at 8 localities in 5 districts.

During the month of December, 1927, 83 cases of typhus fever with 15 deaths were reported in the native population of the Union of South Africa, of which 70 cases with 13 deaths occurred in the Cape Province and 13 cases, 2 deaths, in the Province of Natal. In the European population, one case of typhus fever occurred in Natal and two cases in the Cape Province.

East London—Typhoid fever—January 8–28, 1928.—During the three weeks ended January 28, 1928, 56 cases of typhoid fever with 5 deaths were reported at East London, Union of South Africa. The infection was stated to have been introduced from country districts. The occurrence was in the native population.

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

From medical officers of the Public Health Service, American consuls, Health Section of the League of Nations, and other sources. The reports contained in the following table must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Week ended—											
							Nov. 26, 1927	December, 1927					January, 1928				February, 1928	
								3	10	17	24	31	7	14	21	28	4	11
China:																		
Amoy	C	2	28	72	16													
	D		7	3														
Canton	C	8	31	36	14	12		1										
	D	5	16	25	14	11		1										
Foochow	C	P	P	P	P													
Hong Kong	C	2	P	1	P													
	D	1																
Shanghai (settlement and concession)—																		
Foreigners only	C		1	6	3													
Including natives	D		20	74	7													
Swatow	C	72	42	P	P	P												
	D	1		P	P	P												
Tientsin	C	P	P	15	2	P												
Dutch East Indies: Java—Batavia	C					28	2	1										
	D					18	2	1										
India	C	46,137	45,163	31,390	20,160	23,047	8,102	5,997	5,766	5,274	4,624	3,960	3,550					
	D	24,081	22,051	15,895	10,371	12,863	4,835	3,672	3,355	3,164	2,617	2,353	2,046				1	
Bassein	D	16																
Bombay	C	75	42	3		2												
	D	35	30	2		2												
Calcutta	C	95	87	76	101	199	156	119	87	66	69	42	43	22	39			
	D	48	40	39	64	138	106	77	55	43	48	34	27	16	18	24	38	32
Madras	C	424	547	59	14	13			1					1	1			
	D	204	278	48	8	7	1		1					1		3		1
Madras Presidency	C	11,491	7,660	3,056	2,050	3,073	1,484	861	878	479	503	382	482					
	D	4,807	3,513	1,581	1,055	1,736	802	528	491	283	241	209	254					
Negapatam	C															4		
	D	2	4												4	1		1

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

CHOLERA—Continued

[C, indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Week ended— Nov. 26, 1927	December, 1927 3	10	17	24	31	January, 1928 7	14	21	28	February, 1928 4	11
India—Continued																		
Rangoon	C	2	1	2	6	2	3	1	2	2	1	2	----	1	4	----	----	----
	D	2	1	2	5	5	2	1	2	1	1	1	----	1	----	----	1	1
Tuticorin	C	----	----	----	1	----	----	6	----	2	----	----	----	----	----	----	----	----
	D	----	----	----	1	37	----	6	6	2	----	----	----	----	----	----	----	----
India (French):																		
Chandernagor	C	1	1	1	----	6	2	2	2	2	6	3	4	1	----	----	----	----
	D	1	1	----	----	6	2	2	2	2	4	2	2	1	----	----	----	----
Karikal	C	56	18	1	----	1	----	----	----	1	----	----	6	2	----	----	----	----
	D	45	12	1	----	1	----	----	----	1	----	----	4	----	----	----	----	----
Pondicherry	C	37	12	15	----	1	----	5	3	17	4	1	2	4	----	----	----	----
	D	24	11	15	----	1	----	5	1	15	6	1	2	3	----	----	----	----
Indo-China: Saigon	C	----	----	1	1	----	----	----	----	----	----	----	2	1	1	1	----	2
	D	----	----	----	----	----	----	----	----	----	----	----	1	----	----	----	----	1
Iraq [1]																		
Japan: Yokohama	C	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Philippine Islands: Manila	C	1	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Siam	C	81	77	40	18	110	19	29	18	32	24	24	13	49	50	----	----	----
	D	59	53	24	11	76	11	19	13	21	18	21	5	36	34	----	----	----
Bangkok	C	6	2	3	5	4	----	1	1	1	2	3	7	9	11	28	28	34
	D	1	1	1	3	2	----	1	----	1	2	1	3	5	7	16	26	17
Straits Settlements: Singapore	C	----	----	----	----	7	1	2	----	2	3	15	3	2	2	----	----	1
	D	----	----	----	----	5	2	----	----	2	1	4	5	2	1	----	----	----
On vessel:																		
S. S. Adrastus: At Yokohama, Japan	C	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
S. S. Tabaristan: At Basra, Iraq	C	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----

