PUBLIC HEALTH REPORTS

VOL. 42 NOVEMBER 18, 1927 NO. 46

PREVALENCE OF POLIOMYELITIS IN THE UNITED STATES

The health officers of 41 States reported 390 cases of poliomyelitis for the week ended November 5, 1927, 439 cases for the preceding week, and 524 cases for the week ended October 22, 1927.

Comparing the reports for the week ended November 5, 1927, with the preceding week, slight increases for the later week appear for West Virginia, Ohio, Mississippi, Texas, Idaho, Washington, and California. Seven other States reported increases of one or two cases each. Massachusetts, New York, Illinois, Indiana, Michigan, and Oregon reported fewer cases for the later week. The total for the 41 States was 11 per cent lower for the week ended November 5 than for the week ended October 29, 1927.

Reports are available from 39 States for the weeks ended November 5, 1927, November 6, 1926, and November 7, 1925. These States reported for these weeks, 331 cases in 1927, 60 cases in 1926, and 111 cases in 1925.

A table showing the reports by States appears on pages 2852–53. Reports for the week ended November 12, 1927, are printed on page 2866.

ENDEMIC GOITER IN OREGON

By ROBERT OLESEN, *Surgeon, United States Public Health Service*

GENERAL CONSIDERATIONS

For a number of years it has been known that endemic goiter prevails to a considerable extent in the State of Oregon. This knowledge, fostered by sporadic surveys, received further support when the results of the draft examinations were announced. These results, frequently referred to in the literature, indicate that endemic goiter is more frequently encountered in the Pacific Northwest than any other section of the United States.[1] According to the report giving the number of instances of endemic goiter and the ratio per 1,000 examinations, among 2,510,701 men examined for military service, Oregon, with a ratio of 26.31 per 1,000 examinations, ranked next to the highest of all the States in the amount o simple goiter. This official reference has caused it to become widely known that Oregon, in common with the other States comprising the Pacific Northwest

[1] Table 18, p. 111, of Defects Found in Drafted Men, by A. G. Love and C. B. Davenport, prepared under the direction of the Surgeon General, M. W. Ireland, War Department, Washington, D. C., 1920.

group, has more endemic goiter than any other section of the country. However, it must be recalled that this finding was based upon the detection of only 421 goiters among all of the drafted men in the State.

Because of Oregon's geographical position and the proximity of many of its cities to the ocean, much interest has been manifested as to the underlying cause for the unusually high incidence of endemic goiter. If, as is generally considered to be the case, endemic goiter, with minor exceptions, is least frequent along and near seacoasts, there should be relatively little endemic goiter in the western portion of Oregon. Desiring to learn more concerning the distribution of simple goiter within the State, as well as to compare the incidence of the malady in Oregon with that in other States, the State health officer requested that a suitable study be undertaken by the Public Health Service. Consequently, the investigation herein detailed was made in cooperation with the Oregon State Board of Health.[2]

Previous thyroid surveys.—The rates of thyroid incidence disclosed by the draft examinations constitute a leading contribution to the subject. It should be recalled, however, that these examinations were made by many physicians with varying degrees of skill and experience. Consequently, the results may not present an accurate picture of endemic thyroid enlargements among those most susceptible to the disease, particularly the adolescent girl.

TABLE 1.—*Incidence of endemic goiter in several localities in Oregon, as shown by available records*

Place	Number examined			Percentage with goiter			Reported by—	Remarks
	Boys	Girls	Boys and girls	Boys	Girls	Boys and girls		
Newport	620	1,047	-------	10.8	26.1	-------	W. C. Belt	1916.
Medford	844	832	-------	16.2	44.9	-------	L. D. Inskeep	
Portland	407	2,279	-------	27.0	56.2	-------	City Club's public-health section.	
Do	------	-------	-------	36.0	60.0	-------	J. Earl Else and B. Peden.	
Do	------	-------	4,057	------	-------	8-40	H. A. Cary	31 schools; incidence varies according to school location and length of prophylaxis.
Do	408	361	-------	44.6	50.1	-------	----do	1 school complete.
Douglas County	------	-------	1,253	------	-------	7.6	W. C. Belt	1925.
Do	------	-------	1,583	------	-------	8.6	----do	1926 (north end of county).
Do	------	-------	1,933	------	-------	13.7	----do	South end of county.

[2] The writer is under many obligations to Dr. Frederick D. Stricker, State health officer of Oregon, and to members of his staff for splendid practical assistance in arranging for thyroid surveys in various parts of the State. Especially noteworthy was the excellent cooperation afforded by the director of the division of child hygiene and public health nursing, Mrs. Glendora M. Blakely, through whose efforts the county, school, and special nurses lent particularly fine assistance. To the local health officers, school superintendents, principals, teachers, and others, whose courtesy, sympathy, and help made possible the various individual surveys, grateful acknowledgment is made. The willingness with which cooperation is given in the State in a study of this character makes Oregon an unusually fruitful field for public health investigations.

In addition to the draft figures dealing with goiter, a number of surveys have been made by independent observers. An attempt has been made to secure the results of the principal surveys, the findings being reproduced in Table 1.

It will be noted that one of the early surveys was made in 1916 by Dr. W. C. Belt, then an acting assistant surgeon of the Public Health Service. Doctor Belt at that time noted an incidence of 10.8 per cent of goitrous boys and 26.1 per cent of goitrous girls among those examined. Making a goiter survey in Douglas County in 1926, Doctor Belt noted a greater incidence of simple thyroid enlargement in the southern portion of the county.

