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STUDIES ON THE INDUSTRIAL DUST PROBLEM

III. COMPARATIVE FIELD STUDIES OF THE PALMER APPARATUS, THE KONIMETER, AND THE IMPINGER METHODS FOR SAMPLING AERIAL DUST

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Many different methods have been devised and used for the sampling and estimation of atmospheric dust. These methods were reviewed in the previous paper of this series (1). In that paper also the advantages and disadvantages of each of the methods were pointed out, as well as the general requirements of the ideal dust sampling instrument for industrial atmospheres. In order to be of most value, the sampling method should yield counts of the number of dust particles and should, in addition, possess high dust catching efficiency.

Numerous attempts have been made to determine the efficiency of dust-sampling instruments. In general this has been done by one of three methods. The earliest of these consists in feeding a known weight of dust to the dust-sampling instrument in the stream of incoming air and then determining the weight of dust retained by the instrument. In the second method the instruments being tested are placed in the given dusty atmosphere which they sample simultaneously. The results obtained by the instruments may then be compared, the instrument giving the greatest yield being considered the most efficient. The last method, based on the Tyndall effect, makes use of an apparatus by means of which the stream of dusty air entering the sampling instrument may be compared optically with the stream of air emerging from the instrument. By means of suitably arranged flow meters and mixing devices it is possible to determine the amount of dust-free air that it is necessary to add to a portion of the entering dusty air in order to make both streams match in intensity when viewed simultaneously in a beam of light.

The first of these three methods yields results which are open to some degree of question. It is obvious that this method gives the instrument a decided advantage over actual field conditions. The second method yields only comparative efficiency ratings, but by its use the most efficient instrument may be selected, and under actual field conditions such as the instrument must meet in continued use. The last method is the only one by which the actual efficiency may be obtained. It is true, however, that this method imposes a very severe set of conditions on the instruments tested. It is our feeling that this last method yields results of interest and value, but that the second method is of most value in the selection of an instrument for the field sampling of industrial dusts.

SUMMARY OF PREVIOUS COMPARATIVE DUST-INSTRUMENT STUDIES

The first comparative study which demands our attention was made by Palmer, Coleman, and Ward (2). These authors made simultaneous samplings with the sugar tube, the Palmer apparatus, and the Graham Rogers plate in the hat-fur, burlap-bag, rag-sorting, and pearl-button industries. They found the Palmer apparatus to be 71 per cent as efficient as the sugar tube in sampling these dusts. In the earlier of their studies these workers made no correction for the dust content of the sugar used in the sugar tube; but later the importance of this source of error, due to its size and variability, became apparent. Applying a correction for this, they found that in two cases their results were still valid, and in both of these the water-spray apparatus secured more dust than the sugar tube. The authors conclude that the water-spray apparatus is as efficient for practical purposes as the sugar tube.

In 1919 Bill published a paper (3) describing his studies on the electrostatic method of dust sampling, and reported the results of comparative studies of this method and the Palmer method. Bill concluded that the Palmer method on the count basis had an efficiency of 60 per cent, and on the weight basis an efficiency of 63 per cent, as compared with the electrostatic method. These tests were conducted in a large series of workrooms and hence may be considered as definitely applicable to the problem at hand.

Katz, Longfellow, and Fieldner (4) published an interesting contribution in which they determined the efficiency of the Palmer apparatus by two different methods. The first method used by these workers was the dust-machine method based on the Tyndall effect. Two test dusts were used—tobacco smoke and finely divided silica dust. The second method was a gravimetric method. In this case the air, after passing through the Palmer bulb, was passed through an electric precipitator having an efficiency of 70 per cent. The weight of the dust in the Palmer bulb was determined by filtering the sampling fluid through filter paper, the weight of the dust which escaped in the filtrate being estimated by turbidity standards. As a result of these tests the investigators found the efficiency of the Palmer method to be less than 13 per cent determined optically, using tobacco smoke as the test dust, and 30 per cent determined in the same manner, using a suspension of fine silica dust, whereas on a gravimetric basis the efficiency was found to be 45 per cent. Space does not permit too detailed a discussion of the methods used and the results obtained by these workers. Suffice it to say that an optical method in which finely divided silica dust or tobacco smoke is used is a very severe test for any dust-sampling instrument, and must be interpreted with great caution, for such finely divided dusts as these are not usually encountered in industry at large. Concerning the gravimetric method used by Katz and his colleagues, it is to be pointed out that the duration of these tests was only one minute; that an electric precipitator of low efficiency was used which necessitated dubious corrections, and moreover, only a portion of the dusty air was passed through the precipitator, and lastly, that dust even if of a size up to 2 microns was estimated by a turbidity method.

In 1921 Katz and Trostel (5) made comparative tests on the efficiency of the Hill dust counter, the konimeter, and the sugar tube in the granite-cutting industry. They found the sugar tube to yield 83 times the amount of dust obtained by using the Hill dust counter and 6.7 the amount indicated by the use of the konimeter. The Hill dust counter and the konimeter are the same in principle, and there is no doubt that the efficiency of the konimeter is considerably higher than that of the Hill apparatus. Moreover, the konimeter is smaller, and takes 29 samples on one slide, as contrasted with one sample in the case of the Hill counter. The konimeter is obviously the instrument of choice here, and we may therefore confine our statements to that instrument.

That the air of granite-cutting plants is highly charged with dust there is no doubt, for from the figures quoted in the paper above referred to (5) it is seen that there are, roughly speaking, more than 50,000,000 particles of dust per cubic foot of air, or, roughly, 2,000 particles per cubic centimeter. We have found in using the konimeter that when the air which is sampled contains too great a quantity of dust the particles begin to pile up on each other so that they can not be counted with any degree of accuracy; in fact, in many cases the number of particles can not be estimated. It is apparent, then, that the numbers reported are so far below the actual quantity of dust in the konimeter sample that these so-called counts must be interpreted with great caution. It is fair to say that no ratio of sugar tube to konimeter counts should ever have been put forward on a basis of this study without some reservation. This does, however, demonstrate very clearly one of the deficiencies of the konimeter method which will be discussed in the later pages of this paper.

Smyth and Iszard (6) agree that the optical method, although the best absolute test of complete removal of particulate matter, is too severe a test of the practical hygienic efficiency of a dust-sampling apparatus; and they further point out that both Bill and Katz sampled air at 4 cubic feet per minute, whereas the Palmer method is most efficient when operating at 5 cubic feet per minute. They estimate that at this rate of operation the Palmer apparatus should have an efficiency of almost 82 per cent by weight, as compared with the Bill electrostatic apparatus (at 100 per cent).

The most intensive study of the efficiency of the sugar tube, though not a comparative study, was made by Fieldner, Katz, and Longfellow (7), who tested the sugar tube by means of the dust machine and Tyndall effect described earlier, using tobacco smoke and silica dust as the test medium. When tested in this manner against tobacco smoke, they found the efficiency to be 34 per cent. When silica dust was used, the efficiency was found to be about 75 per cent. And lastly, when silica dust was used and the determination made gravimetrically by weighing the dust caught by the sugar tube and the dust escaping in the outgoing air, the efficiency was found to be 87 per cent.

Winslow and Jordan (8) tested the comparative efficiency of the konimeter and Palmer method in certain industrial establishments. The tests were made in atmospheres ranging from those containing very small amounts of dust to some in which the dust content was exceedingly high (sand-blasting). They found that the konimeter gave counts from 2 to 20 times those obtained with the Palmer method.

Recently the writer and a number of other workers reported a study (9) which had for its object the selection of an instrument to be used in studies on the quantitative aspects of industrial dusts. In this study comparative laboratory tests were made, using six instruments, namely, the sugar tube, Palmer apparatus, konimeter, impinger, the filter-paper thimble, and the dust determinator. The first four of these instruments yield samples of which counts of the number of dust particles may be made. The filter-paper thimble was tested because it was in use by one governmental department for the sampling of grain-elevator dusts, and the dust determinator was included in our tests in order to see whether the principle involved might be developed into a valuable instrument for dust determinations. It is not necessary to describe in detail the results obtained in this study. Briefly, our results indicated that by means of the dust determinator and the thimble it is impossible to obtain counts of the number of particles of dust present in a sample of the given atmosphere, and that the remaining four instruments in order of efficiency ranked as follows, the impinger and konimeter sharing honors for first place, the sugar-tube method next, and the Palmer method last.

These laboratory studies were made using various kinds of dust suspended in the atmosphere of an air-tight chamber, sampling with all of the instruments being done simultaneously, with the instruments grouped as closely as possible. We also attempted to simulate industrial conditions by using two concentrations of dust, a heavier and a lighter concentration. In spite of these efforts we realize that these tests are not really tests of the instruments under the industrial conditions which they must finally and in constant practice meet, and for this reason the studies presented here were undertaken.

INSTRUMENT INVESTIGATED IN THE PRESENT STUDY

As noted earlier, the four methods which yielded the best results in our laboratory studies were the impinger, the konimeter, the sugar tube, and the Palmer method.

The sugar-tube method possesses a relatively high efficiency as a dust-sampling instrument, but the method has one noteworthy deficiency, namely, all sugar contains certain quantities of impurities. In a study of the sugar-tube method previously referred to (7) the authors present a table (p. 26, Table 8) in which it is shown that the weight of the impurities in 100 grams of different lots of granulated sugar varies from 0.8 grams to 3.2 grams, and in our laboratory studies (9), using this method, we found the impurities in 100 grams of sugar to vary from 2.1 to 6.8 grams and to average 3.86 grams. Moreover, the dust count of the sugar was found to be highly variable. For instance, never did more than two control tubes contain the same weight of residual dust. This large and variable residual quantity of dust in sugar seriously militates against the use of the sugar-tube method of sampling dust in ordinary industrial establishments, such as grinding and polishing shops, as will be seen from a consideration of the following analysis. Assuming, for instance, that 15 cubic feet of air are sampled by means of the sugar tube and that the dust in the sugar itself averages 3.86 milligrams, we have then 0.257 milligram of dust per cubic foot of air sampled. In an earlier paper, Winslow and Greenburg (10) presented a summary of dust determination by various observers, and it will be found by reference to this paper (Table 10) that 0.257 milligram of dust per cubic foot of air is a greater quantity of dust than has been found by Miller and Smyth in a cigar shop (0.084), or by Palmer, Coleman, and Ward in a good pearl-button factory (0.0001), in a fur-hat factory (0.1025), in a marble-cutting establishment (0.0607), in an iron-grinding shop (0.1297), or by Winslow, Greenburg, and Angermyer in a good light-polishing shop (0.0181), or in a good heavy-polishing shop (0.030).

From the point of view of dust counts the sugar-tube control shows up in a similar manner. For instance, in column 3 of Table 4 of the paper previously referred to (9), it will be observed that the average number of dust particles counted without dilution is 102,000,000 in 100 grams of sugar. Assuming that 15 cubic feet of air are sampled, a very simple calculation indicates a control error corresponding to 240 particles per cubic centimeter of air. Reference to our industrial dust counts in a later portion of this paper (Table 1) shows that 240 particles is a number larger than was obtained uniformly in any shop except the sand-blast shop. Obviously it is fallacious to use a method which has a collecting medium possessing a greater quantity of dust than is likely to be obtained in sampling a representative quantity of air, and for this reason we have refrained from using the sugar-tube method in the field studies here reported. The present study is limited to a comparison of results obtained by using the Palmer method, the konimeter, and the impinger simultaneously for the sampling of industrial dusts.

DESCRIPTION OF INSTRUMENTS AND TECHNIQUE OF SAMPLING AND ANALYSIS

The Palmer apparatus consists of a small, electrically driven blower, the suction side of which is connected to the outlet of a pear-shaped glass bulb approximately 16 inches in length. At its lower end the glass bulb terminates in a U-shaped trap. This trap, in turn, is provided at its low point with a short glass drain tube closed by means of a piece of rubber tubing and a screw clamp. An air-flow meter of the pitot type is provided in the air circuit between the glass collecting bulb and the suction fan.

The complete equipment for the sampling of dust in air by this method consists of the Palmer apparatus and a sufficient number of small Erlenmeyer sample flasks (150 c. c. capacity) carefully graduated at 100 c. c. At the laboratory the flasks were cleaned with cleaning solution, washed with water, rinsed with distilled water, and then filled with distilled water of as low dust content as was possible to secure. The flasks were then stoppered with carefully washed rubber stoppers and capped with a piece of paper held in place by an elastic band.

The method of using the instrument in the field is comparatively simple. The apparatus was set up at the point at which samples were to be taken, the screw clamp on the outlet tube closed, and approximately 40 c. c. of distilled water added to the U-trap. The motor was then connected to the source of electric current and the power turned on. The rate of air sampling determined by observation of the pitot manometer was in all but one or two cases maintained at 4 cubic feet per minute. The air is drawn through the water in the trap, breaking the water into a spray in the larger portion of the sampling bulb. After a representative sample had been obtained, usually 60 cubic feet, but in some cases (very dusty atmospheres) a smaller quantity, and in others (outdoor country air) a larger quantity, usually 120 cubic feet, the power was shut off and the water was drained from the Palmer bulb to one of the Erlenmeyer sample flasks. The bulb was then rinsed with portions of water which were added to the original sample. Suitable controls were made of the distilled water used in sampling. These controls received the same laboratory treatment as the dust samples.