[1] From July 19 to Dec. 26, 1927, 1,479 cases of cholera were reported in Iraq, with 1,063 deaths, as follows: Amarah Liwa, 261 cases, 205 deaths; Baghdad Liwa, 80 cases, 60 deaths Basra Liwa, 421 cases, 330 deaths; Diwaniah Liwa, 122 cases, 72 deaths; Diyalah Liwa, 1 case, 1 death; Dulaim Liwa, 100 cases, 69 deaths; Hillah Liwa, 105 cases, 71 deaths; Kerbalah Liwa, 79 cases, 60 deaths; Kut Liwa, 66 cases, 44 deaths; Muntafiq Liwa, 244 cases, 151 deaths.

Place		July, 1927	August, 1927	September, 1927	October, 1927	November, 1927			December, 1927			January, 1928	
						1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20
Indo-China (French):													
Annam	C	911	1,628	640	226	13	75	38	16	2		79	95
Cambodia	C	87	89	75	180	56	1	28	21	12	39	30	9
Cochin-China	C	257	68	144	178	21	27	52	17	38	58	46	119
Laos	C	20	190	36	67	10							
Tonkin	C	1,093	180	24	1			1			2	1	
Kwangchow-wan	C		1	15									

PLAGUE

[C indicates cases; D, deaths; P, present]

Place		July 3-30, 1927	July 31-Aug. 27, 1927	Aug. 28-Sept. 24, 1927	Sept. 25-Oct. 22, 1927	Oct. 23-Nov. 19, 1927	Week ended—											
							Nov. 26, 1927	December, 1927					January, 1928				February, 1928		
								3	10	17	24	31	7	14	21	28	4	11	18
Algeria: Oran	C		4	1		2													
	D		3	1															
Arabia: Aden	C													19	13	22	54	89	63
	D													7	8	8	33	55	50
Argentina:																			
Bahia Blanca district	C						1	1	1										
Buenos Aires	C																	2	
Cordoba Province	C		2		P	P	10				1	1							
Entre Rios	C		5																
Firmat	C									1									
Quilino	C						1	1	1										
Rosario	C						1	1	1	1	2	3				4			1
Santiago Province	C																		1
Ucacha	C									1									
Azores: St. Michaels Island	C	2	2	2	3	3	1	1	1		1		1		3	1	2	2	
	D			1	1				1					1	1	1	1	1	
Brazil:																			
Porto Alegre [1]															2				3
Rio de Janeiro	C																		

[1] 2 cases at Porto Alegre Mar. 3, 1928.

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

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Week ended— Nov. 26, 1927	December, 1927 3	10	17	24	31	January, 1928 7	14	21	28	February, 1928 4	11	18
British East Africa:																			
Tanganyiki	C	P	P		P	P	P	P	P	P	P								
Uganda	C	528	456	226	99	99	24	27	16										
	D	413	345	158	88	96	21	25	15										
Canary Islands:																			
Las Palmas	C				9		1			2			2	1	1				1
	D													1	1				
Teneriffe	C														1	3	3	3	
	D														1		3		
Ceylon: Colombo	C		1	3	1		1	1		4	3	2	1	1	1	1	1		3
	D			3					2	4	3	1	1	1	1	1			1
China:																			
Amoy	C	P																	
Tungliao	D				200														
Tientsin	C		2																
Dutch East Indies:																			
Balik-Papan	C										1								
	D										1								
Celebes—Makassar	C					6	1		1		2	1		3	2	1	1	1	
	D					6	1		1		2	1		2	2	1	1	1	
Java	D			432	779	829	291	275											
Batavia and West Java	C	40	71	68	130	132	45	43	32	34	32	36	24	36					
	D	40	71	68	129	132	44	43	32	33	32	36	24	36					
Cheribon	C							1											
	D							1											
East Java and Madura	C	29	28	18	17	10	5	3			3	2	1						
	D	29	27	18	17	10	5	3			3	2	1						
Pasoeroean Residency	C						P	P	P										
Surabaya Residency	C							P											
Surakarta Residency	C					P	P	P											
Egypt:																			
Alexandria	C		2	1			5	3	2	2	3	2					1		1
	D						5	2			1	1					1		1
Suez	C			1										1	1		3		3
	D													1	1		1		3