Surveys in Portland have shown a rather high incidence of endemic goiter. Dr. Helen A. Cary, medical director of schools in Portland, has found that thyroid involvement varies in the different schools, being less in groups that have received prophylactic doses of iodine. Doctors Else and Peden found that endemic goiter prevailed among the boys of Portland to the extent of 30 per cent, and among the girls to 60 per cent. In another survey in Portland Doctor Else, serving as chairman of the City Club's public health section, announced an incidence of 27 per cent among 407 boys and 56.2 per cent among 2,279 girls. In Medford Doctor Inskeep noted that 16.2 per cent of the boys and 44.9 per cent of the girls had some degree of thyroid enlargement. Many other surveys have undoubtedly been made in the State, but only the few recorded appear to have found their way into the literature.

Epidemiological features of prophylaxis.—That the incidence of endemic goiter may be materially lowered by appropriate prophylactic measures has been amply demonstrated in several localities in Oregon. In Portland, for instance, there is less thyroid enlargement among the children who have received minute doses of iodine regularly than among those who, because of parental objection, have been denied this protection. In other places, too, beneficial effects have been noted after the regular application of prophylactic measures. From an epidemiological viewpoint the situation created by preventive measures has its interesting features. Manifestly, the dividing lines between regions of high and low goiter incidence may conceivably be radically altered by energetic procedures of this character. Thus, the natural incidence rates may be greatly lowered by prophylaxis. On the other hand, a community unfriendly or indifferent to the benefits of the measures may, by its inaction, cause a normally low rate to assume undue importance when compared with localities in which preventive measures are energetically applied. Consequently a state-wide goiter survey can only be approximately correct in indicating areas of incidence.

Scope of the study.—The present study in no way attempts to present the epidemiological phases of the endemic goiter problem in Oregon. The investigation had for its sole purpose the determination of the incidence of simple goiter in representative communities in the State. It is fully realized that an intensive and extended investigation of the subject is desirable, for many relevant data are lacking. At the same time such meager information as has become available is presented in this article with the hope that additional interest and study may be stimulated.

Methods.—In determining the presence and extent of thyroid enlargement among the children examined in Oregon, the methods described in previous service publications were employed.[3] [4] The classification originally suggested during the Cincinnati survey in 1924 has been used on a sufficiently comprehensive scale in different sections of the country to insure its value. Moreover, since a number of surveys have been made under similar conditions by the same workers, comparable data have been gathered.

There are manifestly wide variations in the methods of determining thyroid enlargements. Moreover, the classifications of various degrees and types of involvement also range within wide limits. Obviously uniform procedure is a necessity if findings in different sections of the country are to be compared.

It is becoming more and more apparent that a great deal of confusion exists concerning the dividing line between a normal and an enlarged thyroid gland. In the many surveys that have been made in various sections of the United States, mistakes have undoubtedly been made. Some investigators have classified normal thyroids as goitrous, while the reverse error has been committed just as frequently. Inasmuch as the exact dividing line between the normal and enlarged thyroid is not known and no accurate means for its determination are available, reliance must be placed upon an arbitrary mode of demarcation.

The readily palpable thyroid gland.—During the Oregon survey it was noted that some physicians and nurses were prone to classify any gland that could be felt as a goiter. As the normal thyroid has weight and dimensions, it can readily be outlined in the vast majority of individuals examined.[5] The classification of a palpable thy-

[3] Olesen, Robert: Thyroid survey of 47,493 elementary school children in Cincinnati. Pub. Health Rep., vol. 39, No. 30, pp. 1777–1802, July 23, 1924. (Reprint No. 941.)

[4] Olesen, Robert: Endemic goiter in Colorado. Pub. Health Rep., vol. 40, No. 1, pp. 1–22, Jan. 2, 1925. (Reprint No. 983.)

[5] Commenting upon this statement, Dr. J. Earl Else, of Portland, Oreg., says, in a personal communication, "I am of the opinion that by the use of the method developed in this clinic we can palpate all thyroids except those with a retro-tracheal development. This method consists of standing behind the patient and placing the first 3 fingers of each hand over the thyroid region while the patient swallows. I regard the small palpable thyroid as normal when the lower pole is not blunt. A blunt lower pole either means a goiter present at the time of examination or the remains of a previous goiter. The retro-tracheal thyroid can usually be palpated by the procedure outlined by Lahey of Boston." (A method of palpating the lobes of the thyroid. By Frank H. Lahey, Jour. A. M. A., vol. 86, No. 12, p. 813, Mar. 20, 1926.)

roid as a goiter is believed to be an error which unfairly stigmatizes the community thus surveyed. However, in the interest of greater accuracy, a record was kept, during the Oregon survey, of the thyroid glands which, while readily palpable, were judged to be normal in character. In this connection it may be admitted that very slight thyroid involvement, regarded in this classification as a definite departure from normal, may be a physiological enlargement of transient character. Until more accurate knowledge concerning this point becomes available, it is desirable that the readily palpable gland be regarded as normal. However, in the present report the easily palpable yet presumably normal thyroids have been separately classified for the first time. Furthermore, a more nearly complete record of lumpy or nodular glands, presumably adenomatous in character, is available.

Sources of error in determining thyroid status.—It is rather surprising that the sterno-cleido-mastoid muscles, folds of adipose tissue, and even portions of the larynx should be mistaken for enlargement of the thyroid gland. Yet this error is perpetrated with sufficient frequency to exaggerate and unnecessarily confuse the records of thyroid surveys. Furthermore, mistakes of this character are not confined to lay people. Unfortunately, some physicians and nurses likewise commit such errors. The remedy, of course, lies in a better understanding of the topography of the thyroid gland, as well as some training, under a competent instructor, in the methods of examining the thyroid gland in its normal and abnormal states.

Scope of the survey.—Thyroid examinations were made in 32 of the largest cities and towns in Oregon. In all, 8,181 boys and 9,427 girls attending the public and parochial schools were examined. All examinations were made and the results recorded by a single observer. For the most part those examined attended the senior and junior high schools. Occasionally, when the enrollment in the high school was low, examinations were extended to the upper grades of the grammar schools.

Although the surveys were made in the largest cities and towns in the State, the findings are not indicative of urban conditions alone. Practically all of the schools, particularly the high schools, in cities outside of Portland have a large attendance of children from rural districts. Consequently, the survey is representative of conditions in both urban and rural sections.