When the sample arrived at the laboratory it was thoroughly agitated and two 1 cubic centimeter portions were removed to Sedgwick-Rafter counting cells. These cells were scrupulously cleaned and in most cases were examined empty under the microscope to detect the presence of any adventitious dust. After allowing the cell contents to settle five counts were made on each cell, one at each corner and one in the center. The lens combination used in the microscope was No. 3 objective, a No. 3 eyepiece with an inserted eyepiece micrometer, and a microscope tube length of 166 millimeters. With this magnification, which is approximately 84 diameters, the length of the side of the smallest square ruled on the eyepiece micrometer was found to be 0.02 millimeter. In making the dust counts the particles were divided into two groups, those under and those over 10 μ in longest dimension. In order to convert the individual counts of particles into numbers per cubic centimeter, the proper conversion factor was applied. In all cases a correction was applied for the control analysis. In the microscopic examination this consisted in deducting from the results of the sample analysis the number of particles in each group as found in the control.

The foregoing is essentially the analytical procedure recommended for ordinary routine use in the final report of the Committee on Standard Methods for the Examination of Air, of the Laboratory Section of the American Public Health Association (11).

The Kotze konimeter is a small instrument capable of sampling the dust in 9 or 10 cubic centimeters of air. Essentially it consists of a circular brass chamber into which fits a glass plate cemented into a toothed frame of brass. Firmly attached to the brass chamber is a cylinder in which moves a spring-actuated piston, so arranged that on release of the piston spring, air is drawn out of the chamber. The only means of ingress of air to the chamber is through the impinging orifice, and the air enters here, striking the previously vaselined glass plate and leaving its dust thereon. After taking one spot the glass plate is revolved by means of the pinion gear and the instrument is ready for the next sample.

Before using the konimeter it is necessary to test out certain characteristics of the instrument, such as the velocity or impingement, the uniformity of piston travel, and the volume of air sampled.

This was done by the same methods used and reported by Winslow and Jordan (8) and need not be described in detail here.

The analysis of konimeter samples is exceedingly simple. The circular glass plate with the dust spots on it is removed from the konimeter and fitted into a special holder on the stage of the microscope. The holder is provided with a toothed pinion and is so arranged that after spot No. 1 is in focus it is only necessary to turn the pinion to bring the second and all subsequent spots into focus.

The microscope used in connection with the konimeter in our laboratory studies was provided with a 4x eyepiece and a 3 mm. objective, calibrated so that all determinations were made at a magnification of 100 diameters. An eyepiece micrometer, so ruled that two lines intersecting at the center of the field form sectors of 9°, was used for counting. On each side of these sectors the micrometer is crossed by two pairs of parallel lines separated by a distance equivalent to 5 and 10 microns, respectively, when used in the No. 4 eyepiece. The distance between these lines was used to estimate the size of the dust particles. In use this eyepiece micrometer was absolutely clean and free from dust. In this manner four, and, in some cases, five, 9° sectors were counted. The count thus obtained, multiplied by a proper constant and divided by the volume of air sampled, gives the number of particles per cubic centimeter of air sampled.

Mention was made earlier of the impinger dust-sampling apparatus devised by the writer and G. W. Smith (12). The essential portion of this apparatus consists of a glass flask provided with a two-hole rubber stopper. In one hole is fitted the impinging tube, the second hole serving to provide for the exhaust tube. The impinging tube is a glass tube about 20 cm. in length and 13 mm. in diameter and drawn down to an opening of 2.3 mm. Fastened to the impinging tube by means of a brass clamp is the impinger plate, a circular plate 25 cm. in diameter. This impinger plate is fastened and maintained 5 mm. below the end of the impinger tube. Three hundred cubic centimeters of carefully distilled water are placed in the flask, the water level being approximately 3 to 4 cm. above the bottom of the impinger tube. In this way the impinger plate and the orifice of the impinger tube are kept immersed in water. The remainder of the apparatus consists of a motor and positive pressure blower, the suction end of which is attached to the impinger exhaust tube. A flow meter is placed in the air circuit between the impinger flask and the suction apparatus.

The complete field equipment for sampling with the impinger consists of a number of 500 c. c., flat-bottom assay flasks carefully cleaned, graduated at 300 c. c., and filled to that point with dust-free distilled water. The flasks are closed by means of washed rubber stoppers capped with paper.

In the field the apparatus is placed in position and the stopper removed from one of the flasks. The two-hole stopper with its impinger tube is inserted in place and a connection made by means of a piece of rubber tubing to the suction apparatus. The electrical connections are then completed and sampling starts. The analytical procedure used by us for impinger samples is precisely the same as that for samples obtained with the Palmer apparatus, described previously.

Preparatory to sampling the atmosphere the Palmer apparatus and the impinger were set up as closely as possible together at the desired sampling place. In no case were the instruments separated by more than 6 inches. When all was ready sampling was started, and then the konimeter, held close to the other instruments, was released.

ATMOSPHERES STUDIED

The studies reported here were conducted in various atmospheres, ranging from outdoor country air during a rainstorm to the exceedingly dusty air of a sand-blasting cabinet. A large number of samples were obtained in a factory devoted to the manufacture of silverware.

Air samples covering periods of varying duration were taken. In the sand-blasting chamber the dust was so heavy that only 2-minute samples were taken, whereas in the outdoor country atmosphere we took 30-minute samples. Three konimeter samples were taken for each 15-minute Palmer sample and five for each 30-minute Palmer sample. In sampling outdoor atmospheres we used two "pops" of the konimeter for each sample, thus sampling 18–20 cubic centimeters of air, while in the sand-blast chamber we utilized stops in the konimeter in order to sample a smaller volume of air and in this manner obtain a less dense spot of dust.

RESULTS OF THE STUDY

In Table 1 we have tabulated the results of our field studies in order of the dustiness of the atmospheres sampled, ranging from outdoor country air to the air of a sand-blast cabinet. Under each instrument we have recorded the counts of particles over 10 microns in size as +10 microns, and those less than 10 microns in size as −10 microns. On the basis of the particles less than 10 microns we have computed the ratio of konimeter to Palmer counts, konimeter to impinger counts, and impinger to Palmer counts. These ratios appear in the last three columns of the table.

Based on dust content the atmospheres studied by us may be considered as of three general classes; namely, those atmospheres ranging from the lowest dust content (outdoor country air during a rainstorm) to and including ordinary dwelling rooms and workrooms not in use, atmosphere usually associated with the usual type of workroom, including polishing, grinding, and buffing shops, and, lastly, atmosphere of the highest dust content—that found in the sand-blasting shops. In all we have taken 100 samples, 18 in the first, 78 in the second, and 4 in the third type of atmosphere.

TABLE 1.—*Summary of results of field studies on comparative tests of dust-sampling instruments*

Sample No.	Sampling place	Particles per cubic centimeter						Ratio		
		Konimeter		Palmer		Impinger				
		+10	−10	+10	−10	+10	−10	K/P	K/I	I/P
37	Outdoor air during rainstorm.	0.1	3.0	0.1	0.8	0.1	12.6	3.7	0.24	15.4
38		.1	1.6	0	.1	0	10.3	16.0	.16	103.0
39		.3	1.8	0	.6	.1	14.4	3.0	.13	23.1
40		.2	.6	0	.6	.7	11.6	1.0	.01	100.0
51	Unused laboratory	.1	5.6	.1	1.3	0	14.8	4.3	.38	11.3
52		.3	3.8	.1	1.2	1.1	8.5	3.2	.45	7.1
53		.3	8.0	.1	1.4	1.5	10.8	5.7	.74	7.7
54		.1	5.0	.1	1.7	0	9.3	2.9	.54	5.4
45	City house	.6	25.8	.4	4.1	1.5	14.6	6.3	1.80	3.5
46		.4	13.3	.2	2.6	.6	14.4	5.1	.93	3.5
47		.3	1.9	0	3.5	.2	12.1	.5	.16	3.1
48		.4	4.1	0	2.5	.8	22.4	1.6	.18	8.9
49		.5	17.9	.2	3.1	0	16.1	5.8	1.11	5.2
50		.3	11.1	0	2.6	.2	21.8	4.3	.51	8.4
35	Unused machine shop	.5	8.1	0	.8	1.4	23.0	10.1	.35	28.9
36		.2	14.4	.1	.6	0	33.4	24.0	.43	55.8
29	Ordinary workroom—No dusty processes in use.	.4	12.6	.1	1.8	.8	7.7	7.0	1.6	4.4
30		.2	11.1	.2	1.4	.6	7.9	7.9	1.4	5.6
31	Woodworking shop	2.3	30.3	3.3	12.8	10.4	37.6	2.4	.81	3.0
32		2.3	50.4	4.3	18.2	6.1	49.0	2.8	1.03	2.7
33		2.5	67.7	4.5	17.6	8.5	48.5	3.8	1.40	2.7
34		4.7	107.3	8.6	21.2	12.7	81.4	5.0	1.32	3.8
1	Grinding shop	1.1	149.6	.2	10.0	.5	106.2	15.0	1.40	10.7
2		.7	118.8	.1	13.8	.9	69.5	8.6	1.71	5.0
3		1.2	107.3	.2	19.0	0	114.0	5.7	.94	6.1
4		.7	91.0	.4	12.9	.5	92.6	7.1	.98	7.2
9	do	1.7	195.4	.3	36.2	.5	105.0	5.4	1.86	2.9
10		1.2	185.0	.5	24.7	.9	127.0	7.5	1.45	5.2
11		1.1	160.8	0	13.6	.9	41.9	11.8	3.84	3.1
12		1.1	318.0	.3	29.1	2.8	85.5	10.9	3.72	2.9
13		2.1	292.0	.8	29.4	.9	99.3	9.9	2.95	3.4
14		2.0	298.5	.8	21.0	0	123.0	14.2	2.42	5.9
15	Grinding shop—Knife handles.	.9	182.8	1.8	41.1	.9	72.0	4.4	2.54	1.7
16		.9	89.6	.4	47.9	2.4	149.3	1.9	.60	3.2
17		1.1	193.0	3.5	45.8	3.8	109.5	4.2	1.76	2.4
18		.4	94.4	.8	14.8	.9	79.0	6.4	1.19	5.4
19		2.8	310.0	5.7	136.4	4.2	218.0	2.3	1.42	1.6
20		2.8	320.5	4.8	103.0	4.7	264.0	3.1	1.21	2.6
21	Grinding shop	.8	103.1	.6	6.2	2.4	108.0	16.6	.95	17.5
22		.5	37.8	.6	8.8	1.4	55.5	4.3	.68	6.3
23		.8	250.0	1.4	73.6	0	157.0	3.4	1.59	2.1
24		.9	480.0	3.6	209.0	.9	121.0	2.3	3.98	.58
25		.4	104.8	.8	57.3	.5	60.6	1.8	1.73	1.8
26		.6	114.0	.9	19.0	1.4	46.0	6.0	2.48	2.4
27		.5	180.5	14.0	244.0	17.0	765.0	.7	.24	2.9
28		2.9	421.0	12.7	521.0	24.0	914.0	.8	.46	1.7

TABLE 1.—*Summary of results of field studies on comparative tests of dust-sampling instruments*—Continued

Sample No.	Sampling place	Particles per cubic centimeter						Ratio		
		Konimeter		Palmer		Impinger				
		+10	−10	+10	−10	+10	−10	K/P	K/I	I/P
55	Hollow silverware sand-buffing	0.3	158.0	0.1	32.6	0.5	112.6	4.8	1.4	3.5
56		.6	59.0	.2	36.4	1.4	122.5	1.6	.5	3.4
57		1.0	266.0	.2	22.5	0	148.8	11.7	1.8	6.5
58		1.0	394.7	.1	30.3	.5	243.0	13.0	1.6	8.0
59		0	407.3	.3	42.1	.9	122.9	9.7	3.3	2.9
60		0	212.0	.6	42.2	0	110.7	5.0	1.9	2.6
61		3.0	241.7	------	------	0	97.5	------	2.5	------
62		1.0	128.3	.6	44.9	1.4	77.7	2.9	1.6	1.7
63		.7	119.0	.3	51.9	0	107.9	2.3	1.1	2.1
64		1.0	120.3	.6	40.6	0	101.3	3.0	1.2	2.5
65		1.0	36.0	.2	19.8	.5	123.9	1.9	.3	6.2
66		.7	127.3	.3	13.3	1.9	116.8	9.4	1.1	8.7
67		3.3	129.0	.2	16.1	.9	114.5	8.2	1.1	7.1
68		1.7	62.3	.5	9.2	1.9	63.1	6.6	1.0	6.7
69		1.0	140.0	.4	6.7	2.8	103.1	19.9	1.3	14.9
70		3.7	166.7	.1	8.5	2.8	62.2	19.8	2.6	7.6
71		2.0	249.3	.1	38.7	1.4	157.2	6.4	1.6	4.1
72		2.3	186.3	.5	32.8	2.1	99.4	5.7	1.9	3.0
73		1.0	158.0	.2	20.7	.9	123.8	7.6	1.3	6.0
74		1.0	172.0	.2	19.3	2.4	140.0	8.9	1.2	7.3
75		1.3	183.7	.5	23.0	3.2	144.0	7.9	1.3	6.3
76		1.0	115.3	.3	16.5	2.4	117.1	6.9	1.0	7.1
77	Hollow silverware machine buffing	1.0	100.0	.2	14.4	1.4	85.1	6.9	1.2	5.9
78		1.7	63.7	.1	10.8	.4	61.5	6.0	1.1	5.7
79		1.3	56.3	0	8.4	0	58.0	6.9	1.0	6.9
80		.7	44.3	0	8.2	.5	19.3	5.5	2.3	2.4
81		4.0	82.7	.4	6.5	.5	66.5	12.5	1.3	9.7
82		8.0	137.0	------	------	1.9	159.7	------	.9	------
83		.7	68.7	.3	17.5	2.4	91.0	3.9	.7	5.3
84		0	37.0	.3	12.8	.9	51.4	2.8	.7	4.0
85		0	52.7	.2	13.2	.5	77.2	3.9	.7	5.7
86		.3	116.7	.4	24.2	.5	68.4	4.8	1.7	2.8
87		.3	148.3	.2	10.0	.9	114.0	14.5	1.3	11.2
88		0	122.0	.1	13.1	.5	48.0	9.2	2.5	3.7
89	Tripoli buffing	1.0	120.3	.4	13.5	.5	58.5	8.8	2.1	4.2
90		1.0	65.7	.3	10.6	.9	42.8	6.1	1.5	4.0
91		1.3	89.7	.3	10.8	1.4	78.7	8.1	1.1	7.2
92		1.7	111.7	.9	28.5	0	46.2	3.8	2.4	1.6
93		1.0	124.3	.4	17.6	1.4	41.5	7.0	2.9	2.4
94		1.7	172.0	.4	9.6	0	91.0	17.2	1.9	9.1
95		2.0	204.3	.4	9.4	1.4	106.2	21.6	2.0	11.0
96		.7	96.7	.1	8.8	.9	59.8	10.9	1.6	6.8
97		.3	73.3	.2	6.5	0	46.6	11.0	1.6	7.0
98		2.3	85.0	.4	5.2	.5	41.5	15.5	2.1	7.7
99		0	111.3	.3	5.9	.7	41.3	18.0	2.7	6.9
100		3.0	135.3	.1	5.9	1.0	52.2	23.1	2.6	8.9
101	White-metal dust	.7	113.0	.7	27.8	1.9	88.5	4.0	1.3	3.2
102		.7	59.7	0	12.7	0	73.5	4.8	.8	5.8
103	Wood dust	2.7	68.0	2.8	44.0	1.9	68.3	1.5	1.0	1.5
104		2.0	155.7	3.1	38.9	6.6	106.8	3.8	1.4	2.7
41	Sand-blasting cabinet	50.5	838.0	303.0	7,790.0	1,175.0	41,200.0	.11	.02	5.3
42		61.4	674.0	303.0	10,520.0	882.0	41,800.0	.06	.02	4.0
43		102.0	1,330.0	942.0	16,720.0	3,180.0	258,000.0	.08	.01	15.4
44		79.2	1,520.0	1,360.0	43,200.0	4,240.0	204,000.0	.04	------	4.7

