PUBLIC HEALTH REPORTS

VOL. 38 JULY 13, 1923 No. 28

ANALYSIS OF SIX ANNUAL SEASONS OF FALL HAY FEVER IN NEW ORLEANS, LA.

By WM. SCHEPPEGRELL, A. M., M. D., President, American Hay-fever Prevention Association, Surgeon in Charge Hay-fever and Asthma Clinic, Charity Hospital.

A careful study of the fall hay-fever seasons from 1916 to 1922, inclusive, based on clinical, pollenometric, and meteorologic data, gives interesting information on the character and course of hay fever. The fall hay fever has been selected for this analysis, as the principal cause of this form of the disease in Louisiana, in which State these records were taken, is the common ragweed pollen, the buoyancy of which, on account of its small size (20 microns) and spiculated surface, is so great that its number is fairly uniform within the radius of its potential area. By allowing for the difference in its season of bloom, and for weather conditions, the results may be considered representative of the States east of Kansas generally. By substituting the wormwood (*Artemesia*) for the ragweeds, the statement applies for the Pacific and Rocky Mountain States.[1]

The spring and summer hay fever is due to numerous other pollens, generated by grasses, plants, and trees, individually less common than the ragweeds and most of the pollens of which are also less buoyant than the pollen of these weeds. On this account, an analysis of the spring and summer hay fever is omitted in this report, as being more of local than of general interest.

Complete records are kept at our laboratories of the clinical reports and of the pollen and weather reports, tables of the latter for the months of September and October, 1916 and 1918, and of August, September, and October, 1922, being shown on the following pages. In addition to the individual records, which are made at the Hay-fever and Asthma Clinic, a condensed clinical record is kept showing the dates of acute attacks of the patients, with a view of checking these against variations of the pollenometric reports and weather conditions.

[1] Hay-Fever: Its Cause and Prevention in the Rocky Mountain and Pacific States. By Wm. Scheppegrell. Public Health Reports, July 20, 1917. Reprint No. 412.

Pollenometric and meteorologic data, New Orleans, La.

1916.

	Grass pollens.	Ambrosia pollens.	Other pollens.	Estimated number of pollens per cubic yard of air.	Maximum wind velocity.	Mean wind velocity.	Direction of wind.	Mean temperature.	Rainfall.
Sept. 22	4	5	2	29	10	3.8	NW. S.	78	0
25		7		22	14	5.4	S. SE.	80	0
26	1	9		31	16	6.0	S. SE.	80	.01
28		15		48	15	4.3	S. NE.	82	.02
29		114		365	22	13.4	NE.	68	0
Oct. 1		36		115	16	7.5	NE. E.	68	0
2		10		61	14	7.4	SE. E.	71	0
3		6		19	12	5.9	E.	72	0
4		7		22	12	6.2	NE. E.	74	0
5		11		35	21	10.7	NE.	73	.01
6	2	6	2	29	16	7.2	NE. E.	78	.01
7	1	7		26	17	7.9	E. NE.	76	.02
8		2		6	12	4.3	N. SE.	80	1.85
9		8		26	7	2.9	NW. S.	80	0
10		12	1	42	18	9.6	NE.	74	0
11		11		35	18	7.7	NE.	73	0
13		3	1	13	7	4.3	E. SE.	77	0
14		9	2	35	10	5.0	SE. S.	78	0
17				0	25	14.0	E.	72	2.58
18		1	4	16	24	11.5	NE. SW.	74	.19
19		23	5	90	15	7.9	NE. SW.	76	0
20		5	5	32	23	13.4	NW.	62	0
21		12	2	45	15	8.5	NW.	58	0
24			2	6	8	4.2	E.	67	0
25		1	1	6	15	7.1	NW.	70	0
26		8	2	32	17	10.1	NE.	62	0
27		1	3	13	15	8.5	NE.	66	0
28		1	8	29	12	6.5	NE. E.	67	0
29			1	3	9	4.5	NW. N.	70	0
31			2	6	8	3.7	NW.	72	0

SEPTEMBER, 1918.

Sept. 1	1	5	4	31	11	4.5	NE. NW.	84	0
2		7	3	31	12	3.7	SW. E.	84	.45
3	1	14	1	50	18	3.4	SW. E.	82	.33
4	3	9		37	13	4.3	SW. S.	85	0
5		10	3	40	13	5.2	SW. NW.	82	0
6	5	12	1	56	10	6.4	NE. NW.	74	2.38
7		3		9	14	8.5	N. NW.	75	0
8		6		19	12	7.2	NE. NW.	75	0
9		9	2	34	14	6.2	NE.	78	0
10	3	12	2	53	15	7.7	SE. E.	76	0
11		4		12	11	5.4	NE.	80	0

Pollenometric and meteorologic data, New Orleans, La.—Continued.

SEPTEMBER, 1918—Continued.

	Grass pollens.	Ambrosia pollens.	Other pollens.	Estimated number of pollens per cubic yard of air.	Maximum wind velocity.	Mean wind velocity.	Direction of wind.	Mean temperature.	Rainfall.
Sept. 12		5		15	12	4.1	NW.	80	0
13		6		19	10	4.2	SE. E.	81	0
14		12	3	46	9	4.5	S. N.	80	0
15	2	16	4	68	11	3.9	S. SE.	82	0
16		2		6	8	4.5	S. SE.	81	0
17		2		6	9	4.1	NW. SE.	82	0
18		14	3	53	11	4.2	NW. N.	82	0
19		5		16	14	5.6	SW. NE.	82	0
20		0		0	22	10.3	NE.	67	1.65
21	3	110	5	357	19	10.7	NE.	64	0
22	1	25		81	17	8.5	NE.	66	0
23	2	40	2	136	21	9.9	SE. E.	69	0
24	1	23		74	17	9.9	E.	74	0
25		15		47	14	5.5	SE. E.	77	.01
26	1	16		53	9	4.1	SE.	77	0
27		24	1	78	16	8.8	NE. NW.	74	0
28		26		81	16	10.2	N. NW.	67	0
29		27	2	90	12	6.3	N.	70	0
30		24		73	10	5.7	NE.	76	0

OCTOBER, 1918.

Oct. 1	2	32	4	88	13	6.3	NE. E.	78	0
2	1	10	1	37	14	6.7	E. NE.	78	0
3	2	15	2	59	15	7.0	NE. E.	79	0
4	1	20	3	75	19	8.9	SE. E.	78	0
5	3	14	1	56	13	5.3	SE.	80	0
6	4	29	3	12	15	5.3	SE. S.	78	0
7	2	14	2	59	10	2.5	S. SE.	79	0
8	2	9	1	37	6	4.3	SE. E.	80	.04
9	1	3	1	16	12	5.2	SE.	76	.47
10	1	0	1	6	14	6.6	SE.	78	0
11	3	4	2	28	12	5.2	SE. S.	78	1.07
12	4	2	1	22	13	3.8	S. NW.	77	.35
13	1	2	2	16	10	4.0	NW. NE.	76	0
14	3	5	3	34	21	10.9	NE.	70	.08
15	4	6	4	44	30	15.2	NE. E.	66	1.96
16	1	1	2	12	23	12.4	E.	72	.28
17	1	1	3	15	15	7.5	SE. S.	77	0
18	1	3	4	25	10	4.8	S. SE.	76	.69
19	1	1	1	9	19	2.6	SW. W.	76	.02
20	2	6	2	31	0	4.6	NW. NE.	77	0
21	1	4	1	18	14	7.1	NE. E.	74	0

Pollenometric and meteorologic data, New Orleans, La.—Continued.

OCTOBER, 1918—Continued.

	Grass pollens.	Ambrosia pollens.	Other pollens.	Estimated number of pollens per cubic yard of air.	Maximum wind velocity.	Mean wind velocity.	Direction of wind.	Mean temperature.	Rainfall.
Oct. 22	2	0	1	9	12	6.0	E NE	74	0
23	1	0	1	6	21	7.2	NE NW	74	.45
24	2	0	1	9	23	5.7	S SW	73	.29
25	1	0	1	6	8	3.1	SE	72	0
26	0	0	1	3	15	6.9	SE	74	.33
27	1	2	2	16	11	6.1	SW	67	.86
28	1	0	2	9	12	6.4	SE NW	62	0
29	0	0	0	0	20	8.2	SW S	76	4.15
30	1	0	1	6	16	9.9	NW	70	0
31	1	0	0	3	18	8.5	N NW	66	0

AUGUST, 1922.

Aug. 1					16	4.6	SE NW	80	1.70
2	1		1	6	13	6.0	NW	83	0
3	2		1	9	14	6.0	NW	84	0
4	1	1	2	12	10	4.7	W NW	86	0
5	1			3	22	4.6	W S	83	.64
6	2	1	1	12	13	4.7	W SW	82	T.
7		2	2	12	19	6.5	SW	82	T.
8	1	2		9	17	6.4	SW W	80	.28
9	2	3	1	19	19	5.2	W	81	.68
10	1	9	2	37	11	3.9	W NE	83	0
11	2	11	3	50	10	4.9	E NW	84	0
12	1	3	1	16	19	6.4	E S	80	.41
13	2	4		25	16	7.4	SE E	76	.07
14	1			3	14	5.1	SE	80	.83
15		2	2	12	13	5.0	SE S	82	.02
16	1	3	1	15	11	4.8	W	85	T.
17	4	19	3	81	28	5.7	NE	82	.07
18	1		1	6	11	5.0	NE	82	.43
19	1	1	2	12	9	4.1	N	84	0
20		5		16	8	4.5	NW N	87	0
21	1	15	1	53	16	4.5	SW	86	0
22	3	21	3	84	21	5.2	SW	84	T.
23	1	13		43	14	6.2	SE E	84	0
24	1	12		40	17	4.9	SE	84	T.
25		3		9	11	4.2	SW E	85	.14
26		2	1	9	11	5.7	W	84	0
27	1	12	2	47	18	5.7	SW NE	83	0
28		15	1	50	16	8.7	SE E	81	0
29		11		34	13	6.4	E	84	0
30		5	1	19	11	4.9	S SE	84	0
31	1	3	2	19	14	3.5	S SE	84	.07

Pollenometric and meteorologic data, New Orleans, La.—Continued.

SEPTEMBER, 1922.

	Grass pollens.	Ambrosia pollens.	Other pollens.	Estimated number of pollens per cubic yard of air.	Maximum wind velocity.	Mean wind velocity.	Direction of wind.	Mean temperature.	Rainfall.
Sept. 1	2	2	.....	13	13	5.3	S	85	0
2	.....	3	1	13	14	4.9	SE.	84	0
3	.....	6	.....	19	14	5.1	SE. NE.	84	.08
4	.....	2	.....	6	11	5.4	SE.	83	0
5	2	7	.....	28	16	8.0	SE.	82	T.
6	.....	8	.....	25	10	4.2	SW. NE.	85	0
7	.....	4	.....	12	10	4.0	W. SE.	83	.11
8	.....	2	.....	6	16	7.2	SE.	82	.26
9	1	5	1	22	18	7.0	SE. E.	81	T.
10	.....	4	.....	13	14	5.0	SE.	82	.20
11	.....	19	3	65	15	6.5	NE.	82	0
12	.....	17	.....	53	14	5.8	NE.	76	T.
13	.....	21	3	74	18	7.4	SE.	79	T.
14	1	7	.....	25	14	5.5	SE.	78	.12
15	.....	3	.....	9	15	5.4	SE.	80	.16
16	.....	10	.....	31	9	5.0	NE.	80	T.
17	.....	11	.....	34	12	5.8	E.	78	T.
18	3	128	5	421	23	9.3	NE.	79	0
19	1	116	.....	363	21	10.0	NE. E.	78	0
20	.....	84	.....	260	14	7.3	E.	80	0
21	.....	52	.....	161	10	5.1	E.	81	0
22	.....	38	.....	118	13	5.4	E.	80	0
23	.....	26	.....	81	14	5.2	NE.	80	0
24	.....	14	1	47	8	4.7	E.	82	0
25	.....	11	.....	34	9	4.2	NE. SE.	82	0
26	.....	20	.....	62	9	4.0	W.	82	0
27	.....	22	.....	68	13	5.6	NE.	80	0
28	.....	45	1	143	16	7.5	E.	78	0
29	2	110	3	357	20	8.9	E.	79	0
30	.....	88	.....	173	18	7.9	NE. E.	78	0

OCTOBER, 1922.

Oct. 1	.....	89	.....	276	20	9.7	E.	78	0
2	2	98	2	316	24	11.9	NE. E.	77	0
3	.....	0	.....	0	22	11.3	NE.	70	2.06
4	.....	9	.....	28	15	8.3	E. SE.	76	.04
5	.....	4	.....	12	14	8.3	E. SE.	78	.28
6	.....	17	.....	53	11	4.7	SW.	82	T.
7	.....	32	.....	97	18	5.9	SW. NW.	80	.01
8	.....	12	.....	37	17	9.0	N.	70	.20
9	1	68	3	223	22	8.3	NW.	63	0
10	.....	26	1	84	8	3.3	N.	66	0
11	.....	17	.....	53	11	4.2	SE. NE.	70	0
12	.....	15	.....	47	12	4.4	E. NE.	72	0
13	.....	13	.....	40	13	7.0	E.	69	0
14	.....	18	.....	56	12	5.8	NE. N.	70	0
15	.....	14	.....	43	12	6.2	NE. N.	72	0
16	.....	6	.....	19	9	5.5	NE. N.	74	0
17	2	63	4	214	20	8.5	NE.	75	0
18	.....	54	3	177	17	12.3	NE.	66	0
19	.....	22	2	74	14	7.8	NE. E.	68	0

Pollenometric and meteorologic data, New Orleans, La.—Continued.

OCTOBER, 1922—Continued.

	Grass pollens.	Ambrosia pollens.	Other pollens.	Estimated number of pollens per cubic yard of air.	Maximum wind velocity.	Mean wind velocity.	Direction of wind.	Mean temperature.	Rainfall.
Oct. 20		12	2	43	12	6.6	E NE	69	0
21		10	1	34	12	5.7	SE E	73	0
22		8		25	10	5.4	SE	74	0
23		7		22	11	4.7	NE	70	.01
24		13	2	46	13	6.8	E	65	0
25		9		28	13	7.0	E NE	66	.14
26	1	6		22	20	11.4	NE E	64	.51
27		11		34	19	8.0	NE E	72	0
28	7	7		25	15	7.8	NE E	69	0
29		16	2	56	12	7.2	NE	72	T.
30		4	2	19	11	5.7	NW	74	T.
31		3	2	16	11	6.0	SW	76	0

The tables of the physical reports contain the records of the atmospheric-pollen plates (sample plates shown in Figs. 1–4) in relation to the daily maximum and mean wind velocities and directions, the estimated number of pollens per cubic yard of air, the mean temperatures, and the rainfall. They give the number of grass pollens, of *Ambrosia* pollens (common and giant ragweed, Figs. 1 and 2), and of "other pollens," the latter including the docks (Fig. 4), amaranths, chenopods, marsh elders, and cockle burs, all of which give a positive reaction for hay fever, but, in view of variations in different localities, are only of local importance.