RESULTS

Among the 8,181 boys examined, there were 1,826 thyroid enlargements of all degrees, or 22.3 per cent. The percentage incidence among the girls was, as usual, higher, 3,617 enlargements, or 38.3 per cent, being recorded among 9,427 girls. In Table 2 the numbers, degrees, and percentages of thyroid enlargements in each of the places visited are set forth.

Of the very slight thyroid enlargements, constituting a goodly majority of all degrees, there were 18 per cent among the boys and 23.5 per cent among the girls. Slight enlargements prevailed to the extent of 2.4 per cent among the boys and 9.7 per cent among the girls. Moderate enlargements predominated among the girls, 1.0 per cent being recorded, as against 0.086 per cent for the boys. No marked enlargements were found among the boys and only 3 were noted among the girls.

Adenomata.—Adenomatous goiters are especially interesting to the public health administrator, because of their potentialities for toxicity and malignancy in adulthood. Even more important is the possibility of preventing these adenomatous growths by appropriate prophylaxis during pregnancy. Apparently the discovery of lumps or nodules in the substance of the thyroid gland is largely dependent upon skill and experience in making examinations of the gland. Certainly the condition exists more frequently than is apparent from superficial examination. Among the boys examined in Oregon adenomatous goiters prevailed to the extent of 1.8 per cent, while among the girls the incidence was higher, 4.1 per cent.

TABLE 2.—*Numbers, degrees, and percentages of thyroid enlargements among 8,181 boys and 9,427 girls in each of 32 localities in Oregon*

Place	Boys							
	With thyroid enlargement						Normal	Total
	Degree of enlargement				Total	Per cent		
	Very slight	Slight	Moderate	Adenomatous				
Albany	58	8		5	71	23.7	229	300
Ashland	32	5		3	40	20.9	155	195
Astoria	32	2		5	39	18.0	177	216
Baker	62	11		3	76	26.8	207	283
Bend	114	22		4	140	23.6	452	592
Corvallis	30	3			33	11.9	245	278
Cottage Grove	40	9	1	5	55	31.3	121	176
Dallas	38	8		4	50	21.5	183	233
Eugene	20	3		2	25	11.7	188	213
Forest Grove	50	6		3	59	33.3	118	177
Grants Pass	45	12		9	66	26.1	187	253
Hillsboro	64	14	1	13	92	28.7	229	321
Hood River	43	2	1	3	49	33.6	97	146
Klamath Falls	21	1		2	24	13.9	149	173
La Grande	79	9		2	90	24.0	284	374
Marshfield	23	4			27	11.7	203	230
Medford	44	4		7	55	25.1	164	219
McMinnville	34	2		2	38	18.2	171	209
Newberg	58	4	1	3	66	29.9	155	221
North Bend	21	4		2	27	10.3	234	261
Ontario	22	1		1	24	11.7	188	212
Oregon City	57	16	1	6	80	26.3	224	304
Pendleton	42	4	2	3	51	23.9	162	213
Portland	164	10		27	201	24.9	606	807
Ranier	25	3		4	32	20.4	125	157
Roseburg	50	11		9	70	24.3	218	288
Salem	28	4		3	35	20.7	134	169
Seaside	20	1		4	25	17.2	120	145
Silverton	65	4			69	22.5	237	306
St. Helens	23	2		4	29	15.2	161	190
The Dalles	68	10		9	87	27.2	233	320
Total	1,472	199	7	147	1,825	22.3	6,356	8,181
Per cent	18.0	2.4	0.086	1.8		22.3		

TABLE 2.—*Numbers, degrees, and percentages of thyroid enlargements among 8,181 boys and 9,427 girls in each of 32 localities in Oregon*—Continued

Place	Girls								
	With thyroid enlargement							Normal	Total
	Degree of enlargement					Total	Per cent		
	Very slight	Slight	Moderate	Marked	Adenomatous				
Albany	90	43	11		12	156	44.0	199	355
Ashland	65	36	5		7	113	38.1	176	289
Astoria	77	30	2		9	118	37.8	194	312
Baker	90	44	5		10	149	46.6	171	320
Bend	138	48	1	1	16	204	34.5	387	591
Corvallis	65	34	4		14	117	38.2	189	306
Cottage Grove	51	40	3		12	106	51.2	101	207
Dallas	58	16	2		10	86	36.7	148	234
Eugene	67	14	1		10	92	30.6	208	300
Forest Grove	68	31			3	102	47.0	115	217
Grants Pass	66	46	6	1	9	128	48.6	135	263
Hillsboro	75	37	8		17	137	42.7	184	321
Hood River	59	33	2		7	101	48.8	106	207
Klamath Falls	40	12			13	65	39.4	100	165
La Grande	107	34	2		14	157	39.7	238	395
Marshfield	51	16	1		2	70	27.6	183	253
Medford	55	38	3		11	107	40.8	155	262
McMinnville	41	9	5		11	66	37.1	112	178
Newberg	75	35	2		9	121	43.4	158	279
North Bend	52	8			9	69	21.9	246	315
Ontario	18	7			2	27	12.7	184	211
Oregon City	101	42	6		21	170	52.3	155	325
Oswego	29	9	1		6	45	34.6	78	123
Pendleton	58	18			5	81	36.0	144	225
Portland	179	57	5	1	76	318	32.4	665	983
Ranier	55	22	5		10	92	44.4	115	207
Roseburg	64	25	3		15	107	39.2	166	273
Salem	71	35	2		2	110	49.8	111	221
Seaside	32	11			5	48	31.0	107	155
Silverton	98	30	1		3	132	36.6	229	361
St. Helens	59	18	4		11	92	37.8	151	243
The Dalles	70	40	4		17	131	39.6	200	331
Total	2,224	918	94	3	378	3,617	38.3	5,810	9,427
Per cent	23.5	9.7	1.0	0.032	4.1		38.3		

Low goiter rates.—The lowest incidence rates were recorded among the boys living in North Bend, Marshfield, Eugene, and Ontario. In explanation of these findings it may be pointed out that North Bend and Marshfield are on the coast, where endemic goiter may be expected to be less frequently encountered. In Eugene, prophylactic measures have been in operation for several years, apparently with success. Ontario, however, is located in the extreme central western portion of the State, near the Idaho boundary line. Physicians practicing in Vale, near Ontario, report a similarly low goiter incidence.