In Table 2 we have summarized the ratio figures presented in the last three columns of Table 1. Here are tabulated the minimum, maximum, and average ratio for each of the three types of atmospheres. From this table it is at once apparent that in atmospheres of low dust content the impinger yields the highest counts, averaging over 22 times as high as the Palmer and over 1.6 times that found by the konimeter (K/I = 0.62). In the second type of atmosphere, that found in the usual run of workshops where dusty processes are in use, the konimeter yields the highest counts, over 7.5 times that of the Palmer and somewhat over 1.5 times that obtained by the impinger. In the last type of atmosphere, that very highly charged with dust, the impinger ranks first, yielding counts 125 times the count obtained by the konimeter and 7.35 times that obtained with the Palmer method. It is of interest to note that the Palmer method yields higher counts than the konimeter in this highly charged atmosphere, the P/K ratio being 13.7; but in atmospheres of moderate dustiness the results reported here confirm the findings of Winslow and Jordan (8).

TABLE 2.—*Ratio of dust counts obtained with the Palmer, konimeter; and impinger apparatus*

Atmosphere		Ratio K/P	Ratio K/I	Ratio I/P
(1) Low dust content, outdoor and normal room air	Minimum	0.5	0.01	3.10
	Maximum	24.0	1.80	103.0
	Average	6.24	.62	22.36
(2) Dusty workshops, grinding, polishing, etc.	Minimum	.07	.24	.58
	Maximum	23.10	3.98	17.50
	Average	7.55	1.58	5.10
(3) Very dusty atmospheres, sand-blasting shop	Minimum	.06	.01	4.0
	Maximum	.11	.02	15.4
	Average	.073	.008	7.35

GENERAL CONCLUSIONS REGARDING DUST-SAMPLING INSTRUMENTS FOR USE IN INDUSTRIAL ATMOSPHERES

From our deliberations concerning each of these instruments and the studies here reported we are led to conclude that the sugar tube possesses little value for use in ordinary industrial environments because of its large and variable control errors. The Palmer apparatus is satisfactory on this score, but its efficiency is low and for that reason should be replaced by an instrument of higher efficiency. The two instruments possessing neither of these drawbacks are the konimeter and the impinger. The konimeter is small, portable, and very convenient for use. With it 29 samples may be taken on one slide, and, once taken, may be very rapidly analyzed. It is highly efficient for sampling dust in ordinary work places where the atmosphere is not too highly polluted. The objections to its use are that it takes an instantaneous sample of only 9 or 10 cubic centimeters of air, that a weight analysis is not available, and that it yields low results when used in very dusty atmospheres. The author recommends that a konimeter be used for studies of atmospheres of *low or medium dust content* where the desideratum is quickly to establish the conditions of the atmosphere. For plant engineers it is to be highly recommended. The impinger is highly efficient, samples a large volume of air, and has low control errors, and by using it both a weight and count of the dust may be secured. It is recommended for use in all intensive dust studies, no matter how high or low the dust concentration may be.

BIBLIOGRAPHY

(1) Greenburg, L.: Studies on the Industrial Dust Problem. I. A Review of the Methods used for Sampling Aerial Dust. Pub. Health Rep., Vol. 40, No. 16, Apr. 17, 1925, pp. 765–786.

(2) Palmer, G. T., Coleman, L. V., and Ward, H. C.: A Study of Methods for Determining Air Dustiness. Am. Jour. Public Health, Vol. 6, No. 10, October, 1916, pp. 1049–1075.

(3) Bill, J. P.: The Electrostatic Method of Dust Collection as Applied to the Sanitary Analysis of Air. Jour. of Indl. Hyg., Vol. 1, No. 7, November, 1919, pp. 323–342.

(4) Katz, S. H., Longfellow, E. S., and Fieldner, A. C.: Efficiency of the Palmer Apparatus for Determining Dust in Air. Jour. of Indl. Hyg., Vol. 2, No. 5, September, 1920, pp. 167–177.

(5) Katz, S. H., and Trostel, L. J.: Comparative Tests of Air Dustiness with the Dust Counter, Konimeter, and Sugar Tube. Jour. of the Am. Soc. of Heating and Ventilating Engineers, Vol. 27, July, 1921, pp. 519–528.

(6) Smyth, H. F., and Iszard, M.: The Practical Hygienic Efficiency of the Palmer Apparatus for Determining Dust in Air. Jour. of Indl. Hyg., Vol. 3, No. 5, September, 1921, pp. 159–167.

(7) Fieldner, A. C., Katz, S. H., and Longfellow, E. S.: The Sugar Tube Method of Determining Rock Dust in Air. U. S. Bureau of Mines Technical Paper 278. Washington, D. C., 1921.

(8) Winslow, C.-E. A., and Jordan, R.: The Comparative Efficiency of the Circular Konimeter and the Palmer Water Spray Apparatus for the Determination of the Dust Content of the Air. Jour. of Indl. Hyg., Vol. 4, No. 9, January, 1923, pp. 375–379.

(9) Katz, S. H., Smith, G. W., Myers, W. M., Trostel, L. J., Ingels, M., and Greenburg, L.: Comparative Tests of Instruments for Determining Atmospheric Dusts. Public Health Bulletin 144, p. 69. U. S. Public Health Service, Washington, D. C.

(10) Winslow, C.-E. A., and Greenburg, L.: Industrial Tuberculosis and the Control of the Factory Dust Problem. Jour. Indl. Hyg., Vol. 2, No. 9, pp. 333–343, and Vol. 2, No. 10, pp. 378–395.

(11) Final Report of the Committee on Standard Methods for the Examination of Air. Am. Jour. of Pub. Health, Vol. 7, No. 1, January, 1917, pp. 54–72.

(12) Greenburg, L., and Smith, G. W.: A New Instrument for Sampling Aerial Dust. Reports of Investigations, . S. Bureau of Mines Serial No. 2392, September, 1922.

ABSTRACTS OF CURRENT PUBLIC HEALTH COURT DECISIONS

Dispensing by physician of small quantity of habit-forming drugs to addict for self-administration held not violative of Harrison Antinarcotic Act.—(United States Supreme Court.) The defendant in the district court was convicted of a violation of the Harrison Antinarcotic

Act. This conviction was affirmed by the circuit court of appeals. The Supreme Court, in its opinion, stated that the indictment, in effect, alleged—

that the accused, a duly registered physician, violated the statute by giving to a known addict four tablets containing morphine and cocaine with the expectation that she would administer them to herself in divided doses, while unrestrained and beyond his presence or control, for the sole purpose of relieving conditions incident to addiction and keeping herself comfortable. It does not question the doctor's good faith nor the wisdom or propriety of his action according to medical standards. It does not allege that he dispensed the drugs otherwise than to a patient in the course of his professional practice or for other than medical purposes. The facts disclosed indicate no conscious design to violate the law, no cause to suspect that the recipient intended to sell or otherwise dispose of the drugs, and no real probability that she would not consume them.

The court held that the alleged acts of the accused had not violated the Harrison Act, and in concluding its opinion said:

The opinion [in the case of United States *v.* Behrman, 258 U. S. 280, 287; 42 S. Ct. 303; 66 L. Ed. 619] can not be accepted as authority for holding that a physician, who acts bona fide and according to fair medical standards, may never give an addict moderate amounts of drugs for self-administration in order to relieve conditions incident to addiction. Enforcement of the tax demands no such drastic rule, and if the act had such scope it would certainly encounter grave constitutional difficulties.

The narcotic law is essentially a revenue measure and its provisions must be reasonably applied with the primary view of enforcing the special tax. We find no facts alleged in the indictment sufficient to show that petitioner had done anything falling within definite inhibitions or sufficient materially to imperil orderly collection of revenue from sales. Federal power is delegated, and its prescribed limits must not be transcended even though the end seems desirable. The unfortunate condition of the recipient certainly created no reasonable probability that she would sell or otherwise dispose of the few tablets intrusted to her; and we can not say that by so dispensing them the doctor necessarily transcended the limits of that professional conduct with which Congress never intended to interfere. (Linder *v.* United States, 45 S. Ct. 446.)

Conviction for concealing smoking opium with knowledge of its unlawful importation upheld.—(United States Supreme Court.) The defendant in the lower court was convicted of the offense of concealing a quantity of smoking opium after importation, with knowledge that it had been imported in violation of an act of Congress approved February 9, 1909, as amended by an act approved January 17, 1914. The statute, with exceptions pertaining to opium (other than smoking opium or opium prepared for smoking) for medicinal purposes, prohibited the importation of opium into the United States after April 1, 1909; made it unlawful to conceal or facilitate the concealment of such opium after importation, knowing it to have been unlawfully imported; provided that possession of such opium by a defendant on trial, where shown, should be sufficient evidence to authorize conviction unless explained by the defendant to the satisfaction of the jury; and provided that on and after July 1, 1913, smoking opium or opium prepared for smoking found within the United States should be presumed to have been imported after April 1, 1909, and that the burden of proof should be on the claimant or the accused to rebut such presumption. The defendant challenged the constitutionality of the statutory provisions respecting the presumptions arising from the unexplained possession of the prohibited opium and from its presence in this country after the time fixed by the statute, contending that these legislative provisions contravened the due process of law and the compulsory self-incrimination clauses of the fifth amendment of the Federal Constitution. The Supreme Court refused to accept the defendant's views in the matter and upheld the provisions attacked. (Yee Hem *v.* United States, 45 S. Ct. 470.)

Liability of city where typhoid fever epidemic was alleged to have been caused by sewage discharged by city.—(New York Supreme Court, Appellate Division.) The plaintiffs' farms, on which they conducted a dairy business, were on land past which flowed Cassadaga Creek. Into this creek, a little above plaintiffs' farms, the city of Jamestown discharged sewage. A typhoid fever epidemic, which broke out in Jamestown, was traced to the milk produced by the plaintiffs. The plaintiffs claimed that the typhoid fever was caused by the sewage discharged by the city polluting the stream to which plaintiffs' cattle had access, and brought action for damages because of the pollution of the stream and because of the loss suffered by them in their dairy business. The defendant city contended that the typhoid fever outbreak was caused by a carrier on the dairy farm of plaintiffs. The jury found for the plaintiffs, and the appellate division of the supreme court held that where the evidence as to what caused the typhoid epidemic was entirely circumstantial, as in the present case, it was a question for the jury to decide. However, because certain erroneous instructions were given on behalf of the plaintiffs, the judgment for the plaintiffs was reversed. (Forbes et al. *v.* City of Jamestown, 209 N. Y. S. 99.)

City not liable to employee for injuries caused by alleged negligent construction of incinerator.—(North Carolina Supreme Court.) An employee of the city of Winston-Salem brought an action against the city because of injuries alleged to have been received on account of the negligent construction of an incinerator used for burning trash and refuse collected in the city. The defendant demurred, contending that the allegations of the plaintiff constituted no legal cause of action because the construction and operation of the incinerator was a governmental function and the city could not be held liable for injuries received on account of negligence in connection therewith. The lower court overruled the demurrer, but the supreme court held that it should have been sustained. The following was contained in the opinion:

Negligence can not be imputed to the sovereign, and for this reason, in the absence of a statute, no private action for tort can be maintained against the State. It follows that such an action will not lie against a municipal corporation for damages resulting from the exercise of governmental functions as an agency of the sovereign power. * * *

In applying these principles, we must hold that the incinerator was built in the discharge of a governmental function. The power to maintain public works, buildings, and improvements, to remove garbage and to provide for the health, comfort, and welfare of the people, is conferred by statute upon the cities and towns of the State (C. S. sec. 2787, subds. 5. 6, and sec. 2799). It was in pursuance of this legislation that the furnace was constructed; and as suggested in Snider *v.* High Point, supra, the acts complained of were in the performance of duties authorized by law solely for the public benefit, governmental in character, and not merely private and corporate. There was error in overruling the demurrer. (Scales *v.* City of Winston-Salem, 127 S. E. 543.)

DEATHS DURING WEEK ENDED JULY 18, 1925

Summary of information received by telegraph from industrial insurance companies for week ended July 18, 1925, and corresponding week of 1924. (From the Weekly Health Index, July 21, 1925, issued by the Bureau of the Census, Department of Commerce)

	Week ended July 18, 1925	Corresponding week, 1924
Policies in force	60, 539, 284	56, 566, 615
Number of death claims	10, 541	9, 388
Death claims per 1,000 policies in force, annual rate	9. 1	8. 7

Deaths from all causes in certain large cities of the United States during the week ended July 18, 1925, infant mortality, annual death rate, and comparison with corresponding week of 1924. (From the Weekly Health Index, July 21, 1925, issued by the Bureau of the Census, Department of Commerce)

City	Week ended July 18, 1925		Annual death rate per 1,000 corresponding week, 1924	Deaths under 1 year		Infant mortality rate week ended July 18, 1925 [2]
	Total deaths	Death rate [1]		Week ended July 18, 1925	Corresponding week, 1924	
Total (66 cities)	5, 785	10. 8	[3] 10. 7	705	[3] 693	[4] 56
Akron	23			3	1	34
Albany [5]	36	15. 7	10. 6	1	2	22
Atlanta	74			10	10	
Baltimore [5]	203	13. 3	12. 4	31	25	93
Birmingham	57	14. 5	18. 4	12	8	
Boston	167	11. 1	11. 6	20	24	53
Bridgeport	28			2	2	32
Buffalo	105	9. 9	8. 3	16	10	65
Cambridge	23	10. 7	10. 2	3	2	52
Camden	35	14. 2	8. 3	6	2	95
Chicago [5]	562	9. 8	9. 1	51	58	45
Cincinnati	122	15. 5	13. 0	14	15	83
Cleveland	150	8. 4	8. 1	21	24	52

[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 65 cities.
[4] Data for 61 cities.
[5] Deaths for week ended Friday, July 17, 1925.

Deaths from all causes in certain large cities of the United States during the week ended July 18, 1925, infant mortality, annual death rate, and comparison with corresponding week of 1924. (From the Weekly Health Index, July 21, 1925, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended July 18, 1925		Annual death rate per 1,000 corresponding week, 1924	Deaths under 1 year		Infant mortality rate week ended July 18, 1925
	Total deaths	Death rate		Week ended July 18, 1925	Corresponding week, 1924	
Columbus	68	12.7	12.6	11	3	101
Dallas	58	15.6	15.3	10	11	----------
Dayton	34	10.3	8.9	4	6	63
Denver	80	14.8	13.0	14	11	----------
Des Moines	32	11.2	7.9	0	5	0
Detroit	220	----------	----------	36	32	62
Duluth	20	9.4	5.8	4	1	86
El Paso	24	11.9	----------	5	----------	----------
Erie	17	----------	----------	1	1	19
Fall River [1]	27	11.6	9.0	6	2	86
Flint	21	8.4	6.7	1	4	16
Fort Worth	25	8.6	9.2	1	4	----------
Grand Rapids	38	13.0	10.2	6	3	94
Houston	40	12.6	18.9	6	7	----------
Indianapolis	84	12.2	12.8	9	7	64
Jersey City	45	7.4	9.0	5	7	35
Kansas City, Kans	27	11.4	14.1	4	3	84
Kansas City, Mo	83	11.8	14.2	15	11	----------
Los Angeles	215	----------	----------	25	24	69
Louisville	65	13.1	14.9	8	4	70
Lowell	30	13.4	12.2	4	9	70
Lynn	14	7.0	6.5	2	4	53
Memphis	59	17.6	22.1	14	8	----------
Milwaukee	97	10.1	7.9	7	14	33
Minneapolis	88	10.8	9.4	4	9	21
Nashville [1]	62	23.7	16.5	16	1	----------
New Bedford	22	8.5	7.9	2	5	33
New Haven	25	7.3	11.0	5	8	65
New Orleans	136	17.1	18.2	26	26	----------
New York	1,168	10.0	10.1	147	134	59
Bronx Borough	140	8.1	8.4	16	9	55
Brooklyn Borough	360	8.4	8.9	42	49	43
Manhattan Borough	523	12.1	11.9	75	66	78
Queens Borough	112	10.2	8.6	8	8	37
Richmond Borough	33	12.9	16.8	6	2	107
Newark, N. J	75	8.6	10.6	10	17	46
Norfolk	32	----------	----------	7	3	129
Oakland	52	10.7	7.8	4	5	46
Oklahoma City	23	----------	----------	2	3	----------
Omaha	63	15.5	13.0	3	4	31
Paterson	25	9.2	9.3	2	3	34
Philadelphia	383	10.1	10.7	47	43	59
Pittsburgh	167	13.8	10.2	22	21	73
Portland, Oreg	59	10.9	9.0	1	3	10
Providence	49	10.4	9.6	4	7	32
Richmond	47	13.1	19.3	10	15	120
Rochester	62	9.8	7.4	3	5	24
St. Louis	186	11.8	11.8	18	18	----------
St. Paul	44	9.3	9.6	4	5	34
Salt Lake City [1]	28	11.1	11.0	1	3	16
San Antonio	53	14.0	12.0	9	10	----------
San Diego	43	21.1	15.1	5	2	117
San Francisco	104	9.7	13.1	9	9	52
Schenectady	13	6.6	4.2	0	0	0
Seattle	58	----------	----------	3	5	29
Somerville	13	6.6	9.9	0	2	0
Spokane	23	11.0	11.5	0	2	0
Springfield, Mass	24	8.2	9.1	3	4	45
Syracuse	26	7.1	8.6	2	6	25
Tacoma	23	11.5	10.1	2	2	47
Toledo	57	10.3	7.8	6	5	54
Trenton	37	14.6	17.3	3	4	49
Washington, D. C	104	10.9	12.4	13	11	73
Waterbury	15	----------	----------	2	3	43
Wilmington, Del	16	6.8	10.4	1	2	23
Worcester	38	10.0	11.7	4	3	46
Yonkers	15	7.0	6.7	4	2	87
Youngstown	24	7.8	5.7	4	3	49

[1] Deaths for week ended Friday, July 17, 1925.

50246°—25†——2

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 officer

Reports for Week Ended July 25, 1925

ALABAMA	Cases
Chicken pox	1
Diphtheria	8
Dysentery (amebic)	1
Influenza	9
Lethargic encephalitis	1
Malaria	171
Measles	5
Mumps	4
Paratyphoid fever	2
Pellagra	21
Pneumonia	17
Poliomyelitis	1
Scarlet fever	13
Smallpox	15
Tuberculosis	63
Typhoid fever	76
Whooping cough	19

ARIZONA	
Diphtheria	1
Measles	1
Tuberculosis	1
Whooping cough	6

ARKANSAS	
Chicken pox	15
Diphtheria	4
Hookworm disease	4
Influenza	8
Malaria	165
Mumps	18
Pellagra	38
Scarlet fever	1
Smallpox	1
Trachoma	2
Tuberculosis	14
Typhoid fever	62
Whooping cough	19

CALIFORNIA	Cases
Cerebrospinal meningitis:	
Los Angeles County	1
San Diego County	1
Diphtheria	57
Influenza	4
Leprosy—Fresno	1
Lethargic encephalitis—San Francisco	1
Measles	28
Poliomyelitis:	
Alhambra	1
Compton	1
Fresno	1
Laverne	1
Long Beach	2
Los Angeles	18
Los Angeles County	4
Madera County	1
Monrovia	2
Oakland	3
Orange	1
San Francisco	5
San Jose	1
Santa Clara County	2
Santa Monica	1
Sonoma County	1
South Pasadena	1
Sutter County	1
Venice	1
Scarlet fever	41
Smallpox	48
Typhoid fever	30

COLORADO (Exclusive of Denver)	
Chicken pox	7
Diphtheria	10
Dysentery	2
Measles	6
Mumps	13

COLORADO—continued

	Cases
Pneumonia	2
Scarlet fever	17
Tuberculosis	32
Typhoid fever	4
Whooping cough	40

CONNECTICUT

Chicken pox	8
Diphtheria	17
German measles	1
Malaria	2
Measles	60
Mumps	4
Pneumonia (all forms)	13
Poliomyelitis	4
Scarlet fever	14
Tetanus	2
Tuberculosis (all forms)	32
Typhoid fever	4
Whooping cough	75

DELAWARE

Measles	2
Mumps	5
Pneumonia	1
Tuberculosis	5
Typhoid fever	2
Whooping cough	1

FLORIDA

Chicken pox	1
Diphtheria	7
Influenza	2
Malaria	13
Mumps	1
Poliomyelitis	2
Tuberculosis	7
Typhoid fever	13
Whooping cough	1

GEORGIA

Chicken pox	1
Dengue	4
Diphtheria	6
Dysentery	22
German measles	1
Hookworm disease	11
Influenza	6
Malaria	134
Measles	2
Mumps	17
Paratyphoid fever	1
Pellagra	7
Pneumonia	8
Poliomyelitis	1
Scarlet fever	4
Septic sore throat	2
Tetanus	1
Typhoid fever	87
Typhus fever	1
Tuberculosis	23
Whooping cough	24

ILLINOIS

Diphtheria:	
Cook County	45
Scattering	18
Influenza	3

ILLINOIS—continued

	Cases
Lethargic encephalitis:	
Champaign County	1
Coles County	1
Cook County	2
Measles	150
Pneumonia	70
Poliomyelitis:	
Cook County	2
Peoria County	3
Scarlet fever:	
Cook County	40
Scattering	21
Smallpox	16
Tuberculosis	185
Typhoid fever:	
Cook County	6
Scattering	52
Whooping cough	295

INDIANA

Cerebrospinal meningitis	1
Chicken pox	5
Diphtheria	9
Influenza	31
Measles	20
Scarlet fever	29
Smallpox	25
Tuberculosis	17
Typhoid fever	31
Whooping cough	86

IOWA

Diphtheria	8
Scarlet fever	8
Smallpox	2

KANSAS

Cerebrospinal meningitis	1
Chicken pox	2
Diphtheria	1
Mumps	14
Measles	2
Pellagra	1
Pneumonia	4
Poliomyelitis	2
Scarlet fever	23
Smallpox	3
Tetanus	2
Tuberculosis	40
Typhoid fever	40
Whooping cough	119

LOUISIANA

Diphtheria	6
Malaria	27
Pneumonia	9
Scarlet fever	6
Smallpox	1
Trachoma	1
Tuberculosis	35
Typhoid fever	88
Whooping cough	15

MAINE

Chicken pox	1
Diphtheria	1
Dysentery	2
German measles	4

MAINE—continued

	Cases
Influenza	5
Lethargic encephalitis	2
Measles	13
Mumps	26
Pneumonia	3
Scarlet fever	10
Tetanus	1
Tuberculosis	7
Typhoid fever	4
Vincent's angina	3
Whooping cough	11

MARYLAND [1]

Cerebrospinal meningitis	1
Chicken pox	16
Diphtheria	14
Dysentery	16
German measles	1
Influenza	8
Lethargic encephalitis	1
Malaria	1
Measles	20
Mumps	11
Paratyphoid fever	4
Pneumonia (broncho)	11
Pneumonia (lobar)	16
Pneumonia (unspecified)	1
Poliomyelitis	2
Rabies	1
Scarlet fever	6
Smallpox	1
Tuberculosis	90
Typhoid fever	25
Typhus fever	1
Whooping cough	120

MASSACHUSETTS

Chicken pox	35
Conjunctivitis (suppurative)	15
Diphtheria	58
German measles	26
Influenza	2
Measles	175
Mumps	7
Ophthalmia neonatorum	38
Pneumonia (lobar)	13
Poliomyelitis	2
Scarlet fever	41
Septic sore throat	1
Tetanus	2
Trachoma	3
Tuberculosis (pulmonary)	93
Tuberculosis (other forms)	111
Typhoid fever	16
Whooping cough	153

MICHIGAN

Diphtheria	31
Measles	55
Pneumonia	33
Scarlet fever	75
Smallpox	10
Tuberculosis	72
Typhoid fever	14
Whooping cough	163

[1] Week ended Friday.

MINNESOTA

	Cases
Chicken pox	16
Diphtheria	47
Influenza	2
Measles	3
Poliomyelitis	37
Scarlet fever	61
Smallpox	5
Tuberculosis	53
Typhoid fever	2
Whooping cough	36

MISSOURI

(Exclusive of Kansas City)

Chicken pox	5
Diphtheria	23
Malaria	4
Measles	7
Mumps	6
Pneumonia	11
Poliomyelitis	3
Scarlet fever	31
Smallpox	2
Tetanus	1
Tuberculosis	55
Typhoid fever	68
Whooping cough	63

MONTANA

Chicken pox	7
Diphtheria	4
German measles	2
Measles	1
Mumps	11
Poliomyelitis	4
Scarlet fever	9
Smallpox	2
Tuberculosis	4
Typhoid fever	4

NEW JERSEY

Cerebrospinal meningitis	1
Chicken pox	27
Diphtheria	68
Measles	101
Pneumonia	30
Poliomyelitis	8
Scarlet fever	23
Smallpox	4
Typhoid fever	25
Whooping cough	125

NEW MEXICO

Chicken pox	4
Mumps	4
Pellagra	1
Pneumonia	3
Rabies in animals	15
Scarlet fever	1
Tuberculosis	29
Typhoid fever	11
Whooping cough	10

NEW YORK

(Exclusive of New York City)

	Cases
Cerebrospinal meningitis	6
Diphtheria	55
Influenza	1
Lethargic encephalitis	1
Measles	131
Pneumonia	68
Poliomyelitis	13
Scarlet fever	65
Smallpox	1
Typhoid fever	36
Whooping cough	210

NORTH CAROLINA

Chicken pox	7
Diphtheria	36
Measles	3
Ophthalmia neonatorum	1
Scarlet fever	16
Smallpox	11
Typhoid fever	60
Whooping cough	105

OKLAHOMA

(Exclusive of Oklahoma City and Tulsa)

Cerebrospinal meningitis:	
Muskogee	1
Pontotoc	1
Chicken pox	3
Diphtheria	2
Influenza	11
Malaria	76
Measles	2
Mumps	2
Pellagra	14
Pneumonia	4
Scarlet fever	6
Smallpox	5
Typhoid fever:	
Washington	8
Scattering	132
Whooping cough	27

OREGON

Cerebrospinal meningitis	1
Chicken pox	8
Diphtheria	13
Dysentery	9
Influenza	1
Measles	3
Mumps	10
Pneumonia	[1] 4
Scarlet fever	4
Smallpox	3
Tuberculosis	11
Typhoid fever	4
Whooping cough	6

SOUTH DAKOTA

Mumps	1
Scarlet fever	15
Trachoma	2
Tuberculosis	1
Typhoid fever	1

[1] Deaths.

TEXAS

	Cases
Cerebrospinal meningitis	2
Chicken pox	5
Diphtheria	14
Dysentery	1
Mumps	14
Pellagra	1
Poliomyelitis	2
Scarlet fever	3
Smallpox	5
Tuberculosis	25
Typhoid fever	14
Whooping cough	15

VERMONT

Chicken pox	25
Diphtheria	3
Measles	26
Mumps	8
Scarlet fever	4
Whooping cough	10

VIRGINIA

Poliomyelitis	1

WASHINGTON

Cerebrospinal meningitis—Seattle	1
Chicken pox	23
Diphtheria	6
Measles	2
Mumps	11
Poliomyelitis—King County	1
Scarlet fever	13
Smallpox	18
Tuberculosis	24
Typhoid fever	6
Whooping cough	50

WEST VIRGINIA

Diphtheria	5
Influenza	1
Scarlet fever	10
Smallpox	4
Typhoid fever	9

WISCONSIN

Milwaukee:	
Chicken pox	12
Diphtheria	12
German measles	4
Measles	15
Mumps	6
Pneumonia	3
Scarlet fever	2
Smallpox	1
Whooping cough	46
Scattering:	
Cerebrospinal meningitis	2
Chicken pox	43
Diphtheria	31
German measles	9
Influenza	7
Measles	69
Mumps	28
Pneumonia	4
Poliomyelitis	15

WISCONSIN—continued

Scattering—Continued	Cases
Scarlet fever	45
Smallpox	26
Tuberculosis	35
Typhoid fever	5
Whooping cough	122

WYOMING

	Cases
Mumps	2
Scarlet fever	2
Smallpox	2
Typhoid fever	3
Whooping cough	3

Reports for Week Ended July 18, 1925

DISTRICT OF COLUMBIA

	Cases
Chicken pox	3
Diphtheria	7
Measles	13
Pellagra	1
Pneumonia	9
Scarlet fever	4
Tuberculosis	25
Typhoid fever	3
Whooping cough	17

NEBRASKA

Chicken pox	2
Diphtheria	2
Mumps	2
Scarlet fever	2
Smallpox	4
Typhoid fever	1
Whooping cough	14

NORTH DAKOTA

	Cases
Diphtheria	2
Measles	1
Mumps	3
Pneumonia	1
Poliomyelitis	11
Scarlet fever	8
Tuberculosis	5
Whooping cough	23

WYOMING

Chicken pox	4
Diphtheria	1
Mumps	3
Rocky Mountain spotted fever—Sheridan	1
Scarlet fever	1
Typhoid fever	1
Whooping cough	3

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
June, 1925										
Colorado	-------	98	3	-------	33	-------	1	88	1	15
Idaho	0	23	2	0	-------	-------	1	5	-------	4
Illinois	5	323	66	8	4,010	-------	6	909	192	123
Louisiana	2	30	25	72	7	81	1	45	33	302
Maine	2	20	2	0	25	0	1	43	0	7
Maryland	2	74	29	5	303	0	5	112	3	44
Michigan	-------	296	32	1	2,359	-------	6	1,001	117	31
Minnesota	-------	228	7	-------	96	-------	9	562	28	9
Mississippi	1	33	215	7,701	202	1,749	2	13	119	653
New Jersey	7	274	9	1	1,575	-------	15	511	17	29
North Dakota	0	6	0	0	3	1	5	67	15	1
Ohio	6	237	24	2	2,135	-------	6	824	464	91
Oregon	7	104	9	1	17	-------	1	58	62	11
Pennsylvania	7	714	0	2	5,601	0	4	1,217	21	117
Rhode Island	1	27	-------	-------	-------	-------	3	33	6	7
West Virginia	1	20	26	-------	338	1	-------	88	57	38

RECIPROCAL NOTIFICATIONS, JUNE, 1925

Notifications regarding communicable diseases sent during the month of June, 1925, to other State health departments by departments of health of certain States

Referred by—	Diphtheria	Malaria	Measles	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Illinois		1	1	1	6	6	3	1
Massachusetts						1		
Minnesota					2	61	2	
New York	1		1	2	1		3	
Washington					1			1

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 July 11, 1925:

Number of rats trapped	1, 162
Number of rats found plague infected	0
Number of squirrels examined	1, 099
Number of squirrels found plague infected	0

Date of discovery of last plague-infected rat, June 25, 1925.
Date of last human case, Jan. 15, 1925.

Oakland, Calif.

(Including other East Bay communities)

Week ended July 11, 1925:

Number of rats trapped	1, 394
Number of rats found to be plague infected	0
Number of squirrels examined	493
Number of squirrels found to be plague infected	0

Totals:

Number of rats trapped Jan. 1 to July 11, 1925	58, 466
Number of rats found to be plague infected	21
Number of squirrels examined May 1 to July 11, 1925	5, 623
Number of squirrels found to be plague infected	0

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

New Orleans, La.

Week ended July 11, 1925:

Number of vessels inspected	227
Number of inspections made	601
Number of vessels fumigated with cyanide gas	18
Number of rodents examined for plague	3, 875
Number of rodents found to be plague infected	0

Totals, Dec. 5, 1924, to July 11, 1925:

Number of rodents examined for plague	141, 003
Number of rodents found to be plague infected	12

Date of discovery of last plague-infected rat, Jan. 17, 1925.
Date of last human case occurring in New Orleans, Aug. 20, 1920.

POLIOMYELITIS IN THE UNITED STATES

Summary of reports for the seven weeks ended July 18, 1925, and for the corresponding period of 1924.—An increase in the number of cases of poliomyelitis (infantile paralysis) is usual during the late spring and summer. However, the reports from the health officers of several States indicate somewhat more than the usual increase this year.

The following tables show the number of cases of poliomyelitis reported by State health officers of 32 States for the seven weeks from May 31 to July 18, 1925, and from June 1 to July 19, 1924.

The figures for both years are compiled from preliminary telegraphic reports.

Cases of poliomyelitis reported by State health officers for the seven weeks ended July 18, 1925, compared with reports for the corresponding period of 1924

State	1925	1924	State	1925	1924
Alabama	18	13	Missouri	8	0
Arizona	9	0	Montana	2	0
Arkansas	5	0	Nebraska	0	1
California	154	8	New Jersey	35	2
Colorado	1	0	New Mexico	0	0
Connecticut	2	7	New York	66	41
Delaware	1	1	North Carolina	15	2
District of Columbia	0	1	South Dakota	1	0
Florida	11	2	Texas	19	0
Georgia	5	6	Vermont	0	1
Illinois	20	9	Virginia	2	1
Indiana	0	2	Washington	1	4
Kansas	4	1	West Virginia	1	0
Louisiana	2	1	Wisconsin	17	2
Maine	2	0	Wyoming	0	0
Maryland	7	4			
Massachusetts	8	9	Total	462	121
Minnesota	46	3			

An outbreak of poliomyelitis occurred in South Carolina, beginning in April, 1925. To July 16, 1925, 102 cases were reported.

Cases of poliomyelitis reported by the health officers of 32 States May 31 to July 18, 1925, and June 1 to July 19, 1924, by weeks

Week ended—	1925	1924	Week ended—	1925	1924
June 6, 1925; June 7, 1924	34	15	July 11, 1925; July 12, 1924	84	19
June 13, 1925; June 14, 1924	44	10	July 18, 1925; July 19, 1924	134	32
June 20, 1925; June 21, 1924	44	11			
June 27, 1925; June 28, 1924	61	14	Total, 7 weeks	462	121
July 4, 1925; July 5, 1924	61	20			

TYPHOID FEVER IN THE UNITED STATES

Summary of reports for six weeks ended July 18, 1925.—During the period from June 8 to July 18, 1925, 4,083 cases of typhoid fever were reported to the United States Public Health Service by the health officers of 35 States. For the corresponding six-week period of 1924, the same States reported 2,642 cases of typhoid fever.

The New England, Middle Atlantic, Mountain, and Pacific States showed some decrease in typhoid fever this year as compared with last year. All other groups of States showed an increase. Some of the States have recently made efforts to secure better reports of communicable diseases, and this may account in part for the higher figures shown for 1925.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

Diphtheria.—For the week ended July 11, 1925, 34 States reported 876 cases of diphtheria. For the week ended July 12, 1924, the same States reported 1,112 cases of this disease. One hundred and three cities, situated in all parts of the country, and having an aggregate population of more than 28,700,000, reported 533 cases of diphtheria for the week ended July 11, 1925. Last year, for the corresponding week, they reported 689 cases. The estimated expectancy for these cities was 702 cases. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Measles.—Thirty-two States reported 1,936 cases of measles for the week ended July 11, 1925, and 2,792 cases of this disease for the week ended July 12, 1924. One hundred and three cities reported 1,070 cases of measles for the week this year, and 985 cases last year.

Scarlet fever.—Scarlet fever was reported for the week as follows: 34 States—this year, 1,068 cases; last year, 1,250 cases; 103 cities—this year, 493 cases; last year, 548; estimated expectancy, 391 cases.

Smallpox.—For the week ended July 11, 1925, 34 States reported 283 cases of smallpox. Last year for the corresponding week they reported 521 cases. One hundred and three cities reported smallpox for the week as follows: 1925, 91 cases; 1924, 165 cases; estimated expectancy, 53 cases. Four deaths from smallpox were reported by these cities for the week this year—one at Chicago, Ill., two at Cleveland, Ohio, and one at Milwaukee, Wis.

Typhoid fever.—Eight hundred and fifty-four cases of typhoid fever were reported for the week ended July 11, 1925, by 33 States. For the corresponding week of 1924 the same States reported 579 cases. One hundred and three cities reported 192 cases of typhoid fever for the week this year, and 142 cases for the corresponding week last year. The estimated expectancy for these cities was 134 cases.

Influenza and pneumonia.—Deaths from influenza and pneumonia (combined) were reported for the week by 103 cities as follows: 1925, 339 deaths; 1924, 327 deaths.

City reports for week ended July 11, 1925

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 preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during 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 1915 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, 1923, 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	73,129	1	1	0	0	0	2	1	2
New Hampshire:									
Concord	22,408	0	0	0	0	0	0	0	0
Nashua	29,234	0	0	0	0	0	2	0	0
Vermont:									
Barre	[1] 10,008	0	1	0	0	0	0	0	0
Burlington	23,613	0	0	0	0	0	0	1	0
Massachusetts:									
Boston	770,400	0	45	8	1	0	59	2	6
Fall River	120,912	1	2	1	0	0	4	0	0
Springfield	144,227	1	3	2	0	0	0	0	1
Worcester	191,927	1	3	3	0	0	16	0	2
Rhode Island:									
Pawtucket	68,799	0	1	0	0	0	0	0	0
Providence	242,378	0	7	4	0	0	7	0	3
Connecticut:									
Bridgeport	[1] 143,555	1	4	3	0	0	2	0	2
Hartford	[1] 138,036	0	4	3	0	0	2	0	0
New Haven	172,967	0	2	1	0	0	22	0	2
MIDDLE ATLANTIC									
New York:									
Buffalo	536,718	3	10	1	0	0	39	4	7
New York	5,927,625	58	202	177	1	2	149	16	80
Rochester	317,867	0	5	2		0	59	3	2
Syracuse	184,511	11	5	1		0	2	4	5
New Jersey:									
Camden	124,157	1	2	5		0	9	0	0
Newark	438,699	15	11	6	0	0	45	2	5
Trenton	127,390	0	3	1	0	0	3	0	0
Pennsylvania:									
Philadelphia	1,922,788	20	44	47	0	0	83	10	17
Pittsburgh	613,442	15	15	7		1	80	2	10
Reading	110,917	1	2	3	0	0	24	1	1
Scranton	140,636	1	2	4	0	0	0	0	0

[1] Population Jan. 1, 1920.

City reports for week ended July 11, 1925—Continued

Division, State, and city	Population July 1, 1923, 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									
Ohio:									
Cincinnati	406,312	0	6	5	0	0	0	3	4
Cleveland	888,519	40	17	20	0	1	42	2	7
Columbus	261,082	2	2	1	0	0	2	0	0
Toledo	268,338	13	5	16	0	0	35	0	1
Indiana:									
Fort Wayne	93,573	0	2	0	0	0	0	0	1
Indianapolis	342,718	1	5	1	--------	0	11	0	8
South Bend	76,709	1	1	0	0	0	0	0	1
Terre Haute	68,939	1	1	0	0	0	4	0	0
Illinois:									
Chicago	2,886,121	25	83	48	2	2	156	4	33
Cicero	55,968	--------	2	--------	--------	--------	--------	--------	--------
Springfield	61,833	2	0	1	0	0	16	8	0
Michigan:									
Detroit	995,668	11	38	27	0	0	12	4	13
Flint	117,968	1	3	1	0	0	1	0	2
Grand Rapids	145,947	1	3	3	0	0	27	0	1
Wisconsin:									
Madison	42,519	4	0	0	0	0	0	0	0
Milwaukee	484,595	5	10	9	--------	0	30	16	9
Racine	64,393	4	0	2	0	0	0	1	0
Superior	[1] 39,671	0	0	1	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	106,289	--------	1	--------	--------	--------	--------	--------	--------
Minneapolis	409,125	35	9	10	--------	0	2	1	3
St. Paul	241,891	18	11	10	--------	0	3	1	5
Iowa:									
Des Moines	140,923	0	2	3	0	--------	0	0	--------
Sioux City	79,662	2	1	0	0	--------	1	1	--------
Waterloo	39,667	2	0	0	0	--------	1	0	--------
Missouri:									
Kansas City	351,819	2	4	0	0	0	1	5	3
St. Joseph	78,232	0	1	0	0	0	0	0	0
St. Louis	803,853	0	24	22	0	0	8	4	--------
North Dakota:									
Fargo	24,841	0	0	0	0	0	0	8	0
Grand Forks	14,547	0	0	0	0	--------	0	0	--------
South Dakota:									
Aberdeen	15,829	0	0	0	0	--------	0	0	--------
Sioux Falls	29,206	0	0	0	0	0	0	0	0
Nebraska:									
Lincoln	58,761	0	0	1	--------	0	0	0	0
Omaha	204,382	1	3	1	0	0	0	0	5
Kansas:									
Topeka	52,555	1	1	2	0	0	1	9	0
Wichita	79,261	1	0	0	0	0	0	0	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	117,728	0	0	0	0	0	13	0	2
Maryland:									
Baltimore	773,580	10	11	17	6	0	35	21	7
Cumberland	32,361	0	0	0	0	0	0	0	0
Frederick	11,301	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	[1] 437,571	0	4	4	0	0	25	--------	7
Virginia:									
Lynchburg	30,277	0	0	0	0	0	0	5	2
Norfolk	159,089	1	0	0	0	0	0	4	0
Richmond	181,044	1	1	0	0	0	16	3	2
Roanoke	55,502	0	1	0	0	0	6	0	1
West Virginia:									
Charleston	45,597	0	1	0	--------	0	6	0	1
Huntington	57,918	0	0	0	0	--------	0	0	--------
Wheeling	[1] 56,208	1	1	0	--------	0	0	2	3
North Carolina:									
Raleigh	29,171	0	0	0	0	0	1	0	0
Wilmington	35,719	0	0	0	0	0	0	0	1
Winston-Salem	56,230	0	0	0	0	0	1	1	1

[1] Population Jan. 1, 1920.

City reports for week ended July 11, 1925—Continued

Division, State, and city	Population July 1, 1923, 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.									
South Carolina:									
Charleston	71,245	0	0	3	0	0	0	0	1
Columbia	39,688	0	0	0	0	0	0	0	0
Greenville	25,789	0	0	2	0	0	0	0	0
Georgia:									
Atlanta	222,963	1	2	0	5	0	0	1	5
Brunswick	15,937	0	0	0	0	0	0	1	0
Savannah	89,448	0	1	1	0	0	1	1	0
Florida:									
St. Petersburg	24,403	0	0	0	0	0	0	0	0
Tampa	56,050	0	1	0	0	0	0	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington	57,877	0	0	1	--------	0	0	3	1
Louisville	257,671	0	2	2	0	0	0	0	4
Tennessee:									
Memphis	170,067	2	1	0	--------	3	3	0	1
Nashville	121,128	4	0	0	--------	0	17	0	1
Alabama:									
Birmingham	195,901	1	1	1	0	0	1	1	6
Mobile	63,858	0	1	0	--------	0	0	0	2
Montgomery	45,383	0	1	0	0	0	0	1	1
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	30,635	0	0	1	0	--------	0	2	--------
Little Rock	70,916	0	0	0	0	0	0	0	0
Louisiana:									
New Orleans	404,575	0	5	3	2	2	0	0	8
Shreveport	54,590	0	0	0	0	0	0	0	0
Oklahoma:									
Oklahoma City	101,150	0	1	1	0	0	0	0	0
Tulsa	102,018	--------	0	1	0	0	0	--------	0
Texas:									
Dallas	177,274	--------	2	1	0	0	0	--------	2
Galveston	46,877	0	1	1	0	0	0	0	0
Houston	154,970	0	1	2	0	0	0	0	1
San Antonio	184,727	0	1	0	--------	0	0	0	1
MOUNTAIN									
Montana:									
Billings	16,927	0	0	0	0	0	2	10	0
Great Falls	27,787	0	1	0	0	0	0	2	0
Helena	[1] 12,037	0	0	0	0	0	0	0	0
Missoula	[1] 12,668	0	0	1	0	0	0	0	1
Idaho:									
Boise	22,806	0	0	0	0	0	0	0	0
Colorado:									
Denver	272,031	2	7	3	--------	0	3	16	4
Pueblo	43,519	0	1	3	0	0	0	0	0
New Mexico:									
Albuquerque	16,648	0	0	0	0	0	0	0	0
Arizona:									
Phoenix	33,899	0	--------	0	0	0	0	0	0
Utah:									
Salt Lake City	126,241	22	3	4	0	0	1	16	2
Nevada:									
Reno	12,429	0	0	0	0	0	0	0	1
PACIFIC									
Washington:									
Seattle	[1] 315,685	8	4	0	0	--------	1	20	--------
Spokane	104,573	14	1	9	--------	--------	0	0	--------
Tacoma	101,731	2	1	14	0	0	1	0	0
Oregon:									
Portland	273,621	4	4	2	0	0	1	3	6
California:									
Los Angeles	666,853	8	33	10	0	0	9	16	13
Sacramento	69,950	4	1	3	0	0	0	0	0
San Francisco	539,038	15	14	7	1	0	3	3	5

[1] Population Jan. 1, 1920.

City reports for week ended July 11, 1925—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
NEW ENGLAND											
Maine:											
Portland	1	3	0	0	0	2	1	1	0	3	19
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	15
Nashua	0	0	0	0	0	0	0	0	0	0	8
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	4	
Burlington	1	0	0	0	0	0	0	0	0	0	8
Massachusetts:											
Boston	18	38	0	0	0	14	2	2	2	23	210
Fall River	1	1	0	0	0	4	2	5	0	0	23
Springfield	2	3	0	0	0	1	0	0	0	1	30
Worcester	3	5	0	0	0	2	0	0	1	6	43
Rhode Island:											
Pawtucket	1	0	0	1	0	0	0	0	0	0	10
Providence	4	4	0	0	0	5	0	2	0	3	65
Connecticut:											
Bridgeport	3	3	0	0	0	3	0	0	0	3	21
Hartford	2	0	0	0	0	0	1	0	0	15	30
New Haven	1	2	0	0	0	2	2	0	0	20	39
MIDDLE ATLANTIC											
New York:											
Buffalo	11	10	0	0	0	7	1	1	0	9	155
New York	71	52	0	0	0	[1] 96	19	23	3	115	1,210
Rochester	4	10	0	0	0	4	0	1	0	19	65
Syracuse	5	0	0	0	0	5	0	0	0	8	54
New Jersey:											
Camden	1	2	0	0	0	1	1	0	0	3	34
Newark	9	14	0	0	0	6	1	1	0	42	80
Trenton	1	1	0	0	0	3	1	1	0	0	44
Pennsylvania:											
Philadelphia	30	41	0	0	0	38	6	4	2	63	395
Pittsburgh	11	31	1	0	0	10	2	2	0	11	127
Reading	1	0	0	0	0	3	1	0	0	9	33
Scranton	1	2	0	0	0	1	0	12	1	1	
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	4	4	1	0	0	3	1	3	0	7	85
Cleveland	11	5	1	4	2	16	2	2	0	67	188
Columbus	2	3	0	3	0	8	1	1	0	4	69
Toledo	8	4	1	1	0	5	1	1	0	18	61
Indiana:											
Fort Wayne	1	0	0	0	0	0	0	0	0		20
Indianapolis	4	1	0	2	0	6	1	1	0	41	115
South Bend	1	1	0	0	0	0	0	0	0	0	20
Terre Haute	0	1	0	0	0	0	0	0	0	0	22
Illinois:											
Chicago	37	62	1	2	1	55	3	8	0	81	603
Cicero	0		0				0				
Springfield	1	1	1	0	0	0	0	0	0	0	20
Michigan:											
Detroit	31	22	5	1	0	17	4	2	0	88	228
Flint	1	4	1	2	0	0	0	0	0	8	22
Grand Rapids	2	13	1	0	0	2	1	1	1	8	44
Wisconsin:											
Madison	0	2	0	0	0	0	0	0	0	8	
Milwaukee	17	5	2	2	1	3	0	1	1	46	75
Racine	1	2	1	0	0	0	0	0	0	13	6
Superior	1	4	1	0	0	0	0	0	0	1	6

[1] Pulmonary tuberculosis only.

City reports for week ended July 11, 1925—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST NORTH CENTRAL											
Minnesota:											
Duluth	1		1				0				
Minneapolis	11	23	3	0	0	1	1	1	0	2	82
St. Paul	7	12	2	0	0	10	2	1	0	30	54
Iowa:											
Des Moines	2	3	3	0			0	0		0	
Sioux City	1	0	1	0			0	0		1	
Waterloo	1	0	0	3			0	0		7	
Missouri:											
Kansas City	2	1	1	0	0	11	1	8	0	27	99
St. Joseph	1	0	0	0	0	2	0	1	0	0	27
St. Louis	9	27	0	5	0	16	4	8	1	14	239
North Dakota:											
Fargo	0	0	1	0	0	0	0	0	0	3	4
Grand Forks	0	0	1	0			0	0	0	0	
South Dakota:											
Aberdeen	0	0	0	0			0	0		6	
Sioux Falls	0	0	1	0	0	0	0	0	0	0	6
Nebraska:											
Lincoln	0	0	0	0	0	2	0	0	0	13	20
Omaha	1	0	3	2	0	3	1	0	0	6	54
Kansas:											
Topeka	1	0	1	0	0	0	1	1	0	4	19
Wichita	1	0	2	0	0	1	1	1	0	18	28
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	1	0	1	0	0	0	1	0	4	29
Maryland:											
Baltimore	9	7	0	0	0	15	5	5	1	116	194
Cumberland	0	0	0	0	0	0	1	0	0	0	7
Frederick	0	0	0	0	0	0	0	0	0	1	5
District of Columbia:											
Washington	5	6	0	0	0	8	3	3	1	22	117
Virginia:											
Lynchburg	0	0	0	0	0	1	0	1	1	4	17
Norfolk	0	1	0	0	0	2	2	0	0	5	
Richmond	1	3	0	0	0	7	1	6	1	0	61
Roanoke	0	0	0	0	0	1	1	0	0	5	21
West Virginia:											
Charleston	1	0	0	4	0	2	1	0	0	3	16
Huntington	0	0	0	2			1	1		0	
Wheeling	1	2	0	0	0	1	1	0	0	0	20
North Carolina:											
Raliegh	0	0	0	2	0	1	0	1	1	0	15
Wilmington	0	0	0	0	0	2	0	0	0	2	33
Winston-Salem	1	0	1	4	0	2	3	0	0	20	22
South Carolina:											
Charleston	0	0	0	0	0	2	2	0	0	2	33
Columbia	0	0	0	0	0	0	1	1	0	2	
Greenville	0	0	0	0	0	0	0	6	0	6	12
Georgia:											
Atlanta	2	1	4	0	0	4	3	3	3	8	83
Brunswick	0	0	0	0	0	0	1	0	0	0	3
Savanah	1	0	0	1	0	2	2	1	1	1	23
Florida:											
St. Petersburg	0	0	0	0	0	0	0	0	1	0	4
Tampa	0	1	0	0	0	0	0	1	1	0	26
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	0	0	0	0	3	0	0	0	0	12
Louisville	1	2	0	1	0	5	4	4	2	20	99
Tennessee:											
Memphis	1	0	0	1	0	6	5	13	1	10	56
Nashville	0	2	0	0	0	1	5	10	0	2	51
Alabama:											
Birmingham	0	18	0	10	0	7	3	0	0	10	61
Mobile	0	0	0	0	0	3	1	1	0	0	25
Montgomery	0	0	0	2	0	0	1	3	0	0	12

City reports for week ended July 11, 1925—Continued

Division, State, and city	Scarlet fever: Cases, estimated expectancy	Scarlet fever: Cases reported	Smallpox: Cases, estimated expectancy	Smallpox: Cases reported	Smallpox: Deaths reported	Tuberculosis, deaths reported	Typhoid fever: Cases, estimated expectancy	Typhoid fever: Cases reported	Typhoid fever: Deaths reported	Whooping cough, cases reported	Deaths, all causes
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	1	0	------	------	0	8	------	9	------
Little Rock	0	0	0	0	0	0	3	4	0	0	------
Louisiana:											
New Orleans	1	2	1	0	0	9	4	8	1	12	157
Shreveport	0	0	1	1	0	1	1	7	2	0	29
Oklahoma:											
Oklahoma	0	0	0	0	0	3	2	2	0	2	21
Tulsa	0	0	1	0	0	0	3	4	0	0	------
Texas:											
Dallas	2	0	0	0	0	3	4	2	1	------	42
Galveston	0	0	0	0	0	2	0	1	0	0	15
Houston	0	0	1	0	0	5	1	2	0	0	50
San Antonio	0	0	0	0	0	3	1	4	1	1	66
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	3	6
Great Falls	1	4	1	1	0	2	0	0	0	2	7
Helena	0	0	0	0	0	0	0	0	0	0	3
Missoula	0	0	1	0	0	0	0	0	0	1	5
Idaho:											
Boise	0	0	1	1	0	0	0	0	0	0	6
Colorado:											
Denver	5	11	2	0	0	12	2	1	1	30	74
Pueblo	1	0	0	0	0	1	1	2	0	5	12
New Mexico:											
Albuquerque	0	0	0	0	0	5	0	1	0	0	16
Arizona:											
Phoenix	------	0	------	0	0	8	------	0	0	0	23
Utah:											
Salt Lake City	2	1	1	0	0	0	1	0	0	17	27
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	7
PACIFIC											
Washington:											
Seattle	5	1	2	6	------	------	0	0	------	5	------
Spokane	2	4	3	0	------	------	0	0	------	14	------
Tacoma	1	0	1	5	0	0	1	0	0	12	16
Oregon:											
Portland	4	5	4	1	0	0	1	0	0	2	------
California:											
Los Angeles	8	10	1	22	0	18	3	2	0	55	196
Sacramento	1	0	0	0	0	4	1	2	0	12	30
San Francisco	7	3	0	2	0	18	1	2	0	9	157

City reports for week ended July 11, 1925—Continued

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									
Massachusetts:									
Boston	0	0	1	0	1	0	0	0	0
MIDDLE ATLANTIC									
New York:									
Buffalo	2	0	0	0	0	0	0	1	0
New York	0	2	0	3	0	1	3	7	0
New Jersey:									
Newark	1	0	5	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	0	0	1	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Columbus	1	0	0	0	0	0	0	0	0
Illinois:									
Chicago	0	0	0	0	0	0	1	2	1
Michigan:									
Detroit	1	0	0	0	0	0	0	2	0
Grand Rapids	0	0	0	0	0	0	0	1	1
WEST NORTH CENTRAL									
Missouri:									
St. Louis	0	0	1	0	0	0	0	0	0
Iowa:									
Des Moines	0	0	0	0	0	0	0	1	0
SOUTH ATLANTIC									
Georgia:									
Atlanta	0	0	0	0	0	1	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	1	0	0	0	0	0	0	0
Nashville	0	0	0	0	0	2	0	0	0
Alabama:									
Birmingham	0	0	0	0	0	0	0	3	0
Mobile	0	0	0	0	1	0	0	0	0
Montgomery	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	0	0	0	0	4	4	0	0	0
Shreveport	0	0	0	0	0	5	0	0	0
Texas:									
Dallas	0	0	0	0	0	3	0	2	0
Houston	0	0	0	0	0	1	0	1	0
PACIFIC									
California:									
Los Angeles	1	0	5	0	0	0	0	8	1
Sacramento	1	0	0	0	0	0	0	0	0
San Francisco	0	0	1	1	0	0	0	2	0

The following table gives the rates per hundred thousand population for 105 cities for the 10-week period ended July 11, 1925. The population figures used in computing the rates were estimated as of July 1, 1923, as this is the latest date for which estimates are available. The 105 cities reporting cases had an estimated aggregate population of nearly 29,000,000 and the 97 cities reporting deaths had more than 28,000,000 population. The number of cities included in each group and the aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, May 3 to July 11, 1925—Annual rates per 100,000 population [1]

DIPHTHERIA CASE RATES

	Week ended—									
	May 9	May 16	May 23	May 30	June 6	June 13	June 20	June 27	July 4	July 11
105 cities	[2] 157	[3] 164	153	[4] 149	158	120	119	[5] 116	[6] 93	[7] 97
New England	109	154	127	114	129	94	97	127	117	62
Middle Atlantic	212	238	203	211	244	156	166	163	96	127
East North Central	113	110	108	106	99	95	93	[5] 84	[5] 87	[5] 89
West North Central	278	211	251	197	189	145	133	114	131	[8] 97
South Atlantic	104	85	87	[4] 77	91	57	51	73	41	55
East South Central	11	34	40	11	11	11	6	34	6	23
West South Central	65	56	42	65	42	70	74	46	60	42
Mountain	105	153	134	143	76	181	191	105	181	105
Pacific	[2] 123	[3] 138	165	168	145	165	113	107	[2] 145	125

MEASLES CASE RATES

105 cities	[2] 627	[3] 624	601	[4] 593	619	582	434	[5] 303	[6] 228	[7] 194
New England	984	1,188	1,051	867	872	892	634	407	350	283
Middle Atlantic	797	768	617	704	774	727	544	382	258	249
East North Central	890	854	954	913	893	844	592	[5] 404	[5] 321	[5] 225
West North Central	112	79	236	145	114	135	87	60	31	[8] 37
South Atlantic	240	329	327	[4] 256	410	297	349	278	262	211
East South Central	343	166	337	217	132	212	114	132	97	120
West South Central	32	14	23	14	23	14	19	5	5	0
Mountain	181	57	181	248	38	95	76	95	38	57
Pacific	[2] 95	[3] 178	131	165	165	87	84	52	[2] 37	41

SCARLET FEVER CASE RATES

105 cities	[2] 323	[3] 352	307	[4] 278	267	174	165	[5] 117	[6] 96	[7] 89
New England	415	358	350	211	266	179	142	107	112	147
Middle Atlantic	319	331	265	271	263	156	145	100	79	81
East North Central	366	399	413	346	317	204	217	[5] 157	[5] 122	[5] 97
West North Central	618	728	556	531	481	325	328	184	168	[8] 136
South Atlantic	106	165	146	[4] 122	130	61	61	45	59	45
East South Central	263	326	246	183	126	160	160	91	74	126
West South Central	88	74	23	65	88	46	37	56	46	9
Mountain	277	353	324	410	334	277	143	210	105	153
Pacific	[2] 151	[3] 197	162	139	151	162	116	107	[2] 71	52

SMALLPOX CASE RATES

105 cities	[2] 46	[3] 46	60	[4] 48	46	37	36	[5] 25	[6] 14	[7] 17
New England	2	0	0	0	0	0	0	0	0	2
Middle Atlantic	6	7	2	2	4	2	1	0	1	0
East North Central	44	56	70	58	65	42	45	[5] 20	[5] 14	[5] 12
West North Central	60	79	68	70	95	52	60	37	17	[8] 22
South Atlantic	45	37	65	[4] 10	39	22	30	18	10	24
East South Central	377	189	440	423	114	297	200	132	63	80
West South Central	28	37	130	56	32	5	19	0	5	5
Mountain	48	29	29	57	38	29	19	29	29	19
Pacific	[2] 176	[3] 191	186	168	191	148	154	171	[2] 89	102

[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, 1923.
[2] Spokane, Wash., not included. Report not received at time of going to press.
[3] Tacoma, Wash., not included.
[4] Charleston, W. Va., not included.
[5] Cicero, Ill., not included.
[6] Cicero, Ill., and Spokane, Wash., not included.
[7] Cicero, Ill., and Duluth, Minn., not included.
[8] Duluth, Minn., not included.

Summary of weekly reports from cities, May 3 to July 11, 1925—Annual rates per 100,000 population—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	May 9	May 16	May 23	May 30	June 6	June 13	June 20	June 27	July 4	July 11
105 cities	[2] 14	[3] 13	19	[4] 16	25	28	22	[5] 27	[6] 35	[7] 35
New England	5	12	25	17	30	25	20	17	22	25
Middle Atlantic	13	10	19	9	26	17	14	18	15	17
East North Central	9	6	5	7	10	10	4	[5] 9	[5] 10	[5] 14
West North Central	2	0	4	16	8	25	12	10	21	[8] 45
South Atlantic	28	26	39	[4] 41	41	65	49	71	69	59
East South Central	46	63	74	51	40	120	80	91	200	177
West South Central	46	79	65	74	88	116	130	148	240	185
Mountain	0	0	19	10	76	48	38	0	10	29
Pacific	[2] 9	[3] 3	6	9	9	15	6	20	[2] 22	17

INFLUENZA DEATH RATES

	May 9	May 16	May 23	May 30	June 6	June 13	June 20	June 27	July 4	July 11
105 cities	15	14	14	[4] 12	11	7	6	[5] 6	[5] 4	[7] 2
New England	10	7	5	7	2	5	2	7	2	0
Middle Atlantic	10	12	11	9	11	6	4	6	2	2
East North Central	10	11	12	14	10	7	7	[5] 6	[5] 5	[5] 2
West North Central	11	11	18	18	4	9	7	4	6	[8] 0
South Atlantic	24	10	6	[4] 12	6	4	6	2	6	0
East South Central	51	80	86	40	54	17	34	17	11	17
West South Central	15	20	24	31	5	20	10	10	10	10
Mountain	19	57	19	0	29	10	0	10	0	0
Pacific	16	12	25	8	12	4	4	4	4	0

PNEUMONIA DEATH RATES

	May 9	May 16	May 23	May 30	June 6	June 13	June 20	June 27	July 4	July 11
105 cities	151	127	128	[4] 117	128	104	81	[5] 66	[5] 58	[7] 61
New England	161	134	119	114	72	117	62	60	45	45
Middle Atlantic	185	143	144	146	108	130	98	75	62	64
East North Central	130	125	125	119	114	89	81	[5] 42	[5] 45	[5] 59
West North Central	77	58	79	59	57	59	33	50	42	[8] 39
South Atlantic	156	136	134	[4] 157	146	122	77	96	75	67
East South Central	160	166	137	172	126	63	103	120	97	91
West South Central	138	112	84	76	66	87	92	76	61	61
Mountain	124	162	172	76	95	105	143	57	67	76
Pacific	123	78	135	82	131	49	65	53	82	74

Number of cities included in summary of weekly reports and aggregate population of cities in each group, estimated as of July 1, 1923

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
Total	105	97	28, 898, 350	28, 140, 934
New England	12	12	2, 098, 746	2, 098, 746
Middle Atlantic	10	10	10, 304, 114	10, 304, 114
East North Central	17	17	7, 032, 535	7, 032, 535
West North Central	14	11	2, 515, 330	2, 381, 454
South Atlantic	22	22	2, 566, 901	2, 566, 901
East South Central	7	7	911, 885	911, 885
West South Central	8	6	1, 124, 564	1, 023, 013
Mountain	9	9	546, 445	546, 445
Pacific	6	3	1, 797, 830	1, 275, 841

[2] Spokane, Wash., not included. Report not received at time of going to press.
[3] Tacoma, Wash., not incluhed.
[4] Charleston, W. Va., not included.
[5] Cicero, Ill., not included.
[6] Cicero, Ill., and Spokane, Wash., not included.
[7] Cicero, Ill., and Duluth, Minn., not included.
[8] Duluth, Minn., not included.

FOREIGN AND INSULAR

THE FAR EAST

Report for the week ended July 4, 1925.—The following report for the week ended July 4, 1925, was transmitted by the Far Eastern Bureau of the Health Section of the League of Nations, located at Singapore, to the headquarters at Geneva:

Port	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Calcutta	----	5	----	10	16	11
Bombay	0	0	4	2	6	3
Madras	0	0	0	0	16	7
Rangoon	----	18	----	1	2	1
Karachi	0	0	0	0	1	1
Negapatam	0	0	0	1	0	0
Singapore [1]	1	1	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 [1]	1	1	0	0	0	0
Samarang	0	0	0	0	0	0
Belawan Deli	0	0	0	0	0	0
Macassar	0	0	0	0	0	0
Sandakan (North Borneo)	0	0	0	0	0	0
Sarawak	0	0	0	0	2	0

Port	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Bangkok [1]	1	1	0	0	1	1
Saigon and Cholon	0	0	0	1	0	0
Hongkong	0	0	0	0	0	0
Shanghai	0	0	0	0	0	0
Manila	0	0	4	0	0	0
Colombo [1]	4	1	0	0	0	0
Nagasaki	0	0	0	0	0	0
Yokohama	0	0	0	0	0	0
Shimonoseki	0	0	0	0	0	0
Kobe	0	0	0	0	0	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
Port Said	2	0	0	0	0	0

[1] Infected rats found.

MADAGASCAR

Plague—Tananarive Province—May 1–15, 1925.—From May 1 to 15, 1925, 47 cases of plague with 43 deaths were reported in Tananarive Province, Madagascar. The occurrence was distributed according to type as follows: Bubonic, 22 cases with 18 deaths; pneumonic, 5 cases with 5 deaths; septicemic, 20 cases with 20 deaths.

PALESTINE

Erroneous report of plague at Jerusalem—Correction.—The Public Health Service has been informed that the report of a case of plague at Jerusalem, Palestine, which was included in reports received for the week ended March 9, 1925, and published in the Public Health Reports of April 17, 1925, page 810, and subsequent issues, was erroneous.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS 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 July 31, 1925 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
Ceylon	Apr. 5-May 2	47	33	
India				May 24-30, 1925: Cases, 3,502; deaths, 2,104.
Bombay	May 10-16	1	1	Received out of date.
Madras	June 14-20	2		
Rangoon	May 31-June 6	3	2	
Siam:				
Bangkok	May 24-30	2	1	

PLAGUE

Place	Date	Cases	Deaths	Remarks
Ceylon:				
Colombo	June 7-13	4	4	
Gold Coast	March-April	3	3	
India				May 24-30, 1925: Cases, 880; deaths, 694.
Bombay	May 31-June 6	2	2	May 10-16, 1925: Cases, 14; deaths, 11. Received out of date.
Madras (Presidency)	June 17-23	2	2	
Rangoon	May 30-June 6	14	13	
Java:				
Pasoeroean Residency	May 25			Epidemic in native villages.
Soerakarta Residency	May 28			Epidemic at Kalidjambe.
Madagascar:				
Tananarive Province				May 1-15, 1925: Cases, 47; deaths, 43.
Tananarive Town	May 1-15	3	3	Bubonic, 2 cases, 2 deaths; pneumonic, 1 case, 1 death.
Other localities	do	44	40	Bubonic, cases, 20, deaths, 16; pneumonic, cases, 4, deaths, 4; septicemic, cases, 20, deaths, 20.
Siam:				
Bangkok	May 24-30	1		

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	June 1-30	26		June 1-15: Cases, 2; June 16-30, 1925: Cases, 24.
Brazil:				
Pernambuco	May 24-30	1	6	
Rio de Janeiro	June 14-20		1	
China:				
Amoy	May 31-June 13		3	Prevalent in vicinity.
France	Apr. 1-30	11		
Gold Coast				March-April, 1925: Cases, 253; deaths, 12.
Great Britain:				
England and Wales	June 21-27	68		
Newcastle on Tyne	June 28-July 4	1		
Greece				March-April, 1925: Cases, 1; deaths, 2.
India				May 24-30, 1925: Cases, 4,309; deaths, 1,078.
Bombay	May 31-June 6	12	10	May 10-16, 1925: Cases, 25; deaths, 13. Received out of date.
Madras	June 14-20	19	8	
Rangoon	May 31-June 6	14	6	
Iraq				Apr. 19-May 2, 1925: Cases, 29, deaths, 1.
Italy				Dec. 28, 1924-Apr. 18, 1925: Cases, 44.

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

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER—Continued

Reports Received During Week Ended July 31, 1925—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Japan:				
Kobe	June 21-27	1		
Mexico:				
Guadalajara	July 7-13		1	
Tampico	July 1-10	2	1	
Portugal:				
Lisbon	June 14-27	8		
Oporto	June 14-20	1		
Russia				February, 1925: Cases, 972.
Siam:				
Bangkok	May 24-30	2	1	
Spain:				
Valencia	June 21-27	2	1	
Tripoli				Feb. 21-Mar. 4, 1925: Cases, 2.
Tunis:				
Tunis	June 17-23	3	3	
Union of South Africa:				
Transvaal	May 31-June 6			Outbreaks.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Czechoslovakia				April, 1925: One case.
Greece				March-April, 1925: Cases, 12: deaths, 2.
Mexico:				
San Luis Potosi	June 28-July 4		1	
Morocco				February-April, 1925: Cases, 227.
Russia				February, 1925: Cases, 5,893.
Union of South Africa:				
Cape Province	May 31-June 6			Outbreaks.

Reports Received from June 27 to July 24, 1925 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	May 11-20	1		
Ceylon				Jan. 25-Apr. 4, 1925: Cases, 10; deaths, 10.
Colombo	May 10-16	2	2	
India				Apr. 26-May 23, 1925: Cases, 22,771; deaths, 14,011.
Calcutta	May 3-9	58	49	
Do	May 17-23	79	61	
Madras	June 6-13	2	1	
Rangoon	May 3-30	19	13	Feb. 8-14, 1925: Cases, 2; deaths, 2. Received out of date.
Indo-China:				
Saigon	May 4-31	3	3	
Siam:				
Bangkok	Apr. 29-May 23	5	2	
Turkey:				
Constantinople	May 16-22	1		

[1] From medical officers of the Public Health Service, American consuls, and other sources. For reports received from Dec. 27, 1924, to June 26, 1925, see Public Health Reports for June 26, 1925. The tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER—Continued

Reports Received from June 27 to July 24, 1925—Continued

PLAGUE

Place	Date	Cases	Deaths	Remarks
Brazil:				
Bahia	May 3-June 13	5	4	
British East Africa:				
Uganda	Feb. 1-28	28	28	
Ceylon:				
Colombo	May 10-30	1	2	
China:				
Foochow	May 24-31			Reported present in epidemic form.
Ecuador:				
Guayaquil	June 1-15	1	1	May 16-June 16, 1925: Rats examined, 20,967; found infected, 78.
Egypt				Jan. 1-June 17, 1925: Cases, 75. Corresponding period 1924—cases, 298.
City—				
Alexandria	June 17	1	1	Bubonic.
Port Said	June 17-18	1	1	Do.
Suez	June 14-15	2	1	Do.
Province—				
Assiout	June 5	1	1	
Beni Souef	June 10-16	8	4	
Charkieh	June 6-8	1	1	
Kena	June 17	1	1	
Minia	June 6-17	3	2	
India				Apr. 26-May 23, 1925: Cases, 21,525; deaths, 17,662.
Bombay	Apr. 26-May 9	15	16	
Do	May 17-30	20	18	
Calcutta	May 30-June 6	1	1	
Karachi	May 18-June 6	4	3	
Madras	May 10-16	2	1	
Rangoon	May 3-30	49	41	Feb. 8-14, 1925: Cases, 13; deaths, 13. (Received out of date.)
Indo-China:				
Cochin China—				
Saigon	Apr. 20-May 31	2	2	Including 100 square kilometers of surrounding country.
Iraq:				
Bagdad	May 24-30	2		
Java:				
Batavia	May 6-29	21	21	
Pasoeroean Residency	Mar. 7			Epidemic in one locality.
Soerabaya	May 7-13	2	2	
Madagascar:				
Province—				
Itasy	Apr. 1-15	1	1	
Tananarive	Apr. 1-30	128	104	Bubonic, cases, 80, deaths, 61; pneumonic, cases 22; deaths, 17; septicemic, cases, 26; deaths, 26.
Town—				
Tamatave (port)	Apr. 1-15	2		
Tananarive Town	Apr. 16-30	1	1	
Nigeria	Dec., 1924	17	13	
Do	Jan., 1925	10	6	
Siam:				
Bankok	Apr. 26-May 9	5	5	
Straits Settlements:				
Singapore	May 3-30	9	9	
Turkey:				
Constantinople	May 25-31	1		

SMALLPOX

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers				May 1-31, 1925: Cases, 17; deaths, 2.
Brazil:				
Pernambuco	Apr. 26-May 23	39	15	
Rio de Janeiro	May 9-16	1		
British East Africa:				
Kenya—				
Mombasa	Apr. 19-May 23	21	9	
Nairobi	May 3-9	3	2	
Tanganyika Territory	Apr. 5-May 9	22	6	
Uganda	Feb. 1-28	2		
British South Africa:				
Northern Rhodesia	Apr. 28-May 4	3		

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER—Continued

Reports Received from June 27 to July 24, 1925—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada:				
British Columbia—				
Vancouver	June 1-28	7		
New Brunswick—				
Restigouche County	June 1-30	1		
Ontario				May 31-June 27, 1925: Cases, 12; deaths, 1. Corresponding period, 1924: Cases, 24.
Galt	June 14-20	2		
Kingston	do	1		
Saskatchewan—				
Regina	May 24-30	3		
China:				
Amoy	May 17-30		4	Prevalent in surrounding country.
Antung	May 11-June 7	2		
Canton	May 10-June 6			Present.
Chungking	May 3-30			Widespread.
Foochow	May 9-June 6			Present.
Hongkong	Apr. 19-May 23	13	12	
Manchuria—				
Dairen	Apr. 13-June 7	107	16	
Harbin	May 13-June 2	2		
Nanking	May 9-June 6			Do.
Shanghai	May 3-June 6	5	2	
Swatow	May 17-June 6			Stated to be endemic.
Tientsin	May 9-June 6	2		
Chosen:				
Seoul	May 1-31	1		
Egypt:				
Alexandria	May 21-27	1	1	
Cairo	Mar. 19-May 22	2		
France				February-March, 1925: Cases, 48.
Paris	May 21-31	1		
Gold Coast				January-February, 1925: Cases, 114; deaths, 17.
Great Britain:				
England and Wales				May 24-June 20, 1925: Cases, 373.
Birmingham	June 7-13	1		
Cardiff	June 14-20	1		
Newcastle-on-Tyne	May 31-June 13	4		
Greece				January-February, 1925: Cases, 43; deaths, 6.
Athens	May 1-31		2	
India				Apr. 26-May 23, 1925: Cases, 20,092; deaths, 4,976.
Bombay	Apr. 26-May 9	48	42	
Do	May 23-30	38	27	
Calcutta	May 3-9	109	100	
Do	May 17-23	75	61	
Do	May 31-June 6	50	45	
Karachi	May 18-June 13	5	1	
Madras	do	105	45	
Rangoon	May 3-30	157	80	
Indo-China:				
Cochin-China—				
Saigon	Apr. 20-May 24	13	9	
Irak				Jan. 11-Apr. 4, 1925: Cases, 87; deaths, 42.
Bagdad	Apr. 26-May 2	3		
Jamaica				Apr. 26-June 27, 1925: Cases, 11; (reported as alastrim).
Kingston	Apr. 26-June 27	19		Reported as alastrim.
Japan:				
Kobe	May 24-30	1		
Nagasaki	May 15-21	2		
Yokohama	May 25-31	1		
Java:				
Batavia	May 2-8	1		Province.
Rembang Residency	Apr. 23			Epidemic at Kawedanan.
Soerabaya	Apr. 16-May 13	121	16	
Tegal	Mar. 29-Apr. 4	2		
Malta	June 1-15	2		
Mexico:				
Durango	June 1-30		11	
Guadalajara	June 2-July 6		11	
Mexico City	May 24-June27	12		Including municipalities in Federal District.
Tampico	June 1-10		1	
Morocco:				
Tangier	May 17-June 5			Present among natives.
Nigeria				December, 1924: Cases, 40; deaths, 16.
Do				January-February, 1925: Cases, 421; deaths, 11.

CHOLERA, PLAGUE, SMALLPOX, AND TYPHUS FEVER—Continued

Reports Received from June 27 to July 24, 1925—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Persia:				
Teheran	Mar. 21-Apr. 21		11	
Poland				Mar. 1-Apr. 4, 1925: Cases, 19.
Portugal:				
Lisbon	Apr. 26-June 13	35	6	
Russia				December, 1924: Cases, 880. January, 1925: Cases, 383.
Siam:				
Bangkok	Apr. 26-May 23	14	9	
Spain:				
Malaga	May 24-June 20		15	
Valencia	May 31-June 6	1		
Straits Settlements:				
Singapore	May 17-23	1		
Syria:				
Beirut	Apr. 21-30	1		
Tripoli				Jan. 3-Feb. 20, 1925: Cases, 6.
Tunis:				
Tunis	May 6-June 10		23	
Turkey:				
Constantinople	May 16-22	2		
Union of South Africa:				
Cape Province	May 24-30			Outbreaks.
Transvaal	May 3-9			Do.
Uruguay				December, 1924: Cases, 8.

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria:				
Algiers	May 11-20	6	2	In vicinity, 12 cases. Isolated.
Bulgaria				November-December, 1924: 1 case. January-March, 1925; Cases, 36; deaths, 2.
Sofia	May 28-June 3	2		
Chile:				
Valparaiso	May 10-16		1	
China:				
Manchuria—				
Harbin	May 19-June 2	2		
Egypt:				
Alexandria	May 7-June 3	3	1	
Cairo	Mar. 26-Apr. 22	5	4	
Port Said	May 14-20	1	1	
Greece				January-February, 1925: Cases, 40; deaths, 4.
Athens	May 1-31		2	
Latvia				April, 1925: Cases, 12.
Mexico:				
Mexico City	May 24-June 6	24		Including municipalities in Federal district.
Morocco				January, 1925: Cases, 63.
Palestine:				
Jaffa District	June 2-8	2		
Maijdal	May 26-June 8	3		
Ramleh	May 19-25	1		
Safad	June 9-15	1		
Peru:				
Arequipa	Apr. 1-30		2	
Poland				Mar. 1-Apr. 11, 1925: Cases, 1,195; deaths, 74.
Portugal:				
Oporto	May 31-June 6	1		
Rumania:				
Constanza	May 1-31	1		
Russia				December, 1924: Cases, 4,227 January, 1925: Cases, 3,828.
Spain:				
Valencia	June 7-13		1	
Tunis:				
Tunis	May 21-June 17	16	8	
Turkey:				
Constantinople	May 11-31	7	2	
Union of South Africa:				
Cape Province	Apr. 19-May 30			Outbreaks.
Natal	May 3-9			Do.
Durban	Feb. 1-May 9	14		European.
Orange Free State	Feb. 1-May 30			Outbreaks.
Transvaal—				
Johannesburg	May 17-23	1		
Yugoslavia:				
Zagreb	May 8-21	7	1	

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