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HEALTH HAZARDS IN DUSTY TRADES.

In studies made of the health hazards in abrasive industries, it has generally been assumed that the mineral particles from the abrasive material itself are as important a factor as the metallic dust from the object subjected to the grinding or polishing treatment. And yet, heretofore, little attention has been given to the health hazard in the manufacture of the abrasive materials themselves. The following paper gives the results of careful studies of conditions in two large factories where abrasive materials are manufactured.

THE DUST HAZARD IN THE ABRASIVE INDUSTRY.

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Incidence of Tuberculosis among Workers Exposed to Mineral and Metallic Dusts.

The conviction is growing, among students of industrial hygiene, that the incidence of tuberculosis among the workers in dusty trades is one of the gravest problems in this field.

The ideal basis for estimating the seriousness of industrial tuberculosis would be an analysis of actual death rates classified by age at death and by occupation. Unfortunately, data of this kind are practically nonexistent in the United States. A reasonably close approximation to the truth may, however, be obtained by a study of the ratio between tuberculosis deaths and deaths from all causes, ignoring the population exposed which is the unknown element in the problem. A low ratio of tuberculosis deaths (such as is found in the case of railroad employees) may not, of course, indicate a real freedom from tuberculosis but rather a special exposure to some other hazard. A high tuberculosis ratio on the other hand is almost always significant of an excessive death rate from this disease, since most of the factors which promote tuberculosis are of such a nature as to increase mortality from other causes as well.

Two important studies of tuberculosis ratios by industries and age periods have been made in this country—one by the United States Bureau of the Census for the Registration Area in 1908, and

1909, and the other by Mr. F. L. Hoffman for the Prudential Insurance Co. of New Jersey. The whole subject has recently been reviewed by Mr. Hoffman in a very valuable bulletin, No. 231, United States Department of Labor.

The census figures cover a comparatively small number of rather loosely defined occupations; and the Prudential figures, while superior from the standpoint of occupational classification, are open to two other objections. In the first place many of the figures cited by Mr. Hoffman are based on such small numbers of cases as to involve large errors of random distribution. In the second place the ratios calculated for the insured populations are obviously affected by factors of special selection so that they are not fairly comparable with data obtained from other sources.

This constant difference between the Prudential figures and the census data is clearly brought out in Table I, which we have compiled from the tables in Mr. Hoffman's bulletin so as to include all the industries exposed to metallic or mineral dusts for which 500 or more deaths from all causes at all ages were available. It is evident that in almost every instance where the two series can be compared the Prudential ratios are from 25 to 50 per cent higher than those for the registration area.

TABLE I.—*Ratios, in per cent, of tuberculosis deaths to total deaths in occupations exposed to mineral and metallic dusts.*[1]

Occupation.	United States registration area. Ages.						Prudential experience. Ages.					
	15-24	25-34	35-44	45-54	55-64	15 and over.	15-24	25-34	35-44	45-54	55-64	15 and over.
All occupied males	28.1	39.9	24.0	14.4	7.6	14.9	33.2	40.9	32.9	19.0	8.8	20.5
Brick, tile, and terra cotta workers							22.9	35.3	19.8	18.6	10.7	15.6
Iron and steel workers	13.8	28.1	23.3	16.7	8.5	16.9	20.9	34.1	31.3	14.7	8.7	21.6
Plasterers	25.0	31.5	34.5	16.4	7.8	16.7	34.5	43.6	40.4	23.5	11.8	21.9
Molders							23.7	40.4	30.7	21.6	13.9	23.0
Paper hangers							35.1	44.0	42.5	15.7	11.5	29.1
Painters, glaziers, and varnishers	30.8	39.9	29.2	17.4	9.0	18.7						
Tinplate and tinware workers	39.4	36.7	34.8	13.7	6.6	18.7						
Jewelers	50.0	39.7	22.4	14.1	8.5	17.8	59.9	58.3	45.3	21.2	11.1	29.3
Glassblowers							45.1	53.3	31.3	28.3	15.4	32.1
Other glassworkers							31.5	51.1	34.4	23.1	15.5	30.5
Glassworkers	47.2	42.6	33.1	19.7	7.9	30.0						
Tool and instrument makers							37.5	52.7	36.9	33.7	10.4	31.9
Potters							31.2	49.6	39.8	30.2	21.1	32.2
Marble and stone cutters	26.2	43.5	44.1	41.6	23.3	30.7	28.3	53.1	44.4	39.0	26.7	33.6
Brass workers							58.2	51.0	43.8	24.2	16.1	36.7
Compositors and type setters							46.2	55.9	41.1	24.9	9.9	26.8
Pressmen							42.9	47.7	44.0	20.0	11.1	30.6
Printers, lithographers, and pressmen	43.6	50.9	36.3	21.5	7.7	29.5						
Polishers							42.4	56.1	44.6	24.9	14.3	36.9

[1] Figures taken from Bulletin No. 231, Bureau of Labor Statistics, U. S. Department of Labor.

It seems evident that a comparison between the Prudential figures for a given dusty trade and the census figures for all occupied males is not a fair one and that the conclusion (indicated by such a comparison) that such groups as the iron and steel workers experience an excessively high death rate from tuberculosis is unwarranted. As a matter of fact, comparisons made in each case with the corresponding group (census figures for a dusty trade with census figures for all occupied males, or Prudential figures for a dusty trade with Prudential figures for all occupied males) show that the tuberculosis ratio for the iron and steel workers is about normal, which is what should be expected for so diversified an occupational group.

With the precaution of using in each case a proper basis of comparison, both the census and the Prudential data are highly illuminating and bring out very clearly the excess of tuberculosis in certain occupations. The two sets of figures (allowing for the constantly higher ratios throughout the Prudential experience) check each other very closely, even to such special points as the very high incidence among jewelers under 35 and among marble and stone cutters over 35 years of age.

In general the data show quite clearly that exposure to mineral and metallic dusts, as among brass workers, marble and stone cutters and polishers, is accompanied by tuberculosis ratios at least one-third greater than the ratio for all occupied males, and at some age periods more than twice as great. What this means in terms of actual death rates may be estimated from Table II, based on English data which indicate that a tuberculosis ratio half again as high as the normal corresponds to an actual mortality from tuberculosis of one to two persons per thousand in excess of the mortality among all occupied males. In other words, one or two out of every thousand persons in these dusty trades are sacrificed each year to the special hazards of their employment.

TABLE II.—*Death rates, and ratios in per cent, of tuberculosis deaths to total deaths, in industries exposed to metallic dusts in England and Wales, 1900–1902.*

Age at death.	All occupied males.			Occupations exposed to metallic dusts.		
	Deaths per 1,000.		Per cent due to tuberculosis.	Deaths per 1,000.		Per cent due to tuberculosis.
	Total.	Tuberculosis.		Total.	Tuberculosis.	
15–19	2.44	0.54	22.1	2.73	0.73	26.7
20–24	4.41	1.55	35.1	5.28	2.73	51.7
25–34	6.01	2.03	33.8	6.29	3.33	52.9
35–44	10.22	2.74	26.8	11.68	5.05	43.2
45–54	17.73	3.04	17.1	20.97	5.22	24.9
55–64	31.01	2.16	7.0	36.03	3.91	10.9
65 and over	88.39	1.11	1.3	95.52	1.54	1.6

The Hazard of Industrial Tuberculosis in the Abrasive Industry.

Statistical analyses and special intensive and experimental studies alike have shown that the most hazardous of the dusty trades are those in which the workers are exposed to the inhalation of small, hard, sharp, nonabsorptive particles. The continued inhalation of metallic and silicious particles first of all initiates a fibrosis, which is the primary reaction to their deposition in the lung tissues, and then leads, in a majority of cases, to the development of pulmonary tuberculosis in the injured organ.

Among the various types of workers liable to industrial tuberculosis, grinders and other users of abrasive materials are recognized as being among the worst sufferers; and it has generally been assumed that the mineral particles thrown into the air from the abrasive material itself are as important factors as the metallic dust from the object subjected to the grinding or polishing treatment. Yet, curiously enough, so far as we are aware, no one has hitherto called attention to the peculiar hazard which menaces the workers engaged in the manufacture of the abrasive materials themselves.

The inorganic fraction of the dust in the air of the abrasive factories studied by the writers includes at least four different materials—coke, crude aluminum hydroxide, a fused aluminum compound (aloxite or alundum), and carborundum. The exact harmfulness of coke dust is not yet fully determined and the crude aluminum hydroxide is made up of softer and more rounded particles than the carborundum or the fused aluminum compounds. The last two types of material may for practical purposes be considered to possess the same physical properties. Both derive their chief value from their hardness, which is between 9 and 10, carborundum being said to approach very closely in hardness to the diamond. In addition to this property, these materials also possess the property of fracturing in very irregular particles. We have examined many specimens of these dusts and found them to be exceedingly hard, exceedingly sharp, and made up to the extent of 95 to 100 per cent of inorganic material.

Photomicrographs of several samples of these dusts submitted in Plate 1 illustrate in the main the characteristics referred to.

We have every reason to expect from analogy with other industries in which workers are exposed to a similar hazard, that dusts of this nature should be exceedingly deleterious to health. The results of a study of air dustiness in two large abrasive factories where grinding wheels, or materials for grinding wheels, are manufactured, may therefore be of value in calling attention to a hitherto neglected hazardous industry.

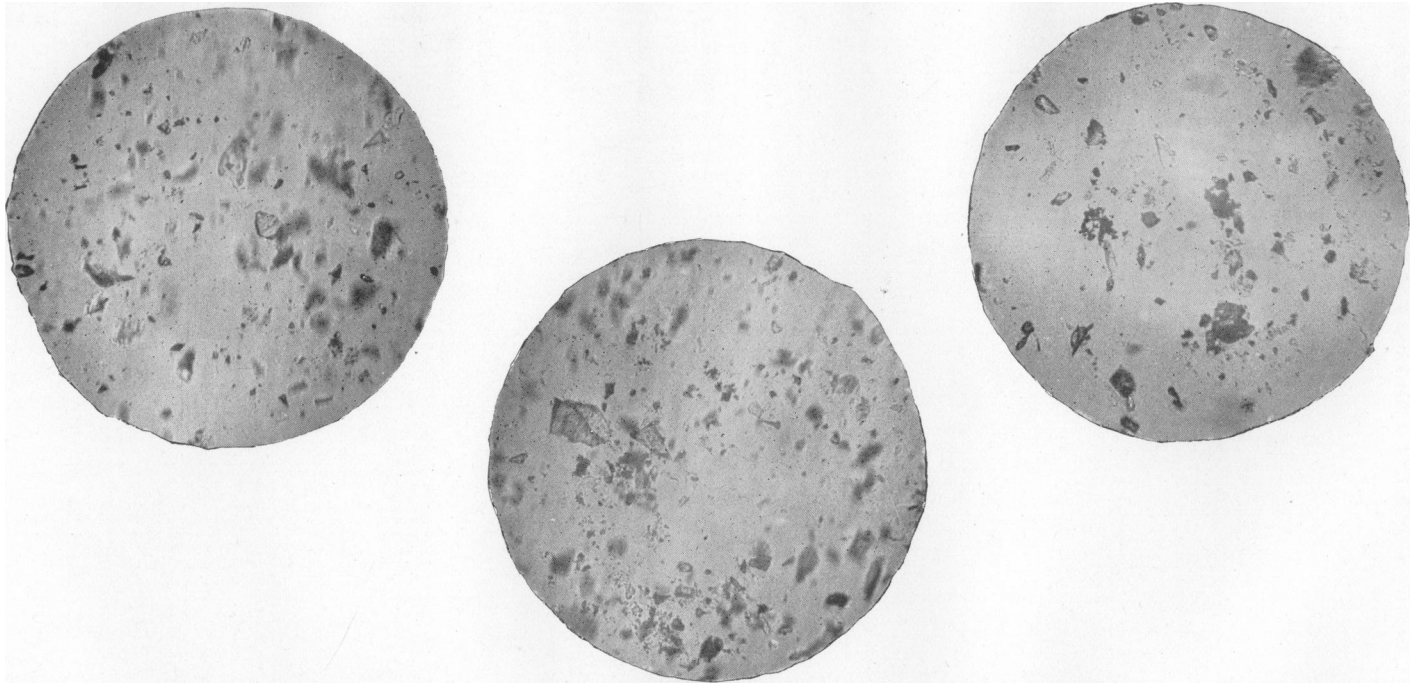

PLATE 1.—PHOTOMICROGRAPHS OF DUST SAMPLES FROM FACTORY B. MAGNIFICATION, 135 DIAMETERS.

General Conditions as Regards the Dust Hazard in Abrasive Factory B.

The first of the abrasive establishments studied, which will be referred to as factory B, is a large plant, which in the summer of 1918 employed 2,000 hands, of whom about 400 were women. The carborundum, of which the wheels are made, is prepared by heating a mixture of coke, sand, salt, and sawdust in the electric furnace. The carborundum is then ground, sifted on jiggers and molded (pressed) to form the wheel. In another department aloxite wheels are made by puddling, and after the wheels are puddled and dried they are submitted to a process known as "shaving." The wheels of either type are kilned and finally smoothed on lathes. The process of shaving is an exceedingly dusty one and probably could be effectively controlled only by carrying it on in some form of inclosed cabinet similar to that used in sandblasting. The mixing and the lathing processes are also very dusty, but it should be possible to maintain reasonably good conditions in both cases by the use of inclosed machines in the mix room, and by powerful local exhaust in connection with the lathes.

In the carborundum department of factory B practically no precautions had been taken last summer in either of these workrooms, while in the aloxite department the "new grinding room" was provided with inclosed machinery, and the lathes in the "new lathe room" were equipped with an exhaust system which the management believed to be adequate. A careful examination of the system showed, however, that it was gravely defective in a number of respects. Its principal shortcomings may be profitably cited because they are typical of conditions which are frequently noted in the inspection of exhaust systems designed or operated by those who are unfamiliar with the principles of efficient dust removal.

1. The exhaust ducts were so small that their high frictional resistance greatly increased the cost of operation and made it very difficult to maintain an adequate suction pressure. Furthermore, such small pipes tend to clog with lint and dust, and dealing with the latter tendency was made doubly difficult because an insufficient number of clean-out handholes was provided.

2. The system as installed had been allowed to deteriorate seriously for lack of careful maintenance. Many ducts were noted with broken joints. The dust separators in some cases were in very bad condition, large holes being plugged only with rags and waste.

3. Partly as a result of conditions noted under (1) and (2) or, to look at it in another way, due to the lack of sufficient fan capacity to overcome these limitations, the suction pressure in the exhaust system was far too low to be effective. With the exception of the ducts serving certain of the shaving hoods this pressure never exceeded that of a 1-inch water gauge.

4. Finally, the hoods for removing the dust from the immediate vicinity of the machines were defective in design. Such hoods should be so arranged as to apply as large a fraction as possible of the suction velocity in the exhaust pipes to the dust at its point of formation, and the suction should preferably be applied from such a direction as to take advantage of the tangential momentum imparted to the dust as it leaves the wheel. Instead, we found most of the machines entirely lacking hoods, the exhaust duct merely terminating in a funnel-shaped opening below the center of the machine spindle so far away that the velocity of the exhaust was scarcely perceptible at the face of the wheel.

Dust Content of Air in Abrasive Factory B.

The actual conditions existing in this factory at the time of our visit are indicated in Tables III–VIII, the general results of all observations in the production departments of the factory being presented in detail in Table III and the data for each workroom separately in Tables IV–VIII. The methods used in this study have been fully described in a paper by Winslow, Greenburg, and Angermyer on Standards for Measuring the Efficiency of Exhaust Systems in Polishing Shops (Public Health Reports, Mar. 7, 1919). They are essentially those recommended by the committee on standard methods for the examination of air of the American Public Health Association (American Journal of Public Health, VII, 54).

TABLE III.—*Dust content of air and per cent of inorganic solids in abrasive factory B.*

Sample number.	Sampling position.	Number of particles per cu. ft. of air, classified by size in standard units.			Total number of particles per cu. ft. of air.	Standard units per cu. ft. of air.	Weight of solids, mgs. per cubic foot of air.			Per cent of inorganic solids.
		10 Std. u.	1 Std. u.	¼ Std. u.			Total.	Organic.	Inorganic.	
	Old lathe room:									
8131	Center	.....	42,500	2,724,000	2,766,500	723,500	0.57	0.02	0.55	96.5
8132	North end	5,560	56,800	3,625,000	3,687,300	1,018,700	.48	.63	.45	93.7
8133	South end	5,560	77,800	2,134,000	2,217,300	666,900	.38	.03	.35	92.0
8141	Edging machine	.....	.....	1,400,000	1,400,000	350,000	.11	.01	.10	91.7
8142	Do	7,135	14,270	2,091,000	2,112,400	608,800	.23	.01	.22	95.6
8143	Do	.....	3,300	7,415,000	7,418,300	1,857,000	.64	.01	.63	98.3
8144	Do	.....	53,100	2,870,000	2,923,100	770,600	.51	.01	.50	98.0
8145	Facing machine	.....	53,100	5,950,000	6,003,100	1,540,600	.99	.01	.98	99.0
8146	Do	14,820	237,000	17,200,000	17,451,800	4,685,000	4.09	.02	4.07	99.5
	New lathe room:									
8151	Facing machine	.....	333,500	17,500,000	17,833,500	4,708,500	2.64	.03	2.61	98.8
8152	Edging machine	.....	51,800	2,785,000	2,836,800	748,000	.37	.03	.34	92.0
8153	Do	.....	44,500	3,702,000	3,746,500	970,000	.72	.01	.71	98.6
8154	Do	.....	22,200	2,960,000	2,982,200	762,200	.37	.01	.36	97.4
8161	Facing machine	.....	44,500	7,515,000	7,559,500	1,923,300	1.79	.01	1.78	99.4
8162	Do	.....	185,000	4,900,000	5,085,000	1,410,000	1.40	.01	1.39	99.0
8163	Do	.....	118,500	1,869,000	1,987,500	585,800	1.18	.02	1.16	98.3
	Shaving room:									
8191	Shaving machine	59,300	267,000	72,100,000	72,426,300	18,885,000	1.78	.13	1.65	92.7
8192	Do	60,000	393,600	181,000,000	181,453,600	46,247,000	6.62	.39	6.23	94.0
8193	Facing machine	.....	59,300	15,900,000	15,959,000	4,034,300	.36	.02	.34	94.5
8194	Do	.....	118,500	15,590,000	16,068,500	4,106,000	.47	.04	.43	91.5
8195	Shaving machine	29,600	356,000	176,500,000	176,885,600	44,777,000	3.97	.22	3.75	94.4
8196	Do	59,200	296,000	222,500,000	222,855,200	56,513,000	5.48	.32	5.16	94.1

TABLE III.—*Dust content of air and per cent of inorganic solids in abrasive factory B*—Continued.

Sample number.	Sampling position.	Number of particles per cu. ft. of air, classified by size in standard units.			Total number of particles per cu. ft. of air.	Standard units per cu. ft. of air.	Weight of solids, mgs. per cubic foot of air.			Per cent of inorganic solids.
		10 Std. u.	1 Std. u.	$\frac{1}{4}$ Std. u.			Total.	Organic.	Inorganic.	
	Mix building:									
8201	Basement	88,800	2,635,000	148,800,000	151,523,800	40,723,000	6.23	1.09	5.14	82.5
8202	Do	22,200	111,200	53,500,000	53,633,400	13,708,200	1.49	1.46	.03	2.0
8211	Coke grinder	30,500	794,000	12,260,000	13,084,500	4,164,000	2.62	2.51	.11	4.2
8212	Scales	29,960	823,000	67,100,000	67,952,900	17,897,000	2.26	.94	1.32	58.4
	Grinding room:									
8213	Pan mill	.....	133,500	584,000	717,500	279,500	.....	.....	.....	.....
8221	Do	14,800	185,000	3,200,000	3,399,800	1,133,000	.62	.12	.50	80.6
8222	Yard	7,400	296,000	5,190,000	5,493,400	1,667,500	.92	.12	.80	87.0
	Grinding room:									
8223	Pan mill	14,800	370,000	8,290,000	8,674,800	2,590,500	1.05	.27	.78	74.3
8224	Do	.....	400,000	16,100,000	16,500,000	4,425,000	.95	.17	.78	82.1
8225	Elevator	14,800	414,000	32,500,000	32,928,800	8,687,000	3.27	.69	2.58	78.8
8226	Yard	7,400	118,500	2,915,000	3,040,900	921,200	.24	.10	.14	58.4
	New grinding room:									
8231	Crusher	29,600	680,000	23,800,000	24,509,600	6,926,000	5.63	.03	5.60	99.4
8232	Do	14,800	44,400	11,500,000	11,559,200	3,067,400	2.90	.01	2.89	99.6
	New lathe room:									
8233	East end	600	12,400	202,000	215,000	68,800	.18	.01	.17	94.8
8241	Center	.....	340,000	9,910,000	10,250,000	2,817,500	.81	.01	.80	98.5
8242	West end	.....	22,200	1,135,000	1,157,000	305,900	.17	.01	.16	94.0

TABLE IV.—*Dust content of air, and weight of dust in mgs. per 100 cubic feet of air in the old lathe room, factory B.*

Sample number.	Sampling position.	Total number of particles (10 microns and under) per cubic foot of air.	Weight of dust, mgs. per 100 cubic feet of air.
8131	Center of lathe room	2,724,000	57.0
8132	North end of lathe room	3,635,000	48.0
8133	South end of lathe room	2,134,000	38.0
8141	Edging machine	1,400,000	11.0
8142	.....do	2,091,000	23.0
8143	.....do	7,415,000	64.0
8144	.....do	2,870,000	51.0
8145	Facing machine	5,950,000	99.0
8146	.....do	17,200,000	409.0

Table IV shows the conditions in regard to air dustiness which existed in the so-called "Old lathe room," in which the carborundum wheels are trimmed to finished dimensions. Almost no measures were taken for the protection of the worker, such exhaust ducts as were present being badly designed, and the suction head, in four cases in which it could be measured, varying between $\frac{3}{8}$ and $1\frac{3}{8}$ inches. Samples were taken at various machines in this room—at those in which the smallest as well as largest wheel was worked—in order to obtain a representative group of samples. It may be pointed out that these samples were taken as close to the operator, and as nearly at the breathing level, as conditions permitted without interfering with

the work. It appears from this table that the amount of dust varied from 11 to 409 mgs. per 100 cubic feet, and that the microscopic counts of particles (10 microns and under) numbered from 1,400,000 to 17,200,000 per cubic foot of air. On this basis it is easy to calculate in a general way the amount of dust breathed by an individual in a given period of time. Assuming the tidal air of man to be 30.5 cubic inches, and the respiratory rate 17 per minute, then the amount of air breathed per minute will be 518 cubic inches, or 100 cubic feet in 333 minutes (slightly more than 5½ hours). For example, the amount of dust breathed by the worker at the machine at which sample 8146 was taken amounts to 409 mgs. in 5½ hours.

The presence of such large amounts of dust produced a condition of air dustiness which was not confined to the immediate vicinity of the machines, but extended throughout the whole workroom. Samples 8131, 8132, and 8133, taken at points in the lathe room well removed from the machines, illustrate this fact.

TABLE V.—*Dust content of air, and weight of dust in mgs. per 100 cubic feet of air in the new lathe room, factory B.*

Sample number.	Sampling position.	Total number of particles (10 microns and less) per cubic foot of air.	Weight of dust, mgs. per 100 cubic feet of air.
8151	Facing machine	17,500,000	264.0
8152	Edging machine	2,785,000	27.0
8153	....do	3,702,000	72.0
8154	....do	2,960,000	37.0
8161	Facing machine	7,515,000	179.0
8162	....do	4,900,000	140.0
8163	....do	1,869,000	118.0
8233	East end of room	202,000	18.0
8241	Center of room	9,910,000	81.0
8242	West end of room	1,125,000	17.0

Table V shows the results obtained in a similar workshop known as the new lathe room in which the aloxite wheels are finished to size. This is the room equipped with a system of exhaust ventilation of which the company was inclined to be proud.

The general impression of an observer on entering the room was, indeed, that it was much less dusty than the old lathe room. The results of our analysis, however, indicate that such was not the case. The optical impression of superiority was probably due to the better lighting, greater floor space, the newness of the room, to the lighter color of the dust, and, perhaps, to the fact that there were fewer very large particles present. The microscopic counts of samples collected here vary from 202,000 to 17,500,000 one-fourth standard unit particles per cubic foot of air, and weights per 100 cubic feet of air, from 17 to 264 mgs. The result of analysis of samples (samples 8233, 8241, 8242) taken at different points in the room, removed from machine

operations, show the air conditions here to be practically the same as those which existed in the old lathe room. Since it is the small dust particles which are the dangerous ones, we are of the opinion that the dust conditions in the new lathe room were not any better than those found in the old lathe room, despite the efforts that had been made at improvement. As a matter of fact the methods of dust removal in both these rooms were wholly inadequate. The suction head as measured in four cases varied from ¾ to 2¼ inches.

TABLE VI.—*Dust content of air, and weight of dust in mgs. per 100 cubic feet of air in the shaving room, factory B.*

Sample No.	Sampling position.	Total number of particles (10 microns and less) per cubic foot of air.	Weight of dust, mgs. per 100 cubic feet of air.
8191	Shaving machine	72,100,000	178.0
8192	....do	181,000,000	662.0
8193	Facing machine	15,000,000	36.0
8194	....do	15,950,000	47.0
8195	Shaving machine	176,500,000	397.0
8196	....do	222,500,000	548.0

The next room studied was the shaving room, where, as pointed out above, the problem of dust control is of specially acute importance. Table VI shows our findings here. The weight of dust per 100 cubic feet of air varied from 36.0 to 662.0 mgs. The microscopic counts varied from 15,000,000 to 222,000,000 one-fourth standard unit particles per cubic foot. It is interesting to note that the highest weight and largest count of any obtained in the entire investigations were found in this room.