The lowest incidence rates among the girls were found in Ontario, North Bend, Marshfield, and Eugene, in the order named, the percentages being 12.7, 21.9, 27.6, and 30.6, respectively. Seaside, on the Pacific coast, also had a comparatively low goiter rate, 31 per cent.

High goiter rates.—The highest prevalence rates were recorded among the boys attending schools in Hood River, Forest Grove,

Cottage Grove, and Newberg, the percentages being 33.6, 33.3, 31.3, and 29.9, respectively. Among the girls, endemic thyroid enlargement was more frequent in Oregon City, Cottage Grove, Salem, Hood River, Grants Pass, and Forest Grove, in the order named. In the majority of the places surveyed in the State, the incidence rates of both sexes combined ranged between 30 and 40 per cent.

Endemic goiter and proximity to the ocean.—In reporting the results of a thyroid survey in Massachusetts, it was pointed out that endemic goiter was least frequent on Cape Cod and the eastern portion of the State.[6] As the western section of the State was approached, a gradual increase in the amount of endemic goiter was noted. It was concluded that proximity to the ocean, affording as it does a more plentiful supply of iodine in food, water, and possibly air, apparently aids in preventing simple thyroid enlargement. Moreover, it was considered possible that similar conditions might obtain in other similarly located places in the United States.

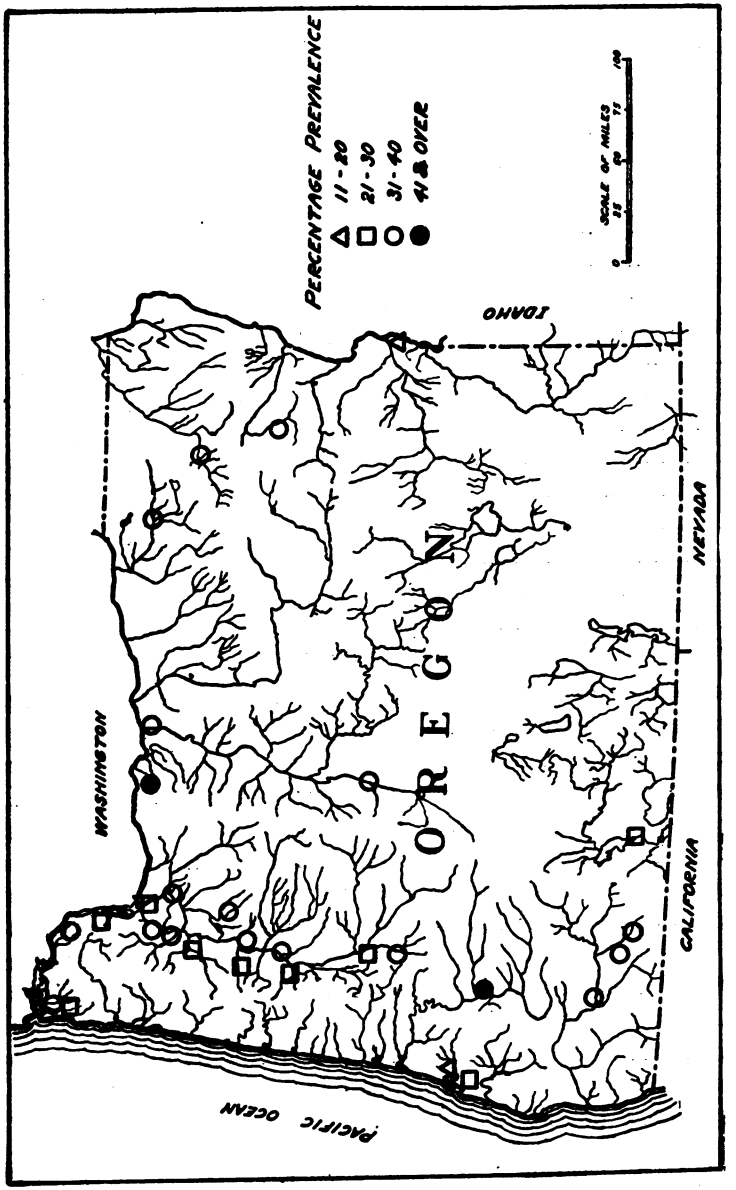
An examination of Table 3, in which are set forth the percentages of simple thyroid enlargement in the principal cities and towns of Oregon, shows that the disease is present to a considerable extent, not only in many places situated within 100 miles of the ocean, but also in seacoast communities. The principal data contained in Table 3 are shown graphically in the map. It will be noted that the principal cities are located in the western and northern sections of the State, the eastern, southern, and central portions being very sparsely populated. By means of symbols the percentage incidence of endemic goiter in each of the places surveyed has been indicated on the map. It will be seen that towns on the coast, such as Marshfield, North Bend, and Seaside, have less goiter than inland communities. Astoria, practically a seaport, likewise has comparatively little goiter. However, there is a marked difference in the goiter incidence encountered in Cape Cod (Mass.) towns, where the disease is infrequent, and Oregon seacoast towns where, relatively speaking, there is considerable endemic thyroid enlargement.[7] [8]

---

[6] Olesen, Robert, and Taylor, N. E.: Endemic thyroid enlargement in Massachusetts, Pub. Health Rep., vol. 42, No. 12, pp. 804-816, March 25, 1927. (Reprint No. 1158.)