HAY-FEVER AND ASTHMA CLINIC.

The clinical data on which this analysis is based is taken from the records of the Hay-fever and Asthma Clinic of the Charity Hospital, New Orleans, La. This clinic was established in 1918, and has grown steadily in popularity and attendance. The number visiting the triweekly clinics during the fall hay-fever season of 1922 frequently exceeded 100 patients, including both white and colored.

All items of importance in the history of the disease, or for the immunizing treatment, are noted in these records, which include the following data:

1. The age of the patient, the time at which the hay fever developed, and the duration of the attack. Also the sex and color of the patient.

2. The months in which the hay-fever attacks are present, as this is a check on the diagnostic tests.

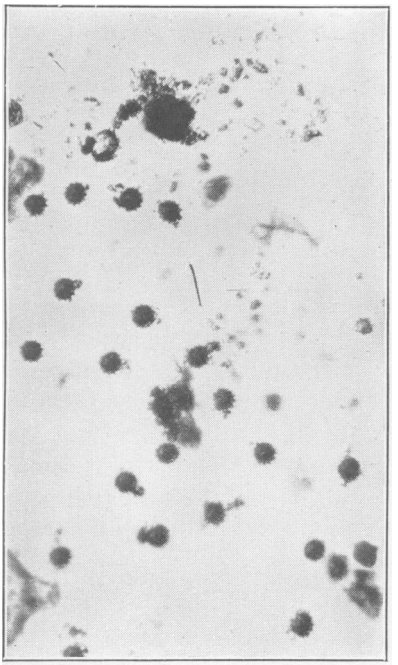

FIG. 1.

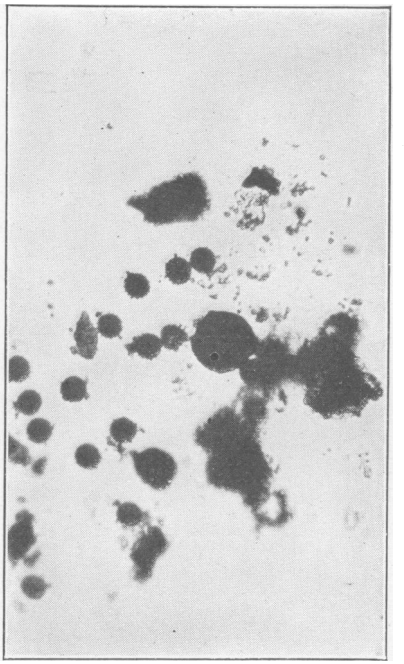

FIG. 2.

Photomicrographs of atmospheric-pollen plates. Fig. 1, ragweed pollens, × 250 diameters; September 29, 1916. Fig. 2, ragweed and Johnson grass pollens, × 250 diameters; September 25, 1918.

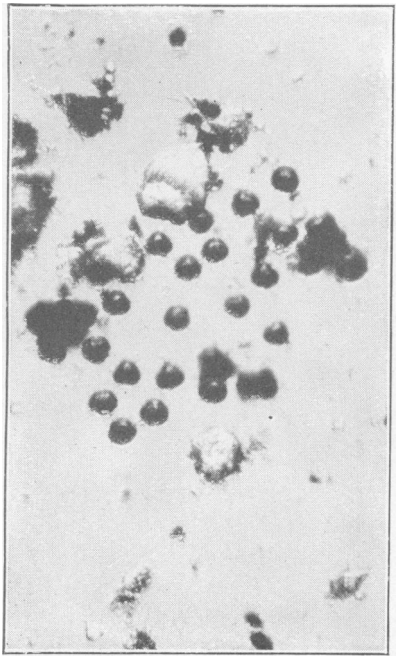

FIG. 3.

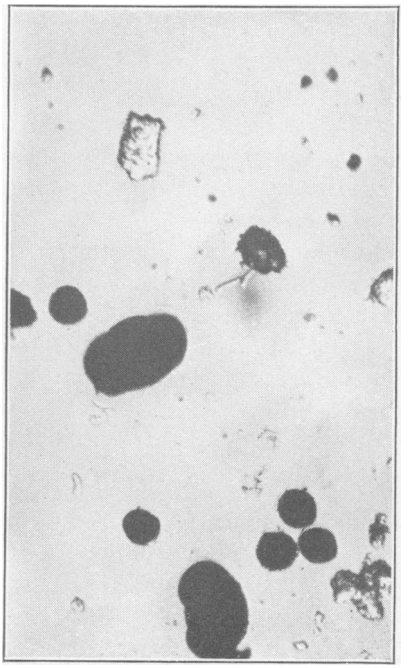

FIG. 4.

Photomicrographs of atmospheric-pollen plates. Fig. 3, tree pollens, X 250 diameters; March 25, 1921. Fig. 4, pine and curly dock pollens, X 250 diameters; April 8, 1922.

3. The residence of the patient (as the locality frequently has an important bearing on the severity of the attacks, and on the corresponding degree of immunity to be attained).

4. Near relatives who have, or have had, hay fever or asthma.

5. The condition of the nose, and any operation that may have been performed.

6. Condition of the chest and heart, pulse pressure, urinalysis.

7. Report of radiograph of chest (asthma cases only.)

8. Complications, such as asthma, bronchitis, affections of the accessory sinuses, ears, throat, eyes, and skin.

9. Diagnostic tests, first of the three major and five minor groups of pollen,[2] and afterwards, if required, of other proteins that may form the principal or complicating cause. The results of these tests, indicating the sensitivity of the patient, are recorded on a percentage basis, and form a constant guide for the immunizing doses.

10. On the back of the chart is a complete record of each dose administered, including the date, the number of units of the pollen extract or the amount of vaccine, and whether this is stock or autogenous, and the name of the manufacturer or the laboratory which prepared it. Finally, special clinical notes, such as the degree of the local or general reaction, dates of severe paroxysms, and the condition of the patient generally.

Such complete data, and based on such a large number of cases, necessarily have marked clinical value, which is especially important in hay fever and asthma, in which the symptoms, course, and seasonal variations are so largely influenced by weather and other extraneous conditions.

DATES OF INCIPIENT FALL HAY FEVER ATTACKS.

Many patients have the belief that their attacks commence on a certain date of each year; but as the amount of pollen necessary to develop the attack is influenced not only by the stage of growth of the incriminating weeds but also by wind conditions, this regular periodicity is rarely the case, the occasions on which such regularity happens being simply coincidences.

Our clinical records show that minor attacks of fall (*Ambrosia*) hay fever (average, 8 per cent) were recorded on the following dates (the maximum velocity of the wind and its direction on the same dates being also given): *1917*, August 2 (12 miles, NW.); *1918*, August 10 (22 miles, SE.); *1919*, August 6 (14 miles, NW.); *1920*, August 3 (12 miles, NW.); *1921*, August 6 (14 miles, W.); *1922*, August 11 (11 miles, NW.).

The common and giant ragweeds in the Southern States begin to pollinate about August 1, but it is not until August 24 that a consider-

[2] Hay Fever and Asthma: Cause, Prevention, and Cure. By Wm. Scheppegrell. Lea & Febiger, 1922.

able number of these weeds are in bloom, and not until about September 10 that the full stage of pollination is reached, the latter being the average date for most of the States east of the one-hundredth meridian. With a sufficiently large number of plants in bloom, the velocity of the wind and its direction are the determining factors of the attacks.

The early cases of fall hay fever usually develop in patients of a high degree of sensitivity, or with less sensitivity but with excessive exposure, as, for instance, when their residence is surrounded with large areas of weeds or they visit weed-infested localities. The majority of patients, however, do not develop their attacks until the air contains a considerable amount of pollen, the number of patients varying with their degree of sensitivity.[2] An average of 17 per cent developed their initial attacks on the following dates: *1917*, August 19 (17 miles, NW.); *1918*, August 16 (12 miles, NW.); *1919*, August 17 (20 miles, NW.); *1920*, August 24 (10 miles, NE.); *1921*, August 18 (12 miles, NW.); *1922*, August 28 (15 miles, E.).

After these dates, initial attacks developed in the remaining cases until about September 10, the final dates of the initial attacks being as follows: *1917*, September 8 (14 miles, NW.); *1918*, September 10 (15 miles, E.); *1919*, September 11 (16 miles, NE.); *1920*, September 3 (23 miles, N.); *1921*, September 11 (26 miles, NE.); *1922*, September 13 (18 miles, NE.).

There is a small percentage of patients whose resistance is so high that in some years they fail to have hay fever at all, and they develop attacks in other years only at times of unusual atmospheric pollen infestation. Such a condition occurred on the following dates: September 29, 1916—the number of pollens per cubic yard air reached 365, and the wind 22 miles per hour from the northwest; September 21, 1918—357 pollens, wind 19 miles from northeast; September 19, 1920—296 pollens, wind 22 miles from northeast; September 14, 1921—382 pollens, wind 24 miles from the north; and September 18, 1922—421 pollens, wind 23 miles from northeast. On account of the long and irregular intervals of their attacks, few of these cases are recognized as hay fever.

These records show, therefore, that the initial attacks of hay fever vary within certain limits in different years, and that they are always associated with wind disturbances. In the locality of our station A, from the records of which these data are taken, the large weed areas are toward the north, east, and west, so that the winds associated with these attacks are usually from those directions. This would not be the case, however, in stations in which the principal weed areas were differently situated.

[2] Hay Fever and Asthma: Cause, Prevention, and Cure. By Wm. Scheppegrell. Lea & Febiger, 1922.

DATES OF GREATEST INTENSITY.

The period of greatest intensity of fall hay fever in the Eastern, Middle, and Southern States is in September, as the common and giant ragweeds, the principal cause of the disease, reach their full stage of pollination during this month, and during a large portion of September the wind is sufficiently high to cause a general distribution of the pollen. At our New Orleans station, for instance, in September, 1917, the wind reached a velocity of 10 or more miles per hour during 28 days; in September, 1918, during 25 days; in September, 1919, during 26 days; in September, 1920, during 25 days; in September, 1921, during 24 days; and in September, 1922, during 26 days. The active pollination of the weeds supplying the pollen and the general wind disturbances for distribution of the pollen are therefore the reasons that September is the *bête noir* of hay-fever sufferers.

The rain is nature's most effective means of percipitating the pollen for the relief of the patient; but, unfortunately, the rainfall during September is usually below the average in most hay-fever sections. At our New Orleans station, for instance, the rainfall during August and September, respectively, was as follows: *1917*—August 6.92 inches, September 2.69 inches; *1918*—August 6.19 inches, September 4.82 inches; *1919*—August 7.38 inches, September 2.93 inches; *1920*—August 4.18 inches, September 6.47 inches; *1921*—August 3.09 inches, September 3.51 inches; *1922* (omitting a heavy rainfall on August 1)—August 3.56 inches, September 0.93 inch.

It will be noted that with exception of September, 1920, in which month it totaled 6.47 inches, the rainfall for this month for the other years was between 2.69 and 4.18 inches. The records of our clinic also show that the general average of hay-fever attacks during September, 1920, was considerably below the general average, and that during September, 1922, when the rainfall was only 0.93 inch, they were unusually severe.

These records also show that the seasons of marked intensity of fall hay fever were as follows: *1917*, August 30 to October 12; *1918*, August 17 to September 29; *1919*, August 24 to September 26; *1920*, September 3 to October 7; *1921*, August 18 to October 13; *1922*, September 18 to October 3.

TERMINATION OF THE ATTACKS.

The cessation of the fall hay fever, uncomplicated with mixed infection, was as follows: *1917*, October 24; *1918*, October 28; *1919*, October 23; *1920*, October 11; *1921*, October 24; *1922*, October 26. The long hay-fever season in the Southern States is due to the mildness of the climate, which prolongs the pollinating season

of the ragweeds. At our station at Hendersonville, N. C. (altitude, 2,250 feet), the cool nights check the pollination much earlier, and the hay-fever season is rarely prolonged after September 30.

LOCAL TEMPORARY RELIEF.

Marked natural relief from the attacks during the hay-fever season, except in localities where the wind may blow from a noninfected area, as on the seashore, results from a general rain that settles the pollen. On October 17, 1916, a rain of 2.58 inches caused the ragweed pollen to disappear from the plates during that day, showing the air to be free of pollens, and this was also the case the following day (1 per square centimeter), in spite of the fact that the wind had reached a velocity of 24 miles per hour and was from a northerly direction. The complete local precipitation of pollen, and the consequent relief to hay-fever sufferers, also occurred in *1917* on August 17, 28, and September 15; *1918*—August 19 to 21, September 20, October 11; *1919*—August 18 to 24, and September 13; *1920*—only on September 21; *1921*—August 24 and September 25; *1922*—October 3 only. The rains on these occasions were so continued and extensive that the absence of atmospheric pollen gave entire relief from hay fever for several successive days.

Unless the physician is familiar with the natural course of hay fever and the influence of weather and other extraneous conditions, the apparent beneficial results of the treatment may be misleading. The numerous so-called "cures" of hay fever depend mainly on these natural causes for their apparent benefits. In no other disease is it so important to take cognizance of the numerous circumstances that may affect the course of hay fever, and the successful immuniologist should be fully equipped for making careful records in order to attain success in the mastery of this disease.

SPLEEN AND BLOOD EXAMINATIONS FOR MALARIA.

A STUDY OF THE RELATIVE MERITS OF THE SPLEEN AND BLOOD PARASITE INDICES FOR DETERMINING MALARIA PREVALENCE AS FOUND IN DUNKLIN COUNTY, MO.

By M. V. VELDEE, Assistant Surgeon, United States Public Health Service.

The positive diagnosis of malaria by the blood smear method is very reliable in the hands of a trained laboratory diagnostician. However, the method is time consuming and is usually not available on short notice. This is especially true with reference to the public health official who, in doing field work, must often examine a large number of individuals and know the results promptly. The development of a method of diagnosis equally reliable and less time consuming would greatly facilitate the work in the field. It is the pur-

pose of this paper to present certain evidence of the value of spleen palpation, obtained during the course of investigations in child hygiene made by the United States Public Health Service.

During December, 1921, Maxcy and Coogle, of the malaria field forces, United States Public Health Service, made a malaria survey of a large group of boys of school age in Dunklin County, Mo. (1). It was the privilege of the writer to go over essentially the same ground during the months from August, 1922, to March, 1923. The data collected by Maxcy and Coogle and some of the data collected by the writer are combined in this report as evidence of the value of the enlarged spleen method in demonstrating the malaria prevalence of a community. It is a yardstick, applicable at once in the field rather than at some later date in the laboratory.