Greece:																			
Athens and Piræus	C	----	1	3	1	----	----	----	----	----	----	2	1	----	----	----	----	----	----
	D	----	----	----	1	----	----	----	----	----	----	1	----	----	----	----	----	----	----
Mitylene	C	----	1	5	1	3	1	1	1	----	----	----	----	----	----	----	----	----	----
Patras	C	----	2	2	1	1	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	----	----	----	1	1	----	----	----	----	----	----	----	----	----	----	----	----	----
Hawaii Territory: Hawaii	D	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
India	C	404	1,391	2,710	3,246	3,600	1,193	1,228	1,348	1,749	1,085	1,197	2,596	----	----	----	----	----	----
	D	241	836	1,428	1,792	2,065	668	742	773	1,085	733	899	1,804	----	----	----	----	----	----
Bassein	D	23	12	14	8	4	3	----	----	1	2	13	2	3	3	----	2	1	----
Bombay	C	14	14	7	4	----	----	----	----	----	----	1	----	2	5	2	----	----	----
	D	13	11	5	3	----	----	----	----	----	----	1	----	1	2	2	3	2	6
Calcutta	C	----	----	18	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	----	----	10	----	----	----	----	----	----	----	----	----	----	1	----	----	----	----
Madras Presidency	C	255	620	465	583	470	190	158	220	223	174	167	56	153	----	----	----	----	----
	D	115	321	230	298	282	111	61	108	79	69	27	38	72	----	----	----	----	----
Rangoon	C	21	15	6	11	11	5	2	6	2	2	4	4	7	8	----	----	----	----
	D	20	14	6	11	11	5	2	5	3	2	3	4	7	7	7	6	10	12
Indo-China: Saigon	C	----	----	2	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----
Nigeria: Lagos	C	----	----	----	----	17	4	3	4	2	2	1	1	6	2	3	3	----	----
	D	----	----	----	----	17	4	3	3	3	1	1	1	5	3	3	3	----	----
Senegal:																			
Baol	C	41	23	72	95	P	----	P	----	----	----	----	----	----	----	----	----	----	----
	D	22	13	33	40	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Cayor	C	126	227	463	176	45	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	74	166	233	88	28	----	----	----	----	----	----	----	----	----	----	----	----	----
Dakar	C	67	46	20	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	41	32	12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Louga	C	----	----	5	8	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	----	----	4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
M'Bour	C	28	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	23	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Rufisque	C	104	44	16	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	82	38	12	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Thies	C	7	----	9	1	1	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	3	----	7	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Tivaouane	C	43	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
	D	29	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
Siam	C	----	----	----	13	1	2	----	----	1	1	7	4	4	5	----	----	----	----
	D	----	----	----	9	----	1	----	----	1	1	1	5	4	1	----	----	----	----
Bangkok	C	----	----	----	2	----	----	----	----	----	----	1	----	----	----	1	----	----	1
	D	----	----	----	----	1	----	----	----	----	----	1	----	----	----	1	----	----	1
Straits Settlements: Singapore	C	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	1	1
	D	----	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	1	1
Turkey: Constantinople	C	----	----	1	1	----	1	1	----	----	----	----	----	----	----	----	----	----	----
	D	----	----	----	1	----	----	1	----	----	----	----	----	----	----	----	----	----	----
Union of South Africa:																			
Cape Providence	C	----	----	----	----	2	----	----	2	----	----	----	----	----	----	----	----	----	----
	D	----	----	----	----	2	----	----	1	----	----	----	----	----	----	----	----	----	----
Orange Free State	C	4	----	----	----	1	8	P	----	----	----	----	----	----	----	----	----	----	----
	D	4	----	----	----	1	6	----	----	----	----	----	----	----	----	----	----	----	----

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

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Week ended— Nov. 26, 1927	December, 1927					January, 1928				February, 1928		
								3	10	17	24	31	7	14	21	28	4	11	18
U. S. S. R.:																			
Chita district	C				1														
	D				1														
Northern Caucasus	C			14	1														
	D			10															
On vessel:																			
At La Plata, from Rosario, Argentina	C											1							
S. S. Aghios Gerasimos at Vigo, Spain	C					3													

Beirut, Syria, 1 case, Dec. 1–10.

Place		July	August	September	October	November	December	January
Algeria: Algiers	C				2			
British East Africa: Kenya	C	13	61	21	18	28	16	
Ecuador: Guayaquil	C	5	7	3	4	9	5	4
	D					3	2	4
Indo-China (French)	C			14	3	3	4	
Madagascar	C	46	98	170	166	209	317	
	D	43	89	154	155	189	261	
Ambositra Province	C	6	1		6	1	18	
	D	6	1		6	1	10	
Antisirabe Province	C		34	5	19	18	72	
	D		34	4	19	17	72	
Itasy Province	C	14	11	21	16	26	62	
	D	14	7	20	15	25	54	

Place		July	August	September	October	November	December	January
Madagascar—Continued.								
Moramanga Province	C	5	4	3	24	46	25	
	D	5	4	3	20	41	22	
Tananarive Province	C	21	48	142	99	170	139	
	D	19	43	127	93	153	108	
Mauritius	C			1				
Nigeria	C	9	8	15	27	16	20	16
	D	7	8	14	27	16	18	16
Peru	C	8	11	15	14	6	14	
	D	7	6	6	5	2	4	
Callao	D	3					3	
Lima	C						7	
	D				1	1	1	

SMALLPOX

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Week ended— Nov. 26, 1927	December, 1927					January, 1928				February, 1928			
								3	10	17	24	31	7	14	21	28	4	11	18	25
Algeria	C	376	459	382	683	661	.....	68	55	47	81	26	.....	.....	.....	18	11	.....	.....	.....
Algiers	C	.....	.....	.....	.....	.....	.....	.....	.....	3	3	4	.....	2	3	1	7	.....	.....	.....
Oran	C	14	9	16	11	20	9	11	10	9	8	15	2	4	2	2	4	.....	.....	.....
Arabia: Aden	C	2	.....	.....	.....	1	.....	1	1	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
	D	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brazil:																				
Para	C	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rio de Janeiro	C	4	6	10	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	D	4	4	9	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
British East Africa: Tanganyiki	D	.....	21	8	P	P	P	P	P	.....	.....	.....	.....	6	4	.....	.....	.....	.....	.....
British South Africa:																				
Northern Rhodesia	C	48	55	39	164	185	57	15	125	55	2	81	141	12	.....	.....	.....	.....	.....	.....
	D	2	1	2	11	64	18	7	28	9	.....	8	23	.....	.....	.....	.....	.....	.....	.....
Southern Rhodesia	C	.....	.....	.....	.....	3	.....	.....	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Canada:																				
Alberta	C	42	17	17	23	10	7	3	3	6	.....	3	3	5	1	19	1	6	.....	3
Calgary	C	5	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edmonton	C	.....	.....	.....	1	1	6	.....	1	1	.....	.....	3	2	1	.....	.....	2	1	.....
British Columbia: Vancouver	C	.....	.....	2	.....	.....	.....	.....	4	.....	1	3	3	1	11	3	1	11	2	1
Manitoba	C	.....	13	9	7	19	1	3	1	2	2	2	2	5	.....	1	.....	.....	.....	.....
Winnipeg	C	3	5	4	2	2	.....	.....	1	1	1	.....	.....	1	1	1	.....	.....	.....	.....
New Brunswick	C	.....	.....	2	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Nova Scotia	C	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Halifax	C	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontario	C	63	60	22	96	264	71	90	82	104	.....	53	83	76	52	77	63	51	40	51
Hamilton	C	.....	.....	.....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kingston	C	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	1	.....	.....
Ottawa	C	37	27	40	67	134	10	19	.....	34	18	9	10	23	20	16	23	9	11	3
Toronto	C	5	.....	2	10	34	.....	25	14	.....	7	.....	11	10	8	5	1	6	4	4
Windsor	C	.....	.....	.....	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quebec	C	12	1	.....	8	25	8	5	3	.....	14	3	10	17	7	.....	11	8	11	.....
Montreal	C	.....	.....	.....	.....	1	.....	.....	.....	.....	1	.....	1	6	3	4	1	.....	5	1
Quebec	C	.....	.....	.....	.....	.....	.....	2	.....	2	.....	2	.....	3	.....	5	.....	.....	.....	2
Riviere du Loup	C	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Saskatchewan	C	25	14	68	31	34	9	15	19	15	12	13	15	12	39	15	9	34	7	8
Moose Jaw	C	.....	10	16	3	.....	.....	.....	.....	1	.....	1	2	1	4	2	3	2	.....	2
Regina	C	2	8	.....	5	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Saskatoon	C	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	4	.....	.....	13	1	.....	1	.....	2