[7] With reference to this observation Dr. David Marine, consultant in goiter studies, United States Public Health Service, says, in a personal communication: "The occurrence of rather a high incidence of goiter along the Pacific seacoast, as in many places along the Mediterranean coast and in Norway, may still be due to a low iodine content of the water. While, undoubtedly, some iodine is ingested from the air and a great deal can be ingested from sea food, I feel certain that the main source of iodine is water. If this comes from soil recently glaciated or of volcanic origin or thoroughly leached by heavy rains, the important source of iodine might be reduced."

[8] On the same point Dr. J. Earl Else, of Portland, Oreg., says in a personal communication: "Referring to the different incidence on Cape Cod and in the coast towns of Oregon, it has been my understanding that the inhabitants of Cape Cod are practically all fisher folks and depend upon fish as one of the chief articles of diet, while the majority of the people along the Oregon coast not only have no relationship to fishing, but, owing to the commonness of sea food, eat perhaps less than those living farther inland. A survey of the families of the fishermen living in Astoria in comparison with the other people of Astoria would be interesting."



Percentage distribution of thyroid enlargement in Oregon as disclosed by a survey of 8,181 boys and 9,427 girls in 32 localities

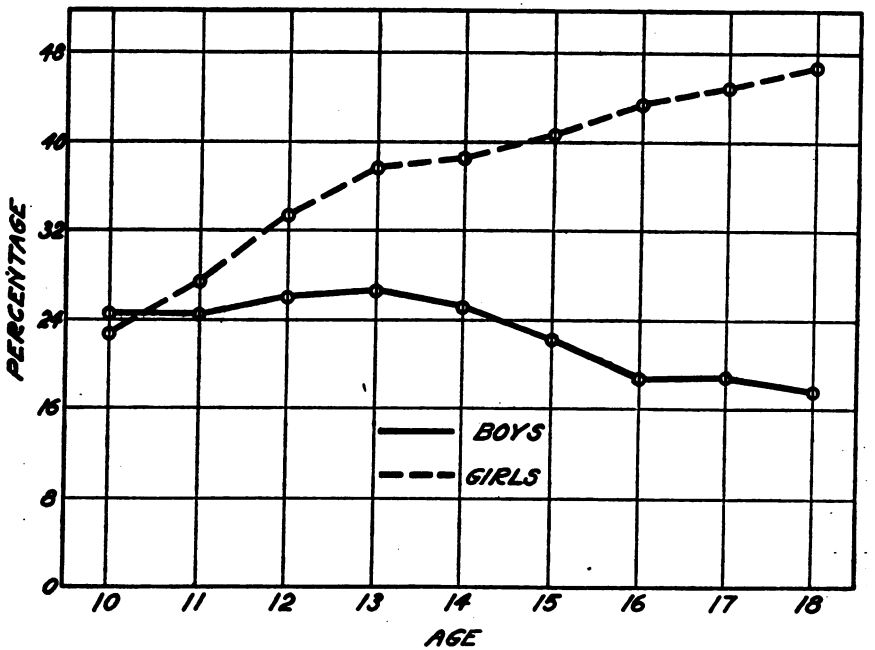
TABLE 3.—*Total numbers and percentages of thyroid enlargement among 8,181 boys and 9,427 girls, and both sexes combined, in each of 32 places in Oregon*

Locality	Per cent			Number		
	Both sexes	Boys	Girls	Both sexes	Boys	Girls
All localities	30.9	22.3	38.3	5,442	1,825	3,617
Albany	34.6	23.7	44.0	227	71	156
Ashland	31.6	20.9	38.1	153	40	113
Astoria	29.7	18.0	37.8	157	39	118
Baker	37.3	26.8	46.6	225	76	149
Bend	31.6	23.6	34.5	344	140	204
Corvallis	25.7	11.9	38.2	150	33	117
Cottage Grove	42.0	31.3	51.2	161	55	106
Dallas	29.1	21.5	36.7	136	50	86
Eugene	22.8	11.7	30.6	117	25	92
Forest Grove	40.8	33.3	47.0	161	59	102
Grants Pass	37.6	26.1	48.6	194	66	128
Hillsboro	35.7	28.7	42.7	229	92	137
Hood River	42.5	33.6	48.8	150	49	101
Klamath Falls	26.3	13.9	39.4	89	24	65
La Grande	32.1	24.0	39.7	247	90	157
Marshfield	20.1	11.7	27.6	97	27	70
Medford	33.7	25.1	40.8	162	55	107
McMinnville	26.8	18.2	37.1	104	38	66
Newberg	37.4	29.9	43.4	187	66	121
North Bend	16.7	10.3	21.9	96	27	69
Ontario	12.1	11.7	12.7	51	24	27
Oregon City	39.7	26.3	52.3	250	80	170
Oswego	36.6	----	36.6	45	----	45
Pendleton	30.3	23.9	36.0	132	51	81
Portland	29.0	24.9	32.4	519	201	318
Ranier	34.0	20.4	44.4	124	32	92
Roseburg	31.5	24.3	39.2	177	70	107
Salem	37.1	20.7	49.8	145	35	110
Seaside	24.3	17.2	31.0	73	25	48
Silverton	30.1	22.5	36.6	201	69	132
St. Helens	27.9	15.2	37.8	121	29	92
The Dalles	33.5	27.2	39.6	218	87	131

It is difficult to explain why conditions should vary so widely in two similarly situated States. It has been suggested that many of the children examined in coast towns were newcomers, the goitrous conditions having existed prior to their coming to that locality. Investigation showed, however, that there was no distinction in goitrous conditions between the native born and recent residents. In the course of questioning it was learned that many native coast residents do not partake of sea food, certainly not to the extent that inland dwellers do. In view of the Oregon findings it may be concluded that there are exceptions to the general rule that simple goiter is comparatively infrequent along the seacoast. Furthermore, the malady is not necessarily more frequent in the interior of continents. Most interesting is the low goiter incidence in the extreme eastern portion of Oregon.

