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THE RATE OF ATMOSPHERIC REAERATION OF SEWAGE-POLLUTED STREAMS [1]

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INTRODUCTION

In all problems of stream sanitation involving the maintenance of an adequate reserve supply of dissolved oxygen for the preservation of fish life or the prevention of nuisance, there are two major factors to be considered as determining the limiting degree of pollution of streams which is consistent with satisfying a given reserve oxygen requirement. One of the factors is the rate of biochemical deoxygenation of the stream water, proceeding in accordance with laws which have been described by Mr. Theriault.[2] The other element is the rate and extent of replenishment of its oxygen supply from three natural sources:

(*a*) Dilution water entering the stream through the medium of tributaries and local inflow.

(*b*) Biological reoxygenation through the activites of certain oxygen-producing plants.

(*c*) Atmospheric reaeration, or absorption of oxygen directly from the atmosphere.

Of these three sources of oxygen, atmospheric reaeration is by far the most important in freely flowing streams, and this paper is limited to this subject.

It has been widely recognized that atmospheric reaeration is an important factor in the recovery of dissolved oxygen by flowing streams subjected to progressive deoxygenation but, as far as is known, the first effort to evaluate its effects quantitatively as observed under natural conditions, and to correlate such measured effects with the various physical elements which modify them, was made in connection with a survey of the pollution and self-purification of the Ohio River, by the United States Public Health Service, in 1914, 1915, and 1916. The results obtained from this phase of the survey, which recently have been published in the form

[1] The third of four papers comprising a symposium on stream pollution presented at the meeting of the sanitary engineering division of the American Society of Civil Engineers at Cincinnati, Ohio, Apr. 23, 1925, and published in the Proceedings of the Society, Vol. LI, No. 9, November, 1925. The first two papers were published in Public Health Reports for Jan. 15, and Feb. 5, 1926, respectively.

[2] Public Health Reports, for Feb. 5, 1926, pp. 207-217.

of a separate report,[3] have served as a basis for a further study of stream reaeration by the service in connection with a survey of the pollution of the Illinois River, in 1921 and 1922. Although a full analysis of the reaeration data obtained from the Illinois River study has not been completed, it has been carried forward sufficiently to suggest wherein the conclusions reached from the Ohio River study concerning the laws and factors underlying this phenomenon appear to be confirmed and wherein they may require modification. In this paper it is proposed to indicate what both studies have shown, of interest to engineers, as bearing on the theory of stream reaeration and its applications to problems of river sanitation. For the sake of brevity the term "reaeration" will be used hereafter in referring to this phenomenon.

THE NATURE OF STREAM REAERATION

The reaeration of flowing streams is governed primarily by the laws controlling the absorption of moderately soluble gases by unsaturated liquids kept in a state of continuous agitation. These laws have been studied recently by a group of chemists, the results of whose observations have been published in the form of a symposium.[4] In a paper included in this symposium Mr. H. G. Becker[5] states in the following general form the law of gas absorption which underlies stream reaeration: When a liquid and a moderately soluble gas are allowed to come in contact and the liquid is thoroughly mixed, "the rate of solution of the gas varies directly as the degree of unsaturation of the liquid." In the report on studies of reaeration in the Ohio River, to which reference has been made, it was stated that the rate of solution of oxygen at the surface is directly proportional to the existing saturation deficit (which is merely another way of stating the same law), and it was shown that results obtained by Dibdin and by Adeney and Becker afford experimental confirmation of this principle.

Expressed in terms of stream reaeration, the law thus stated signifies that in each successive unit of time a constant percentage of the remaining deficit in the dissolved oxygen content of the stream below the saturation point will be satisfied by absorption of oxygen from the atmosphere. The percentage will vary with conditions affecting the rate of absorption but will remain constant for a given condition. This is analogous to the law of deoxygenation discussed in Mr. Theriault's paper, except that in the latter case the rate of

[3] Studies of the pollution and natural purification of the Ohio River, Pt. III: Factors concerned in the phenomena of oxidation and reaeration. By H. W. Streeter and E. B. Phelps. Public Health Bulletin No. 146, U. S. Public Health Service.

[4] Journal of Industrial and Engineering Chemistry, December, 1924, pp. 1215-1230.

[5] Mechanism of absorption of moderately soluble gases in water. Journal of Industrial and Engineering Chemistry, December, 1924, pp. 1220-1224.

progress of the action is a direct function of the biochemical oxygen demand rather than the oxygen saturation deficit of the stream water.

In the Ohio River studies the law of oxygen absorption was formulated thus:

Let

D_a = the initial oxygen saturation deficit, in terms of consentration;

D = the oxygen deficit at any time, t, expressed in similar terms; and

K_2 = a coefficient defining the rate of reaeration.

Then

$$\frac{d\,D}{d\,t} = -K_2\,D$$

whence

$$\log \frac{D}{D_a} = -K_2\,t \qquad (1)$$

On referring to Mr. Theriault's paper it will be noted that this expression is exactly similar to that which defines the rate of deoxygenation—that is,

$$\frac{d\,L}{d\,t} = -K_1\,L$$

whence

$$\log \frac{L}{L_a} = -K_1\,t \qquad (2)$$

except that, in this case, the biochemical oxygen demand, L, replaces the oxygen deficit, D, and the coefficient of deoxygenation, K_1, replaces the coefficient of reaeration, K_2.

The coefficient of reaeration, K_2, defining the rate of absorption of oxygen, when expressed in terms of oxygen concentration in the stream, has been found, in the Ohio River study, to be modified by stream depth and by various physical conditions which influence the turbulence of flow, among which are the velocity of the current and the slope and irregularity of the channel. In the Ohio River these relations were found to be governed by a simple equation:

$$K_2 = c\ V^n \times H^{-2} \qquad (3)$$

in which V represents the velocity of flow; H, the depth; and c and n, the constants for a particular river stretch, the values of which depend in part on the channel slope and irregularity. In most cases it has been found that the value of K_2 is very nearly inversely proportional to the discharge of the stream, which term, multiplied by a proper reducing constant, may be substituted for the square of the depth in equation (3).

The rate of reaeration is further modified by the water temperature, being accelerated at the higher and dimished at the lower temperatures. The controlling element in this temperature effect appears to lie in the fact that the rate of absorption of oxygen at the surface is limited by the process of diffusion, which, as shown by Black and Phelps,[6] is governed by a similar temperature relation. It was found in connection with the Ohio River study that when observed values of the reaeration coefficient, K_2, are corrected in accordance with the factors developed by Black and Phelps, the corrected values are more closely correlated with the other stream conditions which have been noted than the uncorrected ones. A few results obtained from the Illinois River study have indicated that the rate of reaeration of this stream does not appear to be

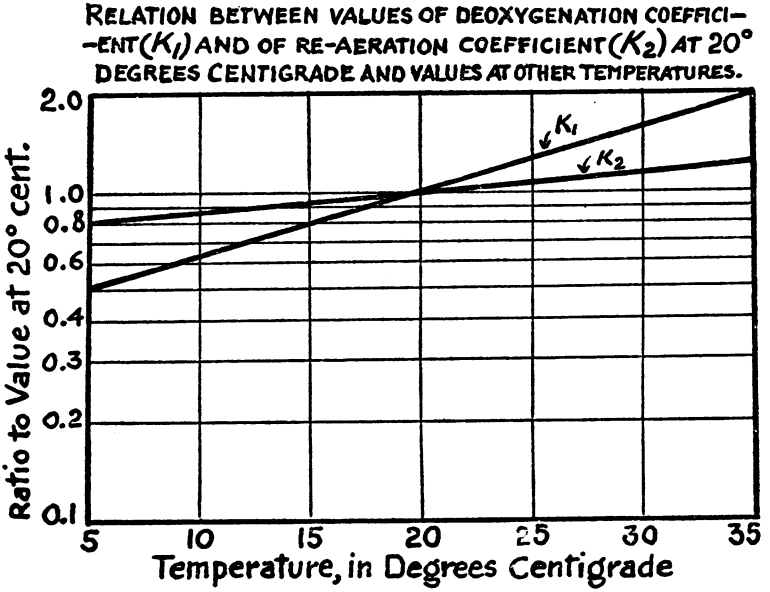

FIG. 4

influenced as much by seasonal changes in temperature as connections based on the diffusion factors developed by Black and Phelps would imply. However, the results of the recent experiments by Becker, previously mentioned, and by Haslam, Hershey, and Keen,[7] carefully conducted under physical conditions closely approaching those of flowing streams, have confirmed the earlier findings of Black and Phelps in respect to the direction, and, roughly, to the extent of the temperature effect. As these experimental results are based on far more carefully controlled observations than would be possible under natural conditions, they must be interpreted, for the

[6] W. M. Black and E. B. Phelps: Report on discharge of sewage into New York Harbor, to the Board of Estimate and Apportionment, New York City, 1911.

[7] Journal of Industrial Engineering Chemistry, December, 1924, pp. 1224–1230.

present at least, as affording a reasonably accurate index of the influence of temperature variations on the rate of reaeration of streams. From a plot of the data compiled by Becker, converted to terms of the reaeration coefficient, K_2, the following temperature correction equation has been derived:

$$K_{2\ (T^\circ\ C.)} = K_{2\ (20^\circ\ C.)} \times [1.0159^{\ (T-20)}] \quad \text{.....(4)}$$

This equation is proposed tentatively as probably representing most nearly, from available data, the effect of temperature variations on the value of the reaeration coefficient, K_2, under natural stream conditions. In Figure 4 is shown a plot of this temperature function as compared with a similar plot of temperature correction factors affecting the rate of deoxygenation, which was developed in connection with the Ohio River studies and has been discussed in Mr. Theriault's paper.

EMPIRICAL MEASUREMENT OF THE REAERATION RATE

From what has been stated concerning the extent and modes of action of atmospheric reaeration in streams acting as receivers of community wastes it is fairly obvious that no even reasonably accurate estimate can be made of the ability of a particular stream to maintain a specified minimum of reserve oxygen supply under a given degree of pollution without a definite knowledge of its capacity for reaeration. This thought leads to a consideration of available means for measuring the reaeration capacities of streams.

Owing to the fact that the rate of reaeration is influenced by a complexity of natural conditions, such as have been noted, methods of laboratory study that have been found suitable for determining the deoxygenation rate are not applicable in this case; hence recourse must be had to measurements in the stream.

If a sufficient number of representative streams could be found in which progressive deoxygenation was not a complicating element, the solution of this problem would be comparatively simple, involving merely the observation of the rate of increase in the dissolved oxygen content of a river between two or more sampling points located at known time intervals of flow from each other. Unfortunately, such a condition never exists, for reasons which are obvious. The true rate of reaeration, then, is always masked, as far as its observable effect on the dissolved oxygen is concerned, by having superimposed on it a rate of deoxygenation acting simultaneously in the opposite direction.

In order to take account of this condition, an equation was devised during the Ohio River studies whereby the resultant effect of two given rates, one of deoxygenation and the other of reaeration, on

progressive changes in the dissolved oxygen content of a stream can be calculated. This equation was derived by combining the differential expressions, equations (1) and (2), into a differential equation and integrating it to a variable time, t. The equation thus derived is:

$$D = \frac{K_1 L_a}{K_2 - K_1} (10^{-K_1 t} - 10^{-K_2 t}) + D_a \times 10^{-K_2 t} \quad \text{.....(5)}$$

in which

D_a = the initial dissolved oxygen saturation deficit, in terms of concentration;
D = the dissolved oxygen deficit after time, t, in similar terms;
L_a = the initial biochemical oxygen demand;
K_1 = the coefficient of deoxygenation; and
K_2 = the coefficient of reaeration.

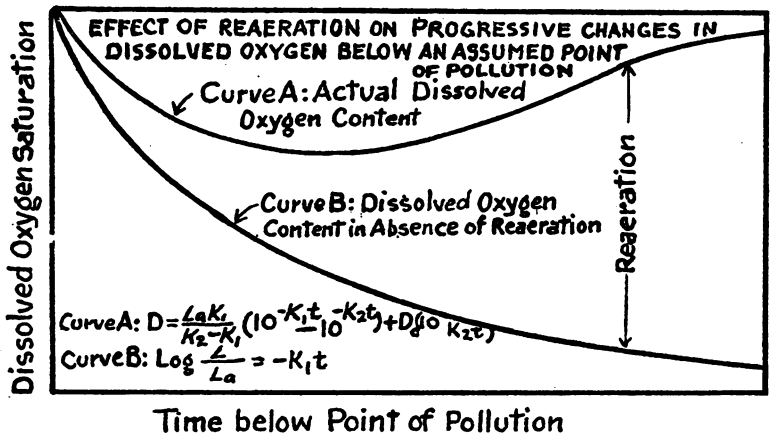

FIG. 5

The type of curve defined by this equation is shown by curve A in Figure 5, which has been reproduced from the report of the Ohio River studies to which reference has been made. For comparison with curve A, is shown curve B, representing the progressive deoxygenation which would occur in the absence of reaeration. Curve A is characteristic of progressive changes in the dissolved oxygen content of streams which frequently have been observed in streams below points of major pollution—for example, in the Illinois River below the outlet of the Chicago Drainage Canal; also in the White River below Indianapolis, Ind. Curve B is characteristic of conditions occasionally occurring in highly polluted streams when covered by a continuous ice sheet, temporarily cutting off reaeration.

By substituting in equation (5) known or observed values of all terms except that of the reaeration coefficient, K_2, the latter can readily be computed for a given river stretch. A large number of

calculations of this kind were made for a series of stretches of the Ohio River, based on observations of the dissolved oxygen and the oxygen demand at the terminals of each river section and on assumed values of the deoxygenation coefficient, K_1, derived from laboratory studies such as have been described by Mr. Theriault, and corrected to the stream temperature by the equation discussed in his paper. A limited number of parallel computations also have been made for a few stretches of the Illinois River. In Table 2 are shown, for comparison, values of the reaeration coefficient derived in this manner from observations in three stretches of the Ohio River and two stretches of the Illinois River presenting, approximately, similar flow and channel characteristics. The results in both cases cover the summer seasonal period, May to September, inclusive. A marked similarity is shown between values of K_2 thus derived in the two streams. It is also noteworthy that the rates of reaeration observed in these five river stretches are approximately double the corresponding rate of deoxygenation as measured by the laboratory value of the coefficient, K_1; thus, the mean value of K_2 is approximately 0.24, whereas that of K_1, at the average river temperature for the given period, is about 0.12.

TABLE 2.—*Measured values of the reaeration coefficient, K_2, in three stretches of the Ohio River and two stretches of the Illinois River*

(May to September, inclusive)

Month	Values of reaeration coefficient, K_2				
	Ohio River			Illinois River	
	Stations 11–19	Stations 23–65	Stations 104–349	Stations 263–240	Stations 148–122
May	0.25	0.20	0.18	0.31	0.47
June	.19	.33	.27	.31	.28
July	.29	.23	.21	.21	.20
August	.22	.26	.21	.19	.27
September	.14	.19	.17	.31	.14
Mean	.22	.24	.21	.27	.27

The locations of river stretches are as follows:

Ohio River (river miles below confluence of Allegheny and Monongahela Rivers):

Stations 11–19—— Below Pittsburgh, Pa.

Stations 23–65—— From above mouth of Beaver River to above Steubenville, Ohio.

Stations 104–349—— From below Moundsville, W. Va., to above mouth of Scioto River.

Illinois River (river miles above mouth):

Stations 263–240—— From opposite Morris to opposite Ottawa, Ill.

Stations 148–122—— From Pekin to Havana, Ill.

Under some conditions, as, for example, where a stream flows rapidly over a shallow "riffle," the rate of reaeration may become greatly accelerated owing to the diminished depth and increased turbulence of flow. An instance of this kind is found in a short stretch of the Des Plaines River immediately below Joliet, Ill., where the channel is steep and rough and a series of shallow rapids is formed. Calculations of the value of K_2 for this section of the river, based on daily observations extending over a period of 10 months, from August, 1921, to April, 1922, inclusive, have given indicated rates of reaeration roughly ten times those observed in deeper and less turbulent stretches of the Illinois River downstream. During the period of December to April, when conditions were most favorable for measuring the true rate of reaeration in this stretch of the river, the following values of K_2 were obtained:

December	2.42
January	2.63
February	2.70
March	2.83
April	2.25
Mean	2.57

The average value of K_2 for the full 10-month period was 2.00.