METHODS EMPLOYED.

Blood smears.—As a routine procedure, blood smears were taken of all the children examined in a given school. The semithick method was used. Each slide received at least 10 minutes of examination in the hands of a trained technician, unless found positive sooner.

Spleen.—Similarly, palpation of the spleen was routine for all the grammar-school children, irrespective of sex. The examination was made with the child in the standing position and leaning forward until the body made approximately a right angle. In this position most children relax their abdominal walls sufficiently to allow deep palpation during a deep inspiration and expiration. Simultaneously with the inward pressure of the examining fingers, forward pressure is made with the palm of the other hand placed dorsally over the region of the spleen. Boys and girls were examined separately and away from the remainder of the class. Maxcy and Coogle used essentially the same technique.

The method is believed to give consistent results. One school of 114 children with a high percentage of positives was reexamined with the greatest care, and there was no important difference in the total number of palpable spleens found. Examination with the relaxation of the abdomen is fully as good as that made with the patient lying down with the knees flexed.

DATA ON BLOOD SMEAR AND SPLEEN METHODS.

A comparison between the blood smear findings and the palpable spleens is shown in Table I.

TABLE I.—*Relative value of blood smear and spleen methods as a malaria index, as shown by the examination of 880 school children (both sexes) in Dunklin County, Mo.*

Name of school.	Date of examination.	Total number examined.	Positive smears.		Palpable spleens.	
			Number.	Per cent.	Number.	Per cent.
Beech Corner	Jan. 24, 1923	114	26	22.8	20	17.5
Cardwell Grammar	Oct. 1, 1922	130	4	3.1	2	1.5
	Jan. 18, 1923	128	7	5.5	8	6.2
Coldwater	Feb. 8, 1923	101	0	0.0	1	1.0
Cotrill	Oct. 30, 1922	56	2	3.6	3	5.4
Cotton Plant	Jan. 30, 1923	62	2	3.2	3	4.8
Gideon Grammar	Nov. 28, 1922	33	0	0.0	0	0.0
Glennonville	Sept. 13, 1922	73	0	0.0	1	1.4
Hartzell	Nov. 8, 1922	30	2	6.7	3	10.0
Kennet Grammar	Oct. 4, 1922	49	1	2.0	3	6.1
Peanut	Nov. 2, 1922	44	2	4.5	0	0.0
Wilhelmina	Sept. 21, 1922	60	0	0.0	1	1.7
Total		880	46	5.2	45	5.1

The same group of 880 children was examined for palpable spleens and blood parasites. Forty-six, or 5.2 per cent, were found to have parasites in their blood, whereas 45, or 5.1 per cent, had palpable spleens—a difference of only 0.1 per hundred in the two methods.

TABLE II.—*Number of children with both positive blood and spleen; also the number with only one index positive.*

Total number of children.	Number with positive spleen and blood.	Number with positive blood and negative spleen.	Number with positive spleen and negative blood.
880	21	25	24

That the groups of children having positive bloods and palpable spleens, respectively, were not the same children, is shown in Table II. In this group of 880 children, only 21 had both positive blood and spleen, 25 had positive blood and negative spleen, and 24 had positive spleen and negative blood. Accepting both indices as evidence of malaria infection, we find 70 infected children in this group. On the basis of blood parasites alone only 46 were found, and by the spleen method alone, 45. Thus, each method falls short of the two methods combined, but in each case the difference is essentially the same.

In the Beech Corner school the parasite rate ran 5.3 per hundred higher than the spleen rate. Believing that perhaps the first examination was inaccurate, these children were again examined in a most careful manner and the same number of positives were found.

There was also considerable variation between the two indices in the Cardwell school as found on two different examinations. The children who were examined in October, 1922, were those who lived in town and did not go out to pick cotton. The group examined in January, 1923, consisted of more rural children, the cotton pickers. The much greater opportunity for infection during the vacations and cotton picking is believed to explain this higher rate. Both indices increased, especially the spleen index.

TABLE III.—*A comparison of certain methods for the determination of malaria prevalence as shown by two surveys in Dunklin County, Mo.*

A. HISTORY INDEX.

Date of survey.	Total number examined.	Positive within 2 years.		Positive more than 2 years.		Date of infection not determined.[1]	
		Number.	Per cent.	Number.	Per cent.	Number.	Per cent.
December, 1921	789	238	30.8	.....	.....	.....	.....
August, 1922, to February, 1923	2,437	508	21.0	195	8.0	229	9.4

B. SPLEEN INDEX.

Date of survey.	Total number examined.	Number found positive.	Per cent positive.
December, 1921	980	70	7.9
August, 1922, to February, 1923	1,355	80	5.9

C. BLOOD PARASITE INDEX.

December, 1921	395	29	7.3
August, 1922, to February, 1923	1,044	56	5.4

[1] Practically all of these occurred within two years.

In Table III there is given a summary of all the data collected by Maxcy and Coogle in December, 1921, and of that collected by the writer a year later. Maxcy and Coogle examined only boys in schools selected because of their proximity to the swamps, using only volunteers for blood smears. The writer included both boys and girls; and in getting blood smears in a school every child was included. Some of the schools included in the last survey were not located in the swamp sections. Again, the mosquitoes were less prevalent in the summer and fall of 1922 because of a longer dry season. It was to be expected, therefore, that the indices for the two surveys would not be the same. However, if independent workers are equally proficient, the parasite-spleen *ratio* should be the same in the same community at the same time of the year, provided both methods are consistently reliable. Maxcy and Coogle report a parasite index

of 7.3 and a spleen index of 7.9. This is a ratio of parasite to spleen index of 1 to 1.08. The writer found a parasite index for the county of 5.4 and a spleen index of 5.9, or a ratio of 1 to 1.09.

Barber and Coogle (2), working in Mitchell County, Ga., during January, February, and March, 1921, report a spleen index of 2.0 per cent among the white boys of the county. This is low, but it followed a summer and fall of intensive quinine medication. In two schools they found a spleen rate of 4.9 among the boys and a parasite rate of 4.7 among the boys and girls combined. This is a ratio of 1 to 1.04. The number so examined was small and not entirely the same group; yet the figures are indicative of what might be expected.

TABLE IV.—*Percentage of positive blood smears and of enlarged spleens in children of the present study, according to age distribution.*

Age.	Total number examined.	Positive blood.		Positive spleen.	
		Number.	Per cent.	Number.	Per cent.
5	7	0	.....	0	.....
6	86	9	10.4	4	4.6
7	81	5	6.2	3	3.7
8	110	3	2.7	9	8.2
9	122	8	6.5	7	5.7
10	93	7	7.5	8	8.6
11	103	4	3.9	3	2.9
12	91	3	3.3	2	2.2
13	106	7	6.6	7	6.6
14	94	5	5.3	4	4.2
15	66	2	3.0	1	1.6
16	31	2	6.5	0	.....
17	18	0	.....	0	.....
18	14	0	.....	0	.....
19	12	0	.....	0	.....
Total	1,034	55	5.3	48	4.7

Table IV shows the age distribution of the children in the present study with positive blood smears or palpable spleens. In this group age seems to have no effect on the frequency of either condition. This is not in agreement with the findings of Stephens and Christophers (3), who found that in children under 2 years of age the parasite rate is considerably above the spleen rate. With the increase in age, the ratio of the two indices gradually reverses until, after the age of 10, the spleen rate is much higher than the parasite rate. These figures are based on data obtained in India, where cinchonization is probably not very widespread. It may be said that the enlarged spleen of chronic malaria is to a certain extent the accumulative result of one or many infections. Its development and disappearance is gradual. In Dunklin County, Mo., we are dealing with a population which is partially cinchonized from time to time. This certainly has the effect of distorting the age distribution curve as compared with a population not so treated.

In estimating the amount of malaria in a community from either the parasite or the spleen index, it is important to know something of the antimalaria medication in the community, whether the medicine taken is "chill tonic" or quinine, and if the latter how near it comes to being standard treatment.

TABLE V.—*Prevalence of antimalaria medication among children with positive malaria histories.*

Number children questioned.	Number taking medicine.	Per cent taking medicine.
313	296	94.6

Of 313 children having a positive malaria history within two years who were questioned regarding the taking of medicine, 296, or 94.6 per cent, stated that they took either quinine or "chill tonic" or both. About one-half of this group took quinine, but none in quantities even approaching standard treatment quantities. At the Beech Corner school over 85 per cent of the children gave a history of having taken quinine in some form during the previous year, regardless of any chills during that time. In other words, quinine medication in some form is nearly universal in the heavily infected sections of Dunklin County, Mo.

TABLE VI.—*Hemoglobin readings (Tallquist) on 750 school children in Dunklin County, Mo.*

	Total number examined.	Hemoglobin under 80 per cent.	
		Number.	Per cent.
Negative blood and spleen	675	75	11.1
Positive blood or spleen	75	16	21.4

The hemoglobin count (Table VI) is presented merely as offering more evidence of the destructive effect of malaria on the blood hemoglobin. The lowest percentage of hemoglobin found in the children examined was 35 per cent (Tallquist). Most of the positive cases gave a reading between 60 and 70 per cent. The possible presence of intestinal parasites was not ruled out by microscopic examination; it may be stated, however, that some of the most anemic children were given quinine, and their hemoglobin promptly increased.

DISCUSSION.

It is not necessary here to go into all the causes of splenic enlargement or the frequency with which it occurs. Reference is made to the Public Health Reports (4), where will be found a good abstract

of the literature dealing with this subject. In children of grammar-school age infected with malaria, splenic enlargement occurs at some time in practically 100 per cent of the untreated cases. There is no other disease causing splenic enlargement sufficiently prevalent in the United States to give an appreciable percentage of enlarged spleens among the school children. Other causes for splenomegaly have been variously reported as less than 1 per cent for this country and for England (5). It is safe to say that a marked increase over this 1 per cent in a community where malaria is known to be endemic will be due to that disease.

It must be remembered that the present study was made on a school population which is more or less cinchonized. These children have been taught that quinine is a "cure all." The amount of quinine taken, however, was usually small. Quinine medication influences the parasite index; small quantities are oftentimes sufficient to render the peripheral blood parasite free. Complete sterilization causes the enlarged spleen to return to normal size. Apparently relatively small doses of quinine taken at irregular intervals during the course of an infection will prevent the spleen from becoming palpable in many cases. As an illustration, three boys at the Beech Corner school were found to have definitely enlarged, hard, and nontender spleens and positive blood smears, both in 1921 and 1923. After one month of small, irregular doses of quinine their spleens had so reduced as to be scarcely palpable. In two acute cases the enlarged spleen disappeared after a few doses of standard treatment.

SUMMARY.

Data relative to the percentage of enlarged spleens and positive bloods were collected from a portion of the school children in Dunklin County, Mo., by independent investigators, working at the same time of the year but in different years. A summary of these two investigations reveals that the spleen and parasite indices at each investigation closely approximate. Also that the parasite-spleen ratio was essentially the same in the two studies. From this we may conclude that in this particular community, at least, the two indices have the same value in measuring malaria prevalence. The ease and rapidity of application of the spleen method are much in its favor.

REFERENCES.

(1) K. F. Maxcy and C. P. Coogle: Methods for Determining Malaria Prevalence: The Spleen Rate of School Boys. Southern Med. Jour. *16*:4, April, 1923.
(2) M. A. Barber and C. P. Coogle: Spleen Examinations of School Boys in Mitchell County, Ga. Public Health Reports, *36*, 14, April 8, 1921. Reprint No. 653.
(3) Stephens and Christophers: Practical Study of Malaria. Liverpool, University Press, 1908, p. 211.
(4) Public Health Reports, April 22, 1921, pp. 884–888. Reprint No. 653.
(5) Ross, Christophers, and Perry. Ind. J. M. Res., *1*:385, 1914.

THE EAST HARLEM HEALTH CENTER DEMONSTRATION.

Successful Coordination of the Health Activities of 22 Organizations in a Large City.

An increase of 81 per cent in the services of health agencies to 112,000 people, with an increase of but 9 per cent in cost, is the record announced by the East Harlem Health Center, which is experimenting in the coordination of health work by bringing together for cooperative effort 22 health and social agencies. This announcement is made at the end of the first half of the experimental period of three years, for which time the New York Chapter of the American Red Cross, sponsor for the demonstration, has guaranteed its existence by providing $168,000.

These agencies have been housed in one building, and, headed by the New York City Department of Health (which maintains the largest group of services), include the following:

Health agencies.—The American Red Cross, the American Social Hygiene Association, the Association for the Prevention and Relief of Heart Disease, the New York Committee on Dispensary Development, the Jefferson Auxiliary, the New York Tuberculosis Association, and the New York State Charities Aid Association.

Nursing organizations.—The Association for the Aid of Crippled Children, the Henry Street Visiting Nurse Service, the Maternity Center Association, the New York Diet Kitchen Association, and the East Harlem Nursing and Health Demonstration.

Family welfare.—The Association for Improving the Condition of the Poor, the Catholic Charities, the Charity Organization Society, and the United Hebrew Charities.

The work has been carried on by a council of representatives from each of the cooperating agencies and a selected group of neighborhood leaders.

The district included is bounded by the Harlem River, Ninety-ninth Street, the East River, and Third Avenue, covers 87 city blocks, and has a population of 112,000 people.

Among the outstanding accomplishments of this demonstration are (1) successful practical coordination, (2) greatly increased efficiency with only slight increase in cost, (3) enlistment of interest of the people, (4) intensive demonstrations, and (5) highly successful follow-up in school health work.

In regard to practical coordination it is stated that the 22 health and allied agencies worked together for the period under report with no important difficulties.

An increase in efficiency of 81 per cent in health service with less than 10 per cent additional cost is shown by a comparison with the records of all the cooperating agencies for the three-year period

immediately preceding the opening of the center. It is stated that the amount of this gain in efficiency is based on such tangible services as a nursing visit to a home, or a visit to a clinic, and that if educational work were included, such as the distribution of pamphlets or the attendance at meetings, a much larger gain would be shown.

It is believed by the officers of the center that so-called "health education" by means of exhibits and literature is not the most effective means of educating the people; and so the workers have gone out to the homes of the 20,000 families and have interested the members of these families through friendly visits, advice, and practical help.

As the health center could not give the full service needed by 112,000 people, because, as the report states, "this would take vastly more money than the public has yet learned to invest in its local health work," a demonstration is being conducted within the health center area in order to determine what might be considered adequate nursing and health service for a district of 40,000 people, what such service costs, and how the work can best be done. In order to do this the East Harlem Nursing and Health Demonstration has been established, combining four agencies. Intensive work is being carried on in two of the eight sanitary districts of the area. The annual budget is $65,000, half of which is contributed by the four cooperating organizations and half by the Rockefeller Foundation.