Age incidence of goiter in Oregon.—In Table 4 are shown the percentages of thyroid enlargements at each age between 8 and 20. The data for the ages 10 to 18 are shown graphically in the Chart. It will be noted that there is a gradual increase in the incidence of

goiter among boys from the age of 10 years until the peak is reached at 13 years. Thereafter, there is a steady decline in the incidence of the disease as the higher ages are reached. Among the girls, how-



Percentages of all grades of thyroid enlargement among 7,498 boys and 8,798 girls, by ages, in 32 localities in Oregon

ever, there is a steady increase in goiter incidence from the age of 10 to 18 years. Goiter, of course, prevails to the customarily greater extent among girls.

TABLE 4.—*Numbers and degrees of thyroid enlargements among 8,181 boys and 9,427 girls (by ages) in 32 places in Oregon*

Age	Boys								
	With enlarged thyroids						Palpable	Normal	Total
	Degree of enlargement				Total	Per cent			
	Very slight	Slight	Moderate	Adenomatous					
8	10	2		2	14	13.6	29	60	103
9	40			4	44	18.0	88	112	244
10	81	7		8	96	24.5	134	161	391
11	110	10		7	127	24.6	189	200	516
12	174	22		18	214	26.0	269	341	824
13	213	37		13	263	26.8	333	384	980
14	236	34	1	22	293	25.1	355	517	1,165
15	211	33		19	263	22.1	319	608	1,190
16	165	17	2	19	203	18.7	275	606	1,084
17	118	18	3	18	157	18.9	189	490	836
18	73	8	1	8	90	17.6	120	302	512
19	29	7		5	41	17.7	58	132	231
20 and over	12	4		4	20	19.0	15	70	105
Total	1,472	199	7	147	1,825	22.3	2,373	3,983	8,181
Per cent	18.0	2.4	0.086	1.8		22.3	29.0	48.8	100.0

TABLE 4.—*Numbers and degrees of thyroid enlargements among 8,181 boys and 9,427 girls (by ages) in 32 places in Oregon*—Continued

Age	Girls									
	With enlarged thyroids							Palpable	Normal	Total
	Degree of enlargement					Total	Per cent			
	Very slight	Slight	Moderate	Marked	Adenomatous					
8	17	1			4	22	17.7	38	64	124
9	42	5			7	54	19.5	98	125	277
10	87	10			10	107	22.8	161	202	470
11	121	23			13	157	27.6	187	225	569
12	195	65	2		32	294	33.4	277	309	880
13	275	95	7	1	52	430	37.7	352	361	1,143
14	323	144	17	1	63	548	38.5	386	411	1,345
15	348	151	14	1	55	569	40.8	371	454	1,394
16	355	171	19		57	602	43.4	376	408	1,386
17	261	140	23		50	474	45.0	248	331	1,053
18	148	82	8		24	262	47.0	147	149	558
19	43	22	3		10	78	46.7	43	46	167
20 and over	9	9	1		1	20	32.8	17	24	61
Total	2,224	918	94	3	378	3,617	38.3	2,701	3,109	9,427
Per cent	23.6	9.7	1.0	0.032	4.0		38.3	28.7	32.9	100.0

Influence of place of birth upon incidence of endemic goiter.—It is probable that endemic goiter is a disease of environment and that neither heredity nor previous place of residence have any considerable bearing upon thyroid status. This contention appears to be borne out by the results of the inquiry concerning the birthplaces of the children examined in Oregon. In Table 5 the birthplaces of the thyroid-normal and thyroid-enlarged children have been arranged according to certain geographical subdivisions.

The data presented in this table indicate that the percentages of thyroid-normal and also thyroid-enlarged individuals from different sections of the country have a striking similarity. This suggests, at least, that the children in a given place in Oregon are free from or susceptible to endemic goiter, irrespective of their places of birth. Children from nongoitrous regions apparently develop goiter when removed to a place in which the malady is endemic. However, the time element and other factors remain to be determined. The question may be considered an open one, with need for extended observations of precise nature before a conclusion is reached.

TABLE 5.—*Number and percentage of thyroid-normal and thyroid-enlarged children according to birthplaces, among 8,071 boys and 9,299 girls examined in Oregon*

BOYS

	Place of birth							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Total
Total number in group	2,472	2,401	1,176	1,050	579	115	278	8,071
Number thyroid normal	1,930	1,892	909	835	462	88	211	6,327
Number thyroid enlarged	542	509	267	215	117	27	67	1,744
Per cent normal	78.1	78.7	77.3	79.5	79.8	76.5	75.8	78.4
Per cent enlarged	21.9	21.3	22.7	20.5	20.2	23.5	24.2	21.6

GIRLS

Total number in group	2,833	2,811	1,334	1,135	708	144	334	9,299
Number thyroid normal	1,766	1,741	859	691	461	88	232	5,838
Number thyroid enlarged	1,067	1,070	475	444	247	56	102	3,461
Per cent normal	62.3	62.0	64.5	60.9	65.1	61.3	69.5	62.8
Per cent enlarged	37.7	38.0	35.5	39.1	34.9	38.7	30.5	37.2

Explanation:
(1) Born in town in which examination was made.
(2) Born in Oregon (outside of town in which examination was made).
(3) Born in area of greatest endemic goiter incidence, according to results of draft examinations (Idaho, Washington, Montana, Utah, and Wyoming).
(4) Born in area of moderate goiter incidence (Wisconsin, Michigan, North Dakota, Minnesota, West Virginia, Illinois, Iowa, Indiana, Nevada, Ohio, Colorado, and California).
(5) Born in area of slight goiter incidence (Pennsylvania, South Dakota, Virginia, Nebraska, Vermont, North Carolina, Kentucky, District of Columbia, Kansas, Arizona, New York, Missouri, South Carolina, Maine, Arkansas, Louisiana, and Oklahoma).
(6) Born in area of least goiter incidence (Maryland, New Mexico, New Hampshire, Mississippi, Delaware, Alabama, Rhode Island, Georgia, New Jersey, Massachusetts, Texas, Florida, Connecticut, and Tennessee).
(7) Born outside continental United States (Canada, Mexico, Philippines, etc.).