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

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Week ended— Nov. 26, 1927	December, 1927					January, 1928				February, 1928			
								3	10	17	24	31	7	14	21	28	4	11	18	25
Ceylon: Colombo	C		1			1		2							1			2		
	D		1					1							1					
China:																				
Antung	C	3												1						
Canton	C			1																
	D			1																
Chefoo	C			1	P		P													
	D			1																
Foochow	C	P	P	P	P	P	P		P	P	P	P		P						
Hong Kong	C	3	1	2										1	1					
	D	3	1	2									1							
Manchuria—																				
Changchun	C	4					1									4				
Dairen	C				1	2				1			2	3						
	D				1															
Fushun	C	1		1		1														
Harbin	C	1								2		1				2				
Mukden	C	3			2	1										1				
Pensihu	C	1			1				•											
Shanghai—																				
Foreigners only	C														1	2		2		
Including natives	D														3	2	3			
Tientsin	C	11		4	13	8	4	1	2	2	2									
Curacao (Alastrim)	C														2				3	
Dutch East Indies:																				
Borneo—																				
Samarinda District	C					P														
South and East Borneo Residency	C		P																	
Java—																				
Batavia and West Java	C	2	4		4	25														
	D					15														
East Java and Madura	C	8	4	22	8	9	4	3	2			3	1							
	D				1															
Sumatra: Medan	C									3		8		1		3				
	D									2		1		2		4				

Egypt	C	4		3				4			4									
	D			1	1				1											
Cairo	C						1	1												
Great Britain:																				
England and Wales	C	721	568	508	473	902	233	366	230	212	255	247	275	398	405	370	386	369	369	
Birmingham	C		1		1										14	17	11	2		
Bradford	C					11	9	6	2	2	2	2	4	24	6	9	7	2	7	
Bristol	C				6	4	2	4	2							2		1		
Cardiff	C					1							1							
Leeds	C	2	5	3	7	5	3	3	6	4	4	5	1		1			2	1	
Liverpool	C													1						
London	C														2		1	5	10	
Manchester	C				3	6	2	5	10	8		1	2	2	11	6	4	4	1	
Newcastle upon Tyne	C	1	1	2	6	9	28	18	5	4	2	13	2	5	14	3	4	6	4	
Nottingham	C												7	6	4	8	6	9	6	
Sheffield	C	11	2	1	10	6	1	8			3		1	10	4		4		1	
Stoke on Trent	C		1										3	1			1		2	
Greece: Saloniki	D	1	2																	
Guinea (French): Beyla	C	9																		
India	C	11,340	5,911	4,398	3,153	4,052	1,031	1,556	1,989	2,205	2,225	2,502								
	D	3,140	1,668	1,120	715	927	307	359	465	519	515	578								
Bassein	C		1															1		
	D		1																	
Bombay	C	38	33	12	10	4		4		5		4	4	6	10	23	10	18		
	D	21	19	8	2	3		1		1					2	8	7	7		
Calcutta	C	93	27	22	5	5	4	3	11	7		17	9	14	14	11	23	10		
	D	70	25		6	2	2	1	6	2		17	4	6	10	7	10	7		
Madras	C	4	6	7	8	7	2	2	5	2	2		11	8	9	16	20	29		
	D	1		2		2	1	1	1		1		4	1	3	2	2	1		
Negapatam	C	3	3	1										5		4	2	2		
	D	2	2	1										3		2	1			
Rangoon	C	37	14	9	17	6	5	2	1	6	36	28	23	49	41	34	103	97		
	D	11	3	2	3	1	1	1		2	5	13	4	9	13	10	18	23		
Vizagapatam	C	11		3									3		2	1	5	2		
	D	4		2											6	1		1		
India (French):																				
Karikal	C	2	3	1	2	P														
	D	2	3	1	2															
Pondicherry	C	22	39	37	38	42	15	6	6	14	6									
	D	20	31	37	38	42	15	6	6	14	6									
Indo-China: Saigon	C	1	1	1						1		1	1	1						
Iraq:																				
Baghdad	C			1	7	5	1	5	7	12	9	9	3	2						
	D			1	4	4		5	4	5	7	3	2							
Basra	C	1	1	4	2	3		2	2			2								
	D	1	1	4	2	1		2	1			1								
Italy (Rome and vicinity)	C	1		1																
Jamaica (outside Kingston) (alastrim)	C	15	6	9	9	7	1		1	1		2				4				
Kingston	C			3	2															

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

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Week ended— Nov. 26, 1927	December, 1927					January, 1928				February, 1928			
								3	10	17	24	31	7	14	21	28	4	11	18	25
Japan:																				
Nagasaki	C	17	2																	
	D	5	1																	
Tokyo	C														2	1				
	D															1				
Mexico:																				
Acapulco	C			2		1														
	D			2		1														
Chihuahua	D												1							
Guadalajara	D						1			1										
Manzanillo	D													1						
Mexico City and surrounding territory	C						1	1	1	1						1	1			
Monterey	C	6																		
	D	4																		
San Luis Potosi	D	4	1																	
Torreon	D		1		2															
Palestine: Jerusalem	C							1												
Paraguay	D	2																		
Persia: Teheran	D	2																		
Poland	C	7	2							1	5	1								
	D	2	1																	
Portugal:																				
Lisbon	C	4		3	8	4		3	3	4	1	2	4	5	5	2	2			
	D									1										
Oporto	C			1																
Siam	C	34	51	27	6	1		8		1	2	5	8	8	13					
	D	9	10	15						1			2		1					
Bangkok	C	5		3		1		1				1	2							
	D	1		1									1							
Spain:																				
Malaga	D					1	1													
Seville	C													1						
Valencia	C				1							1	1							

Straits Settlements: Singapore	C					1					2										
Switzerland	C											2	2			3					
Tunisia: Tunis	C																				
Union of South Africa:																					
Cape Province	C	P	P		P																
Orange Free State	C		P			P	P	P	P	P	P				P						
Transvaal	C					P	7														
Venezuela: Maracaibo	D	1		2	1																

Place		July, 1927	August, 1927	September, 1927	October, 1927	November, 1927			December, 1927			January, 1928		
						1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31
Algeria	C	376	459	382	682									
Oran	C	14	10	16	11									
Indo-China	C	19	3	21	25	13	3	22	10	4	20		40	18
Syria:														
Aleppo	C										1		1	
Beirut	C								1		1			
Damascus	C		3	5	22		13		4	6	2	11	2	

Place		July	August	September	October	November	December	January
Angola	C	42	2	5	73	71		
	D				2			
Congo	C			5	77			
Cuanza-Norte	C			1				
Cuanza-Sul	C				2			
Loanda	C			1				
Zaire	C			3	4	1		
Brazil: Porto Alegre	C	5	3	3	4	1		
British East Africa: Zanzibar	C				2			
	D				1			
Chosen	C	19	2		2	2		
	D	6				1		
Ecuador, Guayaquil	C		2	2	1	1	4	2
France	C	23	6	8	7	4	14	
Gold Coast	C	1	1	5	4			

Place		July	August	September	October	November	December	January
Greece	C	3	3	4	4		5	6
Latvia	C				2			
Mexico	D	93	73	55				
Morocco	C	53	76	51	81	140	401	
Nigeria	C	492	91	237	223	93		
	D	83	20	70	51	30		
Persia	D					2		
Spain: Madrid	D					1		
U. S. S. R.:								
Railways, etc	C	11	6	9	7			
Other territories in Europe	C	146	111	199	220			
Transcaucasus, Siberia, and Central Asia	C	36	29	15	40			
Ukraine	C	16	4	7				

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

TYPHUS FEVER

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Week ended Nov. 26, 1927	December, 1927					January, 1928				February, 1928	
								3	10	17	24	31	7	14	21	28	4	11
Algeria:																		
Algiers	C															1		
Oran	C										1	1	1	1		2		
Bulgaria: Sofia	C				17	6				1	1	4	1		1			
	D					1												
Chile:																		
Antofagasta	D	1			1													
Talcahuano	D	1																
Valparaiso	C	2		1		1	1	1						1				
	D		2	1		2												
China:																		
Manchuria—Harbin	C	3	2			1												
Tientsin	C	1		2														
Egypt	C	24	2		12	4	1	7	3	3	1							
	D	1	3		5			5	1	2								
Cairo	C								1	1								
	D								1									
Port Said	C				1			1										
Ireland (Irish Free State):																		
Cork County	C	1							3				1					
Donegal County, Letterkenny	C				4													
Mexico:																		
Guadalajara	D						1											
Mexico City, including municipalities in Federal District	C	16	17	19	18	28	7	6	4		4	4	4	3	2	1		2
	D					2				1	1	3	1					
Morocco	C												107	235	257	214	370	210
Palestine:																		
Haifa	C		4		2	1	1											
Herzliah	C						1											
Jaffa	C		2		1		1											
Nazareth	C	1	2			1												
Safad	C	1	2				1		1									
Tel-Aviv	C		1	1	2	1	1	1	1									

Poland	C	99	50	35	19	64	13	28	17	35	26	33	68	68	101	92		
	D	10	6	2	4	11	1	5		4	1	3	6	6	4	3		
Portugal: Oporto	C		1			1												1
Rumania	C	27	36	16	17	22	6	8	8	13	32	17	19					
	D	4	1		2							2	1					
Syria: Aleppo	C			2									2					
Tunisia	C	29	14	1	3	1				1	1			5	4			
Union of South Africa:																		
Cape Province	C	P	P	P	P	P	P	P	P	P	P	1	P		P			
Natal	C	P	P	P	P	P	P	P	1	1	2	P	P	1				
Orange Free State	C	P			P				P									
Transvaal	C	18	1		5	P	P	P										

Place		1927				November, 1927			December, 1927			January, 1928
		July	August	September	October	1-10	11-20	21-30	1-10	11-20	21-31	1-10
Algeria	C	67	33	10	12							
	D	13			1							
Algiers	C	2	2	6	2							
Bulgaria	C	12	24	7	2						2	7
	D		1	2	1						1	
Morocco	C	148	76	7	11	5	14	7	5	6	75	
	D											

Place		July	August	September	October	November	December	January
Argentina	C					1		
	D						1	
China: Shanghai	D					1		
Chosen	C	72	17	1	16	26		
	D	8			1	2		
Chemulpo	C	1	2					
Gensan	C	2						
Seoul	C	2	3		2			
	D	1			1			
Czechoslovakia	C	6		6	1		6	
Greece: Athens	C	1		2			1	2
Japan	C	1						
Latvia	C	6						

Place		July	August	September	October	November	December	January
Lithuania	C	44	18	7	9	18	27	
	D	5	8	1	1	1	1	
Mexico	D	12	38	14	36			
Peru:								
Arequipa	D		2	1	2			
Lima	D	8						
U. S. S. R.:								
Railways, etc	C	30	22	25	23			
Transcaucasus, Siberia, and Central Asia	C	79	69	60	61			
Ukraine	C	96	85	114				
Other territories in Europe	C	732	552	555	521			
Yugoslavia	C	11	9		1	1		7
	D	4	1					3

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

YELLOW FEVER

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 29–Oct. 22, 1927	Week ended— Oct. 29, 1927	November, 1927				December, 1927					January, 1928				Feb. 4, 1928
							5	12	19	26	3	10	17	24	31	7	14	21	28	
Ashanti: Obuasi	C		1																	
	D		1																	
Belgian Congo:																				
Boma	C														3					
	D														2					
Matadi	C														6	12	11	1	5	1
	D														2	6	8	2	5	
Dahomey:																				
Grand Popo	C									1										
	D									1										
Porto Novo	C	1																		
	D	1																		
Ivory Coast	C	1												1						
	D	1												1						
Liberia: Monrovia	C			1																
Nigeria	C			2																
	D			2																
Senegal	C	3	10	21	31	9	16	6	6	7										
	D	3	9	21	31	8	10	4	4	6										
Dakar	C	1			12	3	6		5	2	1	4			1	1				
	D				7	2	4		4	2	1	4			1	1				
Togoland	C		1																	
	D		1																	

Place		July	August	September	October
Gold Coast	C	15	2	6	1
	D	4	2	4	1