In school health work, the nurses of the center assist the school physicians in their physical examinations of the children; and during the summer, physical defects that have been discovered in the school children are followed up for correction by the nurses.

The East Harlem Health Center has evidently demonstrated successful cooperation of health agencies and a readiness of the local community to enter into health work under the leadership of an active health center. The work of this center, in which all of the local health and allied agencies of a large city have come together and worked together in one building for the common welfare, should be a matter of keen interest to other health and welfare organizations and, more especially, to all of the larger cities of the country.

DEATHS DURING WEEK ENDED JUNE 30, 1923.

Summary of information received by telegraph from industrial insurance companies for week ended June 30, 1923, and corresponding week of 1922. (From the Weekly Health Index, July 5, 1923, issued by the Bureau of the Census, Department of Commerce.)

	Week ended June 30, 1923.	Corresponding week, 1922.
Policies in force	53,525,793	50,170,299
Number of death claims	9,607	8,251
Death claims per 1,000 policies in force, annual rate	9.4	8.6

Deaths from all causes in certain large cities of the United States during the week ended June 30, 1923, infant mortality, annual death rate, and comparison with corresponding week of 1922. (From the Weekly Health Index, July 5, 1923, issued by the Bureau of the Census, Department of Commerce.)

City	Week ended June 30, 1923.		Annual death rate per 1,000, corresponding week, 1922.	Deaths under 1 year.		Infant mortality rate, week ended June 30, 1923.[2]
	Total deaths.	Death rate.[1]		Week ended June 30, 1923.	Corresponding week, 1922.	
Total	6,693	11.9	10.8	820	710	.....
Akron, Ohio	12	3.0	5.0	1	3	12
Albany, N. Y.[3]	25	11.1	16.6	4	2	88
Atlanta, Ga	63	14.7	21.1	11	16	.....
Baltimore, Md.[3]	204	13.8	12.4	25	25	74
Birmingham, Ala	66	17.6	12.6	6	6	.....
Boston, Mass	201	13.6	12.1	22	15	63
Bridgeport, Conn	22	8.0	6.9	3	3	41
Buffalo, N. Y	108	10.5	11.5	19	17	80
Cambridge, Mass	23	10.8	13.2	0	2	0
Camden, N. J.[3]	19	8.0	15.0	1	8	17
Chicago, Ill	623	11.3	9.8	74	66	.....
Cincinnati, Ohio	126	16.2	12.5	9	8	59
Cleveland, Ohio[3]	177	10.4	8.8	25	21	68
Columbus, Ohio	65	13.0	12.1	7	5	73
Dallas, Tex	43	12.6	12.4	11	6	.....
Dayton, Ohio	28	8.8	9.0	7	0	115
Denver, Colo	76	14.6	12.5	10	3	.....
Des Moines, Iowa	22	8.1	.....	6	.....	.....
Detroit, Mich	257	13.5	10.0	45	41	90
Duluth, Minn	13	6.4	.....	4	.....	91
Erie, Pa	21	9.7	10.9	2	1	41
Fall River, Mass.[3]	18	7.8	11.2	1	4	14
Flint, Mich	20	8.8	.....	4	.....	79
Fort Worth, Tex	12	4.4	10.0	1	2	.....
Grand Rapids, Mich	27	9.6	12.3	6	2	95
Houston, Tex	19	6.4	10.4	7	4	.....
Indianapolis, Ind	85	12.9	14.0	4	5	31
Jacksonville, Fla	32	16.7	15.0	4	2	.....
Jersey City, N. J	74	12.5	8.2	14	8	94
Kansas City, Kans	15	6.8	11.5	2	2	46
Kansas City, Mo	95	14.1	14.2	11	14	.....
Los Angeles, Calif	178	13.9	15.4	18	21	67
Louisville, Ky	72	14.6	11.8	10	6	108
Lowell, Mass	32	14.5	11.8	9	3	156
Lynn, Mass	12	6.1	.....	0	.....	0
Memphis, Tenn	67	20.5	16.2	4	9	.....
Milwaukee, Wis	87	9.4	7.7	13	14	65
Minneapolis, Minn	71	9.0	7.3	15	9	82
Nashville, Tenn.[3]	54	23.2	20.4	4	9	.....
New Bedford, Mass	33	13.2	10.2	5	3	78
New Haven, Conn	32	9.6	8.6	7	3	91
New Orleans, La	125	16.1	17.9	17	14	.....
New York, N. Y	1,213	10.7	9.6	146	130	58
Bronx Borough	146	9.1	7.3	17	12	60
Brooklyn Borough	402	9.7	8.6	43	30	46
Manhattan Borough	520	12.0	11.6	67	70	65
Queens Borough	109	10.6	7.8	15	12	80
Richmond Borough	36	14.7	14.3	4	6	73

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births—an annual rate based on deaths under 1 year for the week and estimated births for 1922. Cities left blank are not in the registration area for births.
[3] Deaths for week ended Friday, June 29, 1923.

Deaths from all causes in certain large cities of the United States during the week ended June 30, 1923, infant mortality, annual death rate, and comparison with corresponding week of 1922—Continued.

City.	Week ended June 30, 1923.		Annual death rate per 1,000, corresponding week, 1922.	Deaths under 1 year.		Infant mortality rate, week ended June 30, 1923.
	Total deaths.	Death rate.		Week ended June 30, 1923.	Corresponding week, 1922.	
Newark, N. J.	99	11.8	8.1	11	7	52
Norfolk, Va.	50	16.4	10.4	10	7	176
Oakland, Calif.	48	10.4	16.5	5	5	64
Omaha, Nebr.	51	13.0	11.7	6	3	65
Paterson, N. J.	24	9.0	11.3	6	4	96
Philadelphia, Pa.	494	13.4	10.5	47	45	61
Pittsburgh, Pa.	133	11.3	11.2	17	19	59
Portland, Oreg.	54	10.3	9.1	5	2	51
Providence, R. I.	50	10.8	11.0	6	5	49
Richmond, Va.	62	17.9	16.1	10	6	123
Rochester, N. Y.	57	9.4	10.0	2	12	16
St. Louis, Mo.	221	14.3	10.6	15	13	.....
St. Paul, Minn.	54	11.6	8.7	6	3	55
Salt Lake City, Utah [3]	23	9.5	15.6	2	6	33
San Antonio, Tex.	50	14.1	.....	11	.....	.....
San Francisco, Calif.	139	13.4	10.8	8	8	48
Seattle, Wash.	55	9.1	9.4	3	4	27
Spokane, Wash.	23	11.5	12.0	3	2	66
Springfield, Mass.	17	6.1	9.7	4	1	57
Syracuse, N. Y.	48	13.6	10.7	8	8	101
Tacoma, Wash.	22	11.3	.....	1	.....	25
Toledo, Ohio.	58	11.3	8.2	5	1	50
Trenton, N. J.	54	22.1	13.8	5	2	85
Utica, N. Y.	24	12.1	.....	1	.....	21
Washington, D. C.	109	13.0	13.1	16	16	91
Wilmington, Del.	25	11.1	10.8	2	3	41
Worcester, Mass.	31	8.4	10.2	7	6	80
Yonkers, N. Y.	23	11.2	7.9	1	4	22
Youngstown, Ohio.	28	11.0	14.2	3	6	41

[3] Deaths for week ended Friday, June 29, 1923.

PREVALENCE OF DISEASE.

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

UNITED STATES.

CURRENT STATE SUMMARIES.

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers.

Reports for Week Ended July 7, 1923.

ALABAMA.

	Cases.
Diphtheria	16
Dysentery	94
Influenza	11
Malaria	208
Measles	118
Mumps	3
Pellagra	11
Pneumonia	27
Scarlet fever	4
Tuberculosis	37
Typhoid fever	76
Whooping cough	60

ARIZONA.

Diphtheria	4
Measles	1
Scarlet fever	3
Tuberculosis	9
Typhoid fever	1

ARKANSAS.

Chicken pox	11
Diphtheria	2
Hookworm disease	1
Influenza	3
Malaria	146
Measles	92
Mumps	6
Paratyphoid fever	2
Pellagra	29
Smallpox	10
Tuberculosis	13
Typhoid fever	14
Whooping cough	48

CALIFORNIA.

Cerebrospinal meningitis:	
Fresno	1
Los Angeles	1
Orange County	1
Sacramento	1

CALIFORNIA—continued.

	Cases.
Diphtheria	136
Influenza	8
Leprosy—Los Angeles	1
Lethargic encephalitis	2
Measles	550
Poliomyelitis:	
Chino	1
Los Angeles County	1
Scarlet fever	82
Smallpox	21
Typhoid fever	10

COLORADO.

(Exclusive of Denver.)

Cerebrospinal meningitis	2
Chicken pox	5
Diphtheria	5
Measles	111
Mumps	3
Pneumonia	1
Scarlet fever	2
Smallpox	1
Tuberculosis	14
Typhoid fever	4
Whooping cough	8

CONNECTICUT.

Cerebrospinal meningitis	2
Chicken pox	30
Diphtheria	30
German measles	3
Lethargic encephalitis	1
Malaria	2
Measles	63
Mumps	11
Pneumonia (lobar)	7
Poliomyelitis	2
Scarlet fever	23
Tetanus	2

CONNECTICUT—continued.

	Cases.
Tuberculosis (all forms)	15
Typhoid fever	5
Whooping cough	54

FLORIDA.

Dengue	2
Diphtheria	9
Malaria	16
Ophthalmia neonatorum	1
Pneumonia	1
Scarlet fever	2
Smallpox	4
Typhoid fever	8

GEORGIA.

Cerebrospinal meningitis	2
Diphtheria	9
Dysentery (amebic)	1
Dysentery (bacillary)	13
German measles	1
Hookworm disease	18
Influenza	7
Malaria	33
Measles	76
Mumps	10
Paratyphoid fever	2
Pellagra	5
Pneumonia	31
Scarlet fever	4
Septic sore throat	2
Smallpox	19
Trachoma	5
Tuberculosis (pulmonary)	16
Typhoid fever	33
Whooping cough	19

ILLINOIS.

Cerebrospinal meningitis—Chicago	2
Diphtheria:	
Cook County (including Chicago)	67
Chicago	61
Scattering	22
Influenza:	
Chicago	4
Scattering	4
Lethargic encephalitis—Chicago	1
Pneumonia	90
Scarlet fever:	
Cook County (including Chicago)	60
Chicago	55
Scattering	19
Smallpox:	
Chicago	7
Scattering	3
Typhoid fever:	
Chicago	3
Scattering	13
Whooping cough	231

INDIANA.

Diphtheria	21
Measles	262
Pneumonia	1
Rabies in animals	1
Scarlet fever	33

INDIANA—continued.

	Cases.
Smallpox	22
Tuberculosis	81
Typhoid fever	5

IOWA.

Diphtheria	15
Scarlet fever	19
Smallpox	10

KANSAS.

Actinomycosis	1
Chicken pox	12
Diphtheria	25
Measles	176
Mumps	14
Pneumonia	3
Scarlet fever	15
Smallpox	8
Tuberculosis	29
Typhoid fever	8
Whooping cough	108

LOUISIANA.

Cerebrospinal meningitis	2
Diphtheria	9
Influenza	1
Lethargic encephalitis	1
Measles	77
Poliomyelitis	1
Smallpox	5
Typhoid fever	20
Whooping cough	23

MAINE.

Chicken pox	11
Diphtheria	5
German measles	11
Measles	60
Ophthalmia neonatorum	1
Pneumonia	1
Scarlet fever	11
Tuberculosis	4
Whooping cough	48

MARYLAND.[1]

Cerebrospinal meningitis	1
Chicken pox	23
Diphtheria	23
Dysentery	10
German measles	5
Lethargic encephalitis	2
Malaria	12
Measles	220
Mumps	10
Paratyphoid fever	2
Pneumonia (all forms)	27
Scarlet fever	38
Septic sore throat	1
Tuberculosis	40
Typhoid fever	18
Whooping cough	97

MASSACHUSETTS.

Cerebrospinal meningitis	1
Chicken pox	146
Conjunctivitis (suppurative)	9

[1] Week ended Friday.

MASSACHUSETTS—continued.

	Cases.
Diphtheria	99
German measles	4
Lethargic encephalitis	1
Measles	358
Mumps	61
Ophthalmia neonatorum	16
Pneumonia (lobar)	28
Scarlet fever	119
Trachoma	2
Tuberculosis (all forms)	125
Typhoid fever	14
Whooping cough	105

MICHIGAN.

Diphtheria	78
Measles	760
Pneumonia	38
Scarlet fever	85
Smallpox	18
Tuberculosis	34
Typhoid fever	14
Whooping cough	130

MINNESOTA.

Chicken pox	2
Diphtheria	34
Lethargic encephalitis	1
Measles	74
Scarlet fever	81
Smallpox	7
Tuberculosis	45
Typhoid fever	2
Whooping cough	2

MISSISSIPPI.

Diphtheria	4
Influenza	12
Poliomyelitis	1
Scarlet fever	1
Smallpox	3
Typhoid fever	25

MISSOURI.

Cerebrospinal meningitis	1
Chicken pox	5
Diphtheria	22
Influenza	1
Measles	142
Mumps	8
Ophthalmia neonatorum	1
Pneumonia	2
Scarlet fever	16
Septic sore throat	2
Trachoma	4
Tuberculosis	36
Typhoid fever	16
Whooping cough	185

MONTANA.

Diphtheria	1
Scarlet fever	23
Smallpox	12

NEBRASKA.

Chicken pox	1
Diphtheria	6
German measles	1
Measles	6
Mumps	9

NEBRASKA—continued.

	Cases.
Poliomyelitis	1
Scarlet fever	8
Smallpox	1
Whooping cough	12

NEW JERSEY.

Cerebrospinal meningitis	2
Chicken pox	100
Diphtheria	79
Malaria	11
Measles	283
Pneumonia	26
Poliomyelitis	1
Scarlet fever	36
Smallpox	11
Typhoid fever	9
Whooping cough	92

NEW YORK.

(Exclusive of New York City.)

Diphtheria	109
Influenza	3
Lethargic encephalitis	4
Measles	1,760
Poliomyelitis	5
Scarlet fever	118
Smallpox	17
Typhoid fever	21
Whooping cough	180

NORTH CAROLINA.

Cerebrospinal meningitis	1
Chicken pox	25
Diphtheria	19
Measles	729
Scarlet fever	7
Septic sore throat	1
Smallpox	30
Typhoid fever	52
Whooping cough	323

OREGON.

Chicken pox	10
Diphtheria	11
Measles	8
Mumps	3
Scarlet fever	9
Smallpox:	
Portland	11
Scattering	5
Typhoid fever	2
Whooping cough	5

SOUTH DAKOTA.

Chicken pox	8
Diphtheria	5
Measles	51
Scarlet fever	8

TEXAS.

Chicken pox	6
Dengue	1
Diphtheria	19
Dysentery (epidemic)	6
Influenza	17
Measles	67
Mumps	16
Pellagra	3

TEXAS—continued.

	Cases.
Pneumonia	10
Poliomyelitis	1
Scarlet fever	8
Smallpox	43
Trachoma	5
Tuberculosis	37
Typhoid fever	24
Whooping cough	52

WASHINGTON.

Chicken pox	41
Diphtheria	15
Lethargic encephalitis	2
Measles	77
Mumps	17
Pneumonia	2
Scarlet fever	21
Smallpox:	
Clarke County	14
Scattering	22
Tuberculosis	16
Typhoid fever	1
Whooping cough	72

WEST VIRGINIA.

Diphtheria	5
Smallpox	1
Typhoid fever	12

WISCONSIN.

Milwaukee:	Cases.
Cerebrospinal meningitis	1
Chicken pox	10
Diphtheria	13
German measles	1
Measles	12
Scarlet fever	29
Smallpox	1
Tuberculosis	14
Whooping cough	21
Scattering:	
Chicken pox	47
Diphtheria	27
German measles	1
Influenza	2
Lethargic encephalitis	1
Measles	474
Pneumonia	1
Scarlet fever	84
Smallpox	10
Tuberculosis	25
Typhoid fever	9
Whooping cough	70

WYOMING.

Diphtheria	1
Measles	11
Rocky Mountain spotted fever	1
Scarlet fever	4

Report for Week Ended June 30, 1923.

DISTRICT OF COLUMBIA.

	Cases.
Chicken pox	13
Diphtheria	3
Measles	47
Scarlet fever	8
Tuberculosis	19
Typhoid fever	2
Whooping cough	13

SUMMARY OF CASES REPORTED MONTHLY BY STATES.

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

State.	Cerebrospinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Poliomyelitis.	Scarlet fever.	Smallpox.	Typhoid fever.
April, 1923.										
Wyoming	.....	3	.....	.....	90	.....	1	21	1	1
May, 1923.										
Alabama	.....	69	350	482	6,841	96	1	28	57	117
Ohio	4	500	29	.....	11,008	.....	3	1,534	313	59
Wyoming	.....	6	1	.....	47	.....	1	34	1	3
June, 1923.										
Connecticut	5	136	2	10	556	.....	.....	230	3	9

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923.

ANTHRAX.

City.	Cases.	Deaths.
New York:		
New York	1	
Texas:		
Houston	1	

CEREBROSPINAL MENINGITIS.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended June 23, 1923.		City.	Median for previous years.	Week ended June 23, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
Illinois:				New York:			
Chicago	2	1	1	Lackawanna	0		1
Indiana:				New York	4	1	1
Muncie	0	1	1	Niagara Falls	0	1	1
Maine:				Troy	0	1	1
Biddeford	0		1	Rhode Island:			
Massachusetts:				Providence	0		1
Boston	0	1	1	Texas:			
Michigan:				Dallas	0	1	1
Kalamazoo	0	1		Virginia:			
Missouri:				Norfolk	0		1
St. Louis	0	1	1	Wisconsin:			
New Jersey:				Milwaukee	1	1	2
Montclair	0	1	1				
Newark	0		1				

DIPHTHERIA.

See p. 1595; also Current State summaries, p. 1585, and Monthly summaries by States, p. 1588.

INFLUENZA.

City.	Cases.		Deaths, week ended June 23, 1923.	City.	Cases.		Deaths, week ended June 23, 1923.
	Week ended June 24, 1922.	Week ended June 23, 1923.			Week ended June 24, 1922.	Week ended June 23, 1923.	
Alabama:				Massachusetts:			
Birmingham		2		Boston	2		
California:				Danvers		1	
Los Angeles	2	10	1	Holyoke	1		
Oakland			1	Springfield		3	3
San Diego		2	1	Minnesota:			
San Francisco		2		St. Paul			2
Connecticut:				Missouri:			
Meriden	5			Kansas City		2	2
Florida:				New Jersey:			
Tampa	11			Newark	2		
Georgia:				Passaic	1		
Savannah		1		New York:			
Illinois:				New York	9	3	1
Chicago	5	4	1	North Carolina:			
Rock Island	1			Greensboro			1
Louisiana:				Ohio:			
New Orleans		1	1	Cleveland		1	
Maryland:				Pennsylvania:			
Cumberland	1			Philadelphia	1		
Frederick		2		Texas:			
				Fort Worth	1	1	1

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

LEPROSY.

City.	Cases.	Deaths.
Texas:		
Houston	1	

LETHARGIC ENCEPHALITIS.

Texas:		
Galveston		1
Wisconsin:		
Milwaukee	1	

MALARIA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Alabama:			New Jersey:		
Birmingham	3		Paterson	2	
Mobile	2		New York:		
Montgomery	1		New York	1	
Arkansas:			Ohio:		
Little Rock	4		Akron	1	
Connecticut:			Cleveland	1	
New Britain	1		Pennsylvania:		
New London	1		Philadelphia	1	
Georgia:			Tennessee:		
Rome	1		Memphis	3	
Savannah	4		Texas:		
Illinois:			Austin	1	
Chicago	1		Dallas		1
Louisiana:			Virginia:		
New Orleans	1		Richmond	1	
Maryland:					
Baltimore	2				

MEASLES.

See p. 1595; also Current State summaries, p. 1585, and Monthly summaries by States, p. 1588.

PELLAGRA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Alabama:			Tennessee:		
Birmingham		1	Memphis	1	
California:			Nashville	1	
Oakland	1		Texas:		
Louisiana:			Dallas		1
New Orleans	1		Fort Worth	1	1
North Carolina:			Virginia:		
Greensboro		1	Norfolk		1
South Carolina:			Roanoke		1
Charleston		1			
Columbia		1			

PNEUMONIA (ALL FORMS).

Alabama:			California—Continued.		
Birmingham	6	4	San Diego	2	1
Mobile		1	San Francisco	12	5
Montgomery	1		Stockton	1	
California:			Colorado:		
Alameda		1	Denver		2
Los Angeles	18	12	Pueblo		1
Oakland		2	Connecticut:		
Riverside		1	Bridgeport	3	
Sacramento		6	Hartford	2	1
San Bernardino		2	Meriden	1	

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.
Connecticut—Continued.		
New Britain		1
New Haven		1
District of Columbia:		
Washington		11
Florida:		
Tampa	1	
Georgia:		
Atlanta	2	1
Rome	1	
Savannah		2
Illinois:		
Aurora		2
Chicago	93	31
Cicero		1
Decatur		1
East St. Louis		1
Elgin	2	
Jacksonville	4	2
Kewanee		1
Mattoon	2	
Quincy	1	
Springfield		2
Indiana:		
Anderson		4
Fort Wayne		1
Hammond		1
Indianapolis		4
Muncie		1
South Bend		1
Kansas:		
Hutchinson	1	
Topeka	1	
Kentucky:		
Lexington		1
Louisville		6
Louisiana:		
New Orleans		9
Maine:		
Auburn	1	
Biddeford		2
Portland		2
Maryland:		
Baltimore	21	20
Massachusetts:		
Adams		1
Arlington		1
Belmont		1
Boston		13
Cambridge		1
Chelsea		2
Chicopee		1
Fall River		2
Haverhill	1	
Lawrence		1
Lowell		1
New Bedford		4
North Adams	1	
Pittsfield		2
Plymouth		3
Quincy		1
Taunton		1
Watertown		1
Worcester		3
Michigan:		
Battle Creek	1	
Benton Harbor		1
Detroit	36	19
Flint		2
Grand Rapids	2	
Highland Park	6	2
Jackson		1
Kalamazoo		1
Muskegon	1	
Port Huron	2	1
Minnesota:		
Duluth	2	1
Minneapolis		1
St. Paul		2
Missouri:		
Kansas City		4
St. Joseph		1
Montana:		
Billings		1
Nebraska:		
Omaha		3
New Hampshire:		
Concord		1
Manchester		2
New Jersey:		
Atlantic City		1
Clifton	2	
Elizabeth		3
Garfield	3	
Hoboken		1
Morristown	1	
Newark	17	4
Orange	2	
Passaic	1	
Paterson	1	
Plainfield		1
Trenton		2
West Orange	2	
New York:		
Albany	8	
Amsterdam		1
Buffalo	10	8
Cortland	1	
Glens Falls		1
Ithaca	1	
Lackawanna	6	2
Mount Vernon	2	1
New York	93	88
Newburgh	1	
Niagara Falls	3	1
North Tonawanda		1
Rochester	10	2
Schenectady	6	
Syracuse	10	2
Troy		2
Watertown		2
White Plains	1	
North Carolina:		
Durham		1
Wilmington		1
Winston-Salem		2
Ohio:		
Akron	1	
Barberton	2	
Cincinnati		5
Cleveland	19	12
Columbus		4
Dayton	2	
Lorain	1	
Newark		3
Springfield		1
Toledo		3
Youngstown		2
Oregon:		
Portland		4
Pennsylvania:		
Philadelphia	35	25
Pittsburgh		24
Rhode Island:		
Cranston		1
Pawtucket		1
Providence		3
South Carolina:		
Charleston		2
South Dakota:		
Sioux Falls		1
Tennessee:		
Memphis		6
Nashville		1
Texas:		
Dallas		1
El Paso		1
Fort Worth		1

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Texas—Continued.			West Virginia:		
Houston		3	Bluefield		1
San Angelo		1	Parkersburg		1
San Antonio		2	Wheeling		1
Utah:			Wisconsin:		
Provo		1	Milwaukee	4	
Salt Lake City		3	Sheboygan		1
Virginia:			Superior		1
Norfolk		3	Wyoming:		
Petersburg		2	Cheyenne		1
Richmond		3			

POLIOMYELITIS (INFANTILE PARALYSIS).

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended June 23, 1923	
		Cases.	Deaths.
California:			
San Diego	0	1	1
New York:			
New York	2	5	
Oklahoma:			
Oklahoma	0	1	

RABIES IN ANIMALS.

City.	Cases.	City.	Cases.
California:		Tennessee:	
Los Angeles	14	Memphis	1
Georgia:		Texas:	
Savannah	1	Beaumont	1
Missouri:			
Kansas City	1		

RABIES IN MAN.

City.	Cases.	Deaths.
Texas:		
Houston	1	1

SCARLET FEVER.

See p. 1595; also Current State summaries, p. 1585, and Monthly summaries by States, p. 1588.

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

SMALLPOX.

The column headed "Median for previous years" gives the median number of cased reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended June 23, 1923.	
		Cases.	Deaths.
California:			
Los Angeles	0	7	.....
Georgia:			
Atlanta	6	27	.....
Illinois:			
Chicago	1	5	.....
Indiana:			
Fort Wayne	1	5	.....
Huntington	0	1	.....
Indianapolis	4	6	.....
La Fayette	0	1	.....
Muncie	0	4	.....
South Bend	0	3	.....
Iowa:			
Burlington	0	1	.....
Cedar Rapids	1	2	.....
Davenport	1	6	.....
Sioux City	3	1	.....
Michigan:			
Detroit	12	3	.....
Grand Rapids	0	1	.....
Jackson	0	3	.....
Muskegon	0	1	.....
Minnesota:			
Duluth	3	2	.....
Missouri:			
St. Louis	1	1	.....
Montana:			
Great Falls	1	1	.....
New Jersey:			
Trenton	0	1	.....
New York:			
Niagara Falls	0	2	.....
North Carolina:			
Durham	0	1	.....
Greensboro	0	2	.....
North Dakota:			
Grand Forks	0	2	.....
Ohio:			
Chillicothe	0	3	.....
Columbus	0	1	.....
Dayton	0	1	.....
Martins Ferry	.....	1	.....
Sandusky	0	4	.....
Toledo	1	2	.....
Oklahoma:			
Oklahoma	6	4	.....
Tulsa	0	6	.....
Oregon:			
Portland	6	10	.....
Pennsylvania:			
Sharon	0	2	.....
South Carolina:			
Greenville	1	1	.....
Tennessee:			
Chattanooga	0	6	.....
Knoxville	0	7	.....
Texas:			
San Antonio	.....	1	1
Vermont:			
Burlington	0	2	.....
Virginia:			
Lynchburg	0	1	.....
Roanoke	0	3	.....
Washington:			
Aberdeen	.....	1	.....
Bellingham	0	1	.....
Everett	1	1	.....
Seattle	3	3	.....
Spokane	2	6	.....
Vancouver	0	2	.....
Walla Walla	0	1	.....
Wisconsin:			
Kenosha	0	1	.....
Superior	1	2	.....

TETANUS.

City.	Cases.	Deaths.
Connecticut:		
New Haven	.....	1
New London	1	1
Georgia:		
Savannah	.....	1
Illinois:		
Chicago	2	.....
Kentucky:		
Henderson	.....	1
Maryland:		
Baltimore	1	1
Massachusetts:		
Boston	1	.....
Fall River	1	1
Michigan:		
Flint	.....	1
New York:		
New York	.....	1
Tennessee:		
Nashville	.....	1
Texas:		
San Antonio	.....	1

TUBERCULOSIS.

See p. 1595; also Current State summaries, p. 1585.

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

TYPHOID FEVER.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended June 23, 1923.	
		Cases.	Deaths.
Alabama:			
Birmingham	6	2	1
California:			
Los Angeles	5	3	.....
Oakland	3	1	.....
Sacramento	1	1	1
District of Columbia:			
Washington	4	4	.....
Georgia:			
Atlanta	2	4	.....
Brunswick	0	1	.....
Macon	2	3	.....
Rome	0	2	.....
Savannah	2	2	1
Illinois:			
Centralia	0	2	.....
Chicago	3	4	.....
Quincy	0	1	.....
Indiana:			
Hammond	0	2	.....
Kansas:			
Hutchinson	0	1	.....
Parsons	0	1	.....
Topeka	1	1	.....
Kentucky:			
Louisville	3	1	.....
Louisiana:			
New Orleans	4	10	1
Maine:			
Bangor	0	1	.....
Maryland:			
Baltimore	5	2	1
Massachusetts:			
Boston	3	1	.....
Brookline	0	1	.....
Cambridge	1	1	.....
Fall River	2	1	.....
Quincy	0	1	.....
Taunton	0	1	.....
Webster	0	1	.....
Michigan:			
Detroit	3	2	1
Muskegon	0	1	.....
Minnesota:			
Minneapolis	1	2	.....
St. Paul	0	6	.....
Missouri:			
St. Louis	2	5	.....
Montana:			
Billings	0	1	.....
New Jersey:			
Belleville	0	1	.....
Newark	0	1	.....
Trenton	0	1	.....
New York:			
Buffalo	1	2	1
Cortland	0	1	.....
New York	18	14	2
North Carolina:			
Greensboro	0	1	.....
Raleigh	0	1	1
Wilmington	0	1	.....
Winston-Salem	1	1	1
Ohio:			
Cleveland	3	2	.....
Findlay	0	1	.....
Oklahoma:			
Oklahoma	1	3	.....
Tulsa	2	2	.....
Pennsylvania:			
Butler	0	7	.....
Coatesville	0	1	.....
Philadelphia	8	2	.....
Pittsburgh	3	.....	1
Pottsville	0	1	.....
Reading	0	1	.....
Rhode Island:			
Cranston	0	1	.....
South Carolina:			
Charleston	4	1	1
Columbia	1	2	.....
Greenville	0	3	.....
Tennessee:			
Chattanooga	0	3	.....
Knoxville	0	1	.....
Memphis	1	3	.....
Nashville	3	2	1
Texas:			
Amarillo	.....	1	.....
Beaumont	0	.....	1
Dallas	4	3	1
El Paso	0	2	.....
Fort Worth	2	1	.....
Houston	2	2	.....
Virginia:			
Norfolk	1	4	.....
Richmond	1	4	1
West Virginia			
Bluefield	0	1	.....
Charlestown	3	4	.....
Huntington	0	4	.....
Martinsburg	0	1	1
Wheeling	1	1	.....
Wisconsin:			
Appleton	0	1	.....

TYPHUS FEVER.

City.	Cases.	Deaths.
Georgia:		
Atlanta	1	.....

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Alabama:										
Birmingham	178,806	72	1	.....	46	3	.....	.....	11	2
Mobile	60,777	22	.....	.....	9	.....	.....	.....	.....	1
Montgomery	43,464	23	.....	.....	2	.....	.....	.....	.....	3
Tuscaloosa	11,996	.....	.....	.....	10	.....	.....	.....	3	.....
Arkansas:										
Fort Smith	28,870	.....	2	.....	11	.....	.....	.....	.....	.....
Little Rock	65,142	.....	.....	.....	6	.....	.....	.....	2	.....
North Little Rock	14,048	.....	.....	.....	4	.....	.....	.....	1	.....
California:										
Alameda	28,806	3	.....	.....	8	.....	.....	.....	.....	.....
Eureka	12,923	7	.....	.....	17	.....	.....	.....	.....	.....
Glendale	13,536	5	.....	.....	.....	.....	.....	.....	.....	.....
Long Beach	55,593	17	1	1	4	.....	3	.....	.....	.....
Los Angeles	576,673	204	39	.....	108	.....	30	.....	70	22
Oakland	216,261	45	11	1	30	.....	8	.....	7	5
Pasadena	45,354	14	.....	.....	3	.....	3	.....	1	2
Richmond	16,843	1	.....	.....	2	.....	.....	.....	1	.....
Riverside	19,341	6	.....	.....	.....	.....	1	.....	.....	.....
Sacramento	65,908	23	1	1	58	1	7	.....	3	3
San Bernardino	18,721	8	1	.....	7	.....	3	.....	.....	1
San Diego	74,683	27	6	1	22	.....	10	.....	3	5
San Francisco	506,676	125	25	4	129	.....	19	.....	13	11
Santa Ana	15,485	9	.....	.....	3	.....	1	.....	.....	1
Santa Barbara	19,441	3	.....	.....	.....	.....	.....	.....	.....	1
Santa Cruz	10,917	8	.....	.....	.....	.....	.....	.....	.....	.....
Stockton	40,296	9	.....	.....	5	.....	.....	.....	.....	.....
Colorado:										
Denver	256,491	82	28	2	88	3	14	.....	.....	16
Pueblo	43,050	9	.....	.....	2	.....	.....	1	.....	.....
Trinidad	10,906	.....	3	.....	3	.....	.....	.....	.....	.....
Connecticut:										
Bridgeport	143,555	36	4	.....	5	.....	6	.....	3	4
Greenwich (town)	22,123	.....	.....	.....	9	.....	.....	.....	.....	.....
Hartford	138,036	44	4	1	.....	.....	9	.....	5	1
Manchester (town)	18,370	2	.....	.....	.....	.....	.....	.....	.....	.....
Meriden (city)	29,867	.....	.....	.....	1	.....	.....	.....	3	.....
Milford (town)	10,193	1	.....	.....	.....	.....	.....	.....	.....	.....
New Britain	59,316	14	2	1	.....	.....	2	.....	.....	.....
New Haven	162,537	35	4	.....	7	.....	.....	.....	7	2
New London	25,688	11	.....	.....	3	.....	.....	.....	.....	.....
District of Columbia:										
Washington	437,571	149	6	.....	63	1	14	.....	19	14
Florida:										
Key West	18,749	3	.....	.....	.....	.....	.....	.....	.....	.....
St. Petersburg	14,237	2	.....	.....	.....	.....	.....	.....	.....	.....
Tampa	51,608	13	.....	.....	2	.....	.....	.....	1	2
Georgia:										
Albany	11,555	.....	.....	.....	.....	.....	.....	.....	1	.....
Atlanta	200,616	88	1	.....	18	3	1	.....	5	4
Augusta	52,548	18	.....	.....	27	2	.....	.....	.....	2
Brunswick	14,413	4	.....	.....	4	.....	.....	.....	.....	1
Macon	52,995	.....	.....	.....	10	.....	1	.....	.....	.....
Rome	13,252	.....	.....	.....	3	.....	.....	.....	.....	.....
Savannah	83,252	40	.....	.....	23	1	.....	.....	5	7
Idaho:										
Boise	21,393	3	.....	.....	.....	.....	.....	.....	.....	.....
Illinois:										
Alton	24,682	6	.....	.....	2	.....	.....	.....	1	.....
Aurora	36,397	13	.....	.....	11	.....	.....	.....	.....	.....
Bloomington	28,725	7	.....	.....	6	.....	.....	.....	3	.....
Centralia	12,491	3	.....	.....	6	.....	.....	.....	.....	.....
Chicago	2,701,705	585	61	3	258	6	61	1	228	49
Cicero	44,995	6	4	.....	15	.....	.....	.....	1	.....
Decatur	43,818	9	.....	.....	21	.....	.....	.....	2	3
East St. Louis	66,767	23	.....	1	.....	.....	.....	.....	.....	.....
Elgin	27,454	5	.....	.....	16	.....	.....	.....	.....	.....
Evanston	37,234	4	.....	.....	19	.....	5	.....	1	.....
Freeport	19,669	3	.....	.....	26	.....	.....	.....	.....	1
Galesburg	23,834	7	.....	.....	7	.....	1	.....	.....	.....
Jacksonville	15,713	9	.....	.....	2	.....	1	.....	.....	.....
Kewanee	16,026	4	.....	.....	2	.....	1	.....	1	.....
Mattoon	13,552	.....	.....	.....	3	.....	.....	.....	2	.....
Oak Park	39,858	12	.....	.....	30	.....	.....	.....	1	.....

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

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

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Illinois—Continued.										
Pekin	12,086				1		1			
Peoria	76,121	26			4		2			
Quincy	35,978	14			18					
Rock Island	35,177	3			29					
Springfield	59,183	26			1		1		1	1
Urbana	10,244				2					
Indiana:										
Anderson	29,767	6			17					
Bloomington	11,595	1								
Crawfordsville	10,139	3								
East Chicago	35,967	11			10	1		1		2
Elwood	10,790	3							1	1
Fort Wayne	86,549	21	3		19		4		1	1
Frankfort	11,585	1			11		1			
Hammond	36,004	5			2		2			
Huntington	14,000	8								
Indianapolis	314,194	107	3	1	68				5	12
Kokomo	30,067	11			10	1				2
La Fayette	22,486	5			15					1
Logansport	21,626	5			2					
Michigan City	19,457	3								1
Mishawaka	15,195	2								
Muncie	36,524	10			50					
South Bend	70,983	9	1		1		4		3	1
Terre Haute	66,083	16			6		3			2
Iowa:										
Burlington	24,057	5			4					
Cedar Rapids	45,566				3	3		1		
Davenport	56,727		4		14					
Dubuque	39,141				2					
Iowa City	11,267		1							
Marshalltown	15,731		1				1			
Muscatine	16,068	5								
Ottuma	23,003		2							
Sioux City	71,227	0	2		3				1	
Waterloo	36,230				9					
Kansas:										
Atchison	12,630								4	
Coffeyville	13,452	5			9				1	
Fort Scott	10,693	2	1		1					
Hutchinson	23,298				2				1	
Kansas City	101,177		4		43		1		4	
Parsons	16,028								2	
Topeka	50,022	13	2		90		1			
Wichita	72,217	19			19		2			1
Kentucky:										
Henderson	12,169	3								1
Lexington	41,534	15			6					2
Louisville	234,891	76	5		16		5		22	7
Louisiana:										
New Orleans	387,219	125	8		27	4	1		21	14
Maine:										
Auburn	16,985	0			8		1			
Bangor	25,978				10					
Biddeford	18,008	8			1					
Lewiston	31,791	17	1		12		1		1	
Portland	69,272	12	2		2		2			
Sanford (town)	10,691	0								
Maryland:										
Baltimore	733,826	194	18		197	2	55	1	21	22
Cumberland	29,837	5			1				2	
Frederick	11,066	2			4				2	
Massachusetts:										
Adams (town)	12,967	2								
Amesbury (town)	10,036	5								
Arlington (town)	18,665	5	1		1		4		1	
Attleboro	19,731	3								
Belmont (town)	10,749	3			18				1	
Beverly	22,561	7							2	
Boston	748,060	195	57	3	140	2	57		37	10
Braintree (town)	10,580	3			6		1			1
Brockton	66,254	5	3		19		7		5	1
Brookline	37,748	10	1		18		3		1	

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

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

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Massachusetts—Continued.										
Cambridge	109,694	28	4	.....	10	1	17	.....	2	1
Chelsea	43,184	10	2	.....	.....	.....	2	.....	3	.....
Chicopee	36,214	4	.....	.....	.....	.....	1	.....	.....	1
Clinton	12,979	2	.....	.....	.....	.....	.....	.....	.....	.....
Danvers	11,108	.....	2	.....	.....	.....	.....	.....	.....	.....
Dedham	10,792	2	.....	.....	.....	.....	.....	.....	.....	.....
Everett	40,120	2	1	.....	2	.....	2	.....	.....	.....
Fall River	120,485	29	4	.....	2	.....	4	.....	4	2
Framingham	17,033	6	.....	.....	1	.....	1	.....	.....	.....
Gardner	16,971	2	.....	.....	3	.....	.....	.....	2	.....
Greenfield	15,462	1	.....	.....	.....	.....	.....	.....	.....	.....
Haverhill	53,884	11	3	.....	46	.....	7	.....	2	2
Lawrence	94,270	11	1	.....	12	.....	.....	.....	3	.....
Leominster	19,744	5	.....	.....	12	.....	1	.....	.....	.....
Lowell	112,759	31	1	.....	6	.....	12	.....	6	3
Lynn	99,148	22	3	.....	1	.....	7	.....	.....	3
Malden	49,103	8	1	.....	5	.....	3	.....	1	.....
Medford	39,038	7	5	.....	3	.....	2	.....	1	.....
Melrose	18,204	6	.....	.....	10	.....	1	.....	.....	.....
Methuen	15,189	6	.....	.....	9	.....	.....	.....	.....	1
New Bedford	121,217	37	1	.....	.....	.....	1	.....	8	4
Newburyport	15,618	4	.....	.....	3	.....	.....	.....	.....	.....
Newton	46,054	11	.....	.....	11	.....	3	.....	1	.....
North Adams	22,282	4	.....	.....	.....	.....	1	.....	1	1
Northampton	21,951	7	.....	.....	.....	.....	7	.....	1	.....
Northbridge	10,174	3	.....	.....	.....	.....	.....	.....	.....	1
Peabody	19,552	1	1	.....	2	.....	2	.....	2	.....
Pittsfield	41,763	10	.....	.....	.....	.....	4	.....	.....	2
Plymouth	13,045	5	.....	.....	.....	.....	.....	.....	.....	.....
Quincy	47,876	13	2	.....	9	.....	8	.....	.....	1
Salem	42,529	1	2	.....	.....	.....	1	.....	4	1
Somerville	93,091	17	4	1	6	.....	1	.....	2	1
Southbridge	14,245	1	.....	.....	8	.....	.....	.....	.....	.....
Springfield	129,614	34	2	1	.....	.....	4	.....	7	2
Taunton	37,137	14	1	.....	.....	.....	5	.....	2	2
Wakefield	13,025	0	1	.....	5	.....	1	.....	3	.....
Waltham	30,915	3	2	.....	2	.....	1	.....	1	1
Watertown	21,457	1	2	.....	1	.....	3	.....	.....	.....
Webster	13,258	.....	.....	.....	.....	.....	4	.....	1	.....
West Springfield	13,443	2	.....	.....	.....	.....	.....	.....	.....	.....
Westfield	18,604	5	1	.....	.....	.....	.....	.....	.....	.....
Winthrop	15,455	3	.....	.....	.....	.....	.....	.....	.....	.....
Woburn	16,574	5	.....	.....	.....	.....	.....	.....	.....	.....
Worcester	179,754	39	5	2	.....	.....	14	1	.....	2
Michigan:										
Alpena	11,101	.....	.....	.....	1	.....	.....	.....	.....	.....
Ann Arbor	19,516	12	.....	.....	43	.....	.....	.....	2	.....
Battle Creek	36,164	2	2	1	68	.....	3	1	.....	.....
Benton Harbor	12,233	6	.....	.....	.....	.....	.....	.....	.....	.....
Detroit	993,678	246	29	1	189	3	61	1	37	13
Flint	91,599	27	2	.....	56	.....	3	.....	1	3
Grand Rapids	137,634	34	6	.....	211	.....	3	.....	4	.....
Hamtramck	48,615	6	.....	.....	.....	.....	.....	.....	.....	1
Highland Park	46,499	8	1	.....	9	.....	6	.....	.....	1
Jackson	48,374	14	.....	.....	23	.....	1	.....	.....	.....
Kalamazoo	48,487	18	.....	1	29	.....	6	.....	2	1
Marquette	12,718	4	1	.....	2	.....	.....	.....	.....	.....
Muskegon	36,570	7	1	.....	25	.....	1	.....	.....	.....
Pontiac	34,273	11	1	.....	27	.....	9	.....	.....	1
Port Huron	25,944	7	1	1	9	.....	2	.....	.....	.....
Sault Ste. Marie	12,096	4	.....	.....	.....	.....	.....	.....	.....	.....
Minnesota:										
Duluth	98,917	17	2	1	2	.....	3	.....	5	.....
Faribault	11,089	0	1	.....	2	.....	.....	.....	.....	.....
Hibbing	15,089	.....	2	.....	3	.....	4	.....	.....	.....
Minneapolis	380,582	91	14	.....	56	2	19	1	18	4
Rochester	13,722	33	.....	.....	.....	.....	.....	.....	.....	.....
St. Cloud	15,873	.....	2	.....	.....	.....	2	.....	2	.....
St. Paul	234,698	48	15	1	43	1	10	.....	10	5
Winona	19,143	.....	.....	.....	4	.....	.....	.....	.....	.....

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

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

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Missouri:										
Joplin	29,902				3					
Kansas City	324,410	97	7		51	2	3		8	5
St. Joseph	77,939	26	1		30		2			
St. Louis	772,897	204	22		27		13		31	9
Springfield	39,631	16								4
Montana:										
Billings	15,100	5								1
Great Falls	24,121	7								
Helena	12,037	2			8					
Missoula	12,668	6					4			
Nebraska:										
Lincoln	54,948	15	2	1	5		1		1	
Omaha	191,601	57	7		4		4			2
Nevada:										
Reno	12,016	4								
New Hampshire:										
Berlin	16,104	6								
Concord	22,167	5	1		10					
Dover	13,029	3			1					
Keene	11,210	3			1					
Manchester	78,384	26	1		1		2			3
New Jersey:										
Asbury Park	12,400	4	(1)		1		5			
Atlantic City	50,707	14	2	2					1	1
Bayonne	76,754		2				1		1	
Belleville	15,660				5					
Bloomfield	22,019	2			4		2			
Clifton	26,470	5	2		3					
Elizabeth	95,783		6		6					3
Englewood	11,627	1			3		1			
Garfield	19,381	2								
Hackensack	17,667	4	1		23				1	3
Harrison	15,721						1		1	
Hoboken	68,166	16	1		3		3		3	1
Jersey City	298,103		7		10		4		20	
Kearny	26,724	9			6		1		1	
Long Branch	13,521	4			8					1
Montclair	28,810	6			19		1			
Morristown	12,548	3			2		1		1	
Newark	414,524	112	10		57		11		17	13
Orange	33,268	10			2					
Passaic	63,841	16	1		2				4	3
Paterson	135,875		12		69		2		6	
Perth Amboy	41,707	5			6		5		2	
Phillipsburg	16,923	3								
Plainfield	27,700	5			1		1			
Summit	10,174	4			8					
Trenton	119,289	37	10	1	1		3		2	1
Union (town)	20,651		1							
West Hoboken	40,074	2			6					1
West New York	29,926	1	3		7		1		1	
West Orange	15,573	3			3					
New Mexico:										
Albuquerque	15,157	4	2		9		1			1
New York:										
Albany	113,344		1		173		4		4	
Amsterdam	33,524	5	1		6				2	
Auburn	36,192	11			11					
Buffalo	506,775	113	14	1	64	3	24		31	13
Cohoes	22,987	7			6				1	1
Cortland	13,294	4			5		1		1	
Geneva	14,648	5								1
Glens Falls	16,638	5								
Hornell	15,025	2			25					
Hudson	11,745	1	2		1					
Ithaca	17,004	13	1		15				1	
Lackawanna	17,918	6			33				3	
Little Falls	13,029	7	2	2						
Lockport	21,308	5					3		1	
Mount Vernon	42,726	7	1				1		1	

[1] The report of 30 cases of diphtheria during the week ended May 26, 1923, published in the Public Health Reports, Vol. 38, No. 24, June 15, 1923, was erroneous. No case of diphtheria was reported in Asbury Park during that week.

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

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

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
New York—Continued.										
New York	5,620,048	1,199	139	6	305	7	128	.....	[2] 226	[2] 97
Newburgh	30,366	18	.....	.....	3	.....	3	.....	.....	.....
Niagara Falls	50,760	16	1	.....	18	.....	2	.....	.....	.....
North Tonawanda	15,482	5	.....	.....	6	.....	.....	.....	.....	.....
Rochester	295,750	47	6	.....	42	.....	2	1	19	2
Rome	26,341	6	.....	.....	4	.....	1	.....	.....	1
Saratoga Springs	13,181	5	.....	.....	.....	.....	4	.....	.....	.....
Schenectady	88,723	11	3	.....	87	.....	.....	1	.....	1
Syracuse	171,717	53	6	.....	237	2	12	.....	12	5
Troy	72,013	28	3	.....	9	.....	.....	.....	.....	2
Watertown	31,285	11	.....	.....	15	.....	.....	.....	.....	1
White Plains	21,031	3	.....	.....	3	.....	.....	.....	.....	.....
Yonkers	100,176	22	11	.....	17	.....	8	1	.....	.....
North Carolina:										
Durham	21,719	5	1	.....	1	.....	.....	.....	.....	.....
Greensboro	43,525	9	.....	.....	31	.....	1	.....	.....	1
Raleigh	24,418	13	.....	.....	5	.....	.....	.....	.....	.....
Salisbury	13,884	1	.....	.....	.....	.....	.....	.....	.....	.....
Wilmington	33,372	7	.....	.....	.....	.....	.....	.....	.....	.....
Winston-Salem	48,395	28	.....	.....	91	1	2	.....	6	1
North Dakota:										
Fargo	21,961	0	1	.....	.....	.....	.....	.....	1	.....
Grand Forks	14,010	.....	.....	.....	.....	.....	2	.....	.....	.....
Ohio:										
Akron	208,435	17	3	.....	12	.....	2	.....	.....	.....
Ashtabula	22,082	4	.....	.....	13	.....	.....	.....	.....	.....
Barberton	18,811	4	.....	.....	2	.....	1	.....	.....	.....
Bucyrus	10,425	2	.....	.....	.....	.....	1	.....	.....	.....
Cambridge	13,104	2	1	.....	.....	.....	1	.....	1	.....
Canton	87,091	10	1	.....	4	.....	.....	.....	.....	1
Chillicothe	15,831	6	.....	.....	.....	.....	.....	.....	.....	.....
Cincinnati	401,247	107	4	.....	74	2	8	.....	.....	11
Cleveland	796,841	168	37	1	149	.....	58	.....	59	15
Cleveland Heights	15,236	.....	.....	.....	3	.....	2	.....	.....	.....
Columbus	237,031	59	.....	.....	5	1	9	.....	4	5
Dayton	152,559	31	7	.....	8	.....	5	.....	2	.....
East Cleveland	27,292	3	.....	.....	5	.....	4	.....	.....	.....
East Youngstown	11,237	2	.....	.....	.....	.....	.....	.....	.....	.....
Findlay	17,021	2	.....	.....	.....	.....	.....	.....	.....	.....
Fremont	12,468	5	.....	.....	3	.....	.....	.....	.....	.....
Kenmore	12,683	.....	.....	.....	15	.....	.....	.....	.....	.....
Lorain	37,295	.....	.....	.....	3	.....	3	.....	.....	.....
Mansfield	27,824	7	.....	.....	6	.....	.....	.....	.....	.....
Martins Ferry	11,634	2	.....	.....	.....	.....	.....	.....	.....	.....
Middletown	23,594	6	.....	.....	.....	.....	.....	.....	.....	.....
New Philadelphia	10,718	.....	.....	.....	11	.....	.....	.....	.....	.....
Newark	26,718	10	.....	.....	15	.....	1	.....	.....	.....
Niles	13,080	2	.....	.....	.....	.....	.....	.....	.....	.....
Norwood	24,966	1	.....	.....	4	.....	.....	.....	.....	.....
Piqua	15,044	3	.....	.....	.....	.....	2	.....	1	.....
Salem	10,305	2	.....	.....	26	.....	.....	.....	.....	.....
Sandusky	22,897	5	.....	.....	.....	.....	3	.....	.....	.....
Springfield	60,840	10	1	.....	4	.....	.....	.....	.....	.....
Steubenville	28,508	9	.....	.....	4	.....	.....	.....	1	.....
Tiffin	14,375	2	.....	.....	7	.....	.....	.....	.....	.....
Toledo	243,164	55	6	.....	19	.....	27	.....	12	6
Youngstown	132,358	33	18	2	40	4	4	.....	.....	.....
Zanesville	29,569	8	1	.....	.....	.....	1	.....	1	.....
Oklahoma:										
Oklahoma	91,295	17	.....	.....	.....	.....	.....	.....	5	1
Tulsa	72,075	.....	1	.....	1	.....	1	.....	.....	.....
Oregon:										
Portland	258,288	61	7	1	3	.....	.....	.....	4	5
Pennsylvania:										
Allentown	73,502	.....	4	.....	9	.....	.....	.....	1	.....
Altoona	60,331	.....	1	.....	1	.....	1	.....	.....	.....
Beaver Falls	12,802	.....	1	.....	3	.....	1	.....	.....	.....
Berwick	12,181	.....	2	.....	2	.....	.....	.....	.....	.....
Bethlehem	50,358	.....	1	.....	18	.....	1	.....	.....	.....
Braddock	20,879	.....	1	.....	.....	.....	1	.....	.....	.....
Bradford	15,525	.....	.....	.....	1	.....	.....	.....	.....	.....
Butler	23,778	.....	1	.....	6	.....	.....	.....	.....	.....

[2] Pulmonary only

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

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

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Pennsylvania—Continued.										
Canonsburg	10,632						1			
Chambersburg	13,171				1		1			
Chester	58,030		1		2		1			
Connellsville	13,804				2					
Dubois	13,681				2		2			
Dunmore	20,250				8					
Duquesne	19,011		3							
Easton	33,813		1		11					
Erie	93,372		1		113				5	
Farrell	15,586				2		1			
Harrisburg	75,917				2		1			
Hazelton	32,277				8					
Jeannette	10,627		1		1		1			
Johnstown	67,327		1		9		4			
Lancaster	53,150				3		2			
McKees Rocks	16,713								1	
McKeesport	46,781		1		1				1	
Meadville	14,568				7					
Monessen	18,179								1	
Mount Carmel	17,469								1	
New Castle	44,938		1							
Norristown	32,319		1		1		5			
North Braddock	14,928		1		2		1			
Philadelphia	1,823,779	431	35	5	39	1	51	2	63	44
Phoenixville	10,484				1					
Pittsburgh	588,343	174	15	3	53	2	16	5	14	20
Plymouth	16,500		1							
Pottsville	21,876				1					
Punxsutawney	10,311		1							
Reading	107,784		5		2					
Scranton	137,783		5		11		1		7	
Shamokin	21,204				1					
Sharon	21,747						1			
Steelton	13,428								1	
Sunbury	15,721		1							
Tamaqua	12,363		2		1					
Uniontown	15,692				2					
Warren	14,272		1		16		1		1	
Washington	21,480				17					
Wilkes-Barre	73,833		4		10		1		3	
Wilkinsburg	24,403		2		3					
Williamsport	36,198		1		4		1			
Woodlawn	12,495								2	
York	47,512				4		1		1	
Rhode Island:										
Cranston	29,407	3			2		1			
Cumberland (town)	10,077	0							1	
Newport	30,255	9	4			1	2			
Pawtucket	64,248	15	1							1
Providence	237,595	63	10		18		8			5
South Carolina:										
Charleston	67,957	23			12					5
Columbia	37,524	17			4					1
Greenville	23,127	1	1		2				10	
South Dakota:										
Sioux Falls	25,202	11			6					
Tennessee:										
Chattanooga	57,895	0	1							
Knoxville	77,818				2				3	3
Memphis	162,351	65			3				17	9
Nashville	118,342	38			11		1		10	1
Texas:										
Amarillo	15,494	5								
Austin	34,876	6							1	1
Beaumont	40,422	7			2					1
Dallas	158,976	42	4		19		4		1	2
El Paso	77,560	30			5		2		9	8
Fort Worth	106,482	15	1		1				2	1
Galveston	44,255	19					1			1
Houston	138,276	43			2		1			3
San Angelo	10,050	5								2
San Antonio	161,379	74	4		6				7	9
Waco	38,500	3								1

CITY REPORTS FOR WEEK ENDED JUNE 23, 1923—Continued.

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

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Utah:										
Provo	10,303	4								
Salt Lake City	118,110	24	5		4		1			2
Vermont:										
Burlington	22,779	3			21					
Virginia:										
Alexandria	18,060	3			5					
Charlottesville	10,688				1					
Lynchburg	30,070	8	1		7	1	1		1	
Norfolk	115,777		4		39				8	3
Petersburg	31,012	14			30		1		1	
Richmond	171,667	53			134	2	1		2	4
Roanoke	50,842	16			1					
Washington:										
Bellingham	25,585						3			
Everett	27,644				1					
Seattle	315,312		5		34		3		21	
Spokane	104,437		3		4		2			
Walla Walla	15,503		4							
Yakima	18,539				1					
West Virginia:										
Bluefield	15,282	2			3					
Charleston	39,608	13	1		8				1	
Clarksburg	27,869	5			33					1
Fairmont	17,851		1		7					
Huntington	50,177	22	1			2			6	1
Martinsburg	12,515	1			1					
Morgantown	12,127				1					
Parkersburg	20,050	7			10					
Wheeling	56,208	15	1		1				1	
Wisconsin:										
Appleton	19,561	9	2		6		1			
Ashland	11,334	4	1		20					1
Beloit	21,284	4			14		7			
Eau Claire	20,906				45					
Fond du Lac	23,427	4			1					
Green Bay	31,017		4		15		4			
Janesville	18,293	5					2		1	
Kenosha	40,472	4	1							
La Crosse	30,421				4					
Madison	38,378	13	1		27					
Manitowoc	17,563				24					
Marinette	13,610				7		3			
Milwaukee	457,147	77	10	1	28		73		16	9
Oshkosh	33,162	10			27		1			2
Sheboygan	30,955	9	3		3		1		1	
Superior	39,671	9	1		1		1			
Waukesha	12,558				9		2			
Wausau	18,661				6		1			
West Allis	13,745						2		1	
Wyoming:										
Cheyenne	13,829	4								

FOREIGN AND INSULAR.

AUSTRALIA.

Plague—Sydney.

Under date of July 5, 1923, one case of plague (septicemic), with fatal termination on June 30, 1923, was reported at Sydney, Australia.

AZORES.

Plague—St. Michael Island.

During the three weeks ended May 26, 1923, 12 cases of plague with 5 deaths were reported in the Island of St. Michael, occurring at one locality.

BRAZIL.

Yellow Fever—Bahia.

During the three weeks ended June 2, 1923, 16 cases of yellow fever with 5 deaths were reported at Bahia, Brazil.

CANARY ISLANDS.

Plague—Las Palmas.

A case of plague was reported, June 7, 1923, at Las Palmas, Canary Islands.

JAMAICA.

Smallpox (Reported as Alastrim)—Kingston.

During the two weeks ended June 9, 1923, 124 cases of smallpox (reported as alastrim) were notified in the Island of Jamaica. Of these, 86 cases were notified during the week ended June 9, 1923. In the parish of Kingston 17 cases were notified.

Typhoid Fever—Kingston and Vicinity.

During the same period 13 cases of typhoid fever were reported in Kingston and 24 cases in the surrounding country.

PANAMA CANAL.

Communicable Diseases—May, 1923.

Communicable diseases were notified for the Panama Canal during the month of May, 1923, as follows:

Disease.	Canal Zone.	Colon.	Panama.	Non-resident.	Total.
Chicken pox	3	3	9	.....	15
Diphtheria	1	2	6	.....	9
Dysentery	1	2	2	.....	5
Hookworm infection	6	2	10	10	28
Leprosy	.....	.....	1	6	7
Malaria	65	1	3	27	96
Measles	4	2	2	2	10
Meningitis	.....	2	.....	.....	2
Mumps	.....	.....	.....	3	3
Paratyphoid fever	1	.....	.....	1	2
Pneumonia	1	2	15	2	20
Relapsing fever	.....	.....	.....	1	1
Scarlet fever	.....	1	.....	.....	1
Tuberculosis	7	16	18	1	42
Typhoid fever	.....	2	1	2	5

POLAND.

Communicable Diseases—March 18–April 7, 1923.

During the three weeks ended April 7, 1923, communicable diseases were notified in Poland as follows:

MARCH 18–24, 1923.

Disease.	Cases.	Deaths.	Districts and city showing greatest mortality.
Cerebrospinal meningitis	10	6	Kielce.
Diphtheria	41	9	Silesia; Warsaw.
Measles	546	15	Lwow.
Scarlet fever	218	29	Stanislawow.
Smallpox	15	4	Krakow; Stanislawow.
Tuberculosis	196	234	Lwow.
Typhoid fever	208	24	Tarnopol.
Typhus fever	404	49	Stanislawow.
Typhus fever, recurrent	68	1	Nowogrodek.
Whooping cough	65	5	Lwow.

MARCH 25–31, 1923.

Cerebrospinal meningitis	9	2	Lodz; Lwow.
Diphtheria	53	7	Posen.
Measles	335	17	Lodz.
Scarlet fever	203	28	Stanislawow.
Smallpox	9	2	Do.
Tuberculosis	153	230	Lwow.
Typhoid fever	170	22	Lodz.
Typhus fever	358	17	Lwow.
Typhus fever, recurrent	66	1	Nowogrodek.
Whooping cough	31	11	Stanislawow.

APRIL 1–7, 1923.

Cerebrospinal meningitis	15	8	Lwow.
Diphtheria	51	2	Lodz; Warsaw.
Measles	335	10	Lodz.
Scarlet fever	144	22	Do.
Smallpox	6	.....	
Tuberculosis	125	203	Lwow.
Typhoid fever	169	12	Former Congress Poland.
Typhus fever	449	36	Lwow.
Typhus fever, recurrent	60	1	Polesia.
Whooping cough	81	10	Lwow.

Dysentery—Rabies—March 18–April 7, 1923.

During the period March 18 to April 7, 1923, 38 cases of dysentery with 5 deaths were reported in Poland, occurring in the districts of Krakow, Lwow, and Silesia. During the two weeks ended April 7, 1923, 2 deaths from rabies were reported, occurring in the districts of Lublin and Silesia.

RUSSIA.

Decrease in Epidemic-Disease Prevalence—January–February, 1923.

According to information dated April 21, 1923, a decrease in epidemic prevalence of disease was noted in Soviet Russia during the months of January and February, 1923, as compared with the corresponding periods of the preceding year. As regards typhoid fever, typhus fever, and recurrent typhus the reported prevalence was as follows:

Disease.	Number of cases reported.			
	January.		February.	
	1923	1922	1923	1922
Typhoid fever	32,613	73,882	.....	.....
Typhus fever	.....	.....	17,577	101,212
Typhus fever, recurrent	30,894	68,080	12,646	73,423

It was stated that complete returns for the month of March, 1923, had not been received, but that data available to date indicated a considerable decrease in prevalence as compared with the same month of 1922.

Lethargic Encephalitis Made Notifiable.

Information dated April 15, 1923, shows that lethargic encephalitis (sleeping sickness) has been included among the list of infectious diseases which are subject to obligatory registration in Russia.

SWEDEN.

Influenza—Goteborg.

Influenza was continuously reported at Goteborg, Sweden, from the beginning of the year to May 26, 1923, with a total of 766 cases, from 30 to 45 cases being reported weekly. During the week ended February 24, 54 new cases were reported. During the two weeks ended June 2 and 9, 1923, the reported occurrence was 37 and 42 new cases, respectively. The population of Goteborg, according to the census of December 31, 1922, was 228,053.

UNION OF SOUTH AFRICA.

Kaffir Pox—Northern Rhodesia.

During the week ended May 21, 1923, 21 cases of smallpox with 8 deaths were reported in Northern Rhodesia. The disease was later reported to be Kaffir pox. Previous occurrence of the disease was reported from March, 1923, with 19 cases and 4 deaths.

VENEZUELA.

Epidemic Influenza—Maracaibo.

Under date of June 19, 1923, influenza was reported epidemic at Maracaibo, Venezuela. It was stated that on June 18, 100 new cases were notified.

VIRGIN ISLANDS.

Disease Prevalence—May, 1923.

During the month of May, 1923, disease prevalence in the Virgin Islands of the United States was reported as follows:

Island and disease.	Cases.	Remarks.	Island and disease.	Cases.	Remarks.
St. Thomas and St. John:			St. Thomas and St. John—Contd.		
Chancroid	2	One imported.	Tuberculosis	1	Chronic pulmonary.
Chicken pox	24		Uncinariasis	1	Necator Americanus.
Dengue	3		St. Croix:		
Erysipelas	1		Chancroid	1	
Gonococcus infection.	5		Chicken pox	14	
			Dysentery	9	Entamebic.
Malaria	1	Tertian.	Filariasis	6	Bancrofti.
Measles	1		Leprosy	1	
Pellagra	1		Tuberculosis	5	Chronic pulmonary.
Syphilis	3	Two imported. Primary, 1; secondary, 2.	Uncinariasis	2	Necator Americanus.

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

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

Reports Received During Week Ended July 13, 1923.[1]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Calcutta	May 6-19	89	80	
Rangoon	May 13-19	1	1	
Philippine Islands:				
Province—				
Mountain Province	Mar. 25-31	1	1	

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

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

Reports Received During Week Ended July 13, 1923—Continued.

PLAGUE.

Place.	Date.	Cases.	Deaths.	Remarks.
Australia:				
Sydney	June 30		1	
Azores:				
St. Michael Island	May 6–26	12	5	In one locality.
Canary Islands:				
Las Palmas	June 7	1		
China:				
Hongkong	May 6–12	3	3	
Ecuador:				
Guayaquil				May 16–31, 1923: Rats examined, 4,800; found infected, 21.
India:				
Calcutta	May 6–19	6	6	
Karachi	May 20–26	34	23	
Madras Presidency	May 20–26	71	35	
Rangoon	May 13–19	32	30	
Java:				
Residency—				
Soerakarta				May 16, 1923: Epidemic in five districts.
Straits Settlements:				
Singapore	May 6–12		2	

SMALLPOX.

Algeria:				
Algiers	May 1–31	2		
Arabia:				
Aden	May 27–June 2		1	
Brazil:				
Pernambuco	May 6–19	3		
Rio de Janeiro	May 13–26	4	1	
China:				
Chungking	May 13–19			Present.
Foochow	May 13–26			Do.
Hongkong	May 6–12	10	6	
Manchuria—				
Dairen	May 21–27	1		
Harbin	May 7–27	2		
Mukden	May 13–20	1		
Shanghai	May 21–June 3	4		Foreign.
Ecuador:				
Guayaquil	May 16–31	1		
Finland				May 1–15, 1923: One case.
India:				
Calcutta	May 13–19	3	3	
Madras	May 20–26	12		
Rangoon	May 13–19	23	11	
Iraq (Mesopotamia):				
Bagdad	Apr. 1–30	10		
Italy:				
Turin	May 28–June 3	1		
Jamaica				May 27–June 9, 1923: Cases, 124.
Kingston	May 27–June 9	17		(Reported as alastrim.)
Mexico:				
Chihuahua	June 11–17	5		
Persia:				
Tabriz	Apr. 1–14		1	District.
Portugal:				
Oporto	June 10–16	4	2	
Spain:				
Barcelona	May 31–June 6		1	
Valencia	June 3–16	17	1	
Switzerland:				
Basel	May 27–June 3	1		
Berne	May 20–26	1		
Lucerne	May 1–31	29		
Zurich	May 20–June 2	6		
Union of South Africa:				
Cape Province	May 6–12			Outbreaks.
Northern Rhodesia	May 8–14	21	8	
Orange Free State	do			Do.
Southern Rhodesia	May 10–16		2	

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

Reports Received During Week Ended July 13, 1923—Continued.

TYPHUS FEVER.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers	May 1-31	41	14	
China:				
Manchuria—				
Harbin	May 6-13	1		
Mukden	May 14-20	2		
Germany:				
Hamburg	May 20-26	3		
Königsberg	May 13-19	1		
Stettin	May 27-June 2		1	
Hungary:				
Budapest	May 20-26	3		
Iraq (Mesopotamia):				
Bagdad	Apr. 1-30	2		
Palestine:				
Jaffa	May 22-28	2		
Jerusalem	do	1		
Persia:				
Tabriz	Apr. 1-14	2		
Poland				Mar. 18-Apr. 7, 1923: Cases, 1,211; deaths, 102. Recurrent typhus: Cases, 194; deaths, 3.
Portugal:				
Oporto	June 10-16	1		
Russia (Soviet)				Feb. 1-28, 1923: Cases, 17,577. Recurrent, Jan. 1-Feb. 28, 1923: Cases, 43,540.
Syria:				
Beirut	May 1-10	1		
Tunis:				
Tunis	June 4-10	2		
Union of South Africa:				
Cape Province	May 6-12			Outbreaks.
Orange Free State	do			Do.
Transvaal	do			Do.

YELLOW FEVER.

Brazil:				
Bahia	May 13-June 2	16	5	

Reports Received from June 30 to July 6, 1923.[1]

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India				Apr. 15-21, 1923: Cases, 3,475; deaths, 2,603.

PLAGUE.

Ceylon:				
Colombo	May 6-12		3	
China:				
Amoy	May 13-19		1	
Hongkong	Apr. 29-May 5	3	1	
Hawaii:				
Hamakua				Plague-infected rats: Pohakea, May 23, 1923, 1 rat; vicinity of Pacific Sugar Co. mill, June 2, 1 rat.

[1] From medical officers of the Public Health Service, American consuls, and other sources. For reports received from Dec. 30, 1922, to June 29, 1923, see Public Health Reports for June 29, 1923. The tables of epidemic diseases are terminated semiannually and new tables begun.

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

Reports Received from June 30 to July 6, 1923—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
India:				
Karachi	May 13-19	26	23	
Madras Presidency	May 13-19	88	58	
Rangoon	May 6-12	34	32	
Java:				
East Java—				
Soerabaya	Apr. 1-30	487	487	
Madagascar				Apr. 1-15, 1923: Cases, 22; deaths, 19. Bubonic, 5; pneumonic, 1; septicemic, 16.
Province—				
Tananarive	Apr. 1-15	22	19	
Mexico:				
Tampico				Apr. 15-21, 1923: 1 plague rat.
Peru				May 1-15, 1923: Cases, 21; deaths, 11.
Locality—				
Callao	May 1-15	2	1	
Cerro Azul	do	2		
Chiclayo	do	5		
Catervo	do	2	1	
Huancabamba	do	3	6	
Lima (city)	do	1		
Lima (country)	do	2	1	
Salaverry	do	3	2	
Trujillo	do	1		
Siam:				
Bangkok	Apr. 29-May 12	5	4	

SMALLPOX.

Canada:				
Alberta—				
Calgary	May 27-June 2	1		Infection from Deer Lodge, Mont.
Quebec—				
Quebec	June 10-16	1		Varioloid.
Ceylon:				
Colombo	May 6-12	18		From outside city.
China:				
Amoy	May 13-19		1	
Antung	May 14-20	1		
Hongkong	Apr. 29-May 5	9	15	
Nanking	May 13-26			Present.
Czechoslovakia				Jan.-Mar., 1923: Cases, 15.
Great Britain:				
Cardiff	June 3-9	5		
India				Apr. 15-21, 1923: Cases, 1,780; deaths, 491.
Karachi	May 13-19	7	6	
Madras	do	2		
Rangoon	May 6-12	37	16	
Japan:				
Kobe	May 28-June 3	1		
Java:				
East Java—				
Soerabaya	Apr. 22-28	27	4	
West Java—				
Batavia	May 5-11	6		Province.
Mexico:				
Mexico City	May 19-26	36		Including municipalities in Federal district.
Portugal:				
Lisbon	May 20-June 2	20		
Portuguese West Africa:				
Angola—				
Loanda	Apr. 1-21		2	
Siam:				
Bangkok	Apr. 29-May 12	21	8	
Sierra Leone:				
Kaballa	May 1-15	1		
Spain:				
Valencia	May 15-June 2	8		
Syria:				
Damascus	May 15-21	2		

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

Reports Received from June 30 to July 6, 1923—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Union of South Africa:				
Orange Free State	Apr. 29–May 5			Outbreaks.
Southern Rhodesia	May 3–9	4		
On vessel:				
S. S. Makura	May 26	2		Two cases, in quarantine (reported as alastrim). Vessel left Victoria, B. C., Apr. 28, 1923. Touched at Honolulu.

TYPHUS FEVER.

Chile:				
Talcahuano	May 13–19	1		
China:				
Hankow	May 19–25	1		
Czechoslovakia				Jan.-Mar., 1923: Cases 191; deaths, 6.
Egypt:				
Alexandria	May 14–20	1	2	
Germany:				
Coblenz	May 27–June 2		1	
Guatemala:				
Guatemala City	Apr. 1–May 31		4	
Hungary				Jan. 1–May 19, 1923: Cases, 318; deaths, 35. In 11 counties.
Budapest	Jan. 1–May 19	45	11	
Mexico:				
Mexico City	May 20–26	15		Including municipalities in Federal district.
Syria:				
Aleppo	do	3	1	
Tunis:				
Tunis	May 28–June 3	1		
Union of South Africa:				
Cape Province	Apr. 29–May 5			Outbreaks.