Relationship between endemic goiter and drinking water in Oregon.—Comprehensive determinations of iodine in Oregon water supplies are lacking. However, the few available analyses indicate a paucity of iodine in the water. McClendon reports 0.03 and 0.10 parts of iodine per billion parts of Bull Run water, with which Portland is supplied.[9] In a sample of water from the Clackamas River, glacial in origin, 0.06 parts of iodine per billion were found. It is interesting to note in this connection that the greatest amount of endemic goiter among girls was found in Oregon City, which uses the untreated water from the Clackamas River.

A sample of water from Marshfield, Oreg., examined by Dr. J. F. McClendon, of the University of Minnesota, since the thyroid survey was completed, failed to disclose the presence of iodine. The paucity of iodine in the drinking water or Oregon can be better appreciated when a comparison is made with the iodine content of waters in other sections of the country. Thus, the water of New York City has 2.50 parts of iodine per billion, while that of Stanford, Calif., has 105.80 parts per billion.

[9] McClendon, J. F., and Hathaway, J. C.: Inverse relation between iodine in food and drink and goiter, simple and exophthalmic. Jour. A. M. A., vol. 82, No. 21, p. 1668, May 24, 1924.

Although the inverse relation between goiter incidence and iodine content of water, as suggested by McClendon, appears to hold true in general, there are numerous exceptions to the general rule. One of these, the absence of iodine from the water used for drinking purposes in Provincetown, Mass., where goiter is almost nonexistent, has been indicated in a previous publication.[10] In this instance, of course, requisite iodine is undoubtedly ingested in sea food.

In Oregon a deficiency in iodine in both water and food is probably responsible in a large degree for the considerable incidence of simple goiter. Determinations of iodine in Oregon fruits and vegetables by McClendon have disclosed unusually small quantities of iodine.

Goiter and polluted water.—Inasmuch as McCarrison has recently reiterated his conviction that endemic goiter is due to the consumption of polluted water, the direct causative agent being an unidentified living organism, it is of interest to institute an inquiry concerning the safety of water supplies in Oregon.[11] Marine and Kimball, discussing this point, contend that "if water is a factor, it would seem that it is the absence rather than the presence of some substance which is to be considered, since goiter is associated with the purest of waters, chemically and bacteriologically, as, for example, in Portland, Oreg., and in Seattle and Tacoma, Wash., where there has been a rapid increase in goiter since these cities began to take their water supplies from the Cascade Mountains." [12]

The source and treatment of the water supplies of the cities and towns in which thyroid examinations were made are shown in Table 6. This information was supplied by the State board of health. It is evident from this table that practically all of these water supplies are safe for human consumption. In fact, many of the supplies, coming from uninhabited mountain water sheds, would appear to be safe without treatment. However, in order to provide an additional factor of safety, some of the supplies are filtered and chlorinated. It does not appear that any of the waters listed are polluted or unsafe. Neither is there evidence, with the exception of the Oregon City supply, that endemic goiter is more frequent in places in which no water treatment is instituted. Under the circumstances McCarrison's belief that this form of goiter is due to the consumption of polluted water can not be substantiated in Oregon.

---

[10] See footnote 6, p. 2838.

[11] McCarrison, Robert: An experiment in goiter prevention. British Med. Jour., Jan. 15, 1927, p. 94. Abstract in Public Health Reports, vol. 42, No. 12, Mar. 25, 1927.

[12] Marine, David, and Kimball, O. P.: The prevention of simple goiter in man. Jour. A. M. A., vol. 77, No. 14, pp. 1068-1070, Oct. 1, 1921.

TABLE 6.—*Sources and treatment of certain public water supplies in Oregon*

Place	Source of water supply	Treatment
Albany	Santiam River	Filtration and chlorination.
Ashland	Ashland Creek	Chlorination.
Astoria	Creek	None.
Baker	Mountain stream	Chlorination.
Bend	Deschutes River	Chlorination occasionally during rainy season.
Canby	Well	Chlorination.
Corvallis	Creek	Do.
Cottage Grove	Creeks	Do.
Dallas	Creek	None.
Eugene	Willamette River	Filtration and chlorination.
Forest Grove	Mountain stream	None.
Grants Pass	Rogue River	Chlorination.
Hillsboro	Sain Creek	None.
Hood River	Springs	
Klamath Falls	Wells	Chlorination.
La Grande	Mountain stream	Do.
Marshfield	Creek	Do.
McMinnville	Mountain creek	Do.
Medford	Fish Lake	Do.
Newberg	Small creek	None.
North Bend	Mountain creek	Chemical coagulation, filtration, and chlorination.
Ontario	Snake River	Filtration and chlorination.
Oregon City	Clackamas River	None.
Oswego	Bull Run Water	Same as city of Portland.
Pendleton	Springs	Chlorination.
Portland	Bull Run Lake	None.
Rainier	Small creek	Do.
Roseburg	Umpqua River	Chlorination.
Salem	Willamette River	Filtration and chlorination.
Seaside	Small mountain creek	None.
Silverton	Silver Creek	Chlorination.
St. Helens	Creek	Do.
The Dalles	do	Do.