The impression one gets on watching the operation of shaving the wheels is that the dust produced is in the nature of large particles which should quickly fall to the ground. Our analyses show, however, that the number of small particles remaining in the air is greater here than in any of the other processes investigated. The dust removal methods as used in this room were wholly inadequate, as shown not only by the high dust counts and weights, but also by the determinations of air velocity at the hoods, made by the use of an anemometer, which showed readings between 500 and 700 feet per minute, an exceedingly low velocity for the proper removal of this dust. In addition, the hoods were faulty in design, in that the dust was not removed at the point of origin.

TABLE VII.—*Dust content of air, and weight of dust in mgs. per 100 cubic feet of air in the mixing room, factory B.*

Sample number.	Sampling position.	Number of particles (10 microns and less) per cubic foot of air.	Weight of dust, mgs. per 100 cubic feet of air.
8201	Basement	148,800,000	623.0
8202	....do	53,500,000	149.0
8211	Coke grinder	12,200,000	262.0
8212	Near scales (first floor)	67,100,000	226.0

Table VII shows results of analyses in the mixing building, in which the coke is ground and the furnace mix is prepared. In addition, ferro-silicon brought from the furnace room is crushed here. Examination of the weights and counts obtained in this building again shows remarkably high figures. The weights varied from 149 to 623 mgs. per 100 cubic feet of air, and the counts varied from 12,200,000 to 148,800,000 one-fourth standard unit particles per cubic foot of air. The air in the basement, and at other points where samples were taken, was so full of dust that the field investigator, even though he wore a respirator during the sampling period, experienced great discomfort.

The gross pollution of the air in this building was due mainly to the failure to remove properly the dust at the coke crusher and at the ferro-silicon crusher; and also to the failure to repair breaks in the bucket elevators which lift the crushed material to the storage bins above.

TABLE VIII.—*Dust content of air, and weight of dust in mgs. per 100 cubic feet of air in the old grinding room, factory B.*

Sample number.	Sampling position.	Number of particles (10 microns and less) per cubic foot of air.	Weight of dust, mgs. per 100 cubic feet of air.
8213	Pan mill	584,000	.....
8221	....do	3,200,000	62.0
8222	Outdoors (gateway)	5,190,000	92.0
8223	Pan mill	8,290,000	105.0
8224	....do	16,100,000	95.0
8225	Elevator	32,500,000	327.0
8226	Outdoors (yard)	2,915,000	24.0

Table VIII shows the result of our analyses in the so-called old grinding rooms in which the carborundum after being removed from the furnace is crushed in pan mills. These mills are loaded with large pieces of carborundum and during this operation (which takes about five minutes) the dust produced is most intense. The mills continue grinding for about 45 minutes and occasionally during this

period a small quantity of water is added. It seems quite certain that the amount of dust in the neighborhood of these mills could be greatly reduced if the process were made a wet one. This modification should not interfere with the steps which are to follow in the preparation of the finished product, because the very next procedure is that of washing the crushed material in a mixture of acids to free the carborundum from impurities.

A good illustration of the effect of leaky bucket elevators is shown in sample 8225. This sample, which was taken in close proximity to the elevator (adjacent to a worker), shows the highest count and weight of any sample in these rooms and in our opinion is due to faulty maintenance of the elevator shaft. This serious defect could very easily be remedied.

Two samples of air collected outdoors, but in close proximity to these grinding rooms, were taken to note the effect on the outdoor air and the results (samples 8222 and 8226) show this air to be grossly polluted.

Samples 8231 and 8232 (see Table III) were taken in the so-called new grinding room where the aloxite is prepared. The "new" grinding room, like the "new" lathe room, was supposed to be superior to the "old" one and had been equipped with elaborate inclosed machines designed to remove the dust. As a matter of fact, the general impression obtained by ocular observation was that this room was far less dusty than the old grinding room. Here, as in the case of the lathe rooms, ocular evidence appears to be deceptive, since the two samples collected in the new grinding room contained, respectively, 23,800,000 and 11,500,000 one-fourth standard unit particles per cubic foot of air and 563 and 290 mgs. of dust per 100 cubic feet of air.

To summarize the general conditions obtaining in this factory it may be pointed out that 38 air samples from the workrooms showed the following distribution of dust counts, only the one-fourth standard unit particles being considered:

Total of 38 samples.	Number of one-fourth standard unit particles per cubic foot of air.	Total of 38 samples.	Number of one-fourth standard unit particles per cubic foot of air.
2 samples	Under 1 million.	9 samples	10–50 millions.
3 samples	1–2 millions.	3 samples	50–100 millions.
7 samples	2–3 millions.	Do	100–200 millions.
4 samples	3–5 millions.	1 sample	Over 200 millions.
6 samples	5–10 millions.		

The weight of dust was as follows:

Total of 37 samples.	Mgs. of dust per 100 cubic feet of air.	Total of 37 samples.	Mgs. of dust per 100 cubic feet of air.
3 samples	0- 20.	2 samples	150- 200.
8 samples	20- 50.	6 samples	200- 400.
9 samples	50-100.	5 samples	400-1,000.
4 samples	100-150.		Over 1,000.

The average number of particles per cubic foot of air was 31,000,000 and the average weight was 1.74 mgs. per cubic foot of air or 174.0 mgs. per 100 cubic feet of air.

Of the seven highest dust counts from factory B (containing more than 50,000,000 dust particles per cubic foot), four were from the vicinity of the shaving machines and three from the mix room. Of the five greatest weights (over 400 mgs. per 100 cubic feet of air) two were from the shaving machines and one each from the lathe room, mix room, and grinding room.

For convenience of comparison, the figures cited by Higgins and Lanza for the Joplin mines (Bulletin 132, U. S. Bureau of Mines) have been converted over to the basis of weights in mgs. per 100 cubic feet of air. The Joplin figures classified in groups by weights, distribute themselves as follows:

Total of 221 samples.	Mgs. of dust per 100 cubic feet of air.	Total of 221 samples.	Mgs. of dust per 100 cubic feet of air.
32 samples	0-20.	12 samples	150-200.
67 samples	20-50.	10 samples	200-400.
63 samples	50-100.	3 samples	400-1,000.
30 samples	100-150.	4 samples	Over 1,000.

All samples considered, the conditions in factory B were worse than those found in the Joplin mines, as shown in the following summary, which gives a comparison of percentage distribution of dust weights:

Mgs. of dust per 100 cubic feet of air.	Per cent of samples, factory B (37 samples).	Per cent of samples, Joplin mines (221 samples).
0-20	8.1	14.5
20-50	21.6	30.3
50-100	24.3	28.5
100-150	10.8	13.6
150-200	5.4	5.4
200-400	16.2	4.5
400-1,000	13.6	1.4
Over 1,000	0.0	1.8

When one recalls Lanza's estimate that at least 30 per cent of the Joplin miners were suffering from industrial tuberculosis, it seems clear that the conditions existing in this abrasive factory constitute a grave menace to the health of the persons employed therein.

In addition to the 38 samples discussed above we collected 5 air samples in the offices of factory B and 5 out-of-doors in the immediate vicinity of the plant, in order to see how far the dust produced by the industrial processes was distributed beyond the workrooms immediately concerned. The results collected in Table IX show that the office air contained between 100,000 and 650,000 one-fourth standard unit particles per cubic foot, two of the samples being beyond the upper limit of 300,000 particles maintained in the polishing shops of factory A (described by Winslow, Greenburg, and Angermyer). The weight per 100 cubic feet of air ranged from 2.5 to 6 mgs. A control sample (No. 9061) for comparison with these office samples was collected in an office building in the center of the city and opposite the railroad station. It showed only 73,500 one-fourth standard unit particles per cubic foot and only 0.60 mgs. of dust per 100 cubic feet of air.

Of the 5 outdoor samples 4 were very satisfactory, but one contained over 2,000,000 one-fourth standard unit particles per cubic foot (55.90 mgs. per 100 cubic feet of air). This sample was taken near a dilapidated and leaking cyclone separator. The 4 good samples were taken on an unusually clear day and to leeward of the factory.

It seems clear from the results tabulated in Table IX that even the office workers and yard helpers in Factory B (many of whom are women) are exposed to serious dangers from industrial tuberculosis, as a result of the inadequate handling of the dust hazard in the production departments of this factory.

TABLE IX.—*Dust content of air in number of particles and weight in mgs. per cubic foot of air in offices and yards, factory B.*

Sample number.	Sampling position.	Number of particles per cubic foot of air, classified by size in standard units.			Total number of particles per cubic foot of air.	Standard units per cubic foot of air.	Weight of solids, mgs. per cubic foot of air.			Percentage of inorganic solids.
		10 Std. u.	1 Std. u.	¼ Std. u.			Total.	Organic.	Inorganic.	
8281	Research laboratory	.....	6,815	279,200	277,000	74,600	0.06	0.01	0.05	83.4
8282	Works' office	563	17,580	114,800	132,900	51,900	.04	.01	.03	73.0
8283	.....do	208	10,630	195,000	205,800	207,700	.025	.005	.02	80.0
8284	Accounting office	208	14,400	651,000	665,600	179,200	.029	.017	.012	41.4
8285	Billing department	370	6,850	579,000	586,200	155,300	.034	.016	.018	53.0
9061	Down town building	.....	1,600	73,500	75,100	20,000	.006	.005	.001	16.6
8286	Outdoors	1,668	44,200	2,325,000	2,370,800	642,100	.56	.142	.417	74.5
8271	.....do	185	1,480	120,000	121,600	33,300	.014	.005	.009	64.2
8272	.....do	.....	926	142,000	142,900	36,400	.010	.001	.009	90.0
8273	.....do	.....	4,070	59,100	63,100	18,800	.024	.014	.010	41.7
8274	.....do	.....	1,850	38,850	40,700	11,500	.007	.001	.006	85.7

It may be of interest to note that the average size of the particles in the air of the workrooms of factory B was about 0.26 standard units and the weight 0.000000055 mg. The average particle in the polishing shops of factory A as reported by Winslow, Greenburg and Angermyer had a size of 0.28 standard units and weighed 0.000000086 mg. In other words the dust particles in the carborundum works were a little smaller and a little more than two-thirds as heavy as those found in the air of the polishing shops. The dust collected in factory B averaged 86.2 per cent inorganic material, but a considerable percentage of organic material was found in the mixing and grinding rooms.

The Dust Hazard in Abrasive Factory C.

At the second abrasive factory investigated (factory C) crude, abrasive material is made and shipped to another city, there to be manufactured into wheels. The process which we studied here consists of the manufacture of an abrasive material, alundum, by the fusing of precipitated aluminum hydroxide in an electric arc furnace, or by the fusing of bauxite with coke in the same manner.

The process as carried on at this plant consists in receiving the aluminum hydroxide in bags, emptying the bags, carting the material to bins on the furnace room floor by means of "buggies," shoveling the material into electric arc furnaces and then fusing it. At the close of the run, the "pig" is removed, cooled, broken into large pieces, crushed, and finally elevated to a storage bin, from which it is run into freight cars.

The industrial operations which give rise to the greatest quantity of dust are the crushing, furnacing, and coke grinding operations, each of which has been studied in detail (see Table X).

The furnacing and crushing operations are carried on in one room. In the furnacing operation the crude material is brought from a storage room to the furnace platform by means of "buggies" and is emptied into open bins before the furnaces, from which place it is shoveled into the furnaces themselves. The two chief sources of dust are the transferring of the material into these bins from the buggies and the shoveling into the furnaces.

Samples 8292 and 8301 were taken in this portion of the room and show weights of 119.9 and 185.7 mgs. of dust per 100 cubic feet of air and counts of 5,500,000 and 13,500,000 one-fourth standard unit particles respectively.

In the crushing operation the fused material from the furnace is crushed and carried by means of a belt conveyor to an elevator shaft and then lifted to a storage bin above. Seated alongside the conveyor is a group of women whose duty it is to remove from the product any impurities which may be found therein. The task of

another female worker, seated alongside the crusher, is to keep the material, as it leaves the crusher, from piling up in one place and thus obstructing the elevator. It was in this operator's position that sample 8294 was taken. Analysis of this sample showed the exceedingly high count of 311,000,000 particles and the second highest weight of any obtained in our study, 2,139 mgs. per 100 cubic feet of air.

TABLE X.—*Dust content of air in number of particles and weight in mgs. per cubic foot of air, various locations, factory C.*

Sample number.	Sampling position.	Number of particles per cubic foot of air, classified by size in standard units.			Total number of particles per cubic foot of air.	Standard units per cubic foot of air.	Weight of solids, mgs. per cubic foot of air.			Per cent of inorganic solids.
		10 Std. u.	1 Std. u.	¼ Std. u.			Total.	Organic.	Inorganic.	
	Grinding room:									
8291	Sorting belt	.....	133,500	17,110,000	17,143,500	4,411,000	2.973	0.033	2.94	98.9
8292	Furnace level	.....	139,000	5,500,000	5,639,000	1,514,000	1.199	.021	1.178	98.2
8293	Sorting belt	.....	504,000	20,660,000	21,164,000	5,669,000	4.209	.044	4.165	98.9
8294	Bucket elevator	.....	3,320,000	311,000,000	313,320,000	81,070,000	21.39	.210	21.18	99.0
8295	West end of room	.....	103,800	4,320,000	4,423,800	1,183,800	.749	.018	.731	97.7
	Furnace room:									
8301	Mix bin	.....	488,000	13,550,000	14,038,000	3,575,500	1.857	.051	1.806	97.4
8302	Storage bin	.....	1,067,000	62,900,000	63,967,000	16,792,000	7.699	.259	7.44	96.7
8303	Coke-grinding room	87,000	10,880,000	669,000,000	679,880,000	179,000,000	21.50	6.35	15.15	70.4
8304	Corridor	.....	2,440,000	316,000,000	318,440,000	81,440,000	8.66	5.92	2.74	31.6
	Outdoors:									
8296	Street near plant	.....	51,800	851,000	902,800	264,600	.127	.016	.111	87.5
8297	200 feet distant	.....	13,030	126,800	139,800	44,700	.051	.019	.032	62.7
9031	¼ mile distant	.....	4,620	310,000	314,600	82,100	.016	.005	.011	68.7
9042	Yard	.....	591	145,800	146,400	37,000	.065	.013	.052	80.0
9062	Residential district	355	533	33,950	34,800	12,600	.005	.003	.002	40.0
9063	Same as 9031	.....	1,776	60,400	62,200	16,900	.005	.002	.003	60.0
9041	Research laboratory	.....	1,970	537,600	539,600	136,400	.013	.007	.006	46.1
9042	Superintendent's office	.....	197	89,200	89,400	22,500	.008	.001	.007	87.4

Two other samples, 8291 and 8293, were taken at points alongside the conveyor at distances of 12 feet and 18 feet from the crusher. These samples also show exceedingly high counts and weights, 17,110,000 and 20,660,000 one-fourth standard unit particles per cubic foot of air, and 297.8 and 420.9 mgs. of dust per 100 cubic feet of air, respectively.

One sample, 8295, of air taken in the west end of the room about 20 feet from the crusher shows a count of 4,320,000 particles and 74.9 mgs. of dust per 100 cubic feet of air.

In the coke-grinding operation, coke, to be used in the manufacture of alundum from bauxite, is shoveled into a crusher and broken down into fine pieces which are carried to a bin above by means of a bucket elevator. The results of the dust analyses of air taken in this part of the plant are shown in the table as samples 8303 and 8304. Number 8303 was taken in the room proper, whereas 8304 was taken in the corridor alongside the room. Sample 8303 shows a dust count of 669,000,000 one-fourth standard unit particles per

cubic foot of air, and a weight of 2,150 mgs. of dust per 100 cubic feet of air, the count and weight in this case being the highest in either plant studied. Sample 8304 shows a count of 316,000,000 one-fourth standard unit particles per cubic foot of air, and a weight of 866 mgs. per 100 cubic feet of air.

Of nine samples of air collected in production departments of the plant, all contained over 1,000,000 one-fourth standard unit particles per cubic foot, and three more than 100,000,000. Of these nine samples all contained over 28.3 mgs. of dust per 100 cubic feet of air. (The standard set by Higgins, Lanza, and others for the Joplin mines is 1 mg. per 100 liters, or 28.3 mgs. per 100 cubic feet.)

In the lower part of Table X are shown the results of analyses of two air samples from the offices in factory C, five outdoor samples in the vicinity, and one control outdoor sample from a residential district of the city. Of the office samples, one collected in the Research Laboratory contained 537,600 one-fourth standard unit particles per cubic foot of air. More significant, however, are the outdoor samples Nos. 8296, 8297, and 9031. The first, collected on the street close to the plant, showed 0.127 mg. of dust per cubic foot. The second was collected about 200 feet farther away, but in the direction in which the wind was blowing the dust from the ventilating stacks over the electric arc furnaces, and showed 0.051 mg. The third sample was taken a quarter of a mile away; but the cloud of dust from the stacks was clearly visible even at this point, and the presence of 0.016 mg. of dust showed appreciable pollution. Sample 9063 taken at the same point as 9031 when the wind was in a different direction, and sample 9062, collected in a residential district free from special pollution, show that the normal dust content of the air at this season was only 0.005 mg. per cubic foot.

The amount of dust present in the air of this plant could be greatly reduced by properly inclosing the crusher, by improved methods of handling and transferring the crude material to the furnaces, and by means of a well-designed hood over the coke crusher.

Comparison of Dust Content of Air in Abrasive Factories with that Reported for Other Industrial Establishments.

It may be interesting to compare these results with those reported for various industries by Miller and Smyth (Journal of the American Medical Association LXX, 599). We have tabulated in Table XI their principal data in comparison with our own and with those obtained by Higgins and Lanza in the Joplin mines.

TABLE XI.—*A comparison of data pertaining to dust content of air in different industries.*

Industry.	Observer.	Number of samples.	Dust particles per cubic foot.	Mgs. dust per 100 cubic feet.	Percentage of inorganic solids.
Good polishing shop	Winslow, Greenburg, and Angermyer.	15	267,000	2.37	77
Cigar shops	Miller and Smyth	19	102,600	8.4	56
Pottery	do	5	182,720	13.0	60
Asbestos	do	6	494,100	35.4	73
Steel grinding	do	3	489,930	43.3	96
Flint	do	3	844,040	45.9	76
Blanket, plush, and carpet	do	13	148,950	50.4	44
Joplin mines	Higgins, Lanza, et al	221		146.4	
Abrasive factory "B"	Winslow, Greenburg, and Greenberg.	57	31,010,000	174.3	86
Cement mill	Miller and Smyth	11	6,790,900	218.5	72
Abrasive factory "C"	Winslow, Greenburg, and Greenberg.	9	159,779,000	780.5	87

It will be noted that our figures for factory B are somewhat in excess of those found by Higgins and Lanza for the Joplin mines; and the figures for factory C are greatly in excess of any reported, including the cement mill studied by Miller and Smyth.

It seems obvious from these results that establishments devoted to the manufacture of abrasive materials may present conditions in regard to aerial dust content that can scarcely be equaled in any other industry. The study of such conditions and the devising of adequate means for so controlling them as to protect the workers in this trade from the menace of tuberculosis would seem to invite serious attention.

A DISPOSAL STATION FOR A CAN PRIVY SYSTEM.

By E. B. JOHNSON, Chief Sanitary Inspector, United States Public Health Service, Montgomery, Ala.

The method of ultimate disposal of the human excrement collected from a can privy system is undoubtedly a matter requiring most careful consideration. An improperly located disposal station, by reason of objectionable odors, will certainly become a source of complaint on the part of persons residing in its vicinity; and since a sanitary system of this character is frequently judged by such an objectionable feature, a malodorous disposal station might cause the condemnation of an otherwise adequate and effective system.

Fully as important as a suitable location is the proper equipment and management of the disposal station. When the sense of smell is offended, or hands and clothing of employees are soiled, it can not be expected that the attendants necessary to operate the station will remain. The disposal plant at Montgomery, Ala., represents the

more recent advances made by the field forces of the Public Health Service in the determination of methods for the installation and operation of such plants and for that reason it is described in detail.

Location.

For the establishment of the disposal station at Montgomery, a plot of ground 150 feet by 100 feet, located on a bluff overlooking the Alabama River, was selected. The nearest dwellings are approximately 300 feet distant, and there are not more than 20 houses within 700 feet of the station. That the station is well located, however, is indicated by the presence of 3,300 privies, in which 3,900 cans are used, within a radius of 1 mile and a half. By locating the disposal station in the center of the available plat, free ventilation has been secured and a reasonable zone maintained between it and adjoining property.

Capacity of Station.

The chief consideration determining the size of the station was the platform room necessary to accommodate the incoming cans. It was estimated that 4,200 weekly (or 700 daily) would be brought through this station, and the assumption was made that not over 200 of these would arrive at one time. To allow for subsequent expansion of the system, however, all further estimates were based on a possibility of 480 arriving at one time; so that the station has really a potential capacity of over 10,000 weekly. Since the cans are changed once a week, the station could dispose of the excreta from a territory containing 10,000 cans, or could serve a number of houses approximately two and one-half times that in the present allotted territory.

Arrangement.

In order to provide space for the 480 cans which might possibly be unloaded at one time, it was decided to build an unloading platform 30 feet by 7 feet, and on the opposite side of the station a loading platform of the same size. Each of these platforms was designed to hold 480 cans in stacks four tiers high. To provide sufficient room in which to work around the hoppers, a space 6 feet wide, running the entire length of the building, was allowed for them between the two platforms. Thus the entire station, when completed, was 30 feet long by 20 feet wide. In figure No. 1 are shown a floor plan of the station (A) and an end elevation (C).

Construction.

The station was built on brick pillars which were placed 5 feet apart and which were of sufficient height to bring the floor from 2½ to 3 feet higher than the driveway. This permits the easy handling

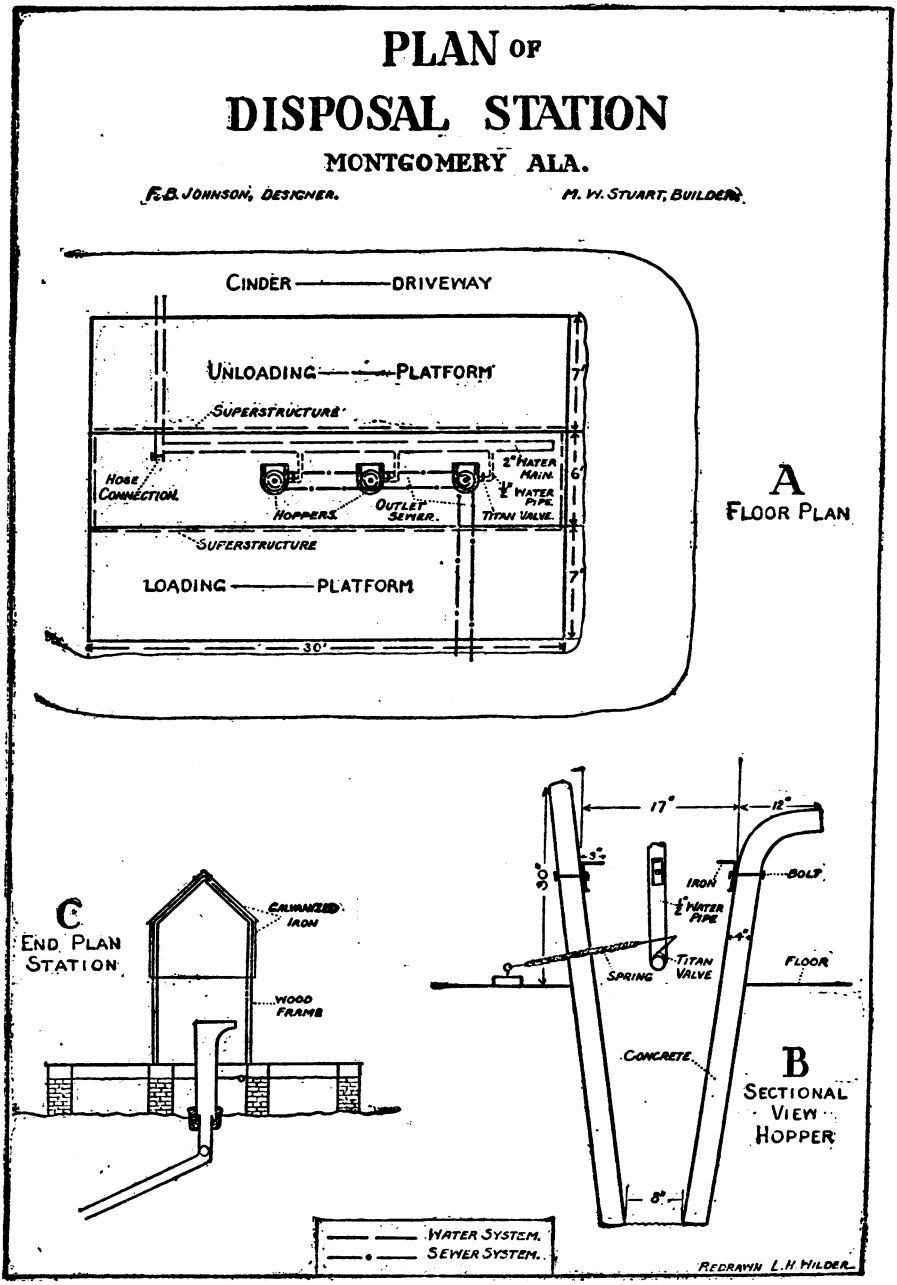
PLAN OF
DISPOSAL STATION
MONTGOMERY ALA.
F.B. JOHNSON, DESIGNER.
M. W. STUART, BUILDER.
CINDER DRIVEWAY
UNLOADING PLATFORM
SUPERSTRUCTURE
HOSE CONNECTION
HOPPERS
OUTLET SEWER.
2" WATER MAIN.
1/2" WATER PIPE.
TITAN VALVE.
SUPERSTRUCTURE
LOADING PLATFORM
30'
7'
6'
7'
A
FLOOR PLAN
17"
12"
3"
30"
IRON
BOLT
1/2" WATER PIPE
4"
SPRING
TITAN VALVE
FLOOR
CONCRETE
B
SECTIONAL VIEW HOPPER
8"
C
END PLAN STATION
GALVANIZED IRON
WOOD FRAME
WATER SYSTEM.
SEWER SYSTEM.
REDRAWN L.H. WILDER.

FIG. 1.

of the cans between the wagons and the platforms. The stringers were 4-inch by 6-inch timbers, and the flooring was made of 2-inch boards. The building proper is 12 feet high at the ridge and 9 feet at the eaves. Corrugated galvanized sheeting was used.

As originally designed, only the central portion of the station, 6 feet in width, was covered by a roof. In building, this plan was adhered to for the purpose of obtaining thorough ventilation and ample light. Experience has shown, however, that a better plan would be to extend the roof over the entire platform. The attendants need shelter in stormy weather, and the station equipment should be protected against theft and depredation. Figures 1, 2, and 3 illustrate the present arrangement. A roadbed of cinders was laid from the street to and around the station.

Hoppers.

The most important and interesting feature of the disposal station is the means by which the excrement is removed from the cans. Three concrete hoppers are used (figs. 4, 5, and 6). A brief description of one of these disposal hoppers will serve to explain the manner in which it is operated.

The hopper has the shape of an inverted frustum of a cone with a lip extending 12 inches toward the unloading platform. The lip is U-shaped, concave upward, and the inside middle point is about 7 inches below the top of the hopper (fig. 6 shows the forms used in the construction of the hoppers). On the inner wall of the hopper, and level with the inside bottom of the lip just described, 4 pieces of right-angle iron are placed at equidistant points. One side of each angle iron is fastened to the inner concrete wall by bolts, while the other sides project 3 inches into the interior of the hopper, thus forming projections which support an inverted can. The diameter of the hopper at this point is 17 inches, while the cans in which excreta are collected have a diameter of 15 inches, giving a leeway of 2 inches when the can is in position on the iron supports. The concrete hopper narrows down gradually until it connects with an 8-inch sewer. This sewer discharges its contents, without treatment, directly into the Alabama River.

The apparatus for washing cans is simple. Projecting into the center of the hopper, and to a point 2 inches above the angle-iron supports previously described, is a half-inch perpendicular pipe. The flow of water through this pipe is controlled by a titan valve located to the left and immediately outside of the hopper. Ordinarily, the valve is kept closed by a spring (fig. 1, B). It is opened by moving the lever, and is kept open during the washing operation either

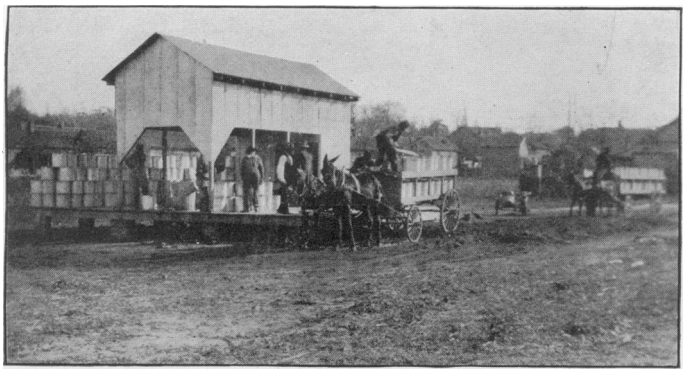

FIG. 2.

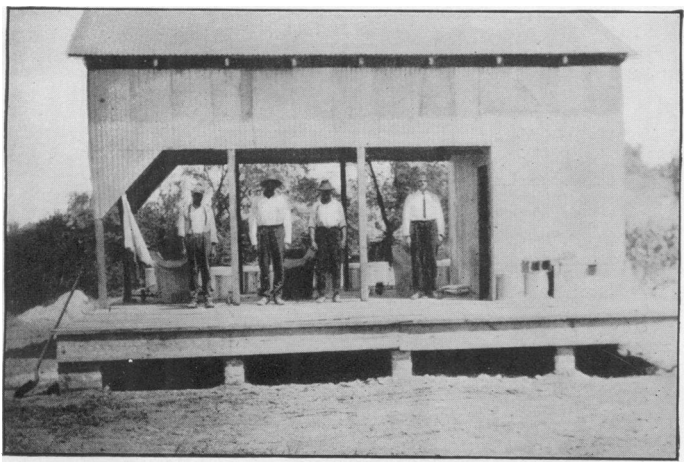

FIG. 3.

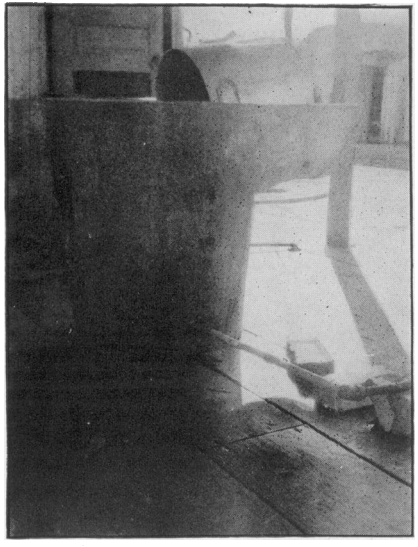

FIG. 4.

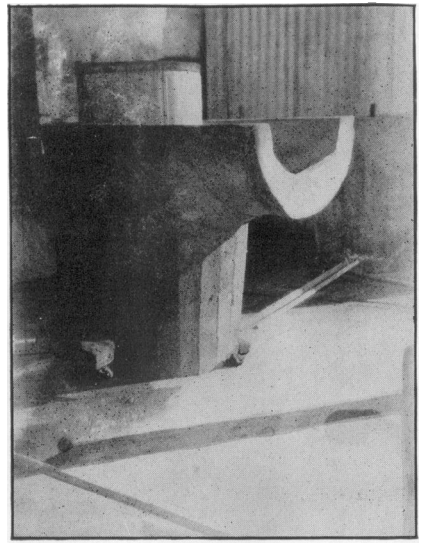

FIG. 5.

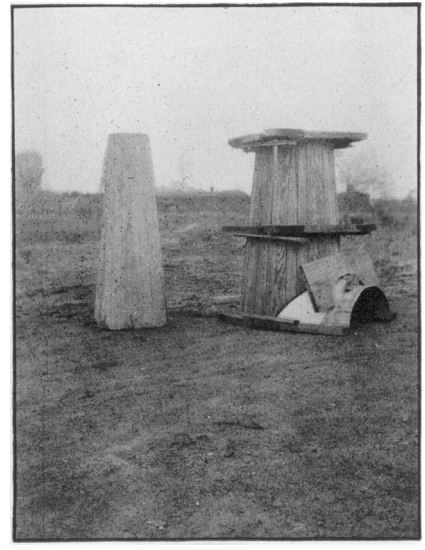

FIG 6.

by foot pressure of the operator or by a weight placed on the lever. The washing pipe is connected to a 2-inch pipe fed by the city mains.

Operation of the Station.

On bringing a load of used cans to the disposal station, each wagon is driven alongside the unloading platform, where the work of unloading is performed by the driver of the wagon and his two helpers. After the cans have been unloaded, the wagon is driven around to the opposite or loading platform, where the same number of clean cans are placed on the wagon by the same employes.

The actual handling and cleaning of the cans at the hoppers is performed by two station employes who operate under the direction of a foreman. One man operates on the "soiled can" side placing the cans in the hoppers, while the other, operating on the opposite side, removes and places them on the "clean can" platform. The man handling the soiled cans loosens the lid, which is dropped onto the platform topside down, and lifts the can to the lip of the hopper. It is then quickly inverted over the washing pipe and the greater portion of the contents falls into the hopper. The can now being in position for washing, the valve is opened and the half-inch stream of water turned on. The water is allowed to flow for from 40 to 60 seconds, after which time it is shut off by the operator on the loading side and the can removed. In practically every instance a single operation cleans the cans satisfactorily, since only in about 1 per cent of the cases do feces adhere to the inner surfaces after the washing. In such cases this material is loosened by applying a solution of lye by means of a mop. Despite certain apprehensions regarding the possible deleterious action of the lye upon the galvanized surfaces it has been found that no damage has resulted.

A measure not in use at this station, but which has been employed quite generally, is that of immersing the cans, after mechanical cleaning, in a tank of disinfectant solution (such as 1–50 compound cresol solution), leaving about a pint of the solution in the can.

The covers previously upturned on the platform are washed by directing upon them a stream from an ordinary hose.

The comparatively slight odor prevailing at the disposal station, even during the unloading and the cleaning operations, has been a matter for much favorable comment. This is due to the fact that all dirty cans are kept tightly covered until they are ready to be placed into the washing hopper. Then, too, the rapidity with which they are handled and the thoroughness of the washing contribute to this favorable result. The process is greatly simplified by the fact that the outer surfaces of the cans seldom become soiled.

Cost of the Station and Its Operation.

The disposal station was erected during the war, at a time when the cost of labor and materials was unusually high. Even so, it does not appear that the expense of construction and maintenance has been disproportionate to the success which has attended the project. The items of expense connected with the erection and operation of the main disposal station may be briefly summarized as follows:

Cost of construction:	
Plat of ground	$1,500.00
Station and hoppers	768.40
Sewer, water pipes, and fixtures	931.60
Total	3,200.00
Cost of operation (daily):	
Foreman	4.50
2 laborers, at $2.50	5.00
Total	9.50

This force handles 700 cans daily, and it could, if necessary, care for 1,200 cans in the same time.

Suggestions for Improvement.

While the present station has served very well the purpose for which it was intended, certain improvements are contemplated which are also to be incorporated in the plans of another station soon to be constructed.

These changes are:

1. A concrete floor with a center drain.
2. A roof over the entire building.
3. Inclosed sides for the building so that the laborers may be protected in stormy weather and the property protected from theft. Sliding or roller doors should be used, thus permitting free ventilation while cans are being discharged or washed.

The disposal station has been in continuous operation in Montgomery for a period of six months. In that time a large number of service cans have been cleaned expeditiously and with practically no objection from persons either working at the station or residing in the neighborhood. From a mechanical as well as from a sanitary standpoint, in which it is an important factor in the prevention of disease, the station has come to be regarded by the community as a successful part of an important system.

PITFALLS IN DETERMINING THE PROPHYLACTIC OR CURATIVE VALUE OF BACTERIAL VACCINES.

WITH SPECIAL REFERENCE TO INFLUENZA.

By G. W. McCoy, Director, Hygienic Laboratory, United States Public Health Service.

During the prevalence of the epidemic of influenza and pneumonia from which the country is just emerging, the writer had an opportunity to examine data on the value of certain bacterial vaccines designed for prophylactic or curative use against the infection.

The inadequacy of the evidence adduced to support the claims of certain preparations has been very striking. This paper is presented in order that the kinds of data on which conclusions may properly be based may be generally understood.

Perhaps the commonest source of error is that due to the employment of a vaccine in an institution, or in a group not in an institution, after cases of the disease have appeared. Influenza develops among the persons in a given group, prophylactic vaccinations are undertaken more or less promptly, and no cases may occur after the inoculations have been completed. The results appear most impressive when the number of cases among vaccinated and unvaccinated is presented; but when closer examination reveals the fact that so large a proportion of the personnel involved has developed the disease before the vaccinations were done, that in all probability the remainder would not sicken, whether vaccinated or not, the figures lose their significance. An example will, perhaps, make this clearer. It was reported that among a large group of hospital attendants, approximately one-third had been vaccinated and all had remained free from the disease, while the remaining two-thirds of the persons had not been vaccinated, all of whom had developed influenza. This appeared to be a very striking example of the prophylactic value of the vaccine, but when the fact was brought out that the vaccinations were only begun after practically all of the two-thirds mentioned had become ill, the significance attributed to these figures was nullified, while the conviction remained that only the naturally immune had been vaccinated, it being unusual for more than two-thirds of the personnel in any group to develop influenza.

Somewhat similar were the data presented to support a claim for the efficiency of a vaccine which had been used in a large group of persons in a civil community. It was shown that but 2 per cent of those who had been vaccinated developed the disease; while in the community at large the incidence had been about 5 per cent. The figures looked significant until it was learned that the vaccinations had not been completed until the community had suffered from the epidemic for several weeks, and that about half of the 5 per cent of

cases had occurred before the vaccinations were completed. Omitting these, there remained so few cases in the large unvaccinated group as compared with those that had occurred among the vaccinated, that the difference was not striking enough to be regarded as satisfactory evidence.

A second source of error occurs in vaccinating all persons in a group, large or small, and interpreting failure of the disease to appear or to spread as evidence of protection. One has but to study the data with regard to certain institutions, where, without vaccinations, the disease has been excluded or has spread but slightly, to realize how fallacious are such arguments. Thus, the writer is acquainted with a large group, where vaccinations have been done and where a rigid quarantine has been in force, which has remained free from the disease; and he is acquainted with a number of institutions where the same result has been obtained by quarantine alone.

The third, and perhaps commonest, pitfall is the drawing of conclusions from too meager data. Thus, one observer assured me that he had been exposed to influenza patients many times and had taken no precautions beyond being vaccinated and he had not developed the disease. Evidence of this sort should be given no consideration, as many of us, the majority, indeed, have escaped the disease without having taken any particular means to prevent it.

We hear of numerous examples of the cure of cases by means of vaccine. I have heard related the most astonishing examples of apparent great benefit from vaccines in the pneumonia that follows influenza. When the records were scrutinized, however, it was found that these remarkable cases could be duplicated by others that had done equally well without vaccine.

In the only examples with which I am familiar in which a vaccine was used on alternate cases, no better results were secured in the vaccinated than in the control group.

The writer suspects that those who have used vaccines most commonly have been more facile in making the diagnosis of a complicating pneumonia than have others. The author has examined numerous clinical records submitted to support the value of vaccines in pneumonia, and many of the cases, judged by the evidence presented, most certainly would not ordinarily have been regarded as pneumonia. Physical signs were equivocal or could probably be attributed to bronchial involvement when there was no definite acceleration of respiration, and the general trend of the record did not support the view that the patient had pneumonia. In a certain large hospital, on one service, about 60 per cent of the cases admitted were diagnosed pneumonia and all were treated with vaccine, with a mortality of about 10 per cent, while in the same institution, on

another service, about 15 per cent of cases were diagnosed pneumonia and the mortality was 40 per cent. In this instance, the actual number of deaths was approximately the same, but vaccine-treated cases showed a much lower case-mortality in the pneumonias. I am by no means sure that the higher percentage of pneumonias diagnosed may not have been more nearly accurate than the lower, but it should not be made the basis of misleading deductions.

The only way in which we are to secure promptly acceptable evidence of the value of a bacterial vaccine is by the vaccination of only a portion of the individuals in a large group, holding the remainder as controls; age, sex, and conditions of exposure being the same in the two groups.

On the other hand, a vaccine should not be condemned unless controlled as just indicated, and unless it has failed to show protective value when sufficient time has elapsed after the inoculation to make it reasonably likely that any immunity which may develop will have had an opportunity to do so.

A large number of vaccines have been used, some made from the influenza bacillus alone, others from this in conjunction with pneumococci, staphylococci, and streptococci, and in various combinations; the failure of one does not necessarily mean the uselessness of others.

NARCOTIC DRUGS—INTERPRETATION OF HARRISON ACT.

THE UNITED STATES SUPREME COURT HOLDS THAT SECTION 2 IS CONSTITUTIONAL.

Two opinions relative to the so-called Harrison Narcotic Drug Act have recently been rendered by the United States Supreme Court. Both cases arose under section 2 of the act, the constitutionality of this section being brought into question.

In the first case [1] the defendant, a physician, was indicted for selling and distributing narcotic drugs unlawfully because not in pursuance of a written order on a form furnished for the purpose, and for selling and distributing narcotic drugs not in the course of professional practice. The United States District Court for the western district of Texas held that section 2 was unconstitutional because it was not a revenue measure but an invasion of the police power reserved to the States. This decision the Supreme Court reversed, holding the act to be within the taxing authority of Congress.

In the second case [2] the defendants were convicted and sentenced in the United States District Court for the western district of Tennessee on a charge of conspiracy to violate the Harrison Act. The facts were that one of the defendants, a physician, prescribed morphine for habitual users without intent to effect a cure but to keep

[1] United States v. Doremus, 39 Sup. Ct., 214. [2] Webb et al. v. United States, 39 Sup. Ct., 217.

the users of the drug supplied; and that the other defendant, a druggist, filled these prescriptions with full knowledge of the circumstances. In answer to certain questions certified to the Supreme Court by the Circuit Court of Appeals for the Sixth Circuit, the Supreme Court held as follows: That retail sales of narcotic drugs by druggists to persons without a physician's prescription or without an order on the prescribed form are prohibited; that the prohibition of such sales is constitutional; and that an order for the drugs given by a physician to an habitual user, not in the course of professional treatment to cure the disease but to keep the user supplied with the drugs, is not a "prescription" under exception (b) of section 2 of the act.

This decision means that it is unlawful for a druggist to fill a prescription for narcotic drugs when he has knowledge that the prescription was given for the purpose of supplying the drugs to an addict, and not for treatment. It does not prevent a physician from prescribing narcotic drugs in good faith or a druggist from filling such a prescription.

Portions of the opinion in the first case follow:

* * * This statute [the Harrison Act] purports to be passed under the authority of the Constitution (Art. I, sec. 8), which gives the Congress power "to lay and collect taxes, duties, imposts, and excises to pay the debts and provide for the common defense and general welfare of the United States; but all duties, imposts, and excises shall be uniform throughout the United States."

The only limitation upon the power of Congress to levy excise taxes of the character now under consideration is geographical uniformity throughout the United States. This court has often declared it can not add others. Subject to such limitation, Congress may select the subjects of taxation and may exercise the power conferred at its discretion. (License Tax Cases, 5 Wall., 462, 471.) Of course Congress may not in the exercise of Federal power exert authority wholly reserved to the States. Many decisions of this court have so declared. And from an early day the court has held that the fact that other motives may impel the exercise of Federal taxing power does not authorize the courts to inquire into that subject. If the legislation enacted has some reasonable relation to the exercise of the taxing authority conferred by the Constitution, it can not be invalidated because of the supposed motives which induced it. * * *

Nor is it sufficient to invalidate the taxing authority given to the Congress by the Constitution that the same business may be regulated by the police power of the State. (License Tax Cases, 5 Wall., supra).

The act may not be declared unconstitutional because its effect may be to accomplish another purpose as well as the raising of revenue. If the legislation is within the taxing authority of Congress, that is sufficient to sustain it. (In re Kollock, 165 U. S., 526, 536). * * *

Considering the full power of Congress over excise taxation, the decisive question here is, Have the provisions in question any relation to the raising of revenue? That Congress might levy an excise tax upon such dealers, and others who are named in section 1 of the act, can not be successfully disputed. The provisions of section 2, to which we have referred, aim to confine sales to registered dealers and to those dispensing the drugs as physicians, and to those who come to dealers with legitimate prescriptions of physicians. Congress, with full power over the subject, short of arbitrary and unreasonable action, which is not to be assumed, inserted these provisions

in an act specifically providing for the raising of revenue. Considered of themselves, we think they tend to keep the traffic aboveboard and subject to inspection by those authorized to collect the revenue. They tend to diminish the opportunity of unauthorized persons to obtain the drugs and sell them clandestinely without paying the tax imposed by the Federal law. * * *

We can not agree with the contention that the provisions of section 2, controlling the disposition of these drugs in the ways described, can have nothing to do with facilitating the collection of the revenue, as we should be obliged to do if we were to declare this act beyond the power of Congress acting under its constitutional authority to impose excise taxes. * * *

COMBATING TUBERCULOSIS IN FRANCE.

A striking illustration of the modern educational methods employed in the campaign now being conducted under the auspices of the Commission Américaine de Préservation Contre la Tuberculose en France is shown in a poster which has just reached this country. (The original is printed in four colors and measures 32 by 48 inches.) The legend on this poster is one which we should all take to heart, for, despite the nation-wide campaign of educational publicity, there still appears to be far too little realization of the great prevalence of tuberculosis in this country.

NE NOUS ENDORMONS PAS
SUR NOS LAURIERS,
LA TUBERCULOSE NOUS MENACE,
IL FAUT LA VAINCRE.

EDUCATIONAL CAMPAIGN FOR THE CONTROL OF VENEREAL DISEASES.

The purpose of the educational campaign for furthering venereal disease control is to bring to the people of America a knowledge of the effects of gonorrhea and syphilis on the health and efficiency of the Nation. By presenting this information to the public it is expected

to secure the cooperation of the people in assisting their State boards of health in carrying on the work.

This information is given by (1) the distribution of pamphlets; (2) lectures, addresses, and conferences; (3) the showing of card exhibits, lantern slides, and motion-picture films.

The material used in the campaign has been carefully prepared and initial publicity has been given by the Division of Venereal Diseases of the United States Public Health Service. The details and follow-up work are being carried out by the various State boards of health cooperating with the Service. The Bureau caused to be distributed a very large number of pamphlets on the subject of venereal diseases, using in this circularization 35 different publications.

Reports of 400 lectures and 18 conferences have been received, but these reports are incomplete in that they do not cover all of the work done by the State boards of health. A total of more than 200,000 registrants in the last draft received instruction in regard to the venereal-disease-control campaign. Card exhibits have been prepared for both adults and boys of high-school age, and sets of these exhibits have been lent to the various State boards of health. Wherever they have been shown unanimous approval and comment thereon have been received. The lantern slides referred to are slides made of the exhibit cards of the "Keeping Fit" exhibit for boys. Motion pictures referring to venereal diseases have been shown to 320 audiences. This includes only the free showings for which invitations are issued.

Special features of the educational campaign are the work being carried on with the cooperation of the Rotary Clubs; the development of programs to be carried out by large employers of labor; the campaign through ministers of the country, 15,000 of whom have pledged their cooperation; the campaign for elimination of advertisement of venereal nostrums and quack doctors from newspapers and magazines; the appeal to druggists for their cooperation and obtaining the absolutely necessary support of the medical profession in securing proper treatment of venereally infected persons.

One phase of the work now being developed, which will be of far-reaching importance, is the organization in each of the 710 cities in the United States having a population of 10,000 and over, of a local committee for stimulating venereal disease control work. This committee is selected upon the recommendations of representative citizens and officials and must be approved by the State board of health. Each city will later be graded on the basis of possibly 1,000 points, according to the medical, educational and law-enforcement measures adopted and carried out by its municipal authorities.

The results of this educational campaign can be measured in some degree by the number of letters received by the Bureau requesting

additional information in regard to the development of the work. During the past eight months, approximately 52,000 such letters have been received. Of these letters, 11,000 have been referred to State boards of health for reply.

Prior to April, 1919, 33 State boards of health had provided a supply of pamphlets for distribution.

Summary.

Number of varieties of pamphlets issued	35
Number of lectures, conferences, and motion-picture film showings reported.	738
Number of pamphlets purchased or reprinted by State boards of health...	1,600,000
Number of States having full sets of venereal disease pamphlets (Apr. 1, 1919)	33
Number of requests for pamphlets received from health officers, physicians, hospitals, civic organizations, libraries, and other sources	52,000
Number of signed agreements of cooperation received from physicians and druggists	83,000

AMERICAN BAR ASSOCIATION OFFERS COOPERATION IN ANTIVENEREAL DISEASE WORK.

At the meeting of the Executive Committee of the American Bar Association in Chicago on April 24, at which meeting a representative of the Public Health Service was present, the following resolution was unanimously adopted:

Resolved, That it is the sense of the executive committee that we cordially indorse, and desire to cooperate with efforts of the United States Government and the various State governments and municipal authorities in stamping out venereal diseases throughout the United States.

This resolution will be of great service to the various State boards of health in the development of their program for venereal disease control, and shows that not only the general public is interested in this important public health work, but that prominent professional groups are willing to give of their time and effort to develop the program until it is successful.

DEATHS DURING WEEK ENDED MAY 17, 1919, IN CITIES.

The table following shows the registered deaths from all causes and from pneumonia (all forms) and influenza combined, in certain large cities of the United States during the week ended May 17, 1919.

The data are taken from the "Weekly Health Index," May 20, 1919, issued by the Bureau of the Census, Department of Commerce.

Registered deaths and annual death rates per 1,000 population in certain large cities of the United States, week ended May 17, 1919—Deaths from all causes, and from pneumonia (all forms) and influenza combined.

City.	Population July 1, 1918, estimated.	Total deaths, all causes.	Annual death rate per 1,000.	Annual death rate for preceding years.[1]		Influenza and pneumonia (all forms).	
						Number of deaths.	Annual death rate per 1,000.
Albany, N. Y.	112,565	32	14.8	C.	15.7	2	0.9
Atlanta, Ga.	201,732	47	12.1	C.	17.3	.....	.....
Baltimore, Md.	[2] 669,981	177	13.8	A.	19.2	11	.9
Boston, Mass.	785,245	202	13.4	A.	17.5	24	1.6
Buffalo, N. Y.	473,229	151	16.6	C.	17.0	.....	.....
Cambridge, Mass.	111,432	30	14.0	A.	12.8	.....	.....
Chicago, Ill.	2,596,681	662	13.3	A.	14.5	54	1.1
Cincinnati, Ohio.	418,022	102	12.7	C.	15.7	.....	.....
Cleveland, Ohio.	810,306	162	10.4	C.	11.1	23	1.5
Columbus, Ohio.	225,296	72	16.7	C.	16.2	9	2.1
Dayton, Ohio.	130,655	23	9.2	C.	14.4	4	1.6
Denver, Colo.	.....	52	.....	.....	.....	.....	.....
Fall River, Mass.	128,392	32	13.0	C.	13.8	.....	.....
Grand Rapids, Mich.	135,450	45	17.3	C.	16.2	.....	.....
Indianapolis, Ind.	289,577	58	10.4	C.	14.4	.....	.....
Jersey City, N. J.	318,770	84	13.7	C.	13.2	.....	.....
Kansas City, Mo.	313,785	89	14.8	C.	26.3	7	1.2
Los Angeles, Calif.	508,495	108	9.9	A.	13.0	4	.4
Louisville, Ky.	242,707	59	12.7	C.	15.7	3	.6
Lowell, Mass.	103,081	47	22.5	A.	16.8	2	1.0
Memphis, Tenn.	154,759	47	15.8	C.	11.8	6	2.0
Milwaukee, Wis.	453,481	101	11.6	A.	12.7	17	2.0
Minneapolis, Minn.	383,442	80	10.9	C.	14.3	.....	.....
Nashville, Tenn.	119,215	42	18.4	C.	21.9	9	3.9
Newark, N. J.	428,684	91	11.1	C.	14.2	.....	.....
New Haven, Conn.	154,865	42	14.1	C.	17.2	.....	.....
New Orleans, La.	382,273	119	16.2	A.	20.5	.....	.....
New York, N. Y.	5,215,879	1,354	13.5	C.	14.3	200	2.0
Oakland, Calif.	214,206	47	11.4	A.	11.9	.....	.....
Omaha, Nebr.	180,264	22	6.4	C.	8.1	.....	.....
Philadelphia, Pa.	1,761,371	442	13.1		[3] 15.7	.....	.....
Pittsburgh, Pa.	593,303	156	13.7	C.	18.6	25	2.2
Portland, Oreg.	.....	52	.....	.....	.....	3	.....
Providence, R. I.	263,613	59	11.7	C.	14.2	5	1.0
Richmond, Va.	160,719	38	12.3	C.	17.8	.....	.....
Rochester, N. Y.	264,856	64	12.6	C.	11.4	10	2.0
St. Louis, Mo.	779,951	150	10.0	C.	13.3	.....	.....
St. Paul, Minn.	257,699	59	11.9	C.	11.3	.....	.....
San Francisco, Calif.	478,530	128	13.9	C.	17.9	14	1.5
Seattle, Wash.	.....	69	.....	.....	.....	12	.....
Spokane, Wash.	.....	21	.....	.....	.....	.....	.....
Syracuse, N. Y.	161,404	42	13.6	C.	17.4	6	1.9
Toledo, Ohio.	262,234	62	12.3	A.	14.6	8	1.6
Washington, D. C.	401,681	102	13.2	A	16.0	6	.8
Worcester, Mass.	173,650	48	14.4	C.	12.6	.....	.....

[1] "A" indicates that the rate given is the average annual death rate per 1,000 population for the corresponding week of the years 1913 to 1917, inclusive. "C" indicates that the rate is the annual death rate per 1,000 population for the corresponding week of 1918.
[2] Population estimated as of July 1, 1919.
[3] Rate is based on statistics of 1915, 1916, and 1917.

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.

EXTRA-CANTONMENT ZONES—CASES REPORTED WEEK ENDED MAY 24.

CAMP DIX ZONE, N. J.

	Cases.
Chicken pox:	
Chesterfield Township	2
Diphtheria:	
Mansfield Township	1
Influenza:	
Chesterfield Township	1
Tuberculosis:	
Pemberton Township	1

FAYETTEVILLE SANITARY DISTRICT, N. C.

Chancroid	4
Gonorrhea	11
Influenza	1
Syphilis	3
Tuberculosis, pulmonary	1

CAMP FUNSTON ZONE, KANS.

Junction City:	
Diphtheria	1
Manhattan:	
Chicken pox	7
Diphtheria	3
Mumps	2
Whooping cough	1

GAS AND FLAME SCHOOL ZONE, GA. AND ALA.

Gonorrhea:	
Muscogee County	1
Measles:	
Columbus	1
Bibb City	1
Pellagra:	
Columbus	1
Pneumonia:	
Columbus	3
Scarlet fever:	
Bibb City	1
Smallpox:	
Columbus	4
Muscogee County	1
Syphilis:	
Girard	1
Tuberculosis:	
Columbus	2
Whooping cough:	
Columbus	1

CAMP GORDON ZONE, GA.

Atlanta:	Cases.
Chancroid	1
Chicken pox	13
Diphtheria	2
Dysentery	2
Gonorrhea	41
Malaria	1
Measles	21
Mumps	1
Pneumonia	2
Scarlet fever	9
Smallpox	18
Syphilis	24
Tuberculosis	1
Venereal warts	1
Whooping cough	3

GULFPORT HEALTH DISTRICT, MISS.

Cancer:	
Gulfport	1
Chicken pox:	
Gulfport	1
Dysentery:	
Gulfport	1
Moss Point	2
Gonorrhea:	
Biloxi	1
Gulfport	5
Lorraine	1
Hookworm:	
Biloxi	1
Cuevas	1
Malaria:	
Escatawpa	3
Fenton	1
Gulfport	5
Handsboro	1
Kiln	1
Krcole	1
Logtown	2
Mississippi City	1
Moss Point	5
Pascagoula	2
Van Cleave	1
Measles:	
Ford	4
Pascagoula	1

GULFPORT HEALTH DISTRICT, MISS.—continued.

	Cases.
Mumps:	
Biloxi	3
Gulfport	3
Kreole	4
Long Beach	1
Lyman	1
Moss Point	1
Saucier	2
Pneumonia:	
Biloxi	1
Gulfport	1
Pass Christian	1
Syphilis:	
Kreole	1
Pascagoula	1
Tuberculosis:	
Biloxi	2
Whooping cough:	
Ford	1
Gulfport	3
Handsboro	1
Hovey	5

CAMP A. A. HUMPHREYS ZONE, VA.

	Cases.
Alexandria:	
Mumps	1
Septic sore throat	1
Smallpox	1

CAMP JACKSON ZONE, S. C.

	Cases.
Columbia:	
Chicken pox	7
Diphtheria	1
Mumps	8
Smallpox	1
Tuberculosis	2
Typhoid fever	4
Whooping cough	12
Government clinic:	
Gonorrhea	27
Syphilis	10

CAMP LEE ZONE, VA.

	Cases.
Petersburg:	
Gonorrhea	2
Measles	1
Syphilis	1
Tuberculosis	2

MUSCLE SHOALS SANITARY DISTRICT, ALA.

	Cases.
Lauderdale County:	
Chicken pox	5
Mumps	3
Smallpox	3
Nitrate Plant No. 2:	
Gonorrhea	9
Malaria	2
Mumps	1
Pneumonia	1
Syphilis	4

PICRIC-ACID PLANT ZONE, GA.

	Cases.
Brunswick:	
Chancroid	2
Gonorrhea	18
Pneumonia	1
Syphilis	4
Tetanus	1
Typhoid fever	1

CAMP PIKE ZONE, ARK.

	Cases.
Little Rock:	
Chicken pox	5
Erysipelas	1
Gonorrhea	23
Mumps	1
Pneumonia	1
Scarlet fever	2
Tuberculosis	1
Typhoid fever	1
North Little Rock:	
Malaria	1
Mumps	3
Scarlet fever	3
Syphilis	8
Tuberculosis	1

CAMP POLK ZONE, N. C.

	Cases.
Chicken pox:	
Durham	1
Gonorrhea:	
Durham	7
Marks Creek Township	1
Middle Creek Township	1
Little River Township	1
Raleigh	18
Wake Forest Township	2
Measles:	
Durham	1
Raleigh	1
Mumps:	
Durham	1
Syphilis:	
Durham	2
Raleigh	6
St. Matthews Township	1
Typhoid fever:	
Durham	1
Whooping cough:	
Durham	21
Cedar Fork Township	1
White Oak Township	1

PORTSMOUTH AND NORFOLK COUNTY HEALTH DISTRICT, VA.

	Cases.
Chicken pox:	
Norfolk	1
Diphtheria:	
Norfolk	3
Measles:	
Norfolk	6
Port Norfolk	2
Scarlet fever:	
Norfolk	4
Smallpox:	
Norfolk County	1
Portsmouth	2
Varioloid:	
Norfolk County	1

CAMP SHERMAN ZONE, OHIO.

	Cases.
Diphtheria:	
Chillicothe	1
Gonorrhea:	
Government clinic	5
Mumps:	
Chillicothe	6
Scarlet fever:	
Chillicothe	2

CAMP SHERMAN ZONE, OHIO—continued.

Smallpox:	Cases.
Harrison Township	1
Syphilis:	
Government clinic	3

SOUTHER FIELD ZONE, GA.

Gonorrhea	1
Rabies in animal	1

CAMP TRAVIS ZONE, TEX.

San Antonio:	
Chicken pox	1
Diphtheria	1
Gonorrhea	22
Influenza	1
Pneumonia	4
Syphilis	5
Tuberculosis	6
Typhoid fever	1

CAMP UPTON ZONE, N. Y.

Brook Haven:	Cases.
Tuberculosis	1
Riverhead:	
Chicken pox	3
German measles	2
Measles	4
Mumps	1
Pneumonia, lobar	1

WILMINGTON SANITARY DISTRICT, N. C.

Wilmington:	
Chicken pox	1
Diphtheria	1
Gonorrhea	25
Mumps	3
Syphilis	5
Tetanus	1
Typhoid fever	8
Tuberculosis	1
Whooping cough	3

DISEASE CONDITIONS AMONG TROOPS IN THE UNITED STATES.

The following data are taken from telegraphic reports received in the office of the Surgeon General of the United States Army for the week ended May 16, 1919. Reports from the American Expeditionary Forces are delayed in transmission, and the "current week" for troops in the American Expeditionary Forces is not the same period as "current week" for troops in the United States.

	Current week.	Last week.
Annual admission rate per 1,000 (all causes)	516.00	596.23
All troops in United States	958.86	1,219.96
American Expeditionary Forces	341.21	348.71
Annual admission rate per 1,000 (disease only)	450.58	517.27
All troops in United States	827.02	1,029.80
American Expeditionary Forces	303.18	309.70
Noneffective per 1,000 on day of report	38.79	40.04
All troops in United States[1]	50.73	52.68
American Expeditionary Forces	34.08	35.04
Annual death rate per 1,000 (all causes)	4.97	6.04
All troops in United States[1]	6.66	9.33
American Expeditionary Forces	4.30	4.73
Annual death rate per 1,000 (disease only)	3.48	4.43
All troops in United States[1]	5.76	7.37
American Expeditionary Forces	2.58	3.27

[1] Sick and death rates among troops in the United States will continue to be relatively high, as the numerical strength of troops in the United States continues to decline from week to week as a result of demobilization. Well men only are eligible for discharge, while the sick and otherwise disabled are retained in service for further treatment. The continued influx of sick and wounded (properly chargeable to commands overseas) is another factor tending to increase rates in the United States and to diminish correspondingly similar rates overseas.

Cases of special diseases reported during the week ended May 16, 1919.

Camp.	Pneumonia.	Dysentery.	Malaria.	Venereal diseases. Total.	Venereal diseases. New infections.	Influenza.	Measles.	Meningitis.	Scarlet fever.	Annual admission rate per 1,000 (disease only).	Noneffective rate per 1,000 on day of report.
Bowie				25	13					4,892.81	267.42
Bragg										387.69	15.84
Custer				8	6				2	524.17	34.16
Devens	5			17	6	6			1	835.28	76.60
Dix	4			15	3		3			517.81	37.98
Dodge	1			19	10				1	623.01	86.00
Funston				13			1			786.05	40.17
Gordon				10						2,741.68	67.05
Grant	1			45	3				1	2,188.74	101.12
Humphreys				1	1					344.21	31.77
Jackson			1	13						1,268.29	92.24
Kearny	3			2	1					1,416.20	166.89
Henry Knox				2						470.16	24.86
Lee				21	7					1,725.01	109.12
Lewis	1			4	4					2,283.74	131.32
Meade	4		1	16	5			1	18	1,079.80	64.16
Pike			1	38	7		1			1,729.38	117.97
Shelby			2	14	1					2,872.76	83.14
Sherman				5						1,440.49	105.74
Taylor	1			5	4	1			1	386.86	119.83
Travis				9	6	1				742.54	63.29
Upton				24	2	2	1			840.51	36.37
Northeastern Department				3	3					490.89	20.22
Eastern Department	1			10	1	1				426.41	19.66
Southeastern Department			2	9	2					591.41	24.27
Central Department				1						393.34	18.40
Southern Department	2			55	6	4				674.19	57.28
Western Department	1			13	7					515.74	16.46
Aviation camps				16	4					637.51	35.45
Ports of embarkation:											
Hoboken	3			33		32	6			1,195.30	74.41
Newport News	3			39	11	1				560.95	25.85
Fort Monroe				6						671.53	23.86
Alcatraz Disciplinary Barracks						3				954.12	36.69
Leavenworth Disciplinary Barracks				1						912.28	54.38
Columbus Barracks							1			706.50	27.13
Jefferson Barracks				7	5					3,662.75	133.93
Fort Logan				4	4	1				1,444.44	50.92
Fort McDowell				3						760.40	22.49
Fort Sill				10	10					419.20	17.17
Fort Slocum				2						491.80	25.22
Fort Thomas				2	2					1,007.04	27.28
West Point										217.83	10.77
Arsenals				5		2				649.63	30.09
Miscellaneous stations				7						495.44	31.17
Total	30		7	532	134	54	13	1	24	824.02	50.73

Number of deaths at large camps in United States, week ended May 16, 1919.

Camp.	Strength.	Deaths. All causes.	Deaths. Disease only.	Camp.	Strength.	Deaths. All causes.	Deaths. Disease only.
Bowie	2,827	0		Taylor	8,737	1	1
Bragg	1,073	0		Travis	4,692	1	
Custer	5,357	0		Upton	23,202	2	2
Devens	10,770	1	1	Northeastern Department	2,966	0	
Dix	30,939	2	2	Eastern Department	13,789	0	
Dodge	6,093	1	0	Southeastern Department	5,891	1	1
Funston	7,343	0		Central Department	3,966	0	
Gordon	5,652	0		Southern Department	30,625	1	1
Grant	9,028	0		Western Department	10,991	0	
Humphreys	2,266	1	1	Aviation camps	20,316	0	
Jackson	6,396	1	1	Port of embarkation:			
Kearney	2,864	1	1	Hoboken	35,760	2	2
Henry Knox	2,212	0		Newport News	17,525	2	2
Lee	6,873	2	2	All others	86,779	27	25
Lewis	4,645	1	1	Total	405,788	52	47
Meade	12,285	2	2				
Pike	5,713	1					
Shelby	3,584	1	1				
Sherman	14,629	1	1				

Annual admission rate per 1,000 for certain diseases.

Disease.	Troops in United States.		American Expeditionary Forces.	
	Current week.	Last week.	Current week.	Last week.
Pneumonia	3.84	8.35	6.63	7.37
Dysentery	.....	.24	.05	.14
Malaria	.89	.61	.25	.19
Venereal	68.57	70.63	39.13	38.32
Paratyphoid	.....	.....	.45	.04
Typhoid	.12	.12	.20	.78
Measles	1.66	2.08	1.11	2.14
Meningitis	.12	.49	1.11	.68
Scarlet fever	3.07	3.07	.65	.53
Influenza	6.53	12.16	.....	.....

CURRENT STATE SUMMARIES.

Telegraphic Reports for Week Ended May 24, 1919.

Alabama.—State totals: Typhoid fever 8, malaria 2, smallpox 17, measles 17, scarlet fever 7, diphtheria 1, whooping cough 7, tuberculosis (pulmonary) 20.

Arkansas.—State totals: Smallpox 49, malaria 35, measles 10, chicken pox 6, tuberculosis 3, pellagra 2, typhoid fever 1, hookworm 1.

California.—Influenza: Cases reported 176. Smallpox: Cases reported 17, of which in Long Beach 3, San Francisco 5, Butte County 2, Oakland 1, Turlock 1, Whittier 1, San Jose 1, Alameda 1, Los Angeles 1, Imperial 1. Typhoid fever: Cases reported 9, of which in Los Angeles 5, Riverside 2, Imperial 1, Kern County 1.

Connecticut.—State totals: Cerebrospinal meningitis: New Haven 3, Waterbury 1. Influenza: Cases reported 7.

Delaware.—Measles: Dover 2, Wilmington 3. Scarlet fever: Wilmington 3. Smallpox: Fairmount 1. Tuberculosis: Wilmington 3, Laurel 3, Lewes 1, Port Penn 1, Seaford 1. Typhoid fever: Blackbird 1, Felton 1.

Florida.—State totals: Typhoid fever 10, malaria 7, smallpox 2, diphtheria 7, dysentery 13. Poliomyelitis: Pensacola 1.

Georgia.—State totals: Acute infectious conjunctivitis 5, hookworm 2, chicken pox 29, diphtheria 5, dysentery (amebic) 32, dysentery (bacillary) 31, gonorrhea 91, influenza 11, malaria 77, measles 56, mumps 23, paratyphoid fever 3, pneumonia (acute lobar) 21, rabies (in animals) 4, scarlet fever 6, septic sore throat 6, smallpox 67, syphilis 42, German measles 1, tetanus 1, tuberculosis (pulmonary) 23, tuberculosis (other than pulmonary) 2, typhoid fever 23, whooping cough 14.

Illinois.—Diphtheria: Cases reported 164, of which in Chicago 138. Scarlet fever: Cases reported 114, of which in Chicago 61, Rockford 9, Oglesby 8, Freeport 7, Blue Island 4, De Kalb 3. Smallpox: Cases

reported 147, of which in Maunie 18, Sawyerville 17, Rock Island 14, Norris City 13, Galesburg 9, Pekin 9, Peoria 8, Avena Township (Fayette County) 6, Cobden 5, Rio Township (Knox County) 4, Seaton 4, Lynnville Township (Ogle County) 4, Aledo 3, York Township (Dupage County) 3. Meningitis: Cases reported in Chicago 4. Poliomyelitis: Cases reported in Chicago 2, Chicago Heights 1. Lethargic encephalitis: Chicago 1, Oregon 1. Influenza: Cases reported 22, of which in Chicago 18. Gonorrhea 80, syphilis 25.

Indiana.—Scarlet fever reported by counties: Wabash, Saint Joseph, Hendricks, and Howard. Smallpox reported by counties: Allen, Franklin, Monroe, Huntington, Wells, Saint Joseph, and Elkhart. Measles reported by towns: Goshen, South Bend, Gary, Greenfield, Carthage, and Elkhart. Mumps reported by towns: Knightstown, Elkhart, and Poneto. Diphtheria reported by counties: Grant 2, Wayne 1, Porter 1, Kosciusko 1, and Whitley 1. Rabies reported by towns: Shelbyville, Auburn, Charlestown, Sullivan, and Jeffersonville. Syphilis 34, gonorrhea 63, chancroid 5.

Iowa.—Cerebrospinal meningitis: Melbourne 1. Chancroid: Des Moines 1. Chicken pox: Davenport 1. Diphtheria: Burlington 1, Cedar Rapids 1, Council Bluffs 2, Davenport 2, Dubuque 14, Hawarden 2, Lamoni 4, South Fort Des Moines 1. Gonorrhea: Albia 3, Bidwell 1, Council Bluffs 7, Davenport 11, Des Moines 22, Dubuque 4, Mason City 5, Sioux City 8, Webster City 1. Measles: Council Bluffs 1. Mumps: Dubuque 1, Fort Des Moines 1. Scarlet fever: Burlington 5, Council Bluffs 5, Des Moines 1, Dubuque 1, Harlan 2. Smallpox: Albia 1, Albion 2, Boone 9, Cedar Falls 1, Cedar Rapids 13, Council Bluffs 2, Davenport 18, Des Moines 1, Dubuque 3, Fort Dodge 2, Indianola 1, Mason City 4, Montezuma 1, Ottumwa 5, Stockton 1, Walnut 1. Syphilis: Council Bluffs 1, Davenport 6, Des Moines 15. In rural districts of following counties: Diphtheria: Adams 1, Keokuk 1. Scarlet fever: Hardin 6. Smallpox: Keokuk 4, Plymouth 1, Sioux 1.

Kansas.—State totals: Smallpox 56, diphtheria 34, scarlet fever 56, influenza 54.

Louisiana.—Poliomyelitis 1, smallpox 20, typhoid fever 12, diphtheria 15, gonorrhea 122, syphilis 16, chancroid 17.

Maine.—Chicken pox: Portland 1. Diphtheria: Portland 1, Brunswick 1, Porter 1, South Portland 1. Scarlet fever: Oakland 3, Portland 5, Farmington 1, Madison 1, Winslow 1. Smallpox: Bath 2, Winslow 1. Tuberculosis: Anson 1, Bath 1, Brunswick 1, Bucksport 1, Fort Fairfield 1, Bowdoinham 1. Mumps: Sanford 1. Typhoid fever: Bath 1. Whooping cough: Sanford 1. Influenza: Portland 1, Howland 7. Gonorrhea: Portland 15, Lewiston 2, Sanford 2, Westbrook 2, Danforth 2, Bath 3, Greenville 1, Calais 1, Guilford 1, Rangeley 1. Syphilis: Portland 2, Kittery 2, Bath 1.

Massachusetts.—Unusual prevalence of measles, Fall River reporting 54 and Worcester 61.

Minnesota.—Smallpox (new foci): Becker County (Detroit City) 17, Traverse County (Dumont village) 1, Wilkin county (Bradford Township) 1. Syphilis 124, gonorrhea 120, chancroid 6, cerebrospinal meningitis 1, poliomyelitis 1.

New York.—State reports, exclusive of New York City: Typhoid fever 17, measles 495, scarlet fever 168, whooping cough 52, diphtheria 162. Smallpox: North Collins town 1, Maryland 1, Spencer town 1. Cerebrospinal meningitis: Buffalo 1, Lackawana 1, Utica 1. Poliomyelitis: Princetown 1. Pneumonia 88. Voluntary reports: Syphilis 167, gonorrhea 28.

North Carolina.—State totals: Whooping cough 137, measles 240, diphtheria 10, scarlet fever 6, septic sore throat 1, smallpox 59, chicken pox 24, typhoid fever 39, broncho-pneumonia 12, lobar-pneumonia 4, cholera infantum 13, dysentery (bacillary) 14, dysentery (amebic) 1.

Ohio.—Scarlet fever: Cincinnati 40, Lima 32. Smallpox: Elyria Township (Loraine County) 15, Brush Creek Township (Highland County) 9, Youngstown 12. Whooping cough: Green Township (Hocking County) 11.

Oregon.—Portland reports 18 cases and 2 deaths from influenza, and Hood River 21 cases.

Vermont.—No unusual prevalence or outbreak.

Virginia.—Cerebrospinal meningitis: Alexandria 1. Smallpox: Norfolk County 2.

Washington.—Unusual prevalence of contagious diseases reported. Scarlet fever: King County 10, Spokane 14, Walla Walla 6, Yakima 4. Smallpox: Puyallup 4, Tacoma 7, Yakima County 7, Yakima city 6, Zillah 5.

RECIPROCAL NOTIFICATION.

Minnesota.

Cases of communicable diseases referred during April, 1919, to other State health departments by Department of Health of the State of Minnesota.

Disease and locality of notification.	Referred to health authority of—	Why referred.
Smallpox:		
Minneapolis Health Department, Hennepin County.	Huron, Beadle County, S. Dak.	Taken sick in Minneapolis April 4. Came from Huron, S. Dak., March 31.
Tuberculosis:		
Mayo Clinic, Rochester, Olmsted County.	Juneau, Alaska	6 advanced cases;
	Alexandria, Madison County, Ind.	3 moderately advanced,
	Cedar Rapids, Linn County, Iowa.	1 incipient,
	Missouri Valley, Harrison County, Iowa.	1 apparently arrested,
	Waterloo, Blackhawk County, Iowa.	3 (stage of disease not given) left Mayo Clinic for homes.
	Detroit, Wayne County, Mich.	
	Wilsall, Park County, Mont.	
	Roswell, Chaves County, N. Mex.	
	Jamestown, Stutsman County, N. Dak.	
	Claremore, Rogers County, Okla.	
	White, Brookings County, S. Dak.	
	Marion, Waupaca County, Wis.	
	Langruth, Manitoba, Canada.	
	Meyronne, Saskatchewan, Canada.	
Pokegama Sanatorium, Pine County.	Chicago, Cook County, Ill.	3 open cases left Pokegama sanatorium for homes.
	Geneseo, Sargent County, N. Dak.	
	Valley City, Barnes County, N. Dak.	
Thomas Hospital, Minneapolis, Hennepin County.	Joice, Worth County, Iowa.	1 open case and 2 fatal cases removed from Thomas Hospital to homes.
	Dodgeville, Iowa County, Wis.	
	Menomonie, Dunn County, Wis.	
Lake Julia Sanatorium, Puposky, Beltrami County.	Burris, Ontario, Canada	Open case left sanatorium for home.

ANTHRAX.

New Jersey Report for April, 1919.

During April, 1919, one case of anthrax was reported in New Jersey.

CEREBROSPINAL MENINGITIS.

State Reports for April, 1919.

Place.	New cases reported.
Illinois:	
Carroll County—	
Elk Grove Township	1
Cook County—	
Chicago	8
Kennilworth	1
Ogle County—	
Monroe Township	1
St. Clair County—	
Freeburg	1
Total	12
Iowa:	
Calhoun County	1
Cerro Gordo County	1
Polk County	1
Total	3
Louisiana:	
Allen Parish	1
Calcasieu Parish	2
Lafayette Parish	1
Louisiana—Continued.	
Orleans Parish	3
St. Mary Parish	1
St. Tammany Parish	2
Total	10
Minnesota:	
Hennepin County—	
Minneapolis	2
St. Louis County—	
Aurora	1
Duluth	1
Total	4
Mississippi:	
Chickasaw County	1
Harrison County	1
Warren County	2
Total	4

CEREBROSPINAL MENINGITIS—Continued.

State Reports for April, 1919—Continued.

Place.	New cases reported.
Montana:	
Lincoln County—	
Eureka	2
New Jersey:	
Bergen County	1
Essex County	7
Hudson County	1
Mercer County	3
Ocean County	3
Passaic County	2
Union County	1
Total	18
North Carolina:	
Carteret County	1
Cumberland County	1
Durham County	1
Jackson County	1
Randolph County	1
Wake County	1
Total	6
Ohio:	
Allen County	1
Cuyahoga County	3
Hamilton County	1
Ohio—Continued.	
Jefferson County	1
Lorain County	1
Lucas County	1
Montgomery County	1
Pickaway County	1
Summit County	1
Total	11
Rhode Island:	
Coventry (town)	1
Providence	3
Total	4
South Carolina:	
Anderson County	1
Florence County	2
Total	3
Washington:	
King County—	
Seattle	3
Pierce County—	
Tacoma	1
Total	4

City Reports for Week Ended May 10, 1919.

Place.	Cases.	Deaths.
Atlanta, Ga	2	1
Chicago, Ill	5	2
Cincinnati, Ohio	1	.....
Cleveland, Ohio	1	1
Detroit, Mich	1	.....
Hartford, Conn	1	.....
Indianapolis, Ind	.....	2
Kansas City, Mo	1	.....
Los Angeles, Calif	.....	1
Lynn, Mass	2	1
Memphis, Tenn	1	.....
New Haven, Conn	2	.....
New York, N. Y	12	8
Paterson, N. J	1	.....
Philadelphia, Pa	2	.....
Pittsburgh, Pa	1	.....
Portsmouth, Va	.....	1
Providence, R. I	.....	1
St. Joseph, Mo	1	1
Trenton, N. J	1	.....

CHANCROID.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.
Fayetteville sanitary district, N. C	4
Camp Gordon zone, Ga	1
Picric acid plant zone, Ga	2

DIPHTHERIA.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.
Camp Dix zone, N. J	1
Camp Funston zone, Kans	4
Camp Gordon zone, Ga	2
Camp Jackson zone, S. C	1
Portsmouth and Norfolk County health district, Va	3
Camp Sherman zone, Ohio	1
Camp Travis zone, Tex	1
Wilmington sanitary district, N. C	1

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1225.

GONORRHEA.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.		Cases.
Fayetteville sanitary district, N. C.	11	Picric acid plant zone, Ga.	1
Gas and Flame school zone, Ga. and Ala.	1	Camp Pike zone, Ark.	23
Camp Gordon zone, Ga.	41	Camp Polk zone, N. C.	30
Gulfport health district, Miss.	7	Camp Sherman zone, Ohio	5
Camp Jackson zone, S. C.	27	Souther Field zone, Ga.	1
Camp Lee zone, Va.	2	Camp Travis zone, Tex.	22
Muscle Shoals sanitary district, Ala.	9	Wilmington sanitary district, N. C.	25

INFLUENZA.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.		Cases.
Camp Dix zone, N. J.	1	Camp Travis zone, Tex.	1
Fayetteville sanitary district, N. C.	1		

LEPROSY.

Boston, Mass., New York, N. Y., and San Francisco, Calif.

During the week ended May 10, 1919, leprosy was reported as follows: Boston, Mass., one case; New York, N. Y., two cases and one death; San Francisco, Calif., one case.

LETHARGIC ENCEPHALITIS.

State Reports for April, 1919.

Place.	New cases reported.	Place.	New cases reported.
Illinois:		Illinois—Continued.	
Cook County—		Sangamon County—	
Chicago	9	Cotton Hill Township	1
De Kalb County—		Vermilion County—	
Cortland Township	1	Sidell	1
Fayette County—		Total	16
Ramsey	1		
Iroquois County—		Louisiana	15
Milford	1		
Lake County—		Nebraska	5
Antioch Township	1		
McDonough County—		North Carolina	2
Macomb	1		

MALARIA.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.		Cases.
Camp Gordon zone, Ga.	1	Muscle Shoals sanitary district, Ala.	2
Gulfport health district, Miss.	20	Camp Pike zone, Ark.	1

State Reports for April, 1919.

Place.	New cases reported.
Louisiana:	
Acadia Parish	10
Avoyelles Parish	2
De Soto Parish	2
East Carroll Parish	1
Grant Parish	6
Iberia Parish	1
Lafayette Parish	2
Livingston Parish	2
St. Charles Parish	1
St. Landry Parish	1
St. Martin Parish	6
Vermilion Parish	10
Washington Parish	3
Webster Parish	1
Orleans Parish	2
Total	50
Mississippi:	
Adams County	18
Alcorn County	47
Amite County	96
Attala County	49
Benton County	15
Bolivar County	512
Calhoun County	48
Carroll County	48
Chickasaw County	38
Choctaw County	46
Claiborne County	53
Clarke County	49
Clay County	28
Coahoma County	297
Copiah County	42
Covington County	113
De Soto County	50
Forest County	34
Franklin County	66
George County	29
Greene County	42
Grenada County	20
Hancock County	56
Harrison County	36
Hinds County	237
Holmes County	165
Humphreys County	152
Issaquena County	27
Itawamba County	40
Jackson County	33
Jasper County	95
Jefferson County	39
Jefferson Davis County	20
Jones County	61
Kemper County	43
Lafayette County	27
Lamar County	40
Lauderdale County	60
Lawrence County	133
Leake County	59
Lee County	89
Leflore County	60
Mississippi—Continued.	
Lincoln County	61
Lowndes County	60
Madison County	23
Marion County	52
Marshall County	14
Montgomery County	100
Neshoba County	36
Newton County	43
Noxubee County	47
Oktibbeha County	68
Panola County	59
Pearl River County	77
Perry County	41
Pike County	54
Pontotoc County	92
Prentiss County	68
Quitman County	220
Rankin County	55
Scott County	54
Sharkey County	38
Simpson County	60
Smith County	28
Stone County	25
Sunflower County	313
Tallahatchie County	62
Tate County	120
Tippah County	55
Tishomingo County	43
Tunica County	101
Union County	24
Walthall County	20
Warren County	179
Washington County	108
Wayne County	25
Webster County	22
Wilkinson County	24
Winston County	88
Yalobusha County	37
Yazoo County	200
Total	6,008
New Jersey:	
Essex County	1
Mercer County	1
Ocean County	1
Somerset County	1
Total	4
Ohio: Portage County	1
South Carolina:	
Aiken County	1
Bamberg County	1
Clarendon County	8
Dillon County	2
Sumter County	1
Total	13

MALARIA—Continued.

City Reports for Week Ended May 10, 1919.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Atlanta, Ga.	1		Long Beach, Calif.	1	
Boston, Mass.	1		Memphis, Tenn.	2	
Houston, Tex.		1	Passaic, N. J.	1	
Kansas City, Mo.	1		Pine Bluff, Ark.	1	
Little Rock, Ark.	2		Tuscaloosa, Ala.	3	

MEASLES.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.		Cases.
Gas and flame school zone, Ga. and Ala.	2	Camp Polk zone, N. C.	2
Camp Gordon zone, Ga.	21	Portsmouth and Norfolk County health district, Va.	8
Gulfport health district, Miss.	5	Camp Upton zone, N. Y.	4
Camp Lee zone, Va.	1		

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1225.

PELLAGRA.

State Reports for April, 1919.

Place.	New cases reported.	Place.	New cases reported.
Illinois:		**Mississippi—Continued.**	
Logan County—		Lincoln County	18
Lincoln	1	Lowndes County	3
		Madison County	6
Louisiana:		Marion County	3
East Baton Rouge Parish	1	Marshall County	2
De Soto Parish	2	Monroe County	11
Sabine Parish	1	Neshoba County	3
West Carroll Parish	1	Newton County	3
		Noxubee County	5
Total	5	Panola County	2
		Pearl River County	5
Mississippi:		Perry County	1
Adams County	8	Pike County	7
Alcorn County	3	Pontotoc County	7
Amite County	7	Prentiss County	12
Bolivar County	51	Scott County	2
Calhoun County	1	Sharkey County	2
Chickasaw County	10	Simpson County	5
Claiborne County	3	Sunflower County	48
Clarke County	7	Tallahatchie County	16
Clay County	4	Tate County	3
Coahoma County	24	Tippah County	1
Copiah County	4	Tishomingo County	8
Covington County	4	Tunica County	18
De Soto County	2	Walthall County	5
Forest County	11	Warren County	4
Franklin County	3	Washington County	8
George County	3	Yalobusha County	2
Greene County	1	Yazoo County	11
Grenada	1		
Harrison	8	Total	471
Hinds County	27		
Holmes County	11	**Rhode Island:**	
Humphreys County	14	Cranston	1
Issaquena County	1		
Itawamba County	3	**South Carolina:**	
Jackson County	1	Anderson County	1
Jasper County	7	Chester County	1
Jefferson Davis County	2	Chesterfield County	1
Jones County	6	Georgetown County	1
Lamar County	1	Greenwood County	1
Lauderdale County	4	Laurens County	1
Lawrence County	14	Spartanburg County	2
Leake County	4	Union County	1
Lee County	8		
Leflore County	2	Total	9

PELLAGRA—Continued.

City Reports for Week Ended May 10, 1919.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Atlanta, Ga		3	Mobile, Ala		1
Birmingham, Ala		3	Montgomery, Ala	2	
Fremont, Nebr		1	Philadelphia, Pa		1
Hartford, Conn	1	1	Richmond, Va		1
Joplin, Mo	1		Tuscaloosa, Ala	1	
Little Rock, Ark		1	Wilmington, N. C		1
Memphis, Tenn		1	Winston-Salem, N. C	2	1

PNEUMONIA.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.		Cases.
Gas and flame school zone, Ga. and Ala	3	Picric Acid plant zone, Ga	1
Camp Gordon zone, Ga	2	Camp Pike zone, Ark	1
Gulfport health district, Miss	3	Camp Travis zone, Tex	4
Muscle Shoals sanitary district, Ala	1	Camp Upton zone, N. Y	1

City Reports for Week Ended May 10, 1919.

Place.	Lobar.		All forms.		Place.	Lobar.		All forms.	
	Cases.	Deaths.	Cases.	Deaths.		Cases.	Deaths.	Cases.	Deaths.
Akron, Ohio	2				Los Angeles, Calif	3	4		
Ann Arbor, Mich	1	1			Lowell, Mass	3	2		
Arlington, Mass	1				Lynn, Mass	4	2		
Asbury Park, N. J	1				Malden, Mass	1	2		
Atchison, Kans			3		Manchester, N. H	1	1		
Atlanta, Ga	2	5			Manitowoc, Wis			2	2
Baltimore, Md	22	14			Medford, Mass	1			
Baton Rouge, La			4	2	Methuen, Mass	1			
Belleville, N. J	1				Milford, Mass			2	
Bloomfield, N. J			1	1	Montclair, N. J			2	1
Boston, Mass	27	12			Mount Vernon, N. Y	4	2		
Brunswick, Ga	1	1			Nashville, Tenn	1	2		
Cambridge, Mass	4	1			New Britain, Conn	1	1		
Camden, N. J	7				Newburgh, N. Y	1			
Chelsea, Mass	3	1			New Orleans, La	1	6		
Chicago, Ill			170	58	Newport, Ky	1	1		
Cleveland, Ohio	28	30			Newton, Mass	2			
Clinton, Mass	1	2			New York, N. Y			115	202
Dayton, Ohio	6	6			Norfolk, Va	1	2		
Detroit, Mich	11	15	12	30	North Adams, Mass	1	1		
Duluth, Minn	6	1			Passaic, N. J	1	1		
East Orange, N. J	1				Paterson, N. J	9			
Elizabeth, N. J	2	1			Philadelphia, Pa	77	37		
Elmira, N. Y	3				Pontiac, Mich	1			
El Paso, Tex	3				Reno, Nev	1	1		
Fall River, Mass	3	1			Riverside, Calif	1			
Fargo, N. Dak	1	1			Roanoke, Va	1			
Framingham, Mass	2	1			Rochester, N. Y	12	2		
Grand Rapids, Mich	3	2			Rome, N. Y	3			
Hackensack, N. J			1		Salem, Mass	1			
Haverill, Mass	3				San Diego, Calif			2	2
Holyoke, Mass	4	1			Sandusky, Ohio			2	1
Independence, Mo			3	1	San Francisco, Calif	9	6		
Ironton, Ohio			1		Schenectady, N. Y	2	1		
Ithaca, N. Y	1				Somerville, Mass	2			
Kalamazoo, Mich	1	1			Springfield, Mass	3			
Kansas City, Kans	3				Taunton, Mass	1			
Kansas City, Mo			6	7	Toledo, Ohio	1	1		
Kearny, N. J	1				Tuscaloosa, Ala	3			
Lackawanna, N. Y	4				Waterbury, Conn	1			
Lakewood, Ohio	1	1			Watertown, Mass	1			
Lawrence, Mass	2	1			Westfield, Mass	2			

POLIOMYELITIS (INFANTILE PARALYSIS).

State Reports for April, 1919.

Place.	New cases reported.
Illinois:	
Champaign County—	
Sidney	1
Cook County—	
Chicago	2
McLean County—	
Danvers	1
Total	4
Michigan:	
Washtenaw County—	
Ann Arbor	1
Wayne County—	
Detroit	1
Total	2
Minnesota:	
Hennepin County—	
Minneapolis	1
Mississippi:	
Walthall County	1
New Jersey:	
Burlington County	1
Middlesex	1
Total	2
North Carolina:	
Beaufort County	1
Jackson County	1
Lenoir County	1
Total	3
Ohio:	
Ashland County	1
Cuyahoga County	1
Hamilton County	2
Mahoning County	1
Tuscarawas County	1
Total	6
Washington:	
Grant County—	
Hartline	1
King County—	
Seattle	1
Okanogan County	1
Pierce County—	
Tacoma	1
Total	4

City Reports for Week Ended May 10, 1919.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Chicago, Ill	3	.....	Houston, Tex	1	.....
Columbus, Ohio	1	.....	Pittsburgh, Pa	1	.....

RABIES IN ANIMALS.

Kansas City, Mo., Week Ended May 10, 1919.

During the week ended May 10, 1919, one case of rabies in animals was reported at Kansas City, Mo.

ROCKY MOUNTAIN SPOTTED OR TICK FEVER.

Montana Report for April, 1919.

Place.	New cases reported.
Montana:	
Fergus County—	
Grass Range	1
Missoula County—	
Deep Creek	1
Montana—Continued:	
Ravalli County—	
Hamilton (R. F. D.)	1
Total	3

Missoula, Mont., Week Ended May 10, 1919.

One fatal case of Rocky Mountain spotted or tick fever was reported at Missoula, Mont., during the week ended May 10, 1919.

SCARLET FEVER.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.		Cases.
Gas and flame school zone, Ga. and Ala	1	Portsmouth and Norfolk County health district, Va	4
Camp Gordon zone, Ga	9	Camp Sherman zone, Ohio	2
Camp Pike zone, Ark	5		

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1225.

SMALLPOX.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.		Cases.
Gas and flame school zone, Ga. and Ala	5	Portsmouth and Norfolk County health district, Va	3
Camp Gordon zone, Ga	18	Camp Sherman zone, Ohio	1
Camp Jackson zone, S. C	1		
Muscle Shoals sanitary district, Ala	3		

State Reports for April, 1919—Vaccination Histories.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Michigan:						
Allegan County—						
Casco Township	1				1	
Antrim County—						
Central Lake Township	2				2	
Berrien County—						
Niles	1				1	
Charlevoix County—						
Evangeline Township	1				1	
Clare County—						
Summerfield Township	3				3	
Clinton County—						
Bath Township	3				3	
Dewitt Township	1				1	
Eaton County—						
Carmel Township	1				1	
Charlotte	1				1	
Grand Ledge	5				5	
Vermontville	2			1	1	
Emmet County—						
Little Traverse Township	1				1	
Genesee County—						
Flint	1				1	
Gogebic County—						
Bessemer Township	2				2	
Houghton County—						
Adams Township	3				3	
South Range	28				28	
Ingham County—						
Ingham Township	3				3	
East Lansing	1				1	
Lansing	101				101	
Isabella County—						
Nottawa Township	5				5	
Jackson County—						
Jackson	3			2	1	
Liberty Township	1				1	
Kalamazoo County—						
Kalamazoo Township	2				2	
Kalamazoo	11				11	
Oshtema Township	1		1			
Kent County—						
Grand Rapids	2					2
Keweenaw County—						
Ahmeek	3				3	
Allouez Township	44			8	36	
Lenawee County—						
Cambridge Township	1				1	
Fairfield Township	1		1			
Palmyra Township	2				2	

SMALLPOX—Continued.

State Reports for April, 1919—Vaccination Histories—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Michigan—Continued.						
Macomb County—						
Lenox Township	1				1	
Midland County—						
Ingersoll Township	3				3	
Lee Township	1			1		
Monroe County—						
Monroe Township	7		6		1	
Monroe	4				4	
Petersburg	4		2		2	
Oakland County—						
Pontiac	2				2	
Orion	5				5	
Ogemaw County—						
West Branch Township	2				2	
Osceola County—						
Marion	1				1	
Saginaw County—						
Saginaw	1					1
Shiawassee County—						
Laingsburg	6				6	
Washtenaw County—						
Ann Arbor	3				3	
Wayne County—						
Detroit	32				32	
Redford	1			1		
Wyandotte	1				1	
Total	311		10	13	285	3
Minnesota:						
Benton County—						
Sauk Rapids	1				1	
Bigstone County—						
Ortonville	1				1	
Carlton County—						
Cloquet	1				1	
Clearwater County—						
Bagley	1				1	
Copley Township	1				1	
Crow Wing County—						
Brainerd	2				2	
Dodge County—						
Ripley Township	1			1		
Faribault County—						
Blue Earth	5				2	3
Hennepin County—						
Minneapolis	59			10	49	
Minnetonka Township	1				1	
Houston County—						
Caledonia Township	1				1	
Spring Grove	1				1	
Hubbard County—						
Nevis Township	4			2	2	
White Oak Township	2				2	
Park Rapids	1				1	
Jackson County—						
Sioux Valley Township	3				3	
Kanabec County—						
Peace Township	2				2	
Kandiyohi County—						
Harrison Township	2				2	
Lake County—						
Two Harbors	2				1	1
Mower County—						
Leroy	1				1	
Olmsted County—						
Rochester	1					1
Ottertail County—						
Fergus Falls	2				2	
Polk County—						
Crookston	4				1	3

SMALLPOX—Continued.

State Reports for April, 1919—Vaccination Histories—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Minnesota—Continued.						
Ramsey County—						
St. Paul	48				48	
Rice County—						
Faribault	9		1		1	7
St. Louis County—						
Duluth	6		1		5	
Hibbing	1				1	
Scott County—						
Shakopee	3				3	
Eagle Creek Township	1				1	
Stearns County—						
St. Cloud	9		1		8	
Todd County—						
Staples	2		1	1		
Traverse County—						
Wheaton	7			7		
Washington County—						
Stillwater	1				1	
Total	186		4	21	146	15
Montana:						
Cascade County—						
Great Falls	5				5	
Chouteau County—						
Fort Benton	8				8	
Geraldine	7				7	
Square Butte	1				1	
Custer County—						
Broadus	1				1	
Miles City	21				21	
Dawson County—						
Glendive	2				2	
Deer Lodge County—						
Anaconda	1				1	
Fergus County—						
Lewistown	5					5
Stanford	1					1
Straw	1					1
Flathead County—						
Creston	1					1
Whitefish	3					3
Gallatin County—						
Bozeman (R. F. D. 2)	8					8
Granite County—						
Philipsburg	7					7
Lewis and Clark County—						
Helena	2					2
Meagher County—						
Lennep	3				3	
Missoula County—						
Missoula (R. F. D. 1)	6					6
Musselshell County—						
Melstone	2				2	
Silver Bow County—						
Butte	1				1	
Stillwater County—						
Springtime	1				1	
Treasure County—						
Big Horn	3				3	
Hysham	1				1	
Wheatland County—						
Harlowton	14				14	
Hedgesville	1				1	
Judith Gap	2				2	
Two Dot	4				4	
Total	112				78	34

SMALLPOX—Continued.

State Reports for April, 1919—Vaccination Histories—Continued.

Place.	New cases reported.	Deaths.	Vaccination history of cases.			
			Number vaccinated within 7 years preceding attack.	Number last vaccinated more than 7 years preceding attack.	Number never successfully vaccinated.	Vaccination history not obtained or uncertain.
Ohio:						
Allen County	5				4	1
Butler County	67				27	40
Champaign County	1				1	
Columbiana County	2					2
Coshocton County	12				6	6
Crawford County	3					3
Cuyahoga County	17		1	2	9	5
Darke County	3					3
Defiance County	1				1	
Delaware County	1					1
Fayette County	5					5
Franklin County	6				1	5
Fulton County	5				1	4
Gallia County	1				1	
Greene County	11				9	2
Hamilton County	46			5	28	13
Hancock County	17				13	4
Highland County	13				3	10
Holmes County	1				1	
Jefferson County	9				8	1
Lawrence County	2					2
Lorain County	33		1	2	6	24
Lucas County	19				16	3
Mahoning County	33				14	19
Marion County	1					1
Medina County	1				1	
Miami County	16		1	2	7	6
Montgomery County	19			1	11	7
Muskingum County	5				5	
Ottawa County	3					3
Pike County	4				2	2
Preble County	1					1
Putnam County	1					1
Richland County	2				2	
Scioto County	4				3	1
Seneca County	10				9	1
Shelby County	5			1	4	
Stark County	4			2	2	
Trumbull County	3				2	1
Tuscarawas County	34				17	17
Warren County	1					1
Total	427		3	15	214	195

State Reports for April, 1919.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Illinois:			Illinois—Continued.		
Adams County—			Dewitt County—		
Quincy	6		Tunbridge Township	2	
Alexander County—			Douglas County—		
Tamms	1		Tuscola Township	1	
Champaign County—			Dupage County—		
Champaign	18		Naperville Township	3	
Philo	4		York Township	3	
Urbana	7		Fayette County—		
Christian County—			Avena Township	1	
Owaneco	3		St. Elmo	1	
Stonington	2		Fulton County—		
Coles County—			Canton	18	
Charleston	2		Kane County—		
Cook County—			Aurora	28	
Chicago	7		Aurora Township	1	
Dekalb County—			Elgin	2	
Hinckley	3		Hampshire	8	
Squaw Grove Township	1		Knox County—		
			Galesburg	15	

SMALLPOX—Continued.

State Reports for April, 1919—Continued.

Place.	Cases.	Deaths.
Illinois—Continued.		
La Salle County—		
Mendota	5	
Lee County—		
Amboy	17	
Amboy Township	19	
Dixon	1	
Lee Center Township	21	
May Township	6	
Macon County—		
Decatur	1	
Macoupin County—		
Palmyra	13	
Madison County—		
Alton	1	
East Alton	2	
Madison	1	
Wood River Township	1	
Marion County—		
Foster Township	1	
Odin	1	
Raccoon Township	1	
Mason County—		
Havana	3	
McDonough County—		
New Salem Township	1	
McLean County—		
Bloomington	4	
Normal	1	
Mercer County—		
Mathersville	1	
Montgomery County—		
Nokomis	5	
Roundtree Township	1	
Morgan County—		
Chapin	2	
Jacksonville	3	
Peoria County—		
Averyville	2	
Glasford	1	
Peoria	15	
Randolph County—		
Percy	1	
Richland County—		
Nobel	7	
Rock Island County—		
East Moline	1	
Saline County—		
Harrisburg	2	
Raleigh Township	1	
Sangamon County—		
Springfield	1	
St. Clair County—		
Belleville	2	
Dupo	1	
East St. Louis	4	
Lebanon	1	
O'Fallon	2	
O'Fallon Township	1	
Swansea	1	
Stephenson County—		
West Point Township	1	
Tazewell County—		
Dillon Township	1	
East Peoria	4	
Groveland Township	2	
Pekin	22	
Tremont	1	
Union County—		
Union precinct	12	
Vermilion County—		
Butler Township	1	
Catlin Township	1	
Danville	9	
Fairmount	12	
Georgetown	1	
Henning	1	
Rankin	4	
Vance Township	2	
Illinois—Continued.		
Washington County—		
Du Bois	26	
Wayne County—		
Leech Township	1	
White County—		
Carmi	1	
Norris City	3	
Will County—		
Joliet	1	
Winnebago County—		
Rockford	3	
Total	401	
Iowa:		
Adams County	5	
Blackhawk County	2	
Boone County	23	
Buchanan County	5	
Buena Vista County	9	
Butler County	1	
Calhoun County	1	
Carroll County	1	
Cerro Gordo County	10	
Cherokee County	5	
Dallas County	1	
Decatur County	1	
Des Moines County	1	
Grundy County	6	
Hamilton County	1	
Linn County	33	
Mahaska County	1	
Marshall County	3	
Mills County	1	
Monona County	4	
Monroe County	12	
Montgomery County	2	
Osceola County	1	
Page County	1	
Polk County	16	
Pottawattamie County	13	
Scott County	54	
Shelby County	1	
Wapello County	7	
Webster County	13	
Wright County	1	
Total	235	
Louisiana:		
Acadia Parish	3	
Allen Parish	37	
Beauregard Parish	7	
Caddo Parish	17	
Calcasieu Parish	19	
De Soto Parish	1	
Evangeline Parish	6	
Grant Parish	1	
Iberia Parish	1	
Iberville Parish	3	
Jackson Parish	1	
Jefferson Davis Parish	7	
Lafayette Parish	4	
Morehouse Parish	5	
Orleans Parish	17	
Plaquemines Parish	3	
Rapides Parish	5	
St. Landry Parish	6	
St. Bernard Parish	1	
St. Martin Parish	2	
St. Mary Parish	1	
Union Parish	1	
Vermilion Parish	23	
Vernon Parish	1	
Webster Parish	1	
Winn Parish	6	
Total	179	

SMALLPOX—Continued.

State Reports for April, 1919—Continued.

Place.	Cases.	Deaths.
Mississippi:		
Adams County	1	
Alcorn County	3	
Attala County	5	
Bolivar County	52	
Carroll County	6	
Chickasaw County	14	
Clay County	1	
Coahoma County	5	
Copiah County	8	
De Soto County	47	
Hancock County	4	
Hinds County	3	
Holmes County	29	
Humphreys County	6	
Issaquena County	1	
Jones County	14	
Kemper County	2	
Lafayette County	9	
Lauderdale County	15	
Lawrence County	8	
Leflore County	48	
Lowndes County	2	
Marshall County	10	
Monroe County	8	
Montgomery County	4	
Oktibbeha County	16	
Panola County	3	
Pearl River County	4	
Perry County	2	
Sunflower County	19	
Tallahatchie County	8	
Tate County	6	
Tippah County	2	
Washington County	5	
Wayne County	12	
Total	380	
Nebraska:		
Cass County	3	
Colfax County	2	
Custer County	1	
Dodge County	22	
Douglas County	92	
Furnas County	2	
Gage County	4	
Jefferson County	12	
Johnson County	1	
Lancaster County	140	
Pierce County	1	
Seward County	1	
Stanton County	3	
Total	284	
New Jersey:		
Atlantic County	19	
Camden County	2	
Cape May County	17	
Hudson County	2	
Total	40	
North Carolina:		
Alamance County	2	
Anson County	6	
Ashe County	14	
Avery County	1	
Beaufort County	2	
Bertie County	11	
Cabarrus County	12	
Caswell County	2	
Catawba County	3	
Chatham County	3	
Chowan County	5	
Columbus County	2	
Cumberland County	9	
Dare County	2	
Davidson County	1	
Davie County	1	

Place.	Cases.	Deaths.
North Carolina—Continued.		
Durham County	8	
Forsyth County	155	
Gaston County	1	
Granville County	1	
Green County	1	
Guilford County	22	
Harnett County	2	
Henderson County	2	
Iredell County	1	
Lee County	4	
Lincoln County	1	
Madison County	1	
McDowell County	8	
Mecklenburg County	6	
Moore County	2	
New Hanover County	1	
Pasquotank County	8	
Perquimans County	5	
Pitt County	28	
Randolph County	6	
Robeson County	1	
Rockingham County	10	
Rowan County	5	
Rutherford County	11	
Scotland County	1	
Stanley County	6	
Surry County	1	
Swain County	1	
Wake County	5	
Warren County	3	
Washington County	3	
Watauga County	4	
Wilkes County	1	
Yadkin County	10	
Total	404	
North Dakota:		
Bottineau County	5	
Burleigh County	1	
Cass County	1	
Eddy County	1	
Grand Forks County	6	
Grant County	4	
McHenry County	26	
Mountrail County	14	
Ransom County	1	
Sargent County	6	
Ward County	2	
Williams County	1	
Total	68	
South Carolina:		
Anderson County	11	
Barnwell County	1	
Charleston County	3	
Chesterfield County	1	
Darlington County	2	
Laurens County	2	
Marlboro County	2	
Richland County	1	
Total	23	
Washington:		
Benton County	8	
Clarke County	9	
Camas	5	
Cowlitz County	1	
Franklin County—		
Pasco	2	
Grays Harbor County—		
Aberdeen	3	
Hoquiam	16	
Montesano	31	
King County—		
Auburn	3	
Renton	3	
Seattle	120	

SMALLPOX—Continued.

State Reports for April, 1919—Continued.

Place.	Cases.	Deaths.
Washington—Continued.		
Kittitas County	11	
Lewis County—		
Centralia	18	
Lincoln County—		
Harrington	1	
Okanogan County	1	
Pateros	2	
Pacific County—		
Raymond	1	
Pierce County	3	
Eatonville	1	
Puyallup	1	
Tacoma	54	
Skagit County—		
Mount Vernon	1	
Snohomish County	4	
Everett	7	
Spokane County	1	
Spokane	17	
Stevens County—		
Chewelah	1	
Thurston County	10	
Olympia	11	
Wahkiakum County	1	
Walla Walla County	1	
Whatcom County—		
Bellingham	2	
Yakima County—		
Sunnyside	7	
Toppenish	6	
Yakima	38	
Total	388	

City Reports for Week Ended May 10, 1919.

Place.	Cases.	Deaths.
Aberdeen, S. Dak.	1	
Akron, Ohio	2	
Alton, Ill.	1	
Atchison, Kans.	17	
Atlanta, Ga.	29	
Austin, Tex.	1	
Baton Rouge, La.	4	1
Bellingham, Wash.	1	
Billings, Mont.	1	
Birmingham, Ala.	1	
Bloomington, Ind.	1	
Boise, Idaho	2	
Cairo, Ill.	7	
Camden, N. J.	1	
Canton, Ill.	2	
Cedar Rapids, Iowa	8	
Chanute, Kans.	7	
Cheyenne, Wyo.	1	
Chicago, Ill.	2	
Cincinnati, Ohio	6	
Cleveland, Ohio	25	
Colorado Springs, Colo.	1	
Council Bluffs, Iowa	4	
Covington, Ky.	1	
Danville, Ill.	1	
Davenport, Iowa	14	
Dayton, Ohio	1	
Decatur, Ill.	2	
Denver, Colo.	9	
Des Moines, Iowa	6	
Detroit, Mich.	1	
Dubuque, Iowa	3	
Duluth, Minn.	3	
Durham, N. C.	1	
East St. Louis, Ill.	1	
Eureka, Calif.	3	
Everett, Wash.	11	
Fond du Lac, Wis.	1	
Fort Scott, Kans.	1	
Fort Wayne, Ind.	4	
Fort Worth, Tex.	3	
Fresno, Calif.	1	
Galesburg, Ill.	4	
Grand Forks, N. Dak.	1	
Great Falls, Mont.	3	
Independence, Mo.	4	
Indianapolis, Ind.	3	
Kalamazoo, Mich.	4	
Kansas City, Kans.	1	
Kansas City, Mo.	6	
Knoxville, Tenn.	7	
Kokomo, Ind.	6	
La Fayette, Ind.	4	
Lincoln, Nebr.	15	
Logansport, Ind.	6	
Long Beach, Calif.	7	
Los Angeles, Calif.	13	
Madison, Wis.	1	
Manitowoc, Wis.	1	
Marshalltown, Iowa.	7	
Memphis, Tenn.	1	
Middletown, Ohio	1	
Milwaukee, Wis.	16	
Mobile, Ala.	5	
Moline, Ill.	1	
Muskogee, Okla.	2	
New Orleans, La.	4	
Norfolk, Va.	1	
Oakland, Calif.	6	
Oklahoma City, Okla.	15	
Omaha, Nebr.	18	
Oshkosh, Wis.	11	
Parsons, Kans.	2	
Pekin, Ill.	4	
Peoria, Ill.	10	
Portland, Oreg.	38	
Portsmouth, Ohio	1	
Portsmouth, Va.	6	
Racine, Wis.	8	
Roanoke, Va.	4	
Rock Island, Ill.	11	
St. Joseph, Mo.	19	
St. Louis, Mo.	2	
Salt Lake City, Utah	8	
San Francisco, Calif.	7	
Seattle, Wash.	33	
Sioux City, Iowa.	2	
Sioux Falls, S. Dak.	1	
South Bend, Ind.	1	
Spartanburg, S. C.	3	
Spokane, Wash.	5	
Springfield, Mass.	1	
Steubenville, Ohio	4	
Superior, Wis.	2	
Tacoma, Wash.	17	
Toledo, Ohio.	5	
Vancouver, Wash.	1	
Walla Walla, Wash.	2	
Wichita, Kans.	8	
Winona, Minn.	1	
Winston-Salem, N. C.	11	
Yakima, Wash.	8	
Youngstown, Ohio	15	
Zanesville, Ohio	1	

SYPHILIS.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.		Cases.
Fayetteville sanitary district, N. C	3	Picric Acid plant zone, Ga	4
Gas and flame school zone, Ga. and Ala	1	Camp Pike zone, Ark	8
Camp Gordon zone, Ga	24	Camp Polk zone, N. C	9
Gulfport health district, Miss	2	Camp Sherman zone, Ohio	3
Camp Jackson zone, S. C	10	Camp Travis zone, Tex	5
Camp Lee zone, Va	1	Wilmington sanitary district, N. C	5
Muscle Shoals sanitary district, Ala	4		

TETANUS.

City Reports for Week Ended May 10, 1919.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Bakersfield, Calif		1	Oklahoma City, Okla	1	1
Los Angeles, Calif		1	Philadelphia, Pa	1	2
New York, N. Y		2	Pine Bluff, Ark	1	

TUBERCULOSIS.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.		Cases.
Camp Dix zone, N. J	1	Camp Lee zone, Va	2
Fayetteville sanitary district, N. C	1	Camp Pike zone, Ark	2
Gas and flame school zone, Ga. and Ala	2	Camp Travis zone, Tex	6
Camp Gordon zone, Ga	1	Camp Upton zone, N. Y	1
Gulfport health district, Miss	2	Wilmington sanitary district, N. C	1
Camp Jackson zone, S. C	2		

See also Diphtheria, measles, scarlet fever, and tuberculosis, page 1225.

TYPHOID FEVER.

Cases Reported in Extra-Cantonment Zones, Week Ended May 24, 1919.

	Cases.		Cases.
Camp Jackson zone, S. C	4	Camp Polk zone, N. C	1
Picric acid plant zone, Ga	1	Camp Travis zone, Tex	1
Camp Pike zone, Ark	1	Wilmington sanitary district, N. C	8

State Reports for April, 1919.

Place.	New cases reported.	Place.	New cases reported.
Illinois:		Illinois—Continued.	
Adams County—		Macon County—	
Quincy	1	Decatur	1
Champaign County—		Madison County—	
Urbana	1	Alton	1
Coles County—		McHenry County—	
Mattoon	4	Woodstock	1
Cook County—		McLean County—	
Chicago	18	Bloomington	1
Franklin County—		Menard County—	
Valier	1	Petersburg	2
Grundy County—		Morgan County—	
Morris	1	Jacksonville	1
Hamilton County—		Randolph County—	
McLeansboro	1	Sparta	1
Lake County—		Sangamon County—	
North Chicago	4	Springfield	6
Waukegan	2	Williamson County—	
LaSalle County—		Marion	2
Sheridan	1	Total	50

TYPHOID FEVER—Continued.

State Reports for April, 1919—Continued.

Place.	New cases reported.
Louisiana:	
Acadia Parish	1
Allen Parish	5
Ascension Parish	5
Avoyelles Parish	1
Bienville Parish	1
Caddo Parish	1
Calcasieu Parish	1
Concordia Parish	1
De Soto Parish	3
East Baton Rouge Parish	1
East Feliciana Parish	1
Franklin Parish	1
Iberville Parish	1
Lafayette Parish	1
Lafourche Parish	4
LaSalle Parish	7
Lincoln Parish	1
Orleans Parish	7
Ouachita Parish	2
Richland Parish	6
St. James Parish	2
St. Martin Parish	3
St. Mary Parish	1
St. Tammany Parish	2
Tangipahoa Parish	5
Union Parish	1
Vermilion Parish	5
Vernon Parish	1
Washington Parish	2
Total	73
Michigan:	
Berrien County—	
Barada	1
Branch County—	
Union City	1
Calhoun County—	
Battle Creek	1
Clinton County—	
Bath Township	1
Genesee County—	
Flint	3
Grand Traverse County—	
Traverse City	1
Ingham County—	
Lansing	69
Williamston Township	1
Iron County—	
Crystal Falls Township	1
Kalamazoo County—	
Kalamazoo	2
Kent County—	
Grand Rapids	3
Lowell Township	1
Livingston County—	
Cohoctah Township	2
Green Oak Township	1
Montcalm County—	
Fairplains Township	1
Saginaw County—	
Saginaw	1
St. Clair County—	
Marine City	1
Shiawassee County—	
Laingsburg	1
Wayne County—	
Highland Park	1
Wyandotte	2
Total	95
Minnesota:	
Beltrami County—	
Baudette	1
Blackduck	1

Place.	New cases reported.
Minnesota—Continued.	
Blue Earth County—	
Madison Lake	2
Cass County—	
Walker	3
Maple Township	1
Walden Township	1
Chippewa County—	
Montevideo	1
Clay County—	
Holy Cross Township	1
Crow Wing County—	
Brainerd	3
Dakota County—	
Rosemount Township	1
Hennepin County—	
Minneapolis	1
Itasca County—	
Nashwauk	2
Kandiyohi County—	
Willmar	1
Koochiching County—	
International Falls	1
Lake County—	
Section Thirty	1
Marshall County—	
New Solum Township	1
Viking Township	1
Olmsted County—	
Rochester	1
Ramsey County—	
St. Paul	4
St. Louis County—	
Duluth	1
Ely	1
Eveleth	2
Gilbert	1
Hibbing	4
Stuntz Township	1
Sherburne County—	
Big Lake	1
Winona County—	
Winona	1
Total	40
Mississippi:	
Adams County	1
Amite County	2
Attala County	3
Bolivar County	13
Calhoun County	1
Carroll County	2
Chickasaw County	1
Choctaw County	2
Coahoma County	1
Copiah County	6
De Soto County	3
Franklin County	7
Greene County	2
Hinds County	3
Jackson County	1
Jasper County	1
Jefferson Davis County	2
Jones County	2
Lafayette County	1
Lee County	1
Lincoln County	1
Madison County	5
Marion County	3
Montgomery County	1
Neshoba County	4
Panola County	1
Pearl River County	2
Pike County	6
Pontotoc County	3
Prentiss County	1

TYPHOID FEVER—Continued.

State Reports for April, 1919—Continued.

Place.	New cases reported.
Mississippi—Continued.	
Quitman County	2
Rankin County	3
Simpson County	4
Sunflower County	2
Tallahatchie County	1
Tate County	5
Tippah County	3
Tishomingo County	12
Union County	3
Warren County	8
Washington County	2
Wilkinson County	2
Winston County	1
Yalobusha County	3
Yazoo County	1
Total	134
Montana:	
Blaine County—	
Harlem	4
Dawson County—	
Myers	1
Fallon County—	
Plevna	1
Flathead County—	
Kalispell (R. F. D.)	3
Lupfer	1
Granite County—	
Philipsburg	4
Missoula County—	
Missoula	7
Ravalli County—	
Hamilton	6
Wheatland County—	
Hedgesville	1
Total	28
Nebraska:	
Knox County	1
New Jersey:	
Atlantic County	1
Camden County	1
Gloucester County	2
Hudson County	1
Mercer County	1
Monmouth County	4
Passaic County	1
Union County	4
Total	15
North Carolina:	
Beaufort County	1
Caldwell County	4
Craven County	1
Davie County	1
Durham County	1
Edgecombe County	1
Forsyth County	1
Franklin County	2
Gaston County	2
Guilford County	1
Harnett County	1
Madison County	1
Martin County	1
Mecklenburg County	2
Nash County	1
New Hanover County	1
Onslow County	1
Person County	4
Pitt County	2

Place.	New cases reported.
North Carolina—Continued.	
Richmond County	1
Stanly County	1
Stokes County	1
Surry County	1
Wake County	2
Wayne County	4
Wilkes County	1
Total	40
North Dakota:	
Burleigh County	3
Cass County	1
McIntosh County	1
Morton County	3
Nelson County	2
Ramsey County	1
Pembina County	2
Walsh County	1
Total	14
Ohio:	
Ashland County	1
Ashtabula County	4
Athens County	3
Clermont County	2
Columbiana County	9
Crawford County	2
Cuyahoga County	1
Erie County	1
Fulton County	1
Gallia County	1
Hamilton County	3
Highland County	2
Jefferson County	1
Lawrence County	6
Lucas County	3
Marion County	2
Meigs County	1
Montgomery County	3
Richland County	1
Sandusky County	1
Trumbull County	2
Washington County	1
Wood County	1
Total	52
Rhode Island:	
Providence	1
South Carolina:	
Chesterfield County	1
York County	1
Total	2
Washington:	
Chelan County	1
Wenatchee	1
Franklin County—	
Pasco	1
King County—	
Enumclaw	1
Seattle	3
Pierce County—	
Tacoma	1
Skagit County	2
Walla Walla County—	
Walla Walla	1
Total	11

TYPHOID FEVER—Continued.

City Reports for Week Ended May 10, 1919.

Place.	Cases.	Deaths.	Place.	Cases.	Deaths.
Allentown, Pa	1		Macon, Ga	1	
Atlanta, Ga	1		Manchester, N. H	6	
Baltimore, Md	5	1	Memphis, Tenn		3
Baton Rouge, La	2	1	Mobile, Ala	1	1
Bellaire, Ohio	1		Nashville, Tenn	1	
Birmingham, Ala	2		Newburgh, N. Y	1	
Boise, Idaho	2		New Orleans, La	1	
Boston, Mass	1		New York, N. Y	16	2
Brunswick, Ga	2		North Tonawanda, N. Y		1
Buffalo, N. Y	1		Oakland, Calif		1
Burlington, Vt	1		Philadelphia, Pa	9	5
Charleston, S. C	4	1	Pittsburgh, Pa	2	
Chicago, Ill	6	1	Pittsfield, Mass	1	
Cleveland, Ohio	1	1	Portland, Me	2	
Columbus, Ohio	1		Pottsville, Pa	1	
Davenport, Iowa	1		Providence, R. I		1
Des Moines, Iowa	1		Quincy, Mass	1	
Detroit, Mich	3	1	Richmond, Va	1	
Duluth, Minn	1		Riverside, Calif	1	
Elizabeth, N. J	1		St. Joseph, Mo		1
Erie, Pa	1		St. Louis, Mo	3	
Everett, Mass	1		Salt Lake City, Utah	1	
Galveston, Tex	3		Sandusky, Ohio	1	
Hammond, Ind	2		San Francisco, Calif	3	
Hartford, Conn		1	Somerville, Mass	1	
Hoboken, N. J	1	1	Toledo, Ohio	1	1
Ironwood, Mich	1		Topeka, Kans	1	
Kalamazoo, Mich	1		Trenton, N. J	1	
Kansas City, Mo	1		Warren, Pa	1	
Kenosha, Wis	1		Wausau, Wis	1	
Lawrence, Kans	1		White Plains, N. Y		1
Lexington, Ky		1	Wilmington, Del	1	
Los Angeles, Calif	8		York, Pa	1	
Louisville, Ky	2		Zanesville, Ohio		1

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

State Reports for April, 1919.

State.	Cases reported.			State.	Cases reported.		
	Diphtheria.	Measles.	Scarlet fever.		Diphtheria.	Measles.	Scarlet fever.
Illinois	644	4,717	526	New Jersey	563	503	485
Iowa	46		151	North Carolina	90	1,422	45
Louisiana	31	49	24	North Dakota	9	76	125
Michigan	552	447	607	Ohio	285	1,855	620
Minnesota	275	713	317	Rhode Island	63	40	81
Mississippi	70	582	93	South Carolina	33	1	1
Montana	48	155	363	Washington	56	279	219
Nebraska	21	38	63				

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended May 10, 1919.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Aberdeen, S. Dak	15,926				1					
Adams, Mass	14,406	6	2							
Akron, Ohio	93,604	37	5		59		9		3	
Alameda, Calif	28,433	4			6		2		2	1
Allentown, Pa	65,109		2		61		1		2	
Alton, Ill	23,783	8								1
Altoona, Pa	59,712		8		1					
Anderson, Ind	24,230	5								
Ann Arbor, Mich	15,041	9	1		1					
Ansonia, Conn	16,954	3			4					1
Appleton, Wis	18,005	2								
Arlington, Mass	13,073	6								2
Asbury Park, N. J	14,629	3								
Asheville, N. C	25,656	15							2	6
Ashtabula, Ohio	22,008	8	1				4		1	
Atchison, Kans	16,785						4			
Atlanta, Ga	196,144	60			13		4		6	6
Atlantic City, N. J	59,515	15			5				2	1
Attleboro, Mass	19,776	9								
Auburn, N. Y	37,823	7	1							
Austin, Tex	35,612	8								1
Bakersfield, Calif	17,543	5							2	3
Baltimore, Md	584,637	219	27	4	34		217	1	40	31
Baton Rouge, La	17,544	7			13					
Battle Creek, Mich	30,159	1	4	1	31		4			
Bayonne, N. J	72,204		10		1		1		3	
Beatrice, Nebr	10,437	4	2	1			1			1
Beaumont, Tex	38,851	7								1
Bedford, Ind	10,613	2								1
Bellaire, Ohio	14,575	9					1			
Belleville, N. J	12,797		3							
Beloit, Wis	18,547	5			2		6	1		
Benton Harbor, Mich	11,099	3			2					
Berkeley, Calif	60,427	15								
Berlin, N. H	13,892	3								
Bethlehem, Pa	14,353		2		21				2	
Beverly, Mass	22,128	4					2		1	
Biddeford, Me	17,760	6								
Billings, Mont	15,123		1				3		4	1
Binghamton, N. Y	54,864	8	1		4				2	
Birmingham, Ala	189,716	52	2		5		3		6	4
Bloomfield, N. J	19,013	2	2	1			3			
Bloomington, Ind	11,661	1	1	1						
Boise, Idaho	35,951	5					1			
Boston, Mass	767,813	221	42		21		56		81	39
Braddock, Pa	22,060		1							
Brazil, Ind	10,472				5					
Bridgeport, Conn	124,724	36	3		6	1	1		6	3
Bristol, Conn	16,318	6	2		3		1			
Brockton, Mass	60,152	10			3				10	3
Brookline, Mass	33,526	6	1		15		4		3	1
Brunswick, Ga	10,984	3								
Buffalo, N. Y	475,781	139	46	2	52		15		9	14
Burlington, Iowa	25,144	7					8			1
Burlington, Vt	21,802	4			5		1			
Butler, Pa	28,677		1		6		2			
Butte, Mont	44,057		1				1			
Cadillac, Mich	10,158	8	1		3					
Cairo, Ill	15,995	8			7					1
Cambridge, Mass	114,293	27	3		7		8		6	5
Camden, N. J	108,117		3		4		3		2	
Canton, Ohio	62,566	10			6		1			1
Carbondale, Pa	19,597						1		5	
Chambersburg, Pa	12,475						1			
Champaign, Ill	15,052	3								
Chanute, Kans	12,968	3			5					
Charleston, S. C	61,041	38								5
Charleston, W. Va	31,060	8	2		2		2			4
Charlotte, N. C	40,759	13			21					1
Chelsea, Mass	48,405				2				2	
Chester, Pa	41,857		3		3		1		4	

[1] Population Apr. 15, 1910.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended May 10, 1919—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census. Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cheyenne, Wyo.	[1] 11,320				3					
Chicago, Ill.	2,547,201	633	112	13	1,069	7	70	3	418	81
Chicopee, Mass.	29,950	8					1		1	2
Chillicothe, Ohio.	15,625	5								
Cincinnati, Ohio.	414,248	131	8		30	1	19		27	15
Cleveland, Ohio.	692,259	199	18	1	81	2	5		46	26
Clinton, Mass.	[1] 13,075	5			1		1			
Coatesville, Pa.	14,998				4					
Coffeyville, Kans.	18,351				3					
Colorado Springs, Colo.	38,965	3					5		4	2
Columbus, Ohio.	220,135	71	3		10		3		4	7
Concord, N. H.	22,858	9								
Corpus Christi, Tex.	10,789	1	1	1						
Council Bluffs, Iowa.	31,838		1				1			2
Covington, Ky.	59,628	16	2				2			4
Cranston, R. I.	26,773	10					1		1	1
Cumberland, Md.	26,686	9			8		1		1	1
Danbury, Conn.	22,931	6					1			
Danville, Ill.	32,969				12				20	
Danville, Va.	20,183	11								
Dayton, Ohio.	128,939	52	1		1		3		6	
Decatur, Ill.	41,483	8							7	1
Dedham, Mass.	10,618	1			1					
Denver, Colo.	268,439	69	2		2		2			21
Des Moines, Iowa.	104,052		6		1		9			
Detroit, Mich.	619,648	233	50	6	58		44	4	44	25
Dover, N. H.	13,276	4								1
Du Bois, Pa.	14,994						23			
Dubuque, Iowa.	40,096		1				1			
Duluth, Minn.	97,077	13	4		34		1			1
Durham, N. C.	26,160	5			8				3	
East Chicago, Ind.	30,286	10								
East Cleveland, Ohio.	13,864				1		1			
Easton, Pa.	30,854		3		3				1	
East Orange, N. J.	43,761	5	2				1			
East Providence, R. I.	18,485		1							
East St. Louis, Ill.	77,312	12			3					
Elgin, Ill.	28,562	2					1			
Elizabeth, N. J.	88,330		4	1			13		7	3
Elmira, N. Y.	38,272	5	2		4		3		3	
El Paso, Tex.	69,149	46	1							11
Englewood, N. J.	12,608	1			2					
Erie, Pa.	76,592		5		5		1		10	
Eureka, Calif.	15,142	3			1					
Evanston, Ill.	29,304	4			101		1			
Everett, Mass.	40,160	10					2			1
Fall River, Mass.	129,828	35	1		69	1	3		6	9
Fargo, N. Dak.	17,872	6			12		1			
Farrell, Pa.	10,190		2							
Findlay, Ohio.	14,858	4			32				2	
Flint, Mich.	57,386	12	1				1			2
Fond du Lac, Wis.	21,486	11					8			1
Fort Dodge, Iowa.	21,039	3								1
Fort Scott, Kans.	10,564	4								
Fort Wayne, Ind.	78,014	23			5					4
Fort Worth, Tex.	109,597	15	1		2		3			
Fostoria, Ohio.	10,959	4					1		1	
Framingham, Mass.	14,149	10			15				2	2
Frederick, Md.	11,225	5					2			
Freeport, Ill.	19,844	6								11
Fremont, Nebr.	16,680	6								
Fremont, Ohio.	11,054	5								
Fresno, Calif.	36,314	11			1					2
Galesburg, Ill.	24,629	5			17					
Galveston, Tex.	42,650	10							2	
Grand Forks, N. Dak.	16,342	3	1		1		1			
Grand Rapids, Mich.	132,861	29	1		13		8		2	3
Great Falls, Mont.	[1] 13,948		1				7			
Greely, Colo.	11,942	2								
Greenfield, Mass.	12,251		2		2					

[1] Population Apr. 15, 1919.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended May 10, 1919—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Greensburgh, Pa.	15,881	.....	.....	.....	4	.....	.....	.....	.....	.....
Greenville, S. C.	18,574	1	.....	.....	.....	.....	.....	.....	2	.....
Greenwich, Conn.	19,594	.....	.....	.....	.....	.....	1	.....	.....	.....
Hackensack, N. J.	17,412	3	2	.....	.....	.....	.....	.....	.....	.....
Hammond, Ind.	27,016	.....	2	.....	9	.....	.....	.....	.....	.....
Harrisburg, Pa.	73,276	.....	.....	.....	44	.....	2	.....	.....	.....
Hartford, Conn.	112,851	41	5	1	5	.....	1	.....	5	.....
Haverhill, Mass.	49,180	18	4	2	1	.....	.....	.....	3	1
Hazelton, Pa.	28,981	.....	.....	.....	2	.....	3	.....	.....	.....
Hibbing, Minn.	17,550	.....	2	.....	.....	.....	.....	.....	1	.....
Highland Park, Mich.	33,859	6	27	1	1	.....	2	1	.....	.....
Hoboken, N. J.	78,324	12	9	.....	3	.....	2	.....	7	1
Holland, Mich.	12,459	3	.....	.....	.....	.....	.....	.....	.....	1
Holyoke, Mass.	66,503	14	.....	.....	2	.....	1	1	1	1
Houston, Tex.	116,878	37	.....	.....	1	.....	.....	.....	1	3
Hudson, N. Y.	12,898	5	.....	.....	.....	.....	.....	.....	.....	.....
Independence, Mo.	11,964	8	.....	.....	6	1	.....	.....	.....	1
Indianapolis, Ind.	283,622	77	2	.....	62	.....	6	.....	12	12
Ironton, Ohio.	14,079	8	.....	.....	.....	.....	.....	.....	.....	.....
Ironwood, Mich.	15,095	4	.....	.....	.....	.....	.....	.....	.....	.....
Ithaca, N. Y.	16,017	3	.....	.....	2	.....	12	.....	2	1
Jersey City, N. J.	312,557	.....	16	.....	12	.....	4	.....	20	.....
Johnstown, N. Y.	10,678	1	.....	.....	.....	.....	.....	.....	1	.....
Johnstown, Pa.	70,473	.....	7	.....	7	.....	.....	.....	5	.....
Joplin, Mo.	33,400	4	.....	.....	.....	.....	.....	.....	2	.....
Kalamazoo, Mich.	50,408	14	1	.....	31	.....	3	.....	2	2
Kansas City, Kans.	102,096	.....	.....	.....	.....	.....	4	.....	1	.....
Kansas City, Mo.	305,816	58	5	1	37	.....	1	.....	.....	7
Kearny, N. J.	24,325	7	2	.....	1	.....	3	1	1	1
Keene, N. H.	10,725	3	.....	.....	1	.....	.....	.....	2	.....
Kenosha, Wis.	32,833	10	.....	.....	32	.....	10	.....	1	.....
Knoxville, Tenn.	59,112	.....	.....	.....	9	.....	5	.....	1	1
Kokomo, Ind.	21,929	7	1	.....	.....	.....	3	.....	.....	1
Lackawanna, N. Y.	16,219	2	2	.....	5	.....	.....	.....	3	.....
La Crosse, Wis.	31,833	7	.....	.....	.....	.....	.....	.....	1	3
La Fayette, Ind.	21,481	2	.....	.....	.....	.....	4	.....	.....	1
Lakewood, Ohio.	23,813	8	.....	.....	2	.....	2	.....	1	1
Lancaster, Pa.	51,437	.....	4	.....	19	.....	.....	.....	2	.....
Lawrence, Kans.	13,477	3	.....	.....	.....	.....	.....	.....	.....	.....
Lawrence, Mass.	102,923	23	6	.....	.....	.....	1	.....	6	3
Lebanon, Pa.	20,947	.....	1	.....	103	.....	3	.....	2	.....
Leominster, Mass.	21,365	3	.....	.....	18	.....	.....	.....	.....	.....
Lexington, Ky.	41,997	15	.....	.....	20	.....	.....	.....	.....	1
Lima, Ohio.	37,145	11	1	.....	28	.....	14	.....	.....	1
Lincoln, Nebr.	46,957	12	1	.....	.....	.....	1	.....	.....	.....
Lincoln, R. I.	10,473	.....	1	.....	.....	.....	.....	.....	.....	.....
Little Rock, Ark.	58,716	8	1	.....	.....	.....	6	.....	5	.....
Lockport, N. Y.	20,028	6	.....	.....	35	.....	.....	.....	.....	1
Logansport, Ind.	21,338	5	.....	.....	.....	.....	2	.....	.....	1
Long Beach, Calif.	29,163	6	.....	.....	.....	.....	.....	.....	2	.....
Long Branch, N. J.	15,733	4	.....	.....	.....	.....	4	.....	1	.....
Lorain, Ohio.	38,266	10	1	.....	2	.....	.....	.....	.....	.....
Los Angeles, Calif.	535,485	126	6	1	10	.....	4	.....	45	21
Louisville, Ky.	240,808	89	9	1	4	1	5	.....	2	9
Lowell, Mass.	114,366	31	10	2	12	.....	5	.....	3	2
Lynchburg, Va.	33,497	5	.....	.....	.....	.....	.....	.....	.....	.....
Lynn, Mass.	104,534	27	9	1	49	2	3	.....	3	2
McKeesport, Pa.	48,299	.....	.....	.....	4	.....	1	.....	4	.....
Macon, Ga.	46,099	18	.....	.....	.....	.....	.....	.....	1	1
Madison, Wis.	31,315	12	.....	.....	15	.....	1	.....	.....	.....
Mahanoy City, Pa.	17,709	.....	2	.....	.....	.....	.....	.....	.....	.....
Malden, Mass.	52,243	16	3	2	3	.....	2	1	2	1
Manchester, Conn.	15,859	2	.....	.....	.....	.....	.....	.....	.....	.....
Manchester, N. H.	79,607	19	4	.....	1	.....	.....	.....	4	1
Manitowoc, Wis.	13,931	5	.....	.....	4	.....	.....	.....	.....	.....
Mankato, Minn.	[1] 10,365	1	.....	.....	.....	.....	.....	.....	2	.....
Marinette, Wis.	[1] 14,610	3	.....	.....	.....	.....	.....	.....	.....	1
Marion, Ind.	19,923	7	.....	.....	.....	.....	7	.....	.....	1
Marion, Ohio.	24,129	.....	1	.....	1	.....	1	.....	.....	.....
Marlboro, Mass.	15,285	7	.....	.....	1	.....	.....	.....	2	.....

[1] Population Apr. 15, 1910.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended May 10, 1919—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census. Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Martinsburg, W. Va.	12,984				5		5			
Martins Ferry, Ohio.	10,135								1	
Mason City, Iowa.	14,938	6								
Medford, Mass.	26,681	6	1		2		1			
Melrose, Mass.	17,724	3	1				5			
Memphis, Tenn.	151,877	53	14		39		2			8
Meriden, Conn.	29,431				2		6	1	5	3
Methuen, Mass.	14,320	3	1		1				1	
Middletown, N. Y.	15,890		3							
Middletown, Ohio.	16,384	3								
Milford, Mass.	14,280	7								
Milwaukee, Wis.	445,008	89	9	2	8		20		17	6
Missoula, Mont.	19,075	9					2			
Mobile, Ala.	59,201	23								2
Moline, Ill.	27,976	1	1							
Monessen, Pa.	23,070		3		1				1	
Montclair, N. J.	27,087	1			3		1		1	
Montgomery, Ala.	44,039	7								
Morristown, N. J.	13,110	7					1			
Moundsville, W. Va.	11,513	3					1			
Mount Carmel, Pa.	20,709								1	
Mount Vernon, Ill.	10,043	7	1		1				1	1
Muscatine, Iowa.	17,713						1			
Muskogee, Okla.	47,173						1			
Nanticoke, Pa.	23,811				2		2			
Nashua, N. H.	27,541	12		6				1		
Nashville, Tenn.	118,136	43			24	1			5	7
Natick, Mass.	10,140	4								
Newark, Ohio.	30,317	10							2	2
New Bedford, Mass.	121,622	28	1	1	24		1		11	2
New Britain, Conn.	55,385	15	1		8	1	5			2
New Brunswick, N. J.	25,855		1				2		1	
Newburgh, N. Y.	29,893	10			2				1	
Newburyport, Mass.	15,291	6			4				1	
New Castle, Pa.	41,915						1		14	
New Haven, Conn.	152,275	37	3		11				10	4
New London, Conn.	21,199	7	2	2					2	
New Orleans, La.	377,010	118	8		4		4		21	15
Newport, Ky.	32,133	8							3	3
Newport, R. I.	30,585	10					4	1		1
Newton, Mass.	44,345	9	1		3				1	1
New York, N. Y.	5,737,492	1,400	319	24	185	8	158	4	251	160
Niagara Falls, N. Y.	38,466	14	2	1	4		1		2	
Norfolk, Va.	91,148		1		2		1			4
Norristown, Pa.	31,969				87		7			
North Adams, Mass.	[1] 22,019	9							1	2
Northampton, Mass.	20,006	7					2			
North Tonowanda, N. Y.	14,060	8			6				1	
Norwalk, Conn.	27,332								1	
Norwich, Conn.	21,923								3	1
Norwood, Ohio.	23,269	3			2		1			
Oakland, Calif.	206,405	53	5		2		7		6	
Oak Park, Ill.	27,816	10	2		48		2		1	
Oil City, Pa.	20,162				44				1	
Oklahoma City, Okla.	97,588	14			2		4		1	
Olean, N. Y.	16,927	2								
Omaha, Nebr.	177,777	45			22	1	6			3
Orange, Conn.	14,393	6			1					3
Orange, N. J.	33,636	13					4			
Oshkosh, Wis.	36,549			1						1
Ossining, N. Y.	14,064	11			3				1	
Parkersburg, W. Va.	21,059	7			11		2			
Pasadena, Calif.	49,620	14	1				6		3	
Passaic, N. J.	74,478	17	3	1	1				1	1
Paterson, N. J.	140,512		8		1		4		15	
Peekskill, N. Y.	19,034	7								1
Pekin, Ill.	10,973				1					
Peoria, Ill.	72,184	20					3		1	1
Perth Amboy, N. J.	42,646	8					1		2	1
Philadelphia, Pa.	1,735,514	521	76	6	167	3	88	1	105	61
Phoenixville, Pa.	11,871				23					

[1] Population Apr. 15, 1910.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended May 10, 1919—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Pine Bluff, Ark	17,777	.....	1	.....	.....	.....	.....	.....	.....	.....
Piqua, Ohio	14,275	3	.....	.....	.....	.....	.....	.....	.....	.....
Pittsburgh, Pa	586,196	.....	17	.....	38	.....	4	.....	20	.....
Pittsfield, Mass	39,678	7	.....	.....	.....	.....	1	.....	.....	.....
Plattsburg, N. Y	13,111	4	.....	.....	.....	.....	.....	.....	2	.....
Plymouth, Mass	14,001	4	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth, Pa	19,439	.....	.....	.....	1	.....	1	.....	.....	.....
Pomona, Calif	13,624	4	.....	.....	.....	.....	.....	.....	.....	1
Pontiac, Mich	18,006	6	5	.....	.....	.....	.....	.....	1	.....
Port Chester, N. Y	16,727	3	.....	.....	1	.....	3	.....	1	1
Portland, Me	64,720	19	.....	.....	.....	.....	1	.....	.....	1
Portland, Oreg	308,399	49	3	1	1	.....	19	.....	8	3
Portsmouth, Ohio	29,356	.....	1	.....	.....	.....	.....	.....	1	.....
Portsmouth, Va	40,693	21	.....	.....	2	.....	2	1	.....	1
Pottsville, Pa	22,717	.....	1	.....	5	.....	.....	.....	.....	.....
Poughkeepsie, N. Y	30,786	12	3	.....	.....	.....	3	1	.....	1
Providence, R. I	259,895	84	9	1	1	.....	11	.....	.....	14
Quincy, Ill	36,832	8	.....	.....	.....	.....	.....	.....	.....	.....
Quincy, Mass	39,022	6	.....	1	.....	.....	.....	.....	5	.....
Racine, Wis	47,465	10	.....	.....	.....	.....	.....	.....	.....	1
Rahway, N. J	10,361	3	.....	.....	.....	.....	.....	.....	.....	.....
Raleigh, N. C	20,274	8	1	.....	.....	.....	1	.....	1	.....
Reading, Pa	111,607	.....	3	.....	13	.....	2	.....	2	.....
Redlands, Calif	14,573	5	.....	.....	.....	.....	.....	.....	.....	1
Reno, Nev	15,514	8	.....	.....	.....	.....	.....	.....	.....	.....
Richmond, Va	158,702	46	2	.....	42	.....	4	.....	4	3
Riverside, Calif	20,496	3	.....	.....	1	.....	.....	.....	.....	.....
Roanoke, Va	46,282	15	1	.....	44	.....	8	1	1	1
Rochester, N Y	264,714	73	6	.....	6	.....	5	.....	10	5
Rockford, Ill	56,739	10	1	.....	51	.....	6	.....	.....	2
Rock Island, Ill	29,452	.....	.....	.....	1	.....	.....	.....	.....	.....
Rocky Mount, N. C	12,673	5	.....	.....	.....	.....	.....	.....	.....	1
Rome, N. Y	24,259	.....	1	.....	2	.....	.....	.....	5	.....
Rutland, Vt	15,038	4	.....	.....	.....	.....	.....	.....	.....	.....
Sacramento, Calif	68,984	20	.....	.....	.....	.....	2	.....	2	4
Saginaw, Mich	56,469	13	1	.....	.....	.....	.....	.....	3	1
St. Cloud, Minn	12,013	.....	.....	.....	6	.....	.....	.....	.....	.....
St. Joseph, Mo	86,498	37	.....	.....	.....	.....	1	.....	.....	3
St. Louis, Mo	768,630	165	29	3	75	.....	26	.....	37	17
Salem, Mass	49,346	10	3	.....	.....	.....	11	.....	.....	.....
Salem, Oreg	21,274	6	.....	.....	.....	.....	.....	.....	1	.....
Salt Lake City, Utah	121,623	30	3	.....	.....	.....	2	.....	.....	.....
San Angelo, Tex	[1] 10,321	4	.....	.....	.....	.....	.....	.....	.....	3
San Bernardino, Calif	17,616	5	.....	.....	.....	.....	.....	.....	.....	2
San Diego, Calif	56,412	.....	3	.....	.....	.....	1	.....	3	3
Sandusky, Ohio	20,226	10	1	.....	.....	.....	.....	.....	2	1
Sanford, Me	11,217	2	.....	.....	.....	.....	.....	.....	.....	.....
San Francisco, Calif	471,023	145	9	2	.....	.....	11	.....	26	17
San Jose, Calif	39,810	.....	.....	.....	.....	.....	5	.....	2	.....
Santa Barbara, Calif	15,360	1	.....	.....	.....	.....	.....	.....	.....	.....
Saratoga Springs, N. Y	13,339	3	.....	.....	3	.....	1	.....	.....	1
Saugus, Mass	10,210	2	.....	.....	.....	.....	1	.....	2	.....
Sault Ste. Marie, Mich	14,130	1	.....	.....	.....	.....	.....	.....	.....	.....
Schenectady, N. Y	103,774	17	1	.....	1	.....	2	.....	2	2
Scranton, Pa	149,541	.....	2	.....	.....	.....	10	.....	7	.....
Seattle, Wash	366,445	.....	10	.....	61	.....	10	.....	.....	.....
Shamokin, Pa	21,274	.....	3	.....	.....	.....	1	.....	1	.....
Shenandoah, Pa	29,753	3	.....	.....	2	.....	.....	.....	.....	.....
Sioux Falls, S. Dak	16,887	2	.....	.....	2	.....	1	.....	.....	.....
Somerville, Mass	88,618	18	4	.....	.....	.....	5	.....	7	3
South Bend, Ind	70,967	13	.....	.....	10	.....	4	.....	.....	.....
Southbridge, Mass	14,465	1	.....	.....	.....	.....	.....	.....	1	.....
Spartanburg, S. C	21,985	5	.....	.....	.....	.....	.....	.....	.....	.....
Spokane, Wash	157,656	.....	.....	.....	.....	.....	5	.....	.....	.....
Springfield, Ill	62,623	14	.....	.....	.....	.....	.....	.....	.....	3
Springfield, Mass	108,668	22	4	1	4	.....	1	.....	3	2
Springfield, Mo	41,169	19	.....	.....	.....	.....	.....	.....	.....	.....
Springfield, Ohio	52,296	9	.....	.....	24	.....	.....	.....	.....	2
Steelton, Pa	15,759	.....	.....	.....	23	.....	.....	.....	2	.....
Steubenville, Ohio	28,259	6	.....	.....	.....	.....	.....	.....	.....	.....
Stockton, Calif	36,209	10	1	.....	.....	.....	.....	.....	.....	1
Sunbury, Pa	16,661	.....	.....	.....	1	.....	.....	.....	.....	.....
Superior, Wis	47,167	8	.....	.....	.....	.....	1	.....	.....	.....

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City Reports for Week Ended May 10, 1919—Continued.

City.	Population as of July 1, 1917 (estimated by U. S. Census Bureau).	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Syracuse, N. Y.	158,559	39	8	1			5		9	3
Tacoma, Wash.	117,446		4		13		3			
Taunton, Mass.	36,610	11	1		14				3	1
Tiffin, Ohio.	12,962	1								
Toledo, Ohio.	202,010	47	4		48		7		7	7
Topeka, Kans.	49,538	12								
Trenton, N. J.	113,974	40	6	1	74	2			10	2
Troy, N. Y.	78,094	28	2	1					3	2
Tuscaloosa, Ala.	10,824	4	1		1				3	
Uniontown, Pa.	21,600						1			
Utica, N. Y.	89,272	18	3	1	8		2		2	2
Vallejo, Calif.	13,803	3			1					
Vancouver, Wash.	13,805						1			
Walla Walla, Wash.	26,067				1		7			
Waltham, Mass.	31,011	5	4		3		2			1
Warren, Pa.	15,083				1					
Washington, Pa.	22,076		2				2			
Waterbury, Conn.	89,201		5		23		18	1	2	
Watertown, Mass.	15,188	1					1			
Watertown, N. Y.	30,404	5	2				1		1	
Wausau, Wis.	19,666	6					5			
West Chester, Pa.	13,403						6			
Westfield, Mass.	18,769	5	3	1			2			1
West Hoboken, N. J.	44,386	8		1	1				2	2
West New York, N. J.	19,613	2					1		1	
West Orange, N. J.	13,964	2			7				1	
Weymouth, Mass.	14,041	4								1
Wheeling, W. Va.	43,657	15					1			2
White Plains, N. Y.	23,331	9	1				3		1	
Wichita, Kans.	73,597				1		1		2	
Wilkes-Barre, Pa.	78,334		3		75		2		4	
Wilkinsburg, Pa.	23,899				2					
Williamsport, Pa.	34,123						1			
Wilmington, Del.	95,369						3			5
Wilmington, N. C.	30,400	6			1		1			
Winchester, Mass.	10,812	2					1			
Winona, Minn.	[1] 18,583	9			3					
Winston-Salem, N. C.	33,136	14			30				3	
Winthrop, Mass.	13,105		1				2			
Woburn, Mass.	16,076	2								
Worcester, Mass.	166,106	45	8		52	2	5		8	4
Yakima, Wash.	22,058						4		2	
Yonkers, N. Y.	103,066	12	1		7		3			2
York, Pa.	52,770		1		2		10		2	
Youngstown, Ohio.	112,282	32	1		118	2	4			3
Zanesville, Ohio.	31,320	10			2					

[1] Population Apr. 15, 1910.

FOREIGN.

AZORES.

Influenza—St. Michaels.

Influenza was reported present on the island of St. Michaels, Azores, April 26, 1919.

CHINA.

Plague—Hongkong.

During the two weeks ended May 17, 1919, 65 fatal cases of plague were notified at Hongkong, China.

UNION OF SOUTH AFRICA.

Influenza—Johannesburg.

Recrudescence of influenza was reported at Johannesburg, Union of South Africa, March 22, 1919. According to information dated March 6, 1919, influenza has been declared a notifiable disease in the Union of South Africa.

Influenza was reported prevalent with high mortality throughout the Union of South Africa in October, 1918. At Johannesburg many fatalities resulting from pneumonia were reported.[1]

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

Reports Received During Week Ended May 30, 1919.[2]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Bombay	Mar. 9-22	10	7	
Calcutta	Mar. 30-Apr. 5		209	
Rangoon	Feb. 23-Mar. 22	26	22	
Java:				
East Java				Mar. 14-27, 1919: Cases, 7; deaths, 2.
Surabaya	Mar. 14-27	6	2	

[1] Public Health Reports, Dec. 20, 1918, p. 2296.
[2] From medical officers of the Public Health Service, American consuls, and other sources.

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

Reports Received During Week Ended May 30, 1919—Continued.

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Hongkong	May 4–17		65	
Ecuador:				
Guayaquil	Apr. 1–15	1	1	
India				Mar. 16–29, 1919: Cases, 9,679; deaths, 7,947.
Bombay	Mar. 9–22	62	46	
Calcutta	Mar. 30–Apr. 5		26	
Karachi	Mar. 23–Apr. 12	37	28	
Madras	Mar. 31–Apr. 5	75	56	
Rangoon	Feb. 23–Mar. 22	132	120	
On vessel:				
S. S. Sparta	May 21	1	1	At Liverpool, England, from Bombay.

SMALLPOX.

Algeria:				
Algiers	Mar. 1–31		1	
Brazil:				
Sao Paulo	Mar. 10–16		1	
Canada:				
Nova Scotia—				
Halifax	May 4–10	23		
Sydney	do	2		
Quebec—				
Montreal	do	1		
Quebec	do	2		
Ceylon:				
Colombo	Mar. 24–29	1		
China:				
Amoy	Mar. 25–Apr. 7	4		
Chungking	Mar. 23–29			Present.
Egypt:				
Alexandria	Apr. 9–22	9	3	
India:				
Bombay	Mar. 9–22	161	75	
Calcutta	Mar. 30–Apr. 5		80	
Karachi	Mar. 23–Apr. 12	37	20	
Madras	Mar. 30–Apr. 5	45	23	
Rangoon	Feb. 23–Mar. 22	431	170	
Italy:				
Leghorn	Apr. 14–20	1		Varioloid.
Messina	Mar. 24–30	1		
Palermo	Apr. 3–16	23	2	
Turin	Mar. 17–23	1		
Japan:				
Taihoku	Apr. 2–15	5		
Java:				
West Java				Mar. 14–27, 1919: Cases, 252; deaths, 56.
Batavia	Mar. 14–27	8	2	
Manchuria:				
Dairen	Apr. 8–14	1		
Mexico:				
Mexico City	Mar. 30–May 3	11		
Newfoundland				May 3–9, 1919: Cases, outports, 26.
St. Johns	May 3–9	2		
Portugal:				
Oporto	Apr. 13–26	43	34	
Spain:				
Valencia	Mar. 16–29	75	10	

TYPHUS FEVER.

China:				
Antung	Apr. 14–20	1		
Egypt:				
Alexandria	Apr. 9–22	170	37	
Italy:				
Leghorn	Apr. 14–27	9	2	
Japan:				
Nagasaki	Apr. 14–20	7		

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

Reports Received During Week Ended May 30, 1919—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Aguascalientes	Mar. 17-23		1	
Mexico City	Mar. 30-May 3	191		
Portugal:				
Oporto	Apr. 13-26	292		
Tunisia:				
Tunis	Apr. 12-25	2	1	

YELLOW FEVER.

Ecuador:				
Guayaquil	Apr. 1-15	1	1	
Vinces	do	1	1	

Reports Received from Dec. 28, 1918, to May 23, 1919.

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
Ceylon:				
Colombo	Nov. 17-30	4	5	
Germany:				
Berlin	To Oct. 5	17	11	
Bremen	Oct. 13-19	1		On a barge.
Marienwerder				1 case in October, 1918, on a barge in canal.
India:				
Bombay	Aug. 18-Dec. 28	1,351	1,031	
Do	Dec. 29-Mar. 8	9,681	8,503	
Calcutta	Sept. 20-Dec. 21		241	Report for Nov. 23, 1918, missing.
Do	Dec. 29-Mar. 22		945	
Karachi	Jan. 26-Mar. 22	3	3	
Madras	Oct. 5-Dec. 28	264	164	Oct. 27-Nov. 2, 1918: Cases, 9; deaths, 4.
Do	Jan. 5-Mar. 29	430	299	
Rangoon	Oct. 5-Dec. 21	35	35	
Do	Dec. 29-Feb. 22	15	11	
Indo-China				July 1-Oct. 31, 1918 Cases, 753; deaths, 472.
Anam	July 1-Aug. 31	37	30	
Cambodia	July 1-Oct. 31	324	171	
Cochin China	do	436	337	
Saigon	Oct. 7-Dec. 22	75	45	
Do	Dec. 3-Mar. 23	456	267	
Kwang-Chow-Wan	July 1-31	50	34	
Tonkin	July 1-Oct. 31	6		
Java:				
East Java				Oct. 7-Dec. 31, 1918: Cases, 381; deaths, 323. Jan. 1-Mar. 11, 1919: Cases, 749; deaths, 717.
Surabaya district	Oct. 7-Dec. 31	655	423	
Do	Jan. 1-Mar. 11	381	280	
Mid-Java				Sept. 25-Dec. 18, 1919: Cases, 3,282; deaths, 2,014. Jan. 24-Feb. 20, 1919: Cases, 1,183; deaths, 928.
Samarang	Sept. 26-Oct. 16	120	111	
West Java				Oct. 3-Dec. 11, 1918: Cases, 412, deaths, 238. Dec. 27, 1918-Jan' 23, 1919: Cases, 10; deaths, 3.
Batavia	Oct. 3-Dec. 11	291	148	
Do	Dec. 27-Jan. 23	8	2	
Cheribon	Jan. 3-9	1		
Mesopotamia:				
Bagdad	Oct. 11-18	8		
Philippine Islands:				
Manila	Sept. 22-Dec. 28	209	135	
Do	Dec. 29-Mar. 29	25	13	
Do	Apr. 6-12	4	1	
Provinces				Nov. 2-Dec. 28, 1918: Cases, 1,986; deaths, 1,515. Dec. 29, 1918-Mar. 29, 1919: Cases, 1,301; deaths, 917. Apr. 6-12, 1919: Cases, 53; deaths, 37.
Albay	Dec. 15-21	1	1	
Ambos Camarines	Feb. 15-21	10	2	
Bataan	Nov. 17-Dec. 28	38	32	
Batangas	Nov. 2-Dec. 28	258	230	
Do	Dec. 29-Mar. 29	71	55	
Do	Apr. 6-12	5	2	

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

Reports Received from Dec. 28, 1918, to May 23, 1919—Continued.

CHOLERA—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Philippine Islands—Continued.				
Provinces—Continued.				
Bohol	Nov. 2-Dec. 28	29	24	
Do	Dec. 29-Mar. 29	88	55	
Do	Apr. 6-12	10	6	
Bulacan	Oct. 12-Dec. 28	51	8	
Do	Dec. 29-Feb. 21	42	26	
Capiz	Dec. 22-28	7	5	
Do	Jan. 5-25	28	14	
Cavite	Oct. 27-Dec. 21	207	115	
Do	Dec. 29-Jan. 25	17	16	
Cebu	Nov. 10-Dec. 21	50	27	
Do	Jan. 12-18	13	12	
Ilocos Sur	Dec. 8-28	17	8	
Do	Dec. 29-Feb. 15	56	38	
Iloilo	Oct. 27-Dec. 21	112	78	
Do	Jan. 5-Mar. 29	186	118	
Do	Apr. 6-12	2	1	
Laguna	Oct. 27-Dec. 28	18	11	
Do	Dec. 29-Mar. 29	142	99	
Do	Apr. 6-12	7	6	
Lanao	Jan. 5-11	8	4	
Mindoro	Nov. 21-30	7	14	
Misamis	Oct. 27-Nov. 2	6	5	
Do	Nov. 17-Dec. 28	75	48	
Do	Jan. 5-Mar. 29	194	88	
Nueva Ecija	Jan. 12-25	9	6	
Occidental Negros	Feb. 2-Mar. 21	8	5	
Oriental Negros	Nov. 2-Dec. 7	32	18	
Do	Jan. 5-Feb. 8	35	22	
Pampanga	Nov. 24-Dec. 14	4	4	
Do	Jan. 5-Mar. 29	51	38	
Do	Apr. 6-12	28	21	
Pangasinan	Nov 2-Dec. 28	930	652	
Do	Dec. 29-Mar. 29	167	129	
Do	Apr. 6-12	1	1	
Rizal	Oct. 27-Nov. 2	3	1	
Do	Nov. 24-30	16	5	
Samar	Dec. 15-21	8	1	
Sorsogon	Nov. 17-23	8	4	
Do	Jan. 19-Feb. 8	44	36	
Tayabas	Nov. 2-Dec. 28	64	31	
Do	Nov. 10-Dec. 28	54	25	
Do	Dec. 29-Feb. 15	69	62	
Union	Nov. 2-Dec. 28	18	14	
Zamboanga	Dec. 8-28	27	19	
Do	Jan. 5-Feb. 8	25	21	
Poland:				
Plonsk district	Oct. 2-Nov. 27	5	.....	
Warsaw	Sept. 29-Oct. 26	5	1	
Russia:				
Petrograd	To July 16	3,388	1,054	
Do	July 17-Sept. 11	3,479	1,455	In civil and military hospitals; In military hospitals, July 5-Aug. 21, 1918: Cases, 881; deaths, 783. In municipal hospitals, Oct. 1, 1918: Cases, 279.
Ukraine:				
Ekaterinaslav	Sept. 1-20	7	6	
Odessa	....do	25	.....	Sept. 1-20, 1918: 11 cases on s. s. Helena.

PLAGUE.

Ceylon:				
Colombo	Oct. 27-Nov. 2	1	1	
Do	Feb. 9-Mar. 22	13	10	
China:				
Amoy	Nov. 24-Dec. 8	.....	.....	Present.
Chungking	Dec. 1-7	.....	.....	Do.
Hing-Ning district	Mar. 15	.....	.....	Do.
Hongkong	Oct. 1-Dec. 28	4	4	
Do	Jan. 1-Mar. 15	18	15	

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

Reports Received from Dec. 28, 1918, to May 23, 1919—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Ecuador:				
Duran	Feb. 16–Mar. 16	2	1	
Guayaquil	July 1–Dec. 31	20	7	
Do	Jan. 1–Mar. 31	54	16	
Taura	Dec. 16–31	1	1	
Egypt				Jan. 1–Nov. 21, 1918: Cases, 357; deaths, 153. Jan. 1–Apr. 10, 1919: Cases, 130; deaths, 96.
Cities—				
Alexandria	Mar. 23	1	1	
Suez	Jan. 31–Apr. 7	40	25	
Provinces—				
Assiout	Feb. 24–Apr. 5		9	1 septicemic.
Girgeh	Feb. 22–Mar. 22	10	5	2 pneumonic.
Minieh	Feb. 21–27	2	2	1 pneumonic.
India				Sept. 23–Dec. 28, 1918: Cases, 24,279; deaths, 18,360. Dec. 29, 1918–Mar. 1, 1919: Cases, 25,506; deaths, 19,401. Mar. 9–15, 1919: Cases, 4,302; deaths, 3,455.
Bombay	Aug. 18–Dec. 28	41	29	
Do	Jan. 12–Mar. 8	6	6	
Calcutta	Dec. 22–28		1	
Do	Jan. 12–Mar. 22		57	
Karachi	Oct. 19–Dec. 28	17	17	
Do	Dec. 29–Mar. 22	18	16	
Madras	Dec. 8–28	26	17	
Do	Dec. 29–Mar. 8	131	61	
Madras Presidency	Oct. 13–Dec. 28	1,152	774	Oct. 27–Nov. 2, 1918: Cases, 142; deaths, 38.
Do	Dec. 29–Mar. 8	2,562	1,726	
Rangoon	Oct. 5–Dec. 21	84	81	
Do	Dec. 29–Feb. 22	107	100	
Indo-China				July 1–Oct. 31, 1918: Cases, 161; Deaths, 145.
Anam	July 1–Oct. 31	42	36	
Cambodia	do	72	72	
Cochin-China	do	65	35	
Saigon	Oct. 7–Nov. 24	5	1	
Do	Jan. 13–Mar. 23	14	10	City and vicinity.
Kwang-Chow-Wan	July 1–31	1	1	
Java:				
East Java				Oct. 7–Nov. 18, 1918: Cases, 109; deaths, 109. Jan. 1–Feb. 25, 1919: Cases, 179, deaths, 179.
Surabaya (district)	Oct. 7–Dec. 31	92	92	
Do	Jan. 1–Feb. 25	49	49	
Mid-Java				Sept. 25–Oct. 16, 1918: Cases, 14; deaths, 14. Jan. 30–Feb. 11, 1919: Cases, 110; deaths, 110.
Samarang	Sept. 25–Oct. 16	6	6	
Mesopotamia:				
Bagdad	Nov. 16–29	5	2	
Do	Feb. 22–Mar. 14	65	20	
Siam:				
Bangkok	Sept. 21–Oct. 12	6	5	
Do	Jan. 19–Feb. 22	7	6	
Venezuela:				
Caracas	Dec. 30	1		
On vessel:				
S. S. Japan	Jan. 14	1	1	At Suez quarantine station from Bombay.

SMALLPOX.

Algeria:				
Algiers	Oct. 1–Dec. 31	2	1	
Austria				Dec. 1, 1918–Jan. 11, 1919: Cases, 68. Jan. 12–Feb. 8, 1919: Cases, 57.
Vienna	Dec. 1–Jan. 11	6		
Bohemia				Feb., 1919: Reported prevalent.
Gablonz	Mar. 1–31	26		March, 1919: Cases, 57.
Brazil:				
Rio de Janeiro	Dec. 1–28	46	19	Oct. 6–12, 1918: Cases, 15; deaths, 10.
Do	Dec. 30–Jan. 25	25	11	
São Paulo	Mar. 3–9		1	
British East Africa:				
Mombasa	Sept. 1–Nov. 30	6	1	
Canada:				
New Brunswick—				
Campbellton	Dec. 22–28	1		
Do	Jan. 5–18	2		
St. John	Nov. 8–14	3		
Do	Jan. 26–Feb. 22	6		

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

Reports Received from Dec. 28, 1918, to May 23, 1919—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Canada—Continued.				
Nova Scotia—				
Bear River	Dec. 29–Jan. 4			Present.
Bigbee	Jan. 10			Do.
Cape Sable Island	May 13			Present on south side.
Digby	Jan. 4			Present.
Halifax	Dec. 7–28	10		
Do	Jan. 5–May 3	294		
Middleton	Dec. 29–Jan. 4			Do.
Sydney	Jan. 5–Mar. 8	4		
Do	Mar. 23–Apr. 5	8		
Ontario—				
North Bay	Jan. 19–25	1		
Ottawa	Jan. 12–Apr. 12	13		
Toronto	Feb. 2–15	2		
Do	Mar. 16–22	1		
Prince Edward Island—				
Charlotte Town	Feb. 27–Apr. 16	2		
Quebec—				
Montreal	Jan. 24–Dec. 21	2		
Do	Jan. 12–Apr. 26	31		
Paspebiac	Jan. 12–Mar. 8	8		
Quebec	Dec. 15–21	1		
Do	Dec. 29–May 3	19		
Ceylon:				
Colombo	Jan. 12–Mar. 15	3		
China:				
Amoy	Oct. 13–Dec. 28			Do.
Do	Mar. 11–Apr. 7	4	3	Jan. 4–Mar. 24, 1919: Present.
Antung	Feb. 10–16	1		
Do	Feb. 24–Mar. 2	1		
Canton	Nov. 17–23			Present.
Do	Feb. 9–15			Do.
Changsha	Mar. 16–23	3		
Chungking	Nov. 10–Dec. 28			Do.
Do	Jan. 5–Mar. 27			Do.
Foochow	Nov. 24–Dec. 28			Do.
Do	Dec. 29–Feb. 22			Do.
Hongkong	Dec. 15–21	1	1	
Do	Feb. 2–8	1		
Do	Feb. 16–Mar. 29	7	2	
Nanking	Dec. 1–28			Do.
Do	Dec. 29–Apr. 11			Do.
Shanghai	Jan. 20–26	1		
Tsingtao	Mar. 3–9	1		
Chosen (Korea):				
Chemulpo	Nov. 1–Dec. 31	15	4	
Do	Jan. 1–Feb. 28	15	6	
Fusan	Feb. 1–28	5		
Seoul	do	1		
Colombia:				
Barranquilla	Apr. 6–12		1	
Denmark:				
Copenhagen	Nov. 9–Dec. 28	12		
Do	Dec. 29–Mar. 15	69		
Egypt:				
Alexandria	Dec. 17–23	1	1	
Do	Jan. 22–Apr. 1	17	7	
Finland:				
Provinces				Jan. 1–31, 1919: Cases, 279.
Abo Och Björneborg	Jan. 1–31	47		
Kuopio	do	47		
Nyland	do	2		
St. Michael	do	51		
Tavastehus	do	4		
Uleaborg	do	1		
Vasa	do	1		
Viborg	do	126		
Provinces				Feb. 1–28, 1919: Cases, 234.
Abo Och Björneborg	Feb. 1–28	23		
Kuopio	do	54		
Nyland	do	15		
St. Michael	do	20		
Tavastehus	do	4		
Viborg	do	118		

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

Reports Received from Dec. 28, 1918, to May 23, 1919—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
France:				
Bordeaux	Feb. 8–13		1	
Brest	Feb. 2–8	1		
Paris	Mar. 2–Apr. 12	12	3	
Germany				Nov. 24–Dec. 7, 1918: Cases, 34.
Dresden	Nov. 24–Dec. 7	18		
Halle	do	4		
Friedland	do	1		
Königsberg	do	8		In persons evacuated from the Ukraine.
Schkeuditz	do	1		
Tilsit	do	1		
Torgau	do	1		
Germany				Dec. 8, 1918–Jan. 11, 1919: Cases 177. Additional cases reported later, 54, for week ended Jan. 11.
Aix-la-Chapelle (district)	Dec. 8–Jan. 11	17		
Cassel	do	10		
Danzig	do	3		
Doristhal	do	8		District of Gumbinnen.
Dresden	Dec. 8–Feb. 15	247		26 additional cases reported later at Dresden.
Halle	Dec. 8–Jan. 11	5		
Hanover	do	7		Among interned Russians.
Königsberg	do	15		
Kottowitz	do	5		
Meyrode	do	6		
Riesa	do	4		District of Dresden.
Great Britain:				
Liverpool	Jan. 26–Mar. 15	7		Of these, 2 from vessels.
London	Mar. 9–Apr. 19	7	1	
Greece:				
Salonika	Feb. 2–15		3	
India:				
Bombay	Aug. 18–Dec. 28	35	8	
Do	Dec. 29–Mar. 8	269	104	
Calcutta	Sept. 29–Dec. 28		17	Report for week ended Nov. 23, 1918, missing.
Do	Dec. 29–Mar. 22		326	
Karachi	Sept. 29–Dec. 28	13	4	
Do	Dec. 29–Mar. 22	107	41	
Madras	Oct. 5–Dec. 28	62	40	
Do	Dec. 29–Mar. 29	204	91	
Rangoon	Oct. 20–Dec. 21	32	6	
Do	Dec. 29–Feb. 22	386	135	
Indo-China:				
Anam	July 1–Oct. 31	146	67	
Cambodia	Aug. 1–Oct. 31	165	74	July 1–Oct. 31, 1918: Cases, 620; deaths, 254.
Cochin-China	July 1–Oct. 31	400	112	
Saigon	Oct. 7–Dec. 22	20	5	
Do	Dec. 30–Mar. 23	93	15	City and vicinity.
Tonkin	July 1–Oct. 31	20	1	
Italy:				
Andria	Mar. 10–16	1		Province of Bari.
Barletta	Mar. 3–9	2		Do.
Lecce (Province)	Feb. 17–23	2		
Genoa	Jan. 9–Mar. 15	4	2	
Messina	Mar. 2–23	3		Cases reported in several localities in Province.
Naples	Mar. 10–16	2		
Palermo	Jan. 31–Apr. 1	30		
Turin	Jan. 27–Mar. 2	8	2	
Japan:				
Kobe	Oct. 26–Dec. 28	186	46	
Do	Dec. 29–Mar. 22	499	165	
Nagasaki	Mar. 31–Apr. 6	3		
Nagoya	Mar. 2–15	2		
Taihoku	Jan. 15–Mar. 18	146	18	Island of Formosa.
Yokohama	Jan. 20–26	1		
Java:				
East Java				Oct. 7–Dec. 31, 1918: Cases, 2 deaths, 1. Jan. 1–Feb. 25, 1919: Cases, 4; deaths, 3.
Surabaya (district)	Oct. 7–Dec. 31	16		
Do	Jan. 1–Feb. 25	4	2	
Mid-Java				Sept. 25–Dec. 18, 1918: Cases, 172; deaths, 3. Jan. 24–30, 1919: Case, 1.
West Java				Oct. 2–Dec. 11, 1918: Cases, 809; deaths, 263. Dec. 27, 1918–Feb. 27, 1919: Cases, 207; deaths, 43.
Batavia	Oct. 2–Dec. 11	185	151	
Do	Dec. 27–Feb. 27	41	25	
Lithuania				Sept. 1–Oct. 16, 1918: Cases, 44.

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

Reports Received from Dec. 28, 1918, to May 23, 1919—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Manchuria:				
Dairen	Jan. 15–21	1		
Do	Feb. 22–Mar. 31	3	2	
Mesopotamia:				
Bagdad	Oct. 11–Dec. 27	308	97	
Do	Dec. 28–Feb. 9	8		
Mexico:				
Ciudad Juarez	Nov. 24–30	1		
Guadalajara	Mar. 1–31	1		
Do	Mar. 29–Apr. 5	1		
Mexico City	Sept. 22–Dec. 28	23		
Do	Dec. 29–Mar. 22	17		
Vera Cruz	Feb. 10–Apr. 12	2	1	
Newfoundland				Outports—Dec. 6–27, 1918: Cases, 78. Dec. 28, 1918–May 2, 1919: Cases, 275.
St. Johns	Dec. 6–20	4		
Do	Jan. 24–May 2	35		
Panama				Aug. 1–31, 1918: Cases, 133, occurring at Colon, Panama, and points in the interior. Jan. 1–25, 1919: Cases, 28.
Colon	Dec. 15–21	1		
Do	Dec. 29–Feb. 9	8		
Philippine Islands:				
Manila	Nov. 2–16	5	3	
Do	Dec. 29–Apr. 12	40	21	Varioloid, 16.
Portugal:				
Lisbon	Nov. 16–Dec. 28	843		
Oporto	Mar. 9–Apr. 12	85	49	
Portuguese East Africa:				
Lourenco Marques				July 1–Oct. 31, 1918: 45 fatal cases.
Siberia:				
Vladivostok	Nov. 1–3	4		
Do	Jan. 17–23		1	
Do	Feb. 1–Mar. 15	16	1	
Spain:				
Barcelona	Jan. 9–Feb. 11		5	
Do	Feb. 19–Apr. 9	2	2	
Bilbao	Jan. 1–Feb. 20	6		
Cadiz	Oct. 1–Dec. 31	18		
Do	Jan. 1–Feb. 28		26	
Madrid	Sept. 1–Oct. 31	153		
Do	Jan. 1–Feb. 28		74	
Seville	Nov. 1–Dec. 31		8	
Do	Jan. 1–Feb. 28		4	
Valencia	Nov. 10–Dec. 21	40	9	
Do	Dec. 29–Jan. 25	93	10	
Do	Feb. 16–Mar. 15	215	19	
Straits Settlements:				
Penang	Oct. 6–12	1		
Singapore	Feb. 2–22	3		
Sweden:				
Stockholm	Feb. 2–8		1	
Union of South Africa:				
Cape Town	Aug. 1–30	1		
Do	Dec. 21–Jan. 31	1		
Johannesburg	Aug. 1–Oct. 31	12		Nov. 1–30, 1918: Cases, 4.

TYPHUS FEVER.

Algeria:				
Algiers	Nov. 1–30	1		
Austria-Hungary:				
Austria				Dec. 1, 1918–Jan. 11, 1919: Cases, 125. Jan. 12–Feb. 8, 1919: Cases, 157.
Vienna	Dec. 1–Jan. 11	110		Occurring almost exclusively in repatriated soldiers and their contacts.
	Jan. 12–Feb. 8	119		
Hungary	Sept. 2–8	2		Sept. 9–Nov. 26, 1918: Cases, 110; deaths, 8. Nov. 27, 1918–Jan. 12, 1919: Cases, 210.
Budapest	Sept. 9–Nov. 26	73	2	
Do	Nov. 27–Jan. 12	150		
Pressburg	Sept. 9–Nov. 26	11	1	
Tyrnau	Nov. 4–26	1		
Szatmarnemeti	do	1		Present, county of Bihar.

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

Reports Received from Dec. 28, 1918, to May 23, 1919—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Brazil:				
Ceara	Sept. 14–21	1		
Rio de Janeiro	Dec. 15–22	2		
Do	Dec. 29–Feb. 15	28	3	
São Paulo	Jan. 13–19	3		
Bulgaria:				
Aeteven	Mar. 10			Present.
Rustchuk	do			Do.
China:				
Antung	Dec. 2–15	2		
Do	Jan. 6–Mar. 30	2	1	
Chosen (Korea):				
Fusan	Feb. 1–28	1	1	
Seoul	Jan. 1–Feb. 28	12	1	
Colombia:				
Barranquilla	Nov. 8–Dec. 28		3	
Do	Jan. 5–Mar. 8	2	3	
Egypt:				
Alexandria	Oct. 14–Dec. 31	85	36	
Do	Jan. 1–Apr. 8	457	126	Confined to one quarter of city and mostly to natives. Oct. 20–Nov. 7, 1918: Cases, 12, deaths, 1.
Finland:				
Provinces—				
Abo Och Björneborg	Jan. 1–31	24		
Do	Feb. 1–28	19		
Nyland	do	10		
France:				
Marseille	Mar. 1–31		31	Apr. 26, 1919, present in 2 civil and 2 military prisons.
Germany:				
Breslau	Sept. 29–Oct. 19	12	8	
Gumbinnen district	Oct. 20–Nov. 7	1		
Dresden	do	1		
Griefswald	do	1		
Godullahutte	do	1		
Königsberg	Sept. 29–Oct. 19	3	1	
Königshutte	Oct. 20–Nov. 7	1	1	
Magdeburg	do	2		
Mostalten	Sept. 29–Oct. 19	7	2	District of Allenstein.
Oppeln district	Oct. 20–Nov. 7	5		
Great Britain:				
Cork	Feb. 2–22	4		
Glasgow	Dec. 22–28	5		
Do	Jan. 5–Feb. 8	9	1	
Do	Mar. 9–15	1		
Greece:				
Athens	Mar. 8	2	2	
Saloniki	Sept. 29–Dec. 21		34	
Do	Dec. 29–Feb. 15		78	
Italy:				
Bari	Feb. 3–9	19		In soldiers returning from Black Sea.
Naples	do	3		Do.
Taranto	do	2		
Japan:				
Nagasaki	Nov. 10–Dec. 29	13	4	
Do	Dec. 30–Apr. 13	31	5	
Java:				
East Java				Oct. 7–21, 1918: Cases, 5.
Surabaya	Oct. 7–21	4		
Mid-Java				Sept. 25–Oct. 16, 1918: Cases, 3.
West Java				Oct. 2–23: Cases, 31; deaths, 6.
Batavia	Oct. 2–23	15	4	
Lithuania				Sept. 1–Oct. 26, 1918: Cases, 539; deaths, 26.
Macedonia:				
Drama	Mar. 17			Present.
Epirus	Mar. 21			Do.
Kavala	Mar. 17	300		Estimated.
Mesopotamia:				
Bagdad	Oct. 5–Dec. 27	2		
Do	Dec. 28–Jan. 31	4		

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

Reports Received from Dec. 28, 1918, to May 23, 1919—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Mexico:				
Aguascalientes	Feb. 2-23		3	
Do	Mar. 24-Apr. 13		3	
Guadalajara	Nov. 1-Dec. 31	4	1	
Do	Jan. 1-Mar. 31	4	2	
Mexico City	Sept. 22-Dec. 28	434		
Do	Dec. 29-Mar. 29	453		
Netherlands:				
Amsterdam	Dec. 8-14	1		
Do	Jan. 12-18	4		
Delft	Feb. 26			Present.
Harlem	do			Do.
Leiden	do			Do.
Limburg	do	5	1	Mining district.
Rotterdam	Feb. 2-Apr. 5	504	89	Jan. 30-Feb. 27, 1919: Cases, 462; deaths, 46.
Schiedam	Feb. 26			Present. Sept. 29-Oct. 26, 1918: Cases, 572; deaths, 50.
Poland:				
Lodz	Sept. 29-Oct. 26	55	8	
Warsaw	do	111	13	
Portugal:				
Braga	Mar. 24			
Oporto	Mar. 8-Apr. 12	432		
Russia:				
Archangel	Jan. 15-Mar. 15	233	61	
Serbia:				
Belgrade	Feb. 5	62		Among soldiers and prisoners.
Siberia:				
Vladivostok	Sept. 1-Dec. 30	43		
Do	Jan. 17-Mar. 15	143	15	
Spain:				
Huelva	Oct. 1-31		2	
Madrid	Dec. 1-31		1	
Ukraine				Apr. 5, 1919: Reported to be spreading.
Union of South Africa:				
Port Elizabeth	Sept. 14-28			Present among natives in several interior towns.

YELLOW FEVER.

Brazil:				
Bahia	Jan. 12-Mar. 1	5	2	
Pernambuco	Oct. 1-Nov. 30	2	1	
Colombia:				
Cartagena	Jan. 29-Feb. 4		4	
Ecuador:				
Babahoyo	Nov. 1-30	1		
Do	Mar. 1-15	1		
Catarama	Feb. 1-15	1		
Chobo	Jan. 1-15	1		
Daule	do	1	1	
Duran	Nov. 1-Dec. 31	3	2	
Do	Jan. 16-Mar. 15	5	1	
Guayaquil	July 1-Dec. 31	326	177	
Do	Jan. 1-Mar. 31	124	68	
Hacienda Vainilla	Feb. 16-28	1		
Milagro	Nov. 1-15	1		
Do	Feb. 1-Mar. 15	2	1	
Naranjal	Nov. 1-15	1	1	
Do	Jan. 1-15	1	1	
Naranjito	Nov. 1-15	1	1	
Do	Jan. 1-Feb. 28	2	2	
Payo (Hacienda)	Nov. 1-15	1		
Punta de Piedra	Nov. 1-30	1		
Salvador:				
San Salvador	Jan. 9	1		
On vessel:				
S. S. Jamaica	Jan. 30	1		At quarantine station, Canal Zone, Panama.