In general, optimum conditions for determining empirically the value of the reaeration coefficient exist where a stream contains a measurable quantity of dissolved oxygen and where the channel bottom is relatively free from unstable and readily oxidizable sludge deposits. When a stream is wholly or nearly depleted of dissolved oxygen and its channel contains any considerable quantities of decomposing sludge, a very sizable proportion of the atmospheric oxygen absorbed by such a stream may be withdrawn from solution almost immediately and thereby fail to be accounted in terms either of reserve oxygen or of biochemical oxygen demand. Under such circumstances the measured value of the reaeration coefficient may be widely in error and always will be lower than the true value. Where an excessively polluted stream contains a measurable supply of oxygen and is relatively free from sludge deposits during a part of the time, measurements of its reaeration capacity should be made when it is in this condition.

APPLICATIONS

The most important applications of the theory outlined in this paper are found in the estimation of dilution or sewage treatment requirements to be met at specified points along excessively polluted streams to avoid overtaxing their capacities for maintaining a specified reserve oxygen supply, or, conversely, in the calculation of the

future limiting permissible degree of pollution of streams now in a satisfactory condition from this standpoint. Both cases are similar in that they involve the prescription of a limiting biochemical oxygen demand of a stream at certain critical points. As the rate of deoxygenation is accelerated during the summer season to a greater proportionate extent than the rate of reaeration (the latter often is actually retarded during this season owing to a greatly diminished stream flow), conditions during the summer ordinarily are the most critical to be considered in this connection.

In Figure 6 is given an example showing the effect of temperature variations on progressive changes in the dissolved oxygen as calculated by equation (5), assuming an initial oxygen demand, L_a, of 20 parts per million and an initial oxygen saturation deficit of zero. The values of the deoxygenation and reaeration coefficients, K_1 and K_2, have been assumed to be 0.10 and 0.20, respectively, at 20° C.

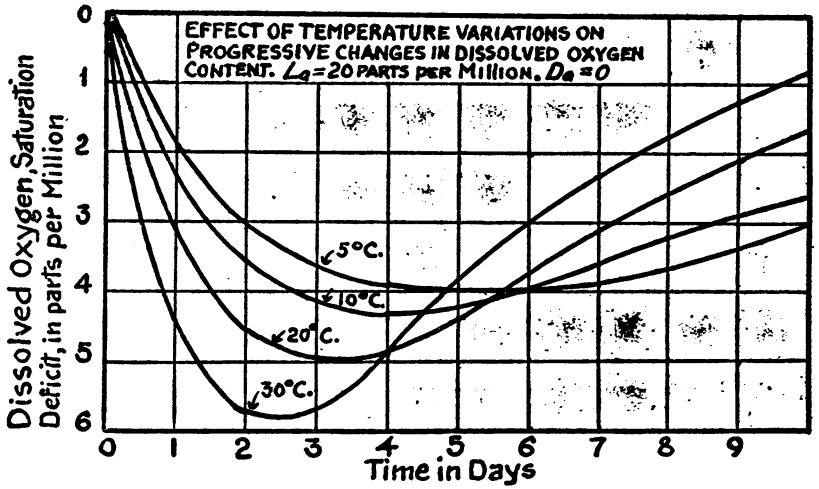

FIG. 6

and have been corrected for temperature in accordance with the factors shown in Figure 4. The time required to attain the maximum oxygen deficit is shown to vary from about two days at 30° C. to five days at 5° C.

The effect of variations in the initial oxygen demand, L_a, on the dissolved oxygen content of a stream below a point of pollution is illustrated by the curves in Figure 7, computed for a temperature of 20° C. and with an assumed initial oxygen deficit of 1.0 part per million. In Figure 8 is a plot of the maximum oxygen deficits and the times required to attain the maximum, as indicated by the curves in Figure 6, the plotted quantities being calculated, however, by a formula developed by differentiating equation (5) and placing the resulting expression equal to zero. In this case it is noted that

although the maximum deficit varies almost as a straight-line function of the initial oxygen demand, the time to attain the maximum lies within a comparatively narrow range—that is, between two and three days.

It thus appears that the points of maximum dissolved oxygen depletion in polluted streams normally should lie within comparatively short distances, as measured by time, below major sources of pollution, and that their positions should be affected to a much less extent by variations in the initial oxygen demand than they are by seasonal changes in temperature. Observations on numerous streams both in the United States and abroad, have confirmed this statement

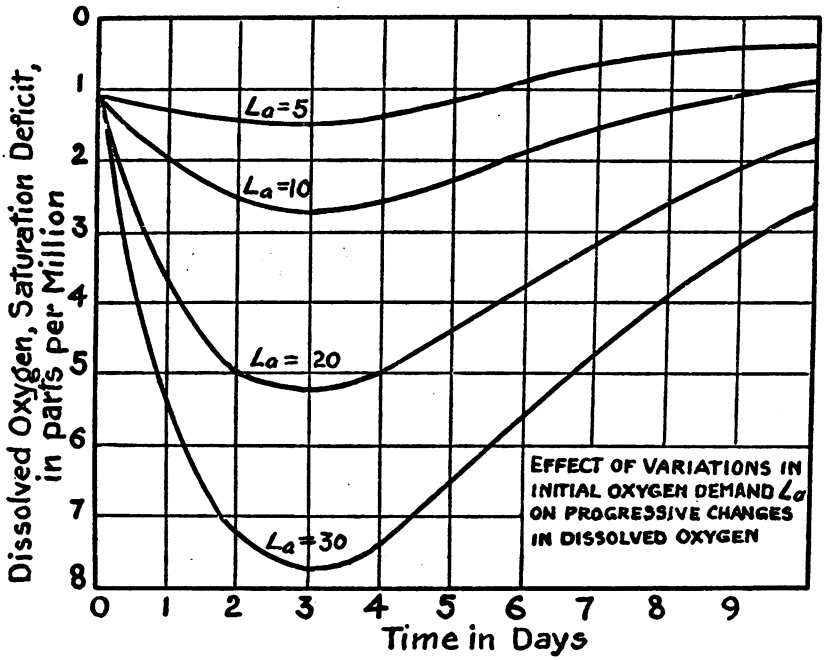

FIG.7

in so far as it applies to streams which are not grossly polluted. If the pollution of a stream is so great, however, as to overtax its capacity for reaeration, zones of complete deoxygenation, indefinite in length, may be established at certain seasons of the year, notably during periods of dry-weather flow in summer. A condition of this kind is frequently aggravated by the tendency of grossly polluted streams to deposit a sludge mat in the bottom of the channel which may greatly augment the oxygen demand of the stream proper during critical seasons. Under these circumstances, the equations previously noted are not applicable and special methods of analysis must be used.

A good example of such a condition is found in the stretch of the upper Illinois River, extending from Joliet downstream for approximately 110 miles to the head of Peoria Lake, which receives at its upstream end the sewage of Chicago, discharged into it through the drainage canal and a stretch of the Des Plaines River channel. During eight months of the year, October to May, inclusive, this stretch of the river contains a measurable, although in places low, reserve supply of dissolved oxygen. During the four summer months, June to September, its dissolved oxygen content is practically exhausted throughout its entire length, owing, in part, to the lower

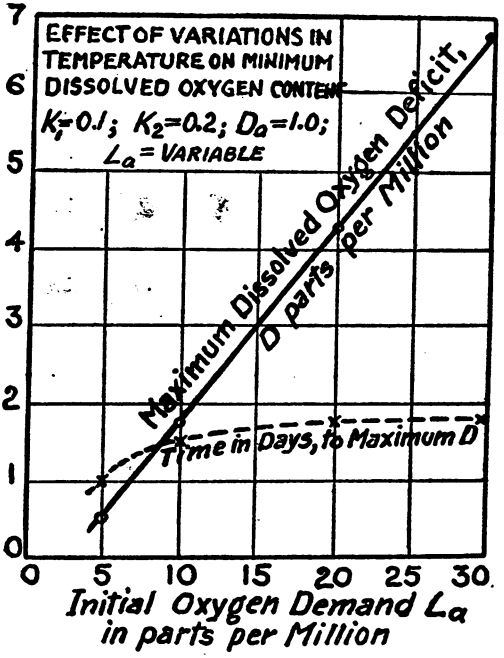

FIG. 8

dilution provided by the river and its tributaries, to the effect of the higher summer temperatures in causing an accelerated rate of deoxygenation as compared with that of reaeration, and to the greatly added deoxygenating effect of the dense mat of decomposing sludge with which the bottom of the river channel is covered.

Following the method previously outlined, an effort was made to calculate values of the reaeration coefficient, K_2, from observations made in the Illinois River during the summers of 1921 and 1922. Owing to the conditions at that time, previously noted, an accurate calculation was found to be impracticable, the values of the coefficient derived being obviously too low, and in some cases negative.

A similar calculation based on observations during the two months, October, 1921, and May, 1922, when the river temperatures approached those of summer and measurable quantities of dissolved oxygen were found in the river, gave results reasonably consistent both as to their agreement with each other and as to their relation to known physical

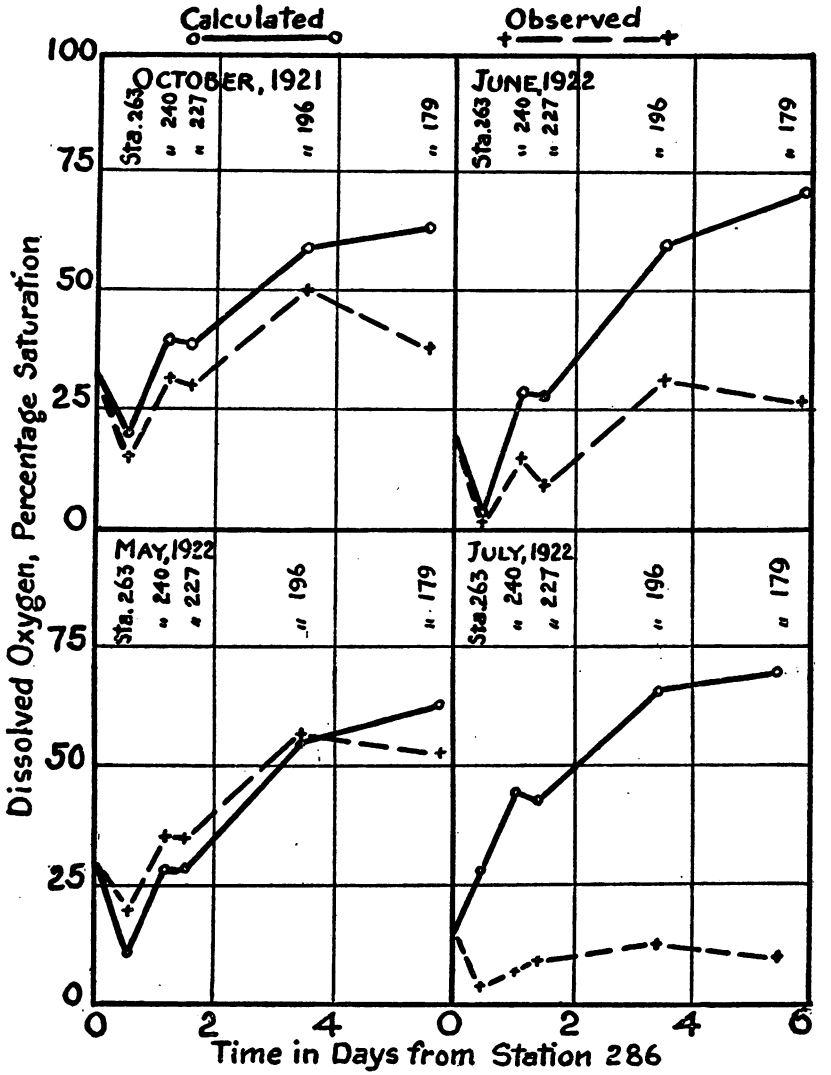

FIG. 9.—Comparison of calculated with observed dissolved oxygen contents at stations in Upper Illinois River. (Plot of data in Table 3.)

conditions in the several river stretches. From these results the following values of K_2, converted to their equivalents at 20° C., were derived for the five river stretches forming the upper section of the Illinois River between the limits stated (the station numbers referring to the locations, in stream-miles, above the month of the Illinois River):

River stretch	Value of K_2
Stations 286–263	0.68 (mean of October and May)
Stations 263–240	.33 (mean of October and May)
Stations 240–227	.15 (mean of May)
Stations 227–196	.23 (mean of October and May)
Stations 196–179	.14 (mean of May)

Although it is likely that the values thus derived (especially the lowest two) are affected to some extent by excessive and unaccountable deoxygenation due to sludge deposits, they are believed to be as nearly representative of the true rates of reaeration prevailing in the several river stretches as any other figures obtained from the present very incomplete series of calculations.

With the foregoing derived values of K_2 as a basis, and using the resultant oxygen equation (5), a computation has been made of the progressive changes in the dissolved oxygen content of the upper Illinois River occurring in the stretch extending from station 286, below Joliet, to station 179, located 107 miles downstream, during each one of the four months, October 1921, and May, June, and July, 1922. In making the calculation (details of which are omitted for the sake of brevity), the value of the deoxygenation coefficient assumed was based on the laboratory figure in every instance except that of the river stretch from station 286 to station 263, for which the mean of the rates of deoxygenation observed in the stream during the two months, October and May, was used. The values of the reaeration coefficient assumed were the same as those just given, corrected to the river temperature. The calculated dissolved oxygen figures at each station are compared with the corresponding results of observation in Table 3 and illustrated graphically in Figure 9.

TABLE 3.—*Comparison of calculated and observed dissolved oxygen contents of upper Illinois River at successive sampling stations*

DISSOLVED OXYGEN SATURATION DEFICIT, IN PARTS PER MILLION

Station	October, 1921		May, 1922		June, 1922		July, 1922	
	Calculated	Observed	Calculated	Observed	Calculated	Observed	Calculated	Observed
263	8.4	9.1	8.6	8.0	8.6	8.8	6.2	8.6
240	6.4	7.1	7.0	6.3	6.4	7.6	4.8	8.0
227	6.5	7.4	7.0	6.4	6.5	8.1	4.9	8.0
196	4.3	5.3	4.4	4.3	3.6	5.9	3.0	7.5
179	4.9	6.6	3.6	4.6	2.6	6.3	2.7	8.1

DISSOLVED OXYGEN, PERCENTAGE OF SATURATION

263	20	14	11	19	3	1	28	2
240	39	32	28	35	28	15	44	6
227	38	29	28	34	27	9	43	8
196	59	50	55	61	60	31	65	12
179	63	37	63	52	71	26	69	9

On referring to Figure 9, it is noted that the calculated and observed figures agree with each other closly for May and reasonably well for October, but they diverge widely for June and July. The divergence probably is due largely to the effect of sludge decomposition in the channel during the summer months, as it represents the excess of dissolved oxygen, unaccounted for in terms of reaeration or normal deoxygenation, which has disappeared from the stream in passing from the uppermost to the lowest station and can be accounted for only as oxygen absorbed by the bottom sediments. The deoxygenating power of sludge deposited in the channel is thus indicated as having been sufficient, in July, 1922, to cause an absorption of a quantity of dissolved oxygen equivalent to 60 per cent of the saturation value

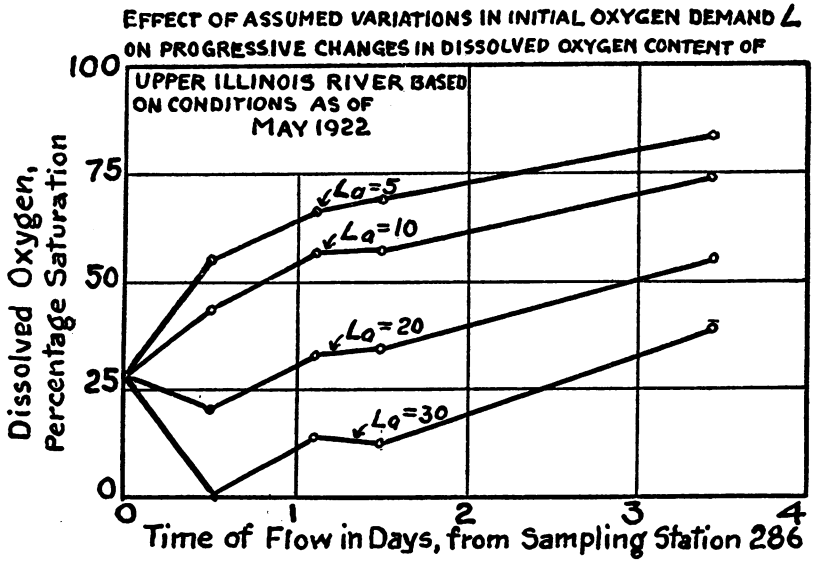

FIG. 10

in a river distance of 107 miles. Although it is hazardous to indulge in speculation in a problem as complex as that presented by the Illinois River, it seems fairly evident that the mere elimination of sludge deposits from the channel of this stream would go far toward restoring the effectiveness of its powers for self-purification.

The density of pollution of the stream proper, however, is fully as important a factor as its condition in respect to sludge deposits in determining its ability to recover its reserve supply of oxygen. To illustrate this point, a series of curves is given in Figure 10, showing calculated progressive changes in the dissolved oxygen content of the upper Illinois River with various assumed quantities of initial oxygen demand, the calculation being based on observed conditions at Station 286, below Joliet, during May, 1922. The figures from which Figure 10 have been plotted are given in Table 4. The comparison

is not valid except for purposes of illustration, as any lowering of the initial oxygen demand at Station 286 would necessarily entail improved conditions upstream, which, in turn, would cause an increased oxygen saturation at the point of departure, or vice versa. The comparative trends of the curves merely serve to give a rough illustration of the improvement which would be expected if the pollution of a stream at a given point were diminished, without any change occurring in its oxygen status above that point.

In general, it is evident that in almost any given instance where systematic measures are undertaken to relieve excessive stream pollution a reduction in the oxygen demand of the stream proper and an improvement in its condition with respect to sludge deposits should go hand in hand. This point is an important one to be borne in mind in forecasting the extent of beneficial results to be obtained from extensive stream-cleaning activities. The illustrations given in this paper err considerably on the side of conservatism in this respect, as this fact has not been taken into account in deriving them.

TABLE 4.—*Calculated percentages of dissolved oxygen saturation at stations in upper Illinois River, assuming different initial oxygen demand values, L_a, at uppermost station*

[Based on conditions as of May, 1922]

Station	Time of flow, in days	Calculated percentage of dissolved oxygen saturation, with initial oxygen demand, L_a, assumed as—			
		5 parts per million	10 parts per million	20 parts per million	30 parts per million
286	0.00	28	28	28	28
263	.49	56	44	21	1
240	1.08	67	57	35	12
227	1.46	69	58	35	12
196	3.44	84	74	55	39

CONCLUSIONS

From the studies briefly described in this paper, the following tentative conclusions appear to be justified:

1. The reaeration of flowing streams proceeds substantially in accordance with physical laws which have already been described.

2. Its rate at any time is controlled mainly by the temperature, turbulence, and oxygen saturation deficit of the stream.

3. The empirical method of measuring rates of reaeration which has been described, involving the use of the resultant oxygen equation (5) and the substitution therein of quantities derived by observations in the stream made under proper circumstances, gives results which appear to be consistent with known facts concerning the physical conditions influencing such rates.

4. By a proper combination of predetermined rates of reoxygenation and of reaeration, using equation (5), a reasonably accurate calculation may be made of the resultant progressive changes in the dissolved oxygen content of a stream under any given or assumed condition of flow, temperature, and initial degree of pollution.

The studies of stream reaeration thus far made along lines indicated in this paper have been confined to the Ohio and Illinois Rivers, surveys of which have offered the only sufficiently extensive and properly coordinated data thus far available for this purpose. A much more comprehensive analysis of the Illinois River data, as yet to be completed, probably will give a more satisfactory basis for judgment as to the wider applicability of the results of these studies than it has been practicable to establish within the limited scope of this paper. Some features of the present theory of stream reaeration and its method of application doubtless will require further modification as more experience is gained in testing it against specific problems. The studies thus far completed, however, have indicated that the theory in question, applied with due consideration of its practical limitations, offers a working hypothesis for a much more rational treatment of stream sanitation problems involving the prevention of conditions contributing to nuisance and to the destruction of fish life in streams than hitherto has been available.

SMALLPOX IN THE UNITED STATES, 1925

REPORTS FROM STATE HEALTH OFFICERS OF 38 STATES FOR 11 MONTHS OF THE YEAR 1925, COMPARED WITH THE SAME PERIOD OF 1923 AND 1924

The following table gives a summary of the preliminary reports of cases of smallpox for the first 11 months of the years 1923, 1924, and 1925. These reports were received from State health officers and 38 States are included, these being all from which complete data for the entire period are now available.

The reports indicate great differences in the number of cases in different parts of the country and in the same States at different times. A considerable percentage of the cases of smallpox occur during epidemics and this fact accounts for some of the abrupt fluctuations noted in the table.

The total number of cases reported for the States for which comparable figures for eleven months of the three years are now available are as follows: 1923, 21,233 cases; 1924, 43,029 cases; 1925, 31,037 cases. The increase in 1924 over 1923 was 103 per cent and the decrease in 1925 from 1924 was 28 per cent. The figures for 1925 in these States were 46 per cent higher than those for 1923.

The figures are subject to revision when final reports are received for the year 1925, but it is not probable that the general results for the States included will be materially changed.

Cases of smallpox reported during 11 months of 1925, by State health officers, compared with similar reports for the years 1923 and 1924

	First quarter	Second quarter	Third quarter	October and November	Total, 11 months
New England:					
Maine—					
1925	1	0	0	0	1
1924	4	12	2	1	19
1923	8	104	3	1	116
Vermont—					
1925	0	0	0	0	0
1924	56	7	1	0	64
1923	25	18	44	116	203
Massachusetts—					
1925	0	2	1	0	3
1924	5	5	2	0	12
1923	0	0	2	0	2
Connecticut—					
1925	0	4	0	0	4
1924	38	30	28	4	100
1923	20	15	14	2	51
Total—					
1925	1	6	1	0	8
1924	103	54	33	5	195
1923	53	137	63	119	372
Middle Atlantic:					
New York—					
1925	146	128	7	1	282
1924	107	94	50	189	440
1923	160	63	88	23	334
New Jersey—					
1925	95	77	13	0	185
1924	160	100	50	18	328
1923	2	4	18	3	27
Pennsylvania—					
1925	82	121	3	3	209
1924	48	101	138	45	332
1923	17	85	28	34	164
Total—					
1925	323	326	23	4	676
1924	315	295	238	252	1,100
1923	179	152	134	60	525
East North Central:					
Ohio—					
1925	1,832	1,460	309	176	3,777
1924	1,669	2,245	692	635	5,241
1923	725	938	210	250	2,123
Indiana—					
1925	1,346	884	211	323	2,764
1924	1,267	1,677	327	277	3,548
1923	552	683	198	199	1,632
Illinois—					
1925	728	557	95	109	1,489
1924	176	514	256	245	1,191
1923	554	247	72	43	916
Michigan—					
1925	293	296	89	31	709
1924	1,852	2,149	321	147	4,469
1923	728	313	247	601	1,889
Wisconsin—					
1925	677	588	145	53	1,463
1924	337	453	178	122	1,090
1923	506	417	129	176	1,228
Total—					
1925	4,876	3,785	849	692	10,202
1924	5,301	7,038	1,774	1,426	15,539
1923	3,065	2,598	856	1,269	7,788

Cases of smallpox reported during 11 months of 1925, by State health officers, compared with similar reports for the years 1923 and 1924—Continued

	First quarter	Second quarter	Third quarter	October and November	Total, 11 months
West North Central:					
Minnesota—					
1925	659	184	42	38	923
1924	861	585	369	720	2,535
1923	962	353	161	254	1,730
Missouri—					
1925	225	253	43	17	538
1924	315	198	30	49	592
1923	243	164	86	104	597
North Dakota—					
1925	101	67	11	15	194
1924	134	188	123	61	506
1923	219	89	40	46	394
South Dakota—					
1925	132	87	13	22	254
1924	39	62	17	80	198
1923	128	33	43	31	235
Nebraska—					
1925	366	310	33	34	743
1924	36	89	42	49	216
1923	38	25	10	20	93
Kansas—					
1925	112	100	26	47	285
1924	540	513	53	13	1,119
1923	124	146	60	99	429
Total—					
1925	1,595	1,001	168	173	2,937
1924	1,925	1,635	634	972	5,166
1923	1,714	810	400	554	3,478
South Atlantic:					
Delaware—					
1925	0	7	2	0	9
1924	1	0	0	0	1
1923	1	0	1	0	2
Maryland—					
1925	2	13	1	0	16
1924	33	58	3	3	97
1923	0	3	9	8	20
District of Columbia—					
1925	27	32	0	0	59
1924	84	58	3	2	147
1923	2	2	22	29	55
Virginia—					
1925	71	125	43	23	262
1924	121	132	34	6	293
1923	123	304	48	37	517
West Virginia—					
1925	509	238	69	3	819
1924	200	121	24	42	387
1923	94	124	14	9	241
South Carolina—					
1925	225	363	76	63	727
1924	355	180	24	36	595
1923	105	76	15	256	452
Georgia—					
1925	123	242	27	30	422
1924	1,300	720	54	16	2,090
1923	123	159	100	97	479
Florida—					
1925	34	75	18	15	142
1924	70	44	2	1	117
1923	142	51	6	8	207
Total—					
1925	991	1,095	236	134	2,456
1924	2,164	1,313	144	106	3,727
1923	595	719	215	444	1,973
East South Central:					
Alabama—					
1925	2,551	1,278	185	196	4,210
1924	464	962	327	289	2,042
1923	97	139	18	20	274
Mississippi—					
1925	540	366	178	54	1,138
1924	171	218	92	128	609
1923	88	35	39	48	210
Total—					
1925	3,091	1,644	363	250	5,348
1924	635	1,180	419	417	2,651
1923	185	174	57	68	484

Cases of smallpox reported during 11 months of 1925, by State health officers, compared with similar reports for the years 1923 and 1924—Continued

	First quarter	Second quarter	Third quarter	October and November	Total, 11 months
West South Central:					
Arkansas—					
1925	156	66	9	9	240
1924	138	146	27	114	425
1923	72	107	53	39	271
Louisiana—					
1925	516	166	37	42	761
1924	237	129	31	39	436
1923	315	232	46	38	631
Oklahoma—					
1925	486	168	49	33	736
1924	611	318	18	33	980
1923	465	605	46	113	1,229
Total—					
1925	1,158	400	95	84	1,737
1924	986	593	76	186	1,841
1923	852	944	145	190	2,131
Mountain:					
Montana—					
1925	195	69	37	47	348
1924	431	257	84	113	885
1923	126	111	65	249	551
Wyoming—					
1925	18	3	4	26	51
1924	0	7	5	21	33
1923	14	3	3	0	20
Colorado—					
1925	5	5	3	1	14
1924	31	18	14	11	74
1923	71	7	2	9	89
Arizona—					
1925	109	8	0	0	117
1924	17	74	9	35	135
1923	73	21	3	1	98
Utah—					
1925	43	5	5	22	75
1924	51	7	19	41	118
1923	74	14	9	23	120
Total—					
1925	370	90	49	96	605
1924	530	363	131	221	1,245
1923	358	156	82	282	878
Pacific:					
Washington—					
1925	605	541	214	322	1,682
1924	880	573	249	168	1,870
1923	555	424	155	217	1,351
Oregon—					
1925	380	145	51	169	745
1924	316	238	120	69	743
1923	236	328	112	95	771
California—					
1925	2,052	1,762	520	307	4,641
1924	4,075	3,303	864	710	8,952
1923	255	371	292	564	1,482
Total—					
1925	3,037	2,448	785	798	7,068
1924	5,271	4,114	1,233	947	11,565
1923	1,046	1,123	559	876	3,604
Grand total—					
1925	15,442	10,795	2,569	2,231	31,037
1924	17,230	16,585	4,682	4,532	43,029
1923	8,047	6,813	2,511	3,862	21,235

DEATH RATES IN A GROUP OF INSURED PERSONS

COMPARISON OF RATES FOR PRINCIPAL CAUSES OF DEATH FOR NOVEMBER AND DECEMBER, 1925, AND FOR THE YEARS 1915 TO 1925, INCLUSIVE

The accompanying tables are taken from the Statistical Bulletin for January, 1926, published by the Metropolitan Life Insurance Co.

They present the mortality experience, according to principal causes of death, of the industrial insurance department of the company for November and December, 1925, and for the years 1915 to 1925, inclusive. The rates for 1925 are based on a strength of approximately 17,000,000 insured persons in the United States and Canada.

It should be borne in mind that these rates apply to a selected group of persons, and that for the years 1920 to 1924, inclusive, they varied between 71 and 75 per cent of the death rate for the United States registration area.

HEALTH RECORD FOR DECEMBER, 1925

The death rate for December, 1925, was 8.7 per 1,000—a new minimum rate for that month for this group of persons. The best previous rate for this month was 9 in each of the years 1922 and 1923. The Bulletin states that this excellent showing for the final month fittingly closes the best yearly health record in its history of the industrial populations of the United States and Canada.

As compared with December a year ago, the favorable contrast is shown for all principal causes of death except chronic nephritis and cancer, which registered substantially the same rates as for December, 1924. Noteworthy declines are shown for diphtheria, tuberculosis, cerebral hemorrhage, heart diseases, pneumonia, puerperal diseases, and accidents.

Death rates (annual basis) for principal causes per 100,000 lives exposed, November and December, 1925, and December and year 1924

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death	Rate per 100,000 lives exposed [1]			
	December, 1925	November, 1925	December, 1924	Year 1924
Total, all causes	874.9	801.8	951.7	905.2
Typhoid fever	4.3	5.6	4.2	4.4
Measles	4.3	1.7	1.6	7.2
Scarlet fever	3.1	2.0	3.8	4.4
Whooping cough	4.2	3.8	5.3	7.4
Diphtheria	11.1	13.8	14.3	13.1
Influenza	16.5	13.8	19.5	16.0
Tuberculosis (all forms)	88.3	78.4	97.3	104.2
Tuberculosis of respiratory system	79.7	69.9	86.0	92.3
Cancer	70.6	66.2	71.0	70.2
Diabetes mellitus	16.1	11.8	16.4	14.8
Cerebral hemorrhage	53.9	47.1	64.3	60.1
Organic diseases of heart	130.4	119.3	142.5	123.4
Pneumonia (all forms)	99.3	77.0	105.3	88.6
Other respiratory diseases	15.3	11.6	18.4	13.8
Diarrhea and enteritis	18.9	29.6	21.1	32.2
Bright's disease (chronic nephritis)	71.0	62.1	70.9	65.3
Puerperal state	12.8	15.1	15.6	16.8
Suicides	6.0	6.6	7.6	7.2
Homicides	6.4	7.2	7.8	7.1
Other external causes (excluding suicides and homicides)	53.5	57.6	64.2	62.5
Traumatism by automobiles	15.0	17.0	17.4	15.7
All other causes	189.1	171.6	200.8	186.5

[1] All figures include infants insured under 1 year of age.

RECORD FOR THE YEAR 1925

The health record in this group of insured persons for 1925 was the best in the history of the company, the death rate being slightly lower than the former minimum rate established in 1924. The death rate for 1925 was 8.46 per 1,000, as compared with 8.48 for the preceding year. While these rates are lower than those for the general population, they are an index as to comparative conditions. In 1924 the rate for this group was 71 per cent of the rate for the registration area of the United States.

The Bulletin states that while there were only 0.3 per cent fewer deaths than would have occurred under the 1924 death rate, there were 66,288 fewer deaths than would have occurred had the 1911 death rate prevailed.

New minimum death rates were established in 1925 for the following causes of death: Measles, scarlet fever, diphtheria, tuberculosis (all forms), tuberculosis of the respiratory system, and diseases incidental to pregnancy and childbirth.

The two outstanding favorable items especially noted are the remarkable improvement in the death rates for tuberculosis and the improvement in the principal epidemic diseases of childhood.

Tuberculosis.—For the first time in the record of this group, the death rate for tuberculosis fell below 100 per 100,000. Ten years ago the rate was 198 per 100,000.

Communicable diseases of childhood.—The death rate for diphtheria shows a decline of almost 20 per cent from the rate for 1924, of 34.2 per cent from the rate for 1923, of more than 50 per cent during the past five years, and of 62.6 per cent since 1911.

The death rate for measles dropped to the remarkably low figure of 2.5 per 100,000 in 1925. While this is gratifying, the records show that the death rate for measles is very irregular, running to some extent in cycles.

The scarlet fever death rate declined 21 per cent from the rate for 1924 and records a new minimum.

While whooping cough increased slightly over 1924, the death rate for 1925 is among the lowest rates recorded for this disease.

Typhoid fever.—The typhoid fever death rate (4.6 per 100,000) was slightly higher than for 1924 (4.4). This rise is not regarded as a particularly unfavorable development, however, as the rates for both years are well below those recorded for prior years. The drop in the typhoid death rate in this group since 1911 is 79.8 per cent.

Influenza and pneumonia.—The combined death rate for these diseases shows a slight increase over that for 1924, due entirely to an

increase in influenza deaths reported. The pneumonia record was favorable, the death rate being, with one exception, the lowest ever recorded for this group.

The "degenerative diseases."—The combined rate for diseases of the heart, chronic nephritis, and cerebral hemorrhage for 1925 (254.2 per 100,000) was slightly higher than that for 1924 (252.8).

Cancer.—The death rate for cancer shows no change as compared with the preceding year. The table shows very little variation in the mortality rate for this cause of death during the 11-year period 1915 to 1925.

The report comments on the fact that an investigation carried on by the company showed that more than 2 per cent of the deaths from cancer among its policyholders were of persons under 25 years of age, cancer in certain localities being especially frequent in early life.

Diseases incidental to pregnancy and childbirth.—The splendid record for diseases associated with maternity is an important item in the 1925 mortality experience. The previous low record, established in 1924, was lowered by about 2 per cent. The Bulletin states:

> Puerperal diseases have proved a very productive field for public health work. Improved medical and nursing supervision during pregnancy, at the time of delivery, and during the immediate postpartum period, are believed to have been the chief factors in bringing about the more favorable showing.

Diabetes.—The death rate for diabetes mellitus was 15.5 per 100,000, as compared with 15.1 in 1924. The 1925 rate is identical with the rate for 1921, and is higher than the rates for 5 and 10 years ago. In 1923 and 1924 the death rate from diabetes declined, and the decline was coincident with the increasing use of insulin.

Alcoholism and cirrhosis of the liver.—The death rate for alcoholism was 2.9 per 100,000, as compared with 2.8 in 1924, 3.0 in 1923, 2.1 in 1922, 0.9 in 1921, and 0.6 in 1920.

The mortality from cirrhosis of the liver increased appreciably, having a rate of 6.9 per 100,000 in 1925 as compared with 5.8 in 1924.

Automobile fatalities.—The deaths from automobile accidents again show an increase over the preceding year, as has been the case each year since 1911. The rate increased from 15.9 per 100,000 in 1924 to 16.7 in 1925. The death rate from this cause has increased 50 per cent since 1920, has more than tripled since 1915, and is now seven times as high as it was in 1911.

Death rates per 100,000 lives exposed (ages 1 and over) for principal causes of death, 1915 to 1925, inclusive

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death	1925	1924	1923	1922	1921	1920	1919	1918	1917	1916	1915
All causes of death	845.8	848.0	897.1	882.9	870.6	969.4	1,063.0	1,559.2	1,161.1	1,168.1	1,130.9
Typhoid fever	4.6	4.4	5.2	5.7	6.7	6.7	7.3	11.5	12.1	13.0	12.9
Communicable diseases of childhood	19.7	26.2	33.1	29.8	37.9	43.1	31.5	41.6	46.8	40.8	36.4
Measles	2.5	5.7	8.4	4.3	3.2	8.5	3.5	8.6	11.1	9.9	5.7
Scarlet fever	3.4	4.3	4.4	4.9	7.0	6.0	3.9	3.6	6.0	4.1	4.6
Whooping cough	3.6	3.5	4.8	2.6	3.9	6.6	3.2	10.1	5.1	5.8	4.7
Diphtheria	10.2	12.7	15.5	18.0	23.8	22.1	20.9	19.3	24.6	21.0	21.4
Influenza and pneumonia	88.3	84.4	107.7	95.3	76.5	159.5	214.1	542.2	135.4	138.1	119.5
Influenza	19.3	14.2	30.1	21.7	8.7	53.5	96.9	272.4	14.4	23.8	13.0
Pneumonia	69.0	70.2	77.6	73.7	67.8	106.1	117.2	269.8	121.0	114.3	106.5
Meningococcus meningitis	.7	.6	.7	.7	.9	1.0	1.3	2.8	3.5	1.5	1.3
Tuberculosis, all forms	98.1	104.4	110.5	114.2	117.4	137.9	156.5	189.0	188.9	190.2	197.8
Tuberculosis of respiratory system	86.9	93.4	100.6	103.6	105.6	124.0	141.6	171.2	172.3	172.8	180.0
Cancer, all forms	71.7	71.5	72.7	72.0	71.7	69.8	67.0	67.2	70.9	70.3	70.9
Diabetes mellitus	15.5	15.1	16.2	17.2	15.5	14.1	13.4	14.0	15.3	15.9	15.1
Cerebral hemorrhage, apoplexy	54.4	61.1	61.9	62.9	62.1	61.3	59.8	64.0	66.8	68.7	68.5
Diseases of heart	128.7	125.2	128.7	126.7	117.4	117.0	113.9	141.7	142.0	140.2	136.7
Diarrhea and enteritis	12.3	11.3	11.1	10.8	14.2	15.8	16.9	23.4	25.5	26.2	24.4
Chronic nephritis (Bright's disease)	71.1	66.5	69.6	70.3	68.0	70.8	73.5	86.8	95.7	99.0	95.7
Puerperal state, total	16.9	17.2	17.9	19.0	19.8	23.0	20.0	27.4	18.2	17.6	18.0
Puerperal septicemia	6.6	6.6	6.9	7.4	8.5	8.6	6.7	7.3	7.5	7.2	7.2
Puerperal albuminuria and convulsions	3.8	4.3	4.2	4.7	4.9	5.0	4.8	4.9	5.1	5.0	4.8
Accidents of pregnancy	1.6	1.6	1.8	1.7	1.6	3.1	3.0	6.9	1.6	1.4	1.8
Total external causes	78.2	76.9	77.8	71.8	72.0	72.0	94.2	128.9	106.7	99.5	88.2
Suicides	7.0	7.3	7.4	7.5	7.6	6.4	6.8	7.6	9.3	9.8	12.2
Homicides	7.4	7.2	7.3	6.3	6.7	5.8	6.9	6.2	7.4	6.9	6.9
Accidents, total	63.8	62.4	63.0	58.0	57.5	59.6	63.8	75.5	76.5	73.2	67.3
Accidental burns	6.1	6.4	6.3	6.1	6.6	8.1	8.1	9.0	8.9	8.8	8.6
Accidental drowning	6.5	7.3	6.7	7.3	8.2	6.7	8.6	9.4	8.7	9.7	11.9
Accidental traumatism by fall	8.0	7.7	8.4	7.3	7.1	7.3	8.0	10.4	11.9	13.1	11.9
Accidental traumatism by machines	1.3	1.3	1.7	1.6	1.0	1.7	1.6	2.4	2.0	1.7	1.4
Railroad accidents	3.9	4.0	4.9	4.1	3.9	5.2	5.7	7.8	8.5	7.9	7.4
Auto accidents	16.7	15.9	15.4	13.6	12.2	11.1	10.7	10.3	9.7	7.4	5.4
All other accidents	21.2	19.7	19.5	18.0	18.5	19.5	21.2	26.1	26.8	24.6	20.7
War deaths	(1)	(1)	------	.1	.1	.5	16.6	39.7	13.5	9.6	1.8
Other diseases and conditions	185.7	183.4	184.0	186.5	190.5	197.4	193.5	218.7	233.2	247.1	245.5

[1] Death rate less than 0.05 per 100,000.

DEATHS DURING WEEK ENDED JANUARY 30, 1926

Summary of information received by telegraph from industrial insurance companies for week ended January 30, 1926, and corresponding week of 1925. (From the Weekly Health Index, February 2, 1926, issued by the Bureau of the Census, Department of Commerce)

	Week ended Jan. 30, 1926	Corresponding week 1925
Policies in force	63, 338, 917	58, 485, 831
Number of death claims	13, 268	12, 486
Death claims per 1,000 policies in force, annual rate	10. 9	11. 1

Deaths from all causes in certain large cities of the United States during the week ended January 30, 1926, infant mortality, annual death rate, and comparison with corresponding week of 1925. (From the Weekly Health Index, February 2, 1926, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Jan. 30, 1926		Annual death rate per 1,000 corresponding week 1925	Deaths under 1 year		Infant mortality rate week ended Jan. 30, 1926[2]
	Total deaths	Death rate[1]		Week ended Jan. 30, 1926	Corresponding week 1925	
Total (68 cities)	8,039	14.5	14.2	863	944	[3] 69
Akron	41			5	3	53
Albany [4]	40	17.7	13.7	5	3	105
Atlanta	71			8	11	
White	30			3		
Colored	41	(5)		5		
Baltimore [4]	331	21.7	17.2	30	25	88
White	266			21		75
Colored	69	(5)		9		146
Birmingham	67	17.0	17.7	8	9	
White	24			1		
Colored	43	(5)		7		
Boston	235	15.7	16.5	22	39	62
Bridgeport	33			6	2	102
Buffalo	128	12.4	12.7	18	21	75
Cambridge	30	13.1	13.1	3	5	50
Camden	46	18.6	15.0	7	4	118
Chicago [4]	741	12.9	13.2	92	104	81
Cincinnati	121	15.4	16.8	9	11	56
Cleveland	189	10.5	10.6	15	27	39
Columbus	81	15.1	16.6	10	5	92
Dallas	58	15.6	13.5	8	5	
White	46			8		
Colored	12	(5)		0		
Dayton	35	10.6	7.5	2	2	31
Denver	76	14.1	17.6	5	10	
Des Moines	36	12.6	13.3	2	2	33
Detroit	284	11.9	10.4	41	62	66
Duluth	23	10.9	9.0	7	2	164
El Paso	63	31.3	21.4	12	9	
Erie	37			5	1	95
Fall River [4]	44	17.8	17.4	7	10	102
Flint	18	7.2	7.2	4	3	66
Fort Worth	35	12.0	14.7	3	8	
White	26			3		
Colored	9	(5)		0		
Grand Rapids	41	13.9	11.5	5	4	72
Houston	59	18.7	18.3	4	5	
White	32			1		
Colored	27	(5)		3		
Indianapolis	102	14.8	14.5	7	11	51
White	84			5		42
Colored	18	(5)		2		110
Jacksonville, Fla	48	23.9	16.4	3	3	66
White	27			1		
Colored	21	(5)		2		
Jersey City	76	12.6	13.4	13	8	92
Kansas City, Kans	27	12.1	11.7	2	3	35
White	18			1		21
Colored	9	(5)		1		131
Kansas City, Mo	91	12.9	14.8	13	7	
Los Angeles	296			25	24	69

Deaths from all causes in certain large cities of the United States during the week ended January 30, 1926, infant mortality, annual death rate, and comparison with corresponding week of 1925. (From the Weekly Health Index, February 2, 1926, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Jan. 30, 1926		Annual death rate per 1,000 corresponding week 1925	Deaths under 1 year		Infant mortality rate week ended Jan. 30, 1926[2]
	Total deaths	Death rate[1]		Week ended Jan. 30, 1926	Corresponding week 1925	
Louisville	72	12.4	13.8	8	7	69
White	61			8		80
Colored	11	(5)		0		0
Lowell	32	15.1	15.1	6	3	112
Lynn	19	9.6	18.7	2	7	50
Memphis	73	21.8	36.8	10	9	
White	41			4		
Colored	32	(5)		6		
Milwaukee	103	10.7	8.2	9	13	42
Minneapolis	92	11.3	13.1	10	10	56
Nashville[4]	57	21.8	18.8	4	5	
White	25			2		
Colored	32	(5)		2		
New Bedford	36	15.7	12.6	9	4	157
New Haven	46	13.4	16.6	7	10	96
New Orleans	213	26.8	20.3	32	15	
White	127			19		
Colored	86	(5)		13		
New York	1,524	13.5	13.9	148	174	60
Bronx Borough	186	11.1	11.6	13	8	43
Brooklyn Borough	486	11.5	12.8	54	66	55
Manhattan Borough	678	18.2	17.2	64	74	71
Queens Borough	129	9.4	9.6	12	20	54
Richmond Borough	45	17.0	22.2	5	6	88
Newark, N. J	115	13.3	12.0	13	16	62
Norfolk	40			5	2	93
White	15			1		30
Colored	25	(5)		4		199
Oakland	84	17.3	8.8	13	2	150
Oklahoma City	17			1	3	
Omaha	59	14.5	16.3	8	6	84
Paterson	40	14.7	16.9	5	8	87
Philadelphia	636	16.8	16.3	47	65	62
Pittsburgh	183	15.1	16.0	22	26	73
Portland, Oreg	82	15.1	13.1	5	7	51
Providence	76	14.8	14.8	9	11	73
Richmond	55	15.4	18.2	8	5	101
White	30			3		59
Colored	25	(5)		5		175
Rochester	76	12.5	11.5	11	5	88
St. Louis	226	14.3	14.7	15	17	
St. Paul	67	14.2	11.0	2	5	18
Salt Lake City[4]	53	21.1	14.3	10	4	138
San Antonio	69	18.2	15.0	8	7	
San Diego	33	16.2	21.6	2	3	42
San Francisco	181	16.9	14.4	12	7	72
Schenectady	37	20.8	9.6	6	0	173
Seattle	71			2	3	19
Somerville	18	9.5	16.8	3	4	78
Springfield, Mass	38	13.9	16.1	5	8	72
Syracuse	38	10.9	12.6	3	6	38
Tacoma	22	11.0	13.5	3	2	70
Toledo	76	13.8	15.1	8	7	78
Trenton	45	17.8	14.6	2	7	33
Utica	36	18.5	15.4	7	4	154
Washington, D. C	145	15.2	16.0	12	26	68
White	93			5		
Colored	52	(5)		7		
Waterbury	32			3	4	64
Wilmington, Del	35	15.0	11.5	3	4	70
Worcester	56	15.3	14.5	7	6	81
Yonkers	35	16.1	14.2	6	4	135
Youngstown	31	10.1	11.4	6	8	76

[1] Annual rate per 1,000 population.

[2] Deaths under 1 year per 1,000 births—An annual rate based on deaths under 1 year for the week and estimated births for 1924. Cities left blank are not in the registration area for births.

[3] Data for 63 cities.

[4] Deaths for week ended Friday, January 29, 1926.

[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following per cents of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Kansas City, Kans., 14, Louisville, 17, Memphis 38, Nashville 30, New Orleans 26, Norfolk 38, 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 Week Ended February 6, 1926

ALABAMA	Cases
Cerebrospinal meningitis	1
Chicken pox	36
Dengue	1
Diphtheria	17
Influenza	311
Malaria	10
Measles	22
Mumps	50
Pellagra	6
Pneumonia	239
Poliomyelitis	1
Scarlet fever	20
Smallpox	36
Tetanus	2
Tuberculosis	41
Typhoid fever	5
Whooping cough	28

ARIZONA	
Chicken pox	6
Diphtheria	11
Mumps	11
Scarlet fever	9
Trachoma	1
Tuberculosis	33
Whooping cough	5

ARKANSAS	
Cerebrospinal meningitis	1
Chicken pox	25
Diphtheria	6
Influenza	248
Malaria	36
Measles	2
Mumps	10
Pellagra	6
Scarlet fever	7
Smallpox	9
Trachoma	1
Tuberculosis	22
Typhoid fever	3
Whooping cough	15

CALIFORNIA	Cases
Cerebrospinal meningitis:	
Amador County	1
Hawthorne	1
Lincoln	1
Los Angeles	1
Patterson	1
Sausalito	1
Stockton	1
Tuolumne	1
Chicken pox	323
Diphtheria	123
Influenza	525
Lethargic encephalitis:	
Los Angeles	1
Los Angeles County	1
Stockton	1
Measles	58
Mumps	197
Poliomyelitis:	
San Diego	1
San Diego County	1
Scarlet fever	164
Smallpox:	
Los Angeles	88
Los Angeles County	37
Oakland	13
Sacramento	5
Sacramento County	7
San Francisco [1]	6
Scattering	25
Typhoid fever	11
Whooping cough	51

COLORADO	
Botulism	2
Chicken pox	40
Diphtheria	17
Influenza	4
Measles	10
Mumps	6
Pneumonia	7
Scarlet fever	21
Tuberculosis	46

[1] 10 cases of smallpox were reported Feb. 1, 1926, in the marine hospital at San Francisco, Calif.

COLORADO—continued

	Cases
Typhoid fever	3
Vincent's angina	1
Whooping cough	64

CONNECTICUT

Anthrax	1
Cerebrospinal meningitis	1
Chicken pox	120
Conjunctivitis (infectious)	18
Diphtheria	51
German measles	11
Influenza	13
Measles	714
Mumps	11
Pneumonia (broncho)	39
Pneumonia (lobar)	48
Poliomyelitis	1
Scarlet fever	90
Septic sore throat	3
Tuberculosis (pulmonary)	25
Typhoid fever	5
Whooping cough	71

DELAWARE

Chicken pox	9
Diphtheria	1
Influenza	4
Measles	66
Pneumonia	1
Scarlet fever	2

DISTRICT OF COLUMBIA

Chicken pox	41
Diphtheria	30
Influenza	10
Measles	24
Pneumonia	88
Scarlet fever	24
Tuberculosis	27
Typhoid fever	2
Whooping cough	12

FLORIDA

Chicken pox	34
Diphtheria	14
Influenza	38
Measles	5
Mumps	17
Pneumonia	12
Scarlet fever	18
Smallpox	130
Tetanus	1
Tuberculosis	14
Typhoid fever	5
Whooping cough	1

GEORGIA

Cerebrospinal meningitis	1
Chicken pox	36
Diphtheria	22
Hookworm disease	2
Influenza	850
Malaria	12
Measles	87
Mumps	46
Pneumonia	153
Scarlet fever	7
Septic sore throat	12

GEORGIA—continued

	Cases
Smallpox	15
Trachoma	1
Tuberculosis	16
Typhoid fever	4
Typhus fever	1
Whooping cough	25

IDAHO

Chicken pox	3
Diphtheria	8
Measles	13
Mumps	3
Scarlet fever	16
Smallpox	12
Typhoid fever	1
Whooping cough	15

ILLINOIS

Cerebrospinal meningitis:	
Cook County	1
Cumberland County	1
Diphtheria	106
Influenza	72
Lethargic encephalitis:	
Marion County	1
Saline County	1
Measles	748
Pneumonia	502
Poliomyelitis:	
Bureau County	1
Fayette County	1
Scarlet fever	550
Smallpox:	
Champaign County	35
Scattering	26
Tuberculosis	237
Typhoid fever	14
Whooping cough	215

INDIANA

Cerebrospinal meningitis	1
Chicken pox	81
Diphtheria	37
Influenza	44
Measles	567
Mumps	1
Pneumonia	26
Poliomyelitis	5
Scarlet fever	282
Smallpox	110
Trachoma	2
Tuberculosis	35
Typhoid fever	1
Whooping cough	69

IOWA

Cerebrospinal meningitis	1
Chicken pox	47
Diphtheria	29
Measles	245
Mumps	56
Pneumonia	8
Scarlet fever	81
Smallpox	41
Tuberculosis	8
Whooping cough	10

KANSAS	Cases
Cerebrospinal meningitis:	
Topeka	1
Wichita	1
Chicken pox	121
Diphtheria	28
German measles	2
Influenza	15
Measles	86
Mumps	18
Pneumonia	95
Poliomyelitis—Severy	1
Scarlet fever	96
Smallpox	2
Tetanus	1
Trachoma	1
Tuberculosis	50
Typhoid fever	3
Whooping cough	75

LOUISIANA	
Cerebrospinal meningitis	1
Diphtheria	21
Influenza	261
Pneumonia	80
Scarlet fever	22
Smallpox	74
Tuberculosis	32
Typhoid fever	17

MAINE	
Chicken pox	27
Diphtheria	4
German measles	2
Influenza	6
Measles	27
Mumps	18
Pneumonia	17
Poliomyelitis	1
Scarlet fever	41
Tuberculosis	10
Typhoid fever	3
Whooping cough	25

MARYLAND [1]	
Cerebrospinal meningitis	1
Chicken pox	97
Diphtheria	30
Dysentery	1
German measles	1
Influenza	1,094
Lethargic encephalitis	2
Malaria	2
Measles	1,589
Mumps	166
Paratyphoid fever	1
Pneumonia (broncho)	145
Pneumonia (lobar)	161
Scarlet fever	64
Septic sore throat	4
Tetanus	1
Tuberculosis	77
Typhoid fever	4
Typhus fever	1
Whooping cough	34

MASSACHUSETTS	Cases
Cerebrospinal meningitis	2
Chicken pox	168
Conjunctivitis (suppurative)	11
Diphtheria	53
German measles	80
Hookworm disease	2
Influenza	13
Lethargic encephalitis	2
Measles	1,538
Mumps	85
Ophthalmia neonatorum	23
Pneumonia (lobar)	128
Poliomyelitis	1
Scarlet fever	332
Septic sore throat	5
Trachoma	2
Trichinosis	1
Tuberculosis (pulmonary)	115
Tuberculosis (other forms)	21
Typhoid fever	8
Whooping cough	340

MICHIGAN	
Diphtheria	85
Measles	1,774
Pneumonia	149
Scarlet fever	362
Smallpox	12
Tuberculosis	45
Typhoid fever	7
Whooping cough	365

MINNESOTA	
Chicken pox	150
Diphtheria	47
Influenza	1
Measles	71
Poliomyelitis	1
Scarlet fever	421
Smallpox	24
Tuberculosis	42
Typhoid fever	4
Whooping cough	50

MISSISSIPPI	
Diphtheria	10
Influenza	577
Scarlet fever	12
Smallpox	7
Typhoid fever	2

MISSOURI	
Chicken pox	103
Diphtheria	80
Influenza	2
Measles	173
Mumps	40
Pneumonia	8
Rabies (in animals)	2
Scarlet fever	218
Smallpox	12
Tetanus	2
Trachoma	1
Tuberculosis	42
Typhoid fever	5
Whooping cough	47

[1] Week ended Friday.

MONTANA

	Cases
Chicken pox	49
German measles	8
Measles	7
Mumps	39
Scarlet fever	27
Smallpox	12
Tuberculosis	5
Whooping cough	17

NEBRASKA

Chicken pox	35
Diphtheria	10
German measles	1
Measles	15
Mumps	2
Paratyphoid fever	1
Pneumonia	5
Scarlet fever	51
Smallpox	21
Whooping cough	9

NEW JERSEY

Anthrax	1
Cerebrospinal meningitis	3
Chicken pox	305
Diphtheria	95
Dysentery	1
Influenza	38
Measles	1,928
Pneumonia	206
Scarlet fever	214
Typhoid fever	2
Whooping cough	77

NEW MEXICO

Chicken pox	15
Diphtheria	1
Influenza	205
Measles	5
Mumps	5
Pneumonia	29
Scarlet fever	11
Smallpox	4
Tuberculosis	44
Typhoid fever	1
Whooping cough	23

NEW YORK

(Exclusive of New York City)

Chicken pox	371
Diphtheria	79
Dysentery	3
German measles	216
Influenza	107
Lethargic encephalitis	2
Measles	1,037
Mumps	170
Pneumonia	365
Poliomyelitis	3
Scarlet fever	274
Septic sore throat	12
Smallpox	1
Trachoma	3
Typhoid fever	19
Vincent's angina	6
Whooping cough	338

NORTH CAROLINA

	Cases
Chicken pox	201
Diphtheria	34
German measles	36
Measles	110
Ophthalmia neonatorum	1
Poliomyelitis	1
Scarlet fever	65
Septic sore throat	1
Smallpox	26
Typhoid fever	3
Whooping cough	170

OKLAHOMA

(Exclusive of Tulsa and Oklahoma City)

Chicken pox	41
Diphtheria	17
Influenza	569
Malaria	16
Measles	10
Mumps	26
Pellagra	2
Pneumonia	240
Poliomyelitis—Love	1
Scarlet fever	34
Smallpox:	
Carter	14
Scattering	13
Typhoid fever	5
Whooping cough	45

OREGON

Cerebrospinal meningitis	4
Chicken pox	20
Diphtheria	12
Influenza	87
Measles	16
Mumps	36
Pneumonia	[1] 13
Scarlet fever	37
Smallpox:	
Deschutes County	11
Scattering	40
Tuberculosis	20
Typhoid fever	5
Whooping cough	31

PENNSYLVANIA

Cerebrospinal meningitis—Pittsburgh	1
Chicken pox	447
Diphtheria	132
German measles	17
Impetigo contagiosa	1
Measles	2,052
Mumps	120
Pneumonia	60
Poliomyelitis—Williamsport	1
Scabies	1
Scarlet fever	434
Smallpox—Steelton	1
Tuberculosis	99
Typhoid fever	19
Whooping cough	238

[1] Deaths.

RHODE ISLAND	Cases
Chicken pox	25
Diphtheria	7
Measles	561
Mumps	5
Ophthalmia neonatorum	1
Pneumonia	3
Scarlet fever	14
Tuberculosis	3
Typhoid fever	3
Whooping cough	17

SOUTH CAROLINA	
Dengue	2
Diphtheria	17
Influenza	1,931
Malaria	64
Measles	5
Scarlet fever	8
Smallpox	17
Tuberculosis	47
Typhoid fever	15
Whooping cough	103

SOUTH DAKOTA	
Cerebrospinal meningitis	1
Chicken pox	15
Diphtheria	9
Mumps	2
Pneumonia	6
Scarlet fever	71
Smallpox	1
Tuberculosis	1
Typhoid fever	1

TENNESSEE	
Cerebrospinal meningitis:	
Dyer County	1
Lincoln County	1
Chicken pox	53
Diphtheria	16
Influenza	158
Malaria	1
Measles	[1] 226
Mumps	19
Ophthalmia neonatorum	1
Pellagra	5
Pneumonia	114
Poliomyelitis:	
Gibson County	1
Nashville	1
Obion County	1
Scarlet fever	28
Smallpox	21
Tuberculosis	42
Typhoid fever	9
Whooping cough	7

TEXAS	
Chicken pox	125
Diphtheria	25
Influenza	106
Measles	5
Mumps	21
Pellagra	2
Pneumonia	37
Poliomyelitis	1
Scarlet fever	38
Smallpox	81

[1] Incomplete report.

TEXAS—continued	Cases
Tuberculosis	14
Typhoid fever	5
Whooping cough	29

UTAH	
Cerebrospinal meningitis—Ogden	1
Chicken pox	57
Diphtheria	6
Influenza	224
Measles	7
Mumps	35
Pneumonia	9
Scarlet fever	4
Smallpox	4
Tuberculosis	2
Typhoid fever	3
Whooping cough	43

VERMONT	
Chicken pox	29
Diphtheria	2
Measles	19
Mumps	11
Scarlet fever	15
Typhoid fever	1
Whooping cough	26

VIRGINIA	
Cerebrospinal meningitis—Dinwiddie County	2
Smallpox	5

WASHINGTON	
Cerebrospinal meningitis—Pierce County	1
Chicken pox	94
Diphtheria	16
German measles	16
Measles	11
Mumps	114
Scarlet fever	126
Smallpox:	
Everett	15
Grays Harbor County	10
Skagit County	10
Tacoma	18
Yakima County	23
Scattering	25
Tuberculosis	12
Typhoid fever	4
Whooping cough	62

WEST VIRGINIA	
Diphtheria	8
Scarlet fever	6
Typhoid fever—Hinton	6

WISCONSIN	
Milwaukee:	
Chicken pox	89
Diphtheria	23
German measles	2
Influenza	2
Measles	23
Mumps	24
Pneumonia	24
Scarlet fever	19
Tuberculosis	13
Whooping cough	49

WISCONSIN—continued

Scattering:	Cases
Chicken pox	135
Diphtheria	29
German measles	11
Influenza	33
Lethargic encephalitis	1
Measles	251
Mumps	77
Pneumonia	23
Scarlet fever	157
Smallpox	11
Tuberculosis	16

WISCONSIN—continued

Scattering—Continued.	Cases
Typhoid fever	6
Whooping cough	109

WYOMING

Chicken pox	8
Diphtheria	1
Influenza	5
Measles	2
Mumps	9
Pneumonia	2
Scarlet fever	19
Whooping cough	24

Reports for Week Ended January 30, 1926

DISTRICT OF COLUMBIA

	Cases
Chicken pox	41
Diphtheria	20
Influenza	6
Measles	32
Mumps	2
Pneumonia	83
Scarlet fever	27
Tuberculosis	23
Whooping cough	7

NORTH DAKOTA

Chicken pox	46
Diphtheria	7
German measles	28
Influenza	17
Measles	24
Mumps	82

NORTH DAKOTA—continued

	Cases
Pneumonia	32
Poliomyelitis	3
Scarlet fever	78
Smallpox	8
Whooping cough	11

SOUTH CAROLINA

Dengue	2
Diphtheria	17
Influenza	1,466
Malaria	74
Measles	11
Scarlet fever	3
Smallpox	11
Tuberculosis	38
Typhoid fever	2
Whooping cough	94

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	Cerebrospinal meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
December, 1925										
Montana	1	41	10		12		3	150	27	21
Pennsylvania	9	890		1	4,387	1	6	1,967	0	149
South Dakota	2	40	4		10		4	366	11	6
Utah	11	174	176		23			110	39	7
Virginia	8	324	1,876	23	441	13	3	438	34	63

PLAGUE ERADICATIVE MEASURES IN THE UNITED STATES

The following items were taken from the reports of plague eradicative measures from the cities named:

Los Angeles, Calif.

Week ended January 23, 1926:

Number of rats trapped	3,382
Number of rats found to be plague infected	0
Number of squirrels examined	823
Number of squirrels found to be plague infected	0
Number of mice trapped	3,260
Number of mice found to be plague infected	0

Date of discovery of last plague-infected rodent, Nov. 6, 1925.
Date of last human case, Jan. 15, 1925.

Oakland, Calif.

(Including other East Bay communities)

Week ended January 23, 1926:	
Number of rats trapped	424
Number of rats found to be plague infected	0
Totals:	
Number of rats trapped Jan. 1, 1925 to Jan. 23, 1926	80,713
Number of rats found to be plague infected	21
Number of squirrels examined May 1 to Aug. 1, 1925	7,277
Number of squirrels found to be plague infected	0
Number of mice trapped Jan. 1, 1925 to Jan. 23, 1926	31,490

Date of discovery of last plague-infected rat, Mar. 4, 1925.
Date of last human case, Sept. 10, 1919.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

Diphtheria.—For the week ended January 23, 1926, 36 States reported 1,577 cases of diphtheria. For the week ended January 24, 1925, the same States reported 1,679 cases of this disease. One hundred cities, situated in all parts of the country and having an aggregate population of more than 29,600,000, reported 814 cases of diphtheria for the week ended January 23, 1926. Last year for the corresponding week they reported 896 cases. The estimated expectancy for these cities was 1,150 cases. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Measles.—Thirty-three States reported 9,951 cases of measles for the week ended January 23, 1926, and 2,121 cases of this disease for the week ended January 24, 1925. One hundred cities reported 7,778 cases of measles for the week this year, and 1,043 cases last year.

Poliomyelitis.—The health officers of 38 States reported 13 cases of poliomyelitis for the week ended January 23, 1926. The same States reported 17 cases for the week ended January 24, 1925.

Scarlet fever.—Scarlet fever was reported for the week as follows: Thirty-six States—this year, 4,088 cases; last year, 4,281 cases; 100 cities—this year, 1,647 cases; last year, 1,977 cases; estimated expectancy, 1,223 cases.

Smallpox.—For the week ended January 23, 1926, 36 States reported 965 cases of smallpox. Last year for the corresponding week they reported 1,205 cases. One hundred cities reported smallpox for the week as follows: 1926, 203 cases; 1925, 388 cases, estimated expectancy, 122 cases. Eight deaths from smallpox were reported by these cities for the week this year—at Los Angeles, Calif.

Typhoid fever.—Two hundred and nine cases of typhoid fever were reported for the week ended January 23, 1926, by 35 States. For the corresponding week of 1925 the same States reported 289 cases of this disease. One hundred cities reported 75 cases of typhoid fever for the week this year and 95 cases for the corresponding week last year. The estimated expectancy for these cities was 55 cases.

Influenza and pneumonia.—Deaths from influenza and pneumonia were reported for the week by 93 cities, with a population of nearly 29,000,000, as follows: 1926, 1,214 deaths; 1925, 1,181.

City reports for week ended January 23, 1926

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence how many cases of the disease under consideration 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 corresponding week of the preceeding 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 nonepidemic 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 1917 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, 1925, 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	75,333	9	2	1	3	0	7	5	4
New Hampshire:									
Concord	22,546	0	0	1	0	0	2	0	1
Manchester	83,097	0	2	0	0	0	9	0	4
Vermont:									
Barre	10,008		0						
Burlington	24,089	0	0	0	0	0	0	0	1
Massachusetts:									
Boston	779,620	66	66	24	5	1	163	22	30
Fall River	128,993	3	6	3	0	0	74	1	3
Springfield	142,065	8	4	0	0	0	76	0	2
Worcester	190,757	11	6	12	0	0	116	0	12
Rhode Island:									
Pawtucket	69,760	5	2	1	0	0	30	0	6
Providence	267,918	0	11	2	0	0	452	0	9
Connecticut:									
Bridgeport	(1)	6	9	4	1	1	96	0	6
Hartford	160,197	17	8	6	0	1	53	0	8
New Haven	178,927	11	5	1	0	0	19	0	7
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	31	19	0	0	2	11	1	12
New York	5,873,356	0	226	175	52	16	1,478	30	261
Rochester	316,786	19	9	11	0	0	66	0	10
Syracuse	182,603	32	9	0	1	0	18	15	3
New Jersey:									
Camden	128,642	24	5	4	1	1	20	1	12
Newark	452,513	79	21	9	8	0	208	8	19
Trenton	132,020	8	6	2	3	4	1	1	6
Pennsylvania:									
Philadelphia	1,979,364	214	79	60	1	5	355	17	99
Pittsburgh	631,563		23						
Reading	112,707	17	5	2	0	0	4	0	6
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	15	11	8	0	2	3	0	21
Cleveland	936,485	41	35	4	0	0	1,528	5	28
Columbus	279,836	21	4	5	0	2	10	1	11
Toledo	287,380	32	9	8	0	1	81	0	11
Indiana:									
Fort Wayne	97,846	5	4	1	0	1	1	0	1
Indianapolis	358,819	20	14	13	0	0	153	0	16
South Bend	80,091	7	1	1	0	0	0	0	1
Terre Haute	71,071	2	1	1	0	0	1	0	0

[1] No estimate made.

City reports for week ended January 23, 1926—Continued

Division, State, and city	Population July 1, 1925, 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									
Illinois:									
Chicago	2,995,239	142	121	63	10	6	69	11	58
Peoria	81,564	7	1	0	0	0	3	9	2
Springfield	63,923	8	2	1	0	0	0	2	2
Michigan:									
Detroit	1,245,824	108	70	52	2	0	1,215	10	39
Flint	130,316	24	8	4	0	0	16	2	4
Grand Rapids	153,698	10	4	1	0	0	11	1	2
Wisconsin:									
Madison	46,385	8	0	0	0	0	20	0	0
Milwaukee	509,192	134	22	37	1	1	9	21	19
Racine	67,707	15	1	1	0	0	0	2	2
Superior	39,671	0	1	0	1	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	19	3	2	0	0	1	0	1
Minneapolis	425,435	72	22	20	0	0	7	5	15
St. Paul	246,001	32	15	12	0	3	3	2	5
Iowa:									
Davenport	(1)	5	1	1	0	-------	0	0	-------
Des Moines	(1)	0	4	0	0	-------	0	0	-------
Sioux City	(1)	6	1	0	0	-------	1	0	-------
Waterloo	36,771	2	1	1	0	-------	0	1	-------
Missouri:									
Kansas City	367,481	51	10	4	1	1	54	3	7
St. Joseph	78,342	2	4	4	0	0	0	0	2
St. Louis	821,543	40	53	57	1	1	4	3	-------
North Dakota:									
Fargo	26,403	2	0	0	0	0	3	16	0
Grand Forks	14,811	2	1	0	0	-------	2	0	-------
South Dakota:									
Aberdeen	15,036	0	1	0	0	0	0	37	0
Sioux Falls	30,127	2	1	0	0	-------	1	0	-------
Nebraska:									
Lincoln	60,941	6	3	2	0	0	0	4	3
Omaha	211,768	10	5	1	0	0	2	1	5
Kansas:									
Topeka	55,411	24	2	2	0	0	1	2	1
Wichita	88,367	22	4	1	0	0	0	0	3
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	5	2	5	0	0	46	0	3
Maryland:									
Baltimore	796,296	157	30	26	371	13	1,108	127	56
Cumberland	33,741	2	1	1	0	0	0	0	1
Frederick	12,035	1	0	0	0	0	7	0	0
District of Columbia:									
Washington	497,906	27	20	21	2	2	26	0	35
Virginia:									
Lynchburg	30,395	37	1	1	0	0	2	3	2
Norfolk	(1)	-------	2	-------	-------	-------	-------	-------	-------
Richmond	186,403	4	6	5	0	1	10	2	13
Roanoke	58,208	7	2	1	0	1	1	3	3
West Virginia:									
Charleston	49,019	0	2	2	0	0	3	0	2
Huntington	63,485	0	1	2	0	0	5	0	0
Wheeling	56,208	0	2	5	0	1	0	1	3
North Carolina:									
Raleigh	30,371	9	1	0	0	0	0	0	0
Wilmington	37,061	8	1	0	0	0	0	0	0
Winston-Salem	69,031	7	1	1	0	0	107	2	5
South Carolina:									
Charleston	73,125	0	1	2	0	1	0	0	0
Columbia	41,225	2	1	0	0	0	0	1	0
Greenville	27,311	6	0	1	0	0	0	0	0

[1] No estimate made.

City reports for week ended January 23, 1926—Continued

Division, State, and city	Population July 1, 1925, 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			
SOUTH ATLANTIC—con.									
Georgia:									
Atlanta	(1)	6	3	4	47	1	8	0	17
Brunswick	16,809	5	0	1	0	0	0	0	0
Savannah	93,134	5	1	2	47	1	1	0	7
Florida:									
St. Petersburg	26,847	0	1	0	0	0	0	0	1
Tampa	94,743	4	1	3	1	0	0	2	3
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	0	1	0	0	0	0	3
Louisville	305,935	4	9	3	4	0	5	0	12
Tennessee:									
Memphis	174,533	14	5	5	0	3	0	1	11
Nashville	136,220	5	2	2	0	6	46	0	3
Alabama:									
Birmingham	205,670	24	3	2	12	1	4	2	13
Mobile	65,955	2	1	0	2	1	0	0	2
Montgomery	46,481	6	1	1	4	0	0	16	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	5	0	1	0	----	1	0	----
Little Rock	74,216	1	1	1	0	0	0	0	4
Louisiana:									
New Orleans	414,493	2	15	13	35	14	0	0	17
Shreveport	57,857	7	0	2	0	1	0	0	3
Oklahoma:									
Oklahoma City	(1)	0	2	1	16	1	0	0	3
Tulsa	124,478	5	2	0	0	----	0	0	----
Texas:									
Dallas	194,450	32	7	10	7	3	1	0	17
Galveston	48,375	1	1	0	0	0	0	0	2
Houston	164,954	2	4	6	0	0	1	1	7
San Antonio	198,069	1	2	3	----	2	0	1	16
MOUNTAIN									
Montana:									
Billings	17,971	8	0	0	0	0	0	8	0
Great Falls	29,883	15	1	0	0	0	0	25	1
Helena	12,037	0	0	0	0	0	2	0	0
Missoula	12,668	3	0	5	0	0	0	2	1
Idaho:									
Boise	23,042	2	0	0	0	0	0	0	0
Colorado:									
Denver	280,911	61	10	4	0	2	6	0	12
Pueblo	43,787	9	3	4	0	0	0	0	4
New Mexico:									
Albuquerque	21,000	4	0	0	0	0	1	0	1
Utah:									
Salt Lake City	130,948	43	3	4	0	0	5	17	12
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	28	7	1	0	----	5	84	----
Spokane	108,897	18	4	1	0	----	0	0	----
Tacoma	104,455	4	3	4	0	0	0	5	4
Oregon:									
Portland	282,383	11	9	30	0	0	1	5	11
California:									
Los Angeles	(1)	39	45	39	40	1	11	6	27
Sacramento	72,260	4	3	0	10	2	0	0	7
San Francisco	557,530	16	25	7	39	8	8	6	14

[1] No estimate made.

City reports for week ended January 23, 1926—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	2	6	0	0	0	1	1	1	0	8	19
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	10
Manchester	3	14	0	0	0	2	0	0	0	0	29
Vermont:											
Barre	1		0				0				
Burlington	1	7	0	0	0	1	0	0	0	0	6
Massachusetts:											
Boston	52	86	0	0	0	11	1	3	0	90	237
Fall River	3	1	0	0	0	3	0	0	0	6	37
Springfield	10	2	0	0	0	2	0	0	0	4	32
Worcester	11	12	0	0	0	1	1	0	0	7	59
Rhode Island:											
Pawtucket	1	1	0	0	0	0	0	0	0	2	21
Providence	8	4	0	0	0	3	1	0	0	7	63
Connecticut:											
Bridgeport	6	9	0	0	0	3	0	0	0	9	43
Hartford	8	4	0	0	0	3	0	0	0	12	46
New Haven	10	2	0	0	0	3	1	0	0	4	48
MIDDLE ATLANTIC											
New York:											
Buffalo	23	14	0	0	0	8	1	4	0	36	158
New York	221	190	0	0	0	[1] 125	11	7	1	91	1,689
Rochester	13	31	0	0	0	5	0	3	0	11	97
Syracuse	16	5	0	0	0	1	0	0	0	83	47
New Jersey:											
Camden	4	17	0	0	0	3	0	1	0	2	39
Newark	24	40	0	0	0	14	1	0	0	23	120
Trenton	4	6	0	0	0	4	0	0	0	1	54
Pennsylvania:											
Philadelphia	69	112	0	0	0	42	4	3	0	35	603
Pittsburgh	34		1				1				
Reading	2	5	0	0	0	1	0	0	0	9	41
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	11	24	1	1	0	8	1	0	0	29	137
Cleveland	35	46	2	8	0	14	2	1	0	85	186
Columbus	10	19	1	2	0	6	0	1	0	4	88
Toledo	18	30	3	0	0	6	1	1	0	5	87
Indiana:											
Fort Wayne	5	17	1	0	0	1	0	0	0	1	23
Indianapolis	9	17	6	24	0	4	1	0	0	37	108
South Bend	4	4	0	11	0	1	0	0	0	1	12
Terre Haute	3	5	1	0	0	0	0	0	0	1	24
Illinois:											
Chicago	154	126	3	1	0	48	4	3	0	67	694
Peoria	7	5	0	0	0	0	0	0	0	6	20
Springfield	2	1	0	0	0	0	0	0	0	6	40
Michigan:											
Detroit	95	143	4	1	0	28	2	0	0	73	348
Flint	10	6	1	0	0	0	0	0	0	30	17
Grand Rapids	12	28	0	0	0	0	0	0	0	38	35
Wisconsin:											
Madison	3	7	0	0	0	0	0	0	0	4	5
Milwaukee	38	24	2	0	0	4	1	0	0	88	117
Racine	6	1	1	0	0	0	0	0	0	6	13
Superior	2	8	3	0	0	1	0	0	0	3	7
WEST NORTH CENTRAL											
Minnesota:											
Duluth	7	26	1	0	0	1	0	0	0	12	20
Minneapolis	44	69	17	0	0	7	1	0	0	3	102
St. Paul	25	75	11	0	0	7	0	0	0	22	52

[1] Pulmonary tuberculosis only.

City reports for week ended January 23, 1926—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—con.											
Iowa:											
Davenport	2	2	2	0	----	----	0	0	----	0	----
Des Moines	8	6	3	2	----	----	0	0	----	0	----
Sioux City	2	0	1	4	----	----	0	0	----	0	----
Waterloo	2	2	1	1	----	----	0	0	----	2	----
Missouri:											
Kansas City	15	22	2	0	0	6	0	0	0	16	94
St. Joseph	3	0	1	0	0	0	0	0	0	0	29
St. Louis	37	112	3	1	0	9	1	1	0	13	249
North Dakota:											
Fargo	1	2	1	0	0	0	0	1	0	3	2
Grand Forks	1	0	0	0	----	----	0	0	----	0	----
South Dakota:											
Aberdeen	0	0	0	0	0	0	0	0	0	0	----
Sioux Falls	2	2	0	1	0	0	0	0	0	0	----
Nebraska:											
Lincoln	2	4	0	0	0	0	1	0	0	8	18
Omaha	5	15	6	9	0	3	0	0	0	9	62
Kansas:											
Topeka	2	4	1	0	0	2	0	0	0	0	13
Wichita	4	9	0	2	0	0	1	0	0	3	24
SOUTH ATLANTIC											
Delaware:											
Wilmington	3	10	0	0	0	0	0	0	0	0	36
Maryland:											
Baltimore	40	26	0	0	0	16	2	1	0	53	283
Cumberland	0	0	0	0	0	1	0	0	0	1	11
Frederick	0	0	0	0	0	0	0	0	0	0	7
District of Col.:											
Washington	22	27	0	0	0	14	1	0	0	22	181
Virginia:											
Lynchburg	1	3	0	0	0	0	0	0	0	4	10
Norfolk	2	----	0	----	----	----	0	----	----	----	----
Richmond	5	12	0	0	0	3	0	0	0	1	67
Roanoke	1	0	0	1	0	2	0	0	0	0	18
West Virginia:											
Charleston	1	0	0	0	0	0	0	1	0	2	20
Huntington	0	3	1	0	0	1	0	0	0	0	10
Wheeling	1	1	1	0	0	1	1	0	0	0	25
North Carolina:											
Raleigh	1	1	1	1	0	1	0	0	0	0	14
Wilmington	0	3	0	0	0	0	0	0	0	3	14
Winston-Salem	2	0	2	1	0	2	0	0	0	25	27
South Carolina:											
Charleston	1	2	0	0	0	2	0	0	0	0	20
Columbia	0	*6	1	0	0	0	0	0	0	2	----
Greenville	1	0	0	1	0	1	0	0	0	0	5
Georgia:											
Atlanta	3	3	2	1	0	5	0	0	1	0	78
Brunswick	0	0	0	0	0	0	0	0	0	0	4
Savannah	1	0	1	0	0	4	1	1	0	0	31
Florida:											
St. Petersburg	0	0	1	0	0	0	0	0	0	0	13
Tampa	1	1	0	25	0	2	1	1	0	1	41
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	2	0	0	0	0	0	0	0	0	19
Louisville	5	11	0	0	0	6	1	0	0	3	92
Tennessee:											
Memphis	4	12	2	3	0	9	0	1	0	1	70
Nashville	3	3	1	0	0	3	0	0	0	0	63
Alabama:											
Birmingham	4	6	3	6	0	6	0	0	0	3	73
Mobile	0	2	0	0	0	1	0	0	0	0	19
Montgomery	1	3	1	0	0	0	1	0	0	1	15

City reports for week ended January 23, 1926—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	1	0	1	0			0	0		0	
Little Rock	2	1	1	0	0	2	0	0	1	0	
Louisiana:											
New Orleans	4	9	0	4	0	16	3	5	0	2	181
Shreveport	0	0	4	2	0	0	0	0	0	0	19
Oklahoma:											
Oklahoma City	2	2	2	0	0	2	0	0	0	0	23
Tulsa	2	2	1	0			0	0		5	
Texas:											
Dallas	4	3	2	0	0	4	0	24	0	0	61
Galveston	1	1	0	7	0	1	0	5	0	0	11
Houston	2	2	1	10	0	9	1	1	0	0	48
San Antonio	0	0	0	0	0	12	0	0	0	0	77
MOUNTAIN											
Montana:											
Billings	2	0	1	0	0	0	0	0	0	0	4
Great Falls	1	8	2	3	0	0	1	0	0	4	9
Helena	0	3	0	0	0	0	0	0	0	0	5
Missoula	1	2	0	0	0	0	0	0	0	7	12
Idaho:											
Boise	1	5	0	0	0	0	0	0	0	0	8
Colorado:											
Denver	11	16	3	0	0	8	0	0	0	50	66
Pueblo	2	1	0	0	0	2	1	0	0	0	15
New Mexico:											
Albuquerque	0	4	0	0	0	1	0	0	0	4	4
Utah:											
Salt Lake City	4	6	4	0	0	1	0	0	0	21	42
Nevada:											
Reno	1	0	0	0	0	0	0	0	0	0	1
PACIFIC											
Washington:											
Seattle	10	25	3	7			1	0		5	
Spokane	4	12	6	0			1	0		0	
Tacoma	3	4	2	11	0	1	0	0	0	2	20
Oregon:											
Portland	6	14	10	4	0	1	1	0	0	0	
California:											
Los Angeles	18	32	3	44	8	27	2	4	0	3	248
Sacramento	1	2	1	9	0	1	0	2	0	0	
San Francisco	14	20	2	1	0	12	1	0	0	1	226

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Rhode Island:									
Providence	1	0	0	0	0	0	0	0	0
Connecticut:									
Bridgeport	0	0	0	0	1	0	0	0	0
Hartford	0	0	1	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
Buffalo	1	0	1	0	0	0	0	1	0
New York	2	3	19	4	0	0	1	2	1
New Jersey:									
Newark	0	0	2	0	0	0	1	0	0

City reports for week ended January 23, 1926—Continued

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MIDDLE ATLANTIC—continued									
Pennsylvania:									
Philadelphia	0	0	1	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland	0	0	0	1	0	0	0	1	0
Illinois:									
Chicago	1	1	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee	0	0	1	1	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	0	0	0	1	0	0	0	1	1
Nebraska:									
Omaha	1	1	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	1	0	0	0	0	0	0	0
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	0	1	0	0	0
Georgia:									
Atlanta	1	1	0	0	0	1	0	0	0
Savannah	1	0	0	0	0	0	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	1	0	0	0	0	0	0	
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	1	0	0	0	0	0	0	0	0
Louisiana:									
New Orleans	0	0	0	0	1	0	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	1	0	0	0	0	0
Texas:									
San Antonio	0	0	0	0	0	1	0	0	0
PACIFIC									
Oregon:									
Portland	1	0	0	0	0	0	0	0	0
California:									
Los Angeles	3	5	0	0	0	0	1	0	0
San Francisco	2	1	0	0	0	0	0	0	

The following table gives the rates per 100,000 population for 103 cities for the four-week period ended January 23, 1926, compared with those for a like period ended January 24, 1925. The population figures used in computing the rates are approximate estimates as of July 1, 1925 and 1926, respectively, authoritative figures for many of the cities not being available. The 103 cities reporting cases had an estimated aggregate population of nearly 30,000,000 in 1925 and nearly 30,500,000 in 1926. The 96 cities reporting deaths had more than 29,250,000 estimated population in 1925 and more than 29,750,000 in 1926. 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, December 27, 1925, to January 23, 1926—Annual rates per 100,000 population—Compared with rates for the corresponding period of 1924–25 [1]

DIPHTHERIA CASE RATES

	Week ended—							
	Jan. 3, 1925	Jan. 2, 1926	Jan. 10, 1925	Jan. 9, 1926	Jan. 17, 1925	Jan. 16, 1926	Jan. 24, 1925	Jan. 23, 1926
103 cities	149	129	145	170	167	145	159	[2] 143
New England	249	139	247	139	173	144	165	[3] 131
Middle Atlantic	140	124	130	182	187	151	174	[4] 139
East North Central	141	129	122	151	132	135	121	131
West North Central	171	154	139	283	247	253	193	206
South Atlantic	138	126	161	178	115	141	144	[5] 162
East South Central	84	109	110	52	84	67	74	73
West South Central	141	146	137	189	185	120	154	155
Mountain	102	109	231	182	148	127	231	155
Pacific	160	124	185	97	196	81	213	140

MEASLES CASE RATES

103 cities	150	601	207	1,146	188	973	204	[2] 1,368
New England	367	2,373	381	3,094	424	2,867	470	[3] 2,583
Middle Atlantic	120	550	168	995	157	845	186	[4] 1,145
East North Central	277	736	391	1,761	327	1,302	352	2,068
West North Central	10	59	18	148	12	127	26	156
South Atlantic	50	460	79	1,289	42	1,356	36	[5] 2,638
East South Central	16	104	26	52	42	239	68	285
West South Central	9	0	4	0	22	22	13	13
Mountain	111	82	129	55	259	91	240	118
Pacific	75	46	185	65	152	51	52	65

SCARLET FEVER CASE RATES

103 cities	284	221	307	270	344	285	356	[2] 290
New England	587	300	637	295	542	381	575	[3] 302
Middle Atlantic	285	166	323	210	292	237	325	[4] 223
East North Central	227	243	166	330	350	321	344	324
West North Central	549	493	733	580	731	548	780	669
South Atlantic	192	137	148	158	246	186	190	[5] 190
East South Central	158	99	210	119	168	140	168	202
West South Central	79	120	141	112	110	90	185	69
Mountain	157	246	370	237	518	319	296	373
Pacific	155	205	180	243	174	267	210	256

SMALLPOX CASE RATES

103 cities	41	23	55	33	56	47	68	[2] 36
New England	0	0	0	0	0	0	0	[3] 0
Middle Atlantic	3	1	3	0	10	2	6	[4] 0
East North Central	25	22	38	48	37	37	45	33
West North Central	125	18	213	65	187	51	175	36
South Atlantic	36	24	29	43	58	68	35	[5] 60
East South Central	341	73	362	47	200	57	620	47
West South Central	31	22	62	52	31	146	31	99
Mountain	46	36	28	36	55	18	92	27
Pacific	108	148	141	111	202	286	199	194

[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, 1925 and 1926, respectively.
[2] Barre, Vt., Pittsburgh, Pa., and Norfolk, Va., not included.
[3] Barre, Vt., not included.
[4] Pittsburgh, Pa., not included.
[5] Norfolk, Va., not included.

Summary of weekly reports from cities, December 27, 1925, to January 23, 1926—Annual rates per 100,000 population—Compared with rates for the corresponding period of 1924–25—Continued

TYPHOID FEVER CASE RATES

	Week ended—							
	Jan. 3, 1925	Jan. 2, 1926	Jan. 10, 1925	Jan. 9, 1926	Jan. 17, 1925	Jan. 16, 1926	Jan. 24, 1925	Jan. 23, 1926
103 cities	36	10	32	13	20	11	17	[2] 13
New England	24	7	14	31	24	2	19	[3] 9
Middle Atlantic	58	7	49	14	21	16	20	[4] 10
East North Central	26	6	13	11	22	8	10	3
West North Central	4	6	6	2	10	4	6	4
South Atlantic	38	11	52	9	19	8	12	[5] 8
East South Central	37	31	47	16	16	16	26	5
West South Central	35	47	66	22	66	13	40	151
Mountain	0	9	9	9	0	9	46	0
Pacific	11	8	25	11	6	13	14	16

INFLUENZA DEATH RATES

96 cities	18	15	20	21	21	23	21	[2] 20
New England	2	12	17	9	26	14	10	[3] 7
Middle Atlantic	21	10	20	18	18	16	20	[4] 15
East North Cenreal	9	8	15	12	14	11	17	8
West North Central	8	15	13	8	2	19	19	10
South Atlantic	25	19	33	15	42	23	21	[5] 42
East South Central	58	31	42	83	42	88	58	57
West South Central	48	43	39	47	82	80	87	94
Mountain	37	27	18	46	28	64	9	18
Pacific	11	39	18	57	11	46	11	39

PNEUMONIA DEATH RATES

96 cities	195	184	185	220	206	211	202	[2] 198
New England	168	210	117	246	151	208	208	[3] 209
Middle Atlantic	225	186	227	229	259	236	233	[4] 227
East North Central	155	142	143	176	143	153	132	139
West North Central	91	117	87	140	104	125	117	81
South Atlantic	232	261	232	289	271	276	242	[5] 300
East South Central	278	259	268	332	173	285	294	228
West South Central	324	312	247	335	426	354	343	312
Mountain	222	264	222	127	240	328	314	273
Pacific	167	135	164	220	145	167	185	185

[2] Barre, Vt., Pittsburgh, Pa., and Norfolk, Va., not included.
[3] Barre, Vt., not included.
[4] Pittsburgh, Pa., not included.
[5] Norfolk, Va., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1925 and 1926, 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	
			1925	1926	1925	1926
Total	103	96	29,944,996	30,473,129	29,251,658	29,764,201
New England	12	12	2,176,124	2,206,124	2,176,124	2,206,124
Middle Atlantic	10	10	10,346,970	10,476,970	10,346,970	10,476,970
East North Central	16	16	7,481,656	7,655,436	7,481,656	7,655,436
West North Central	14	11	2,594,962	2,634,662	2,461,380	2,499,036
South Atlantic	21	21	2,716,070	2,776,070	2,716,070	2,776,070
East South Central	7	7	993,103	1,004,953	993,103	1,004,953
West South Central	8	6	1,184,057	1,212,057	1,078,198	1,103,695
Mountain	9	9	563,912	572,773	563,912	572,773
Pacific	6	4	1,888,142	1,934,084	1,434,245	1,469,144

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended January 9, 1926.—The following report for the week ended January 9, 1926, was transmitted by the Far Eastern Bureau of the health section of the League of Nations' secretariat, located at Singapore, to the headquarters at Geneva:

Port	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Calcutta	-------	0	-------	23	18	10
Bombay	-------	2	-------	0	15	9
Madras	-------	0	-------	16	7	4
Rangoon	-------	3	-------	0	7	0
Karachi	-------	0	-------	0	3	2
Negapatam	-------	0	-------	4	0	0
Colombo	0	0	0	0	2	0
Basra	0	0	0	0	8	5
Singapore	2	2	0	0	0	0
Port Swettenham	0	0	0	0	0	0
Penang	0	0	0	0	0	0
Batavia	0	0	0	0	0	0
Soerabaya	0	0	0	0	2	2
Samarang	0	0	0	0	0	0
Belawan Deli	0	0	0	0	0	0
Padang (Sumatra)	0	0	0	0	0	0
Sabang (Rhio)	0	0	0	0	0	0
Macassar	1	1	0	0	0	0
Pontianak (Borneo)	0	0	0	0	0	0
Sandakan (North Borneo)	0	0	0	0	0	0
Manila	0	0	1	1	0	0
Zamboanga	0	0	0	0	0	0
Bangkok	1	0	36	30	2	1
Saigon and Cholon	0	0	0	1	0	0
Hong Kong	0	0	0	0	1	0
Shanghai	0	0	0	0	----	18
Amoy	0	0	0	0	0	0
Nagasaki	0	0	0	0	0	0
Yokohama	0	0	0	0	0	0
Simonoseki	0	0	0	0	0	0
Moji	0	0	0	0	0	0
Kobe	0	0	0	0	0	0
Osaka	0	0	0	0	0	0
Keelung	0	0	0	0	0	0
Fusan	0	0	0	0	0	0
Dairen	0	0	0	0	9	0
Adelaide	0	0	0	0	0	0
Brisbane	0	0	0	0	0	0
Fremantle	0	0	0	0	0	0
Melbourne	0	0	0	0	0	0
Sydney	0	0	0	0	0	0
Rockhampton	0	0	0	0	0	0
Townsville	0	0	0	0	0	0
Port Darwin	0	0	0	0	0	0
Broome	0	0	0	0	0	0
Port Moresby	0	0	0	0	0	0
New Zealand	0	0	0	0	0	0
Honolulu	0	0	0	0	0	0
Suez	0	0	0	0	0	0
Alexandria	0	0	0	0	0	0
Port Said	0	0	0	0	0	0
Mombasa (Kenya)	0	0	0	0	0	0
Massowah	0	0	0	0	0	0
Djibuti	0	0	0	0	0	0
Mozambique	0	0	0	0	0	0
Lourenco-Marques	0	0	0	0	0	0
Durban	0	0	0	0	0	0
East London	0	0	0	0	0	0
Port Elizabeth	0	0	0	0	0	0
Cape Town	0	0	0	0	0	0
Port Louis (Mauritius)	0	0	0	0	0	0
Seychelles	0	0	0	0	0	0

ARGENTINA

Plague in interior Provinces.—During the week ended January 30, 1926, six cases of plague were reported in the interior Provinces of Salta and Santa Fe, Argentina. The foci were isolated, and the ports were said to be free from the disease.

BRAZIL

Malaria mortality—Para.—During the week ended January 9, 1926, six deaths from malaria were reported at Para, Brazil.

CANADA

Communicable diseases—Week ended January 23, 1926.—The Canadian Ministry of Health reports certain communicable diseases in seven Provinces of Canada for the week ended January 23, 1926, as follows:

	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever						1		1
Poliomyelitis					1			1
Smallpox				31	3	10	15	59
Typhoid fever		3	3	11	1	48		66

CZECHOSLOVAKIA

Communicable diseases—July–September, 1925.—During the period July 1 to September 30, 1925, communicable diseases were notified in Czechoslovakia as follows:

Disease	Cases	Deaths	Provinces showing greatest number of cases and deaths
Anthrax	23		Slovakia: Cases, 11.
Cerebrospinal meningitis	25	10	Bohemia: Cases, 8; deaths, 4.
Diphtheria	805	56	Bohemia: Cases, 422; deaths, 37.
Dysentery	400	48	Slovakia: Cases, 184; deaths, 23.
Malaria	76		Russinia: Cases, 70.
Paratyphoid fever A	2		Bohemia.
Paratyphoid fever B	28		Bohemia.
Rabies	5		Bohemia.
Scarlet fever	2,566	60	Bohemia: Cases, 1,614; deaths, 6.
Trachoma	760		Slovakia: Cases, 371.
Typhoid fever	2,295	137	Moravia: Cases, 754; deaths, 54.
Typhus fever	3		Russinia.

Population, 13,611,349.

ECUADOR

Plague—January 1–15, 1926.—During the period January 1 to 15, 1926, plague was reported in Ecuador as follows: Eloy Alfaro, one case; Guayaquil, cases, 15; deaths, 5; Recreo (country estate), one case.

Plague-infected rats—Guayaquil.—During the period under report, of 11,864 rats taken, 80 rats were found plague infected.

IRELAND

Typhus fever—Cork—Galway.—Under date of January 8, 1926, five cases of typhus fever were reported present in hospital at Cork, Ireland. Two cases were reported discharged from hospital during the previous week. The localities in which the cases occurred were not stated. Previous occurrence of typhus fever in Ireland has been reported as follows: October 17, 1925—one case in County Galway; November 14, 1925—one case at Dunmanway, County Cork.

MEXICO

Influenza mortality—Vera Cruz—January 10–16, 1926.—During the week ended January 16, 1926, 10 deaths from influenza were reported at Vera Cruz, Mexico, in a total of 69 deaths from all causes reported. Population, 1922—57,000.

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

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended February 12, 1926 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
India				Nov. 22–28, 1925: Cases, 2,259; deaths, 1,385.
Siam:				
Bangkok	Dec. 13–19	48	29	

PLAGUE

Argentina				Jan. 24–30, 1926: Cases, 6. Occurring in interior Provinces of Salta and Santa Fe.
Ecuador:				
Eloy Alfaro	Jan 1–15	1		
Guayaquil	do	15	5	Rats taken, 11,864; found infected, 80.
Recreo (country estate)	do	1		
India				Nov. 22–28, 1926: Cases, 1,480; deaths, 1,088.
Iraq:				
Bagdad	Dec. 13–26	4	1	
Java:				
Batavia	Dec. 5–18	63	60	Province.
Cheribon	Nov. 15–28		59	
Pekalongan	Nov. 8–28		80	
Soerabaya	Nov. 29–Dec. 5	1	1	
Tegal	Nov. 8–28		14	
Straits Settlements:				
Singapore	Nov. 22–Dec. 5	3	3	

[1] From medical officers of the Public Health Service, American consuls, and other sources.

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

Reports Received During Week Ended February 12, 1926—Continued

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Brazil:				
Rio de Janeiro	Dec. 6-26	65	26	
British South Africa:				
Southern Rhodesia	Dec. 17-23	1		
Canada				Jan. 17-23, 1926: Cases, 59.
Alberta	Jan. 17-23	15		
Manitoba	do	3		
Winnipeg	Jan. 24-30	1		
Ontario	Jan. 17-23	31		
Toronto	do	1		
Saskatchewan	do	10		
China:				
Chungking	Dec. 13-19			Present.
Foochow	Dec. 6-26			Do.
Manchuria—				
Dairen	Dec. 7-20	27	5	
Shanghai	Dec. 20-26	7	6	Cases, foreign; deaths, native and foreign.
Do	Dec. 27-Jan. 2	7	5	Do.
Tientsin	Dec. 13-19	1		Reported by British municipality.
Egypt:				
Alexandria	Dec. 17-31	4	1	
Great Britain:				
England and Wales—				
Sheffield	Dec. 20-26	3		
Do	Dec. 27-Jan. 9	2		
India				Nov. 22-28, 1925: Cases, 1,892; deaths, 431.
Bombay	Dec. 13-19	3	2	
Iraq:				
Bagdad	Dec. 13-26	6	2	
Java:				
Batavia	Dec. 12-18	1		Province. City, Nov. 15-21, 1925: 1 case.
Cheribon	Nov. 8-14	1		
Pekalongan	Oct. 25-31	1		
Soerabaya	Nov. 29-Dec. 5	73	14	
Mexico:				
Aguascalientes	Jan. 17-23		1	
Guadalajara	Jan. 19-25		2	
San Luis Potosi	Jan. 17-23		3	
Persia:				
Teheran	Aug. 23-Sept. 22		135	
Portugal:				
Lisbon	Dec. 7-27		29	
Switzerland:				
Zurich	Dec. 27-Jan. 2	1		

TYPHUS FEVER

Chile:				
Valparaiso	Dec. 27-Jan. 2		1	
China:				
Manchuria—				
Harbin	Dec. 17-23	1		
Ireland:				
Cork County—				
Cork	Dec. 26-Jan. 1	2		Discharged from hospital.
Do	Jan. 2-8	5		In hospital. Places of origin not stated.
Dunmanway	Nov. 14	1		
Galway County	Oct. 17	1		
Palestine:				
Gaza	Dec. 18	1		

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

Reports Received from December 26, 1925, to February 5, 1926 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
India				Oct. 18–Nov. 21, 1925: Cases, 8,732; deaths, 5,113.
Calcutta	Nov. 1–28	101	89	
Do	Dec. 6–12	23	30	
Madras	Nov. 15–Dec. 26	146	57	
Rangoon	Nov. 8–Dec. 5	4	4	
Indo-China				September, 1925: Cases, 9; deaths, 5. September, 1924: Cases, 7; deaths, 4. (European cases, 2.)
Province—				
Annam	Sept. 1–30	2	2	September, 1924: None.
Cochin China	do	5	3	September, 1924: 1 case; 1 death.
Tonkin	do	2		September, 1924: None.
Japan	Aug. 30–Oct. 17	409		
Philippine Islands:				
Manila	Nov. 9–Dec. 5	8	6	
Do	Dec. 14–26	5	2	
Provinces—				
Bataan	Nov. 30–Dec. 13	10	8	
Bulacan	Oct. 18–Nov. 7	92	64	
Do	Nov. 23–Dec. 13	179	69	
Laguna	do	16	13	
Nueva Ecija	do	6	2	
Pampanga	Nov. 1–7	1	1	
Do	Nov. 23–Dec. 13	80	56	
Rizal	Sept. 27–Nov. 21	75	21	
Romblon	Dec. 7–13	23	12	
Russia	May–June	7		
Do	July–Aug	4		
Siam:				
Bangkok	Oct. 4–Nov. 14	108	68	
Do	Nov. 22–Dec. 12	161	88	
On vessel:				
Steamship	Oct. 3	9		Arrived at Bangkok, Siam; 9 cases in coolie passengers.

PLAGUE

Brazil:				
Bahia	Nov. 8–14	2		
Santos	Dec. 8–21		2	
British East Africa:				
Kenya—				
Kisumu	Nov. 22–Dec. 5	1	2	
Uganda Protectorate	September	103	85	
Canary Islands:				
La Laguna	Dec. 24	3	2	
Las Palmas	do	1		
Santa Cruz de Teneriffe	Dec. 18–27	3		
Ceylon:				
Colombo	Nov. 15–28	3	3	
Do	Nov. 29–Dec. 5			1 plague rodent.
China:				
Nanking	Nov. 15–Jan. 2			Prevalent.
Ecuador:				
Guayaquil	Nov. 1–Dec. 31	31	12	Rats taken, Nov. 1–Dec. 31, 1925: 49,370; rats found infected, 281.
Egypt				Jan. 1–Dec. 9, 1925: Cases, 138.
Beni Suef	Nov. 18	1	1	Corresponding period, 1924: Cases, 365.
Fayoum Province	Dec. 3–9	1	1	
Greece:				
Athens	Nov. 1–30	18	4	Including Piræus.
Patras	Nov. 13–Dec. 12	4	1	
India				Oct. 18–Nov. 21, 1925: Cases, 5,940; deaths, 3,943.
Bombay	Dec. 6–12	1	1	
Calcutta	do	1	1	
Karachi	Nov. 1–Dec. 19	4	3	
Madras	Oct. 25–Nov. 7	75	41	
Do	Nov. 15–21	35	22	
Rangoon	Oct. 25–Dec. 12	19	12	
Indo-China				September, 1925: Cases, 17; deaths, 16. September, 1924: Cases, fatal, 12.
Province—				
Cambodia	Sept. 1–30	11	11	September, 1924: Cases, 9; deaths, 9.
Cochin China	do	6	5	September, 1924: 1 case, 1 death.

[1] From medical officers of the Public Health Service, American consuls, and other sources.

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

Reports Received from December 26, 1925, to February 5, 1926—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Java:				
Batavia	Oct. 24–Nov. 6	94	89	Province.
Do	Nov. 14–Dec. 4	169	159	
Cheribon	Sept. 27–Oct. 17		166	
Djokjakarta	Oct. 20–Nov. 9			Epidemic in one locality.
Kediri	Dec. 7			Do.
Pekalongan	Sept. 27–Oct. 17		42	
Rembang	Oct. 20			Do.
Soerabaya	Oct. 11–Nov. 28	36	36	
Tegal	Sept. 27–Oct. 17	6	6	
Madagascar:				
Province—				
Itasy	Sept. 16–Oct. 31	20	20	
Moramanga	do	17	17	
Tananarive	do	174	159	
Town—				
Fort Dauphin	Sept. 16–Oct. 15	5	2	
Tamatave (port)	Sept. 16–30	3	2	
Do	Oct. 16–31	4	4	
Tananarive	Sept. 16–30	2	2	
Mauritius Island	Sept. 20–Nov. 14	9	9	
Nigeria	August–September	349	267	
Peru:				
Huacho	Jan. 26	15		Port 60 miles north of Callao.
Russia	May–June	67		
Do	July–August	139		
Senegal	September–October.	45	25	
Siam	Aug. 23–Oct. 13	50	40	
Bangkok	Nov. 15–28	3	3	
Straits Settlements:				
Singapore	Nov. 1–21	5	5	
Syria:				
Beirut	Nov. 11–20	1		
Union of South Africa:				
Cape Province—				
Middleburg district	Dec. 6–12	1		European.
Steynsburg district	Nov. 15–21	1		Native. On farm.
Orange Free State—				
Boshof district	Nov. 29–Dec. 5	1	1	In native.
Bothaville district	Dec. 6–12	1	1	Native. On farm.

SMALLPOX

Algeria:				
Algiers	Nov. 21–Dec. 20	109		
Arabia:				
Aden	Nov. 29–Dec. 5	1		Imported.
Argentina:				
Rosario	October		1	
Australia:				
Queensland—				
Brisbane	Dec. 9–15	1		
Brazil:				
Rio de Janeiro	Nov. 1–28	134	72	
British East Africa:				
Kenya—				
Mombasa	Nov. 15–Dec. 12	14	5	
Uganda Protectorate	Sept. 1–30	7	4	
British South Africa:				
Southern Rhodesia	Nov. 13–Dec. 10	2		
Canada				Sept. 13–Jan. 2: In 7 Provinces, 186 cases.
Alberta	Jan. 10–16	2		
Calgary	Dec. 13–19	1		From Drumheller, vicinity of Calgary.
British Columbia—				
Vancouver	Jan. 4–10	1		
Manitoba	Jan. 3–9	14		
Winnipeg	do	2		
Do	Jan. 3–23	7		
New Brunswick—				
Northumberland	Dec. 6–13	1		

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

Reports Received from December 26, 1925, to February 5, 1926—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada—Continued.				
Ontario				December, 1925: Cases, 32; deaths, 1. Occurring in 15 localities. January 3-16, 1926: Cases, 35.
Ottawa	Dec. 6-12	2		
Do	Jan. 3-9	1		
Toronto	Dec. 27-Jan. 2	1		
Do	Jan. 3-16	20		
Saskatchewan	do	5		
Moose Jaw	do	2		
Ceylon:				
Colombo	Dec. 6-12	1		Port case.
China:				
Amoy	Oct. 25-Dec. 19		1	
Antung	Dec. 7-20	2		
Chungking	Nov. 15-Dec. 26			Present.
Foochow	Nov. 1-21			Do.
Hankow	Nov. 14-Dec. 26	4		
Hongkong	Nov. 22-28	3		
Manchuria—				
An-shan	Dec. 6-12	1		
Dairen	Oct. 19-Dec. 6	40	10	
Mukden	Oct. 24-Nov. 15	1		
Tieh-ling	do	2		
Nanking	Nov. 21-Dec. 26			Do.
Do	Dec. 27-Jan. 2			Do.
Shanghai	Oct. 25-Dec. 19	23	25	
Swatow	Nov. 22-Dec. 5			Do.
Tientsin	Nov. 1-7	1		
Egypt:				
Alexandria	Dec. 3-9	1	1	
France				September, October, 1925: Cases, 91.
Gold Coast	September, 1925	14	4	
Great Britain:				
England and Wales	Nov. 15-Dec. 26	790		
Do	Dec. 27-Jan. 2	203		
Hull	Dec. 27-Jan. 9	14		
Newcastle-on-Tyne	Nov. 29-Dec. 19	6		
Do	Dec. 27-Jan. 2	1		
Nottingham	Dec. 13-26	5		
Sheffield	Nov. 22-Dec. 12	7		
Greece				Oct. 1-31, 1925: Cases, 16.
Athens	Nov. 1-30	17	1	
India				Oct. 18-Nov. 21, 1925: Cases, 6,935; deaths, 1,484.
Bombay	Nov. 8-Dec. 12	19	14	
Calcutta	Nov. 29-Dec. 12	29	18	
Karachi	Nov. 1-21	23		
Do	Nov. 29-Dec. 5	4	2	
Do	Dec. 13-19	3		
Madras	Nov. 15-Dec. 26	17	5	
Rangoon	Oct. 25-Nov. 28	3		
Do	Dec. 6-12	2	1	
Indo-China				September, 1925: Cases, 122; deaths, 33. September, 1924: Cases, 78; deaths, 22.
Province—				
Annam	Sept. 1-30	47	9	September, 1924: Cases, 8; deaths, 2.
Cambodia	do	29	8	September, 1924: Cases, 16; deaths, 1.
Cochin China	do	28	16	September, 1924: Cases, 43; deaths, 19.
Tonkin	do	18		September, 1924: Cases, 11.
Iraq				Sept. 6-Oct. 17, 1925: Cases, 81; deaths, 40
Bagdad	Nov. 1-14	4	4	
Do	Nov. 22-Dec. 5	9	9	
Italy				Aug. 2-Oct. 31, 1925: Cases, 38.
Rome	Oct. 12-25	1		
Jamaica				Nov. 27-Dec. 26, 1925: Cases, 52.
Kingston	Nov. 27-Dec. 26	43		Reported as alastrim.
Japan:				
Taiwan	Nov. 11-Dec. 10	3		
Yokohama	Dec. 14-20	1		
Java:				
Batavia	Oct. 24-30	1		
Do	Nov. 14-27	5		Province and city.
Kraksaan	Oct. 11-17	11		
Malang	do	2		
North Bantam	Oct. 4-17	4		

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

Reports Received from December 26, 1925, to February 5, 1926—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Java—Continued.				
Probolingo	Oct. 11-17	1		
Soerabaya	Oct. 11-Nov. 28	394	54	
South Bantam	Oct. 11-17	1		
Tegal	Oct. 4-10	9	1	
Malta	November	14		
Mexico				July-September, 1925: Deaths, 1,157.
Aguascalientes	Dec. 13-Jan. 2	4	3	
Do	Jan. 6-16		3	
Durango	Dec. 1-31		1	
Guadalajara	Dec. 29-Jan. 18		4	
Mexico City	Nov. 28-Dec. 5	1		Including municipalities in Federal district.
Do	Jan. 3-9	1		
Torreon	Nov. 1-Dec. 31		51	
Nigeria	August-September.	103	1	
Persia:				
Teheran	July 23-Aug. 23		68	
Peru:				
Arequipa	Oct. 1-31		1	
Poland				Nov. 1-7, 1925: Cases, 8.
Portugal:				
Lisbon	Oct. 4-31	124		
Do	Nov. 16-Dec. 6		31	
Do	Nov. 14-Dec. 19	179		
Oporto	Nov. 22-Dec. 19	2	3	
Do	Dec. 27-Jan. 2	1		
Russia				May-June, 1925: Cases, 2,333. Later than previously published reports.
Do	July-August	760		
Siam				July 12-Sept. 5, 1925: Cases, 21; deaths, 6.
Spain:				
Madrid	Year 1925		18	
Malaga	Nov. 29-Dec. 5		2	
Do	Dec. 27-Jan. 2		1	
Valencia	Dec. 20-26	1		
Do	Dec. 27-Jan. 2	1		
Switzerland				June 28-Nov. 21, 1925: Cases, 62.
Lucerne	Oct. 1-Nov. 30	8		
Tunisia:				
Tunis	Nov. 21-30	2		
Do	Dec. 11-31	10	1	
Do	Jan. 1-10	1		
Union of South Africa:				
Transvaal—				
Pretoria District	Dec. 6-12			Outbreaks. In native compound.

TYPHUS FEVER

Algeria:				
Algiers	October-Dec. 20	4		
Argentina:				
Rosario	Oct. 13-1	1		
Bulgaria	September-October.	26	2	
Chile:				
Valparaiso	Nov. 29-Dec. 5		1	
China:				
Antung	Nov. 29-Dec. 27	5	1	
Czechoslovakia	October, 1925	8		
Egypt:				
Port Said	Nov. 19-25	1		
Finland				October, 1925: One case.
France	July-October	4		
Germany	Oct. 25-31	1		
Greece:				
Athens	Nov. 1-30	11	2	
Latvia	October, 1925	2		
Lithuania				September-October, 1925: Cases, 9; deaths, 1.

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

Reports Received from December 26, 1925, to February 5, 1926—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Mexico				July–September, 1925: Deaths, 90.
Aguascalientes	Dec. 14–19	1		
Durango	Dec. 1–31		1	
Guadalajara	Dec. 8–Jan. 4		3	
Mexico City	Nov. 22–Jan. 9	165		Including municipalities in Federal district.
Tampico	Dec. 21–Jan. 10	1	1	
Torreon	November, 1925		1	
Morocco	August, 1925	3		
Palestine:				
Jaffa	Dec. 1–7	1		
Nazareth	Nov. 3–9	1		
Safad	Nov. 24–30	1		
Tel-Aviv	do	1		
Peru:				
Arequipa	October, 1925		2	
Poland	Oct. 11–Nov. 14	142	16	
Rumania				July, 1925: Cases, 74; deaths, 9.
Russia				May–June, 1925: Cases, 10,680. Later than previously published reports.
Do				July–August, 1925: Cases, 3,136.
Union of South Africa				Oct. 1–31, 1925: Cases, 88; deaths, 7 (colored); cases, 7 (European population).
Cape Province	Oct. 1–31	63	5	Colored.
Do	Nov. 8–14			Outbreaks in two districts.
Middleburg District	Dec. 6–12	1		European. On farm.
Natal	Oct. 1–Dec. 5	1		
Orange Free State	Nov. 29–Dec. 5	23	1	
Do	Nov. 1–7			Outbreaks.
Bethulia District	Dec. 6–12			Do.
Bothaville District	do	1		Native. On farm.
Transvaal	Oct. 1–31	1	1	

YELLOW FEVER

Gold Coast	September	1	1	
Nigeria	August–September.	2	1	

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