Comparative goiter incidence in six States and one city.—Representatives of the Public Health Service have made extensive goiter surveys in the States of Minnestoa, Oregon, Colorado, Montana, Connecticut, and Massachusetts and in the city of Cincinnati. These surveys have included 55,179 boys and 70,307 girls in 192 localities. Five of the seven surveys were made by the same examiners, enabling comparisons which serve to indicate differences in general prevalence, degrees of enlargement, and geographical distribution. A comparative study of the data gathered during these surveys will be presented in a later article. The material secured to date shows that endemic goiter is most frequent in Minnesota and least frequent in Connecticut and Massachusetts, the other States and the one city occupying intermediate positions. Comparatively, the incidence of endemic goiter in Oregon, taken as a whole, is approximately the same as that in the city of Cincinnati.

SUMMARY

1. The thyroid survey in Oregon included 8,181 boys and 9,427 girls attending the senior and junior high schools and upper grades of the grammar schools in 32 localities.

2. A total of 5,443 thyroid enlargements, a percentage of 30.9, was noted among the 17,608 children examined.

3. Thyroid enlargements of all degrees prevailed among the boys to the extent of 22.3 per cent and among the girls to the extent of 38.3 per cent.

4. Among the 8,181 boys examined, 48.8 per cent of the thyroids were classified as normal, 29 per cent as palpable, and presumably normal, 18 per cent as very slightly enlarged, 2.4 per cent as slightly enlarged, and 1.8 per cent as adenomatous. There were also 7 moderate enlargements, a percentage of 0.086.

5. Among the 9,427 girls examined, 32.9 per cent of the thyroids were regarded as normal, 28.7 per cent as readily palpable and normal, 23.6 per cent as very slightly enlarged, 9.7 per cent as slightly enlarged, 1 per cent as moderately enlarged, and 4 per cent as adenomatous in character. There were only three marked enlargements, a percentage of 0.032.

6. The observation previously made that thyroid enlargements decrease in number as boys increase in age, while among the girls the involvements continue to increase in number up to the age of 18, was again sustained by the Oregon survey.

7. Endemic goiter is present to a considerable extent in the seacoast towns of Oregon, mere proximity to the ocean apparently failing to confer the relative freedom from the disease which prevails on Cape Cod, Mass. At the same time there is much less goiter in the seacoast towns in Oregon than in the cities and towns farther inland.

8. A district of low goiter incidence prevails in the central-eastern section of the State, around Ontario and Vale.

9. The places of birth and the places of previous residence are factors which do not appear to enter into the question of thyroid status among the children of a given community in Oregon.

10. There appears to be no relationship between the amount of goiter in a given community in Oregon and the treatment of the public water supplies by filtration and chlorination.

11. Endemic goiter prevails to a considerable extent in most portions of the State of Oregon. There is much less goiter in Oregon than in Minnesota, approximately the same amount as in Cincinnati, and much more than in Connecticut and Massachusetts.

12. It is probable that iodine prophylaxis has materially altered the usual incidence of goiter in many localities. It may no longer be possible to determine natural goiter rates.

SUGGESTIONS

It is impracticable to suggest a plan for dealing with the endemic goiter problem that will be universally applicable. Each community must decide how the local indications may best be met. An agreement as to the method to be employed is obviously essential.

Thus, the public health officials, medical society, school board, and representatives of the general public should be in agreement as to the procedure to be instituted. Moreover, goiter prophylaxis should come at the request of the intelligent citizenry, following preliminary educational measures, rather than be thrust upon the people without adequate explanation.

The following measures appear to be warranted by the findings in Oregon and consequently are recommended for adoption:

1. Physicians should be encouraged, through suitable educational measures, to apply prophylaxis during pregnancy and lactation, using the plan advocated by Marine.[13]

2. By means of a survey, made in conjunction with the annual physical examinations in the schools, the children should be divided into two groups, one containing the thyroid-normal and the other the thyroid-enlarged individuals.

3. Children with thyroid enlargements should be referred to physicians skilled in treating such conditions or special arrangements should be made for free treatment by physicians selected by competent authorities.[14]

4. Thyroid-normal children should receive individual oral prophylaxis, preferably in connection with the medical inspection system in the schools.

COMMENT

Goiter prophylaxis may be specific or general. Each method has its merits as well as its shortcomings. Individual oral prophylaxis is undoubtedly the preferable procedure, for nominal supervision and accurate dosage are assured. However, experience has shown that unless the recipients of individualized doses of iodine are carefully and constantly followed, the necessary medication will not be ingested with essential regularity.

It is obvious that, until some general automatic method is devised for supplying the minute doses of iodine needed as a goiter prophylactic, the success of the movement will be interfered with to a marked degree. This knowledge has been responsible for attempts to make iodine universally available in water and table salt, the two most widely used foods. The iodization of drinking water for the prevention of simple goiter appears to be a theoretically correct procedure. However, proof of the efficiency and harmlessness of this measure is lacking. Iodized table salt, a prophylactic of distinct

[13] Marine, David: The importance of our knowledge of thyroid physiology in the control of thyroid diseases. Arch. of Int. Med., vol. 32, No. 6, p. 811, December, 1923.

[14] Dr. H. S. Plummer, consultant in goiter studies, United States Public Health Service, commenting in a personal communication, upon this recommendation, expresses the opinion that prophylaxis would probably meet the requirements of a large percentage of the thyroid enlargements noted during the Oregon survey.

promise, is under a cloud of suspicion at the present time because of alleged harmful effects exerted upon hypersusceptible individuals. While some of these reports are undoubtedly authentic, it is believed that the incidence of endemic goiter has been reduced in an encouraging degree in some localities by the general use of iodized table salt. It can only be hoped that the iodine content of salt can be so adjusted as to be efficient in preventing simple goiter and, at the same time, be incapable of exciting a diseased gland to hyperfunction. Until such a scientific readjustment of the iodine content has been made it may be best not to advocate the widespread use of artificially iodized table salt. Persons with goiters should certainly be cautioned against the use of iodized salt, for it is inconceivable that existing thyroid enlargements will be benefited by the ingestion of this commodity. On the other hand, it is likely that some forms of goiter may be made worse by the unrestricted use of iodized salt.

There is urgent need for restating the principles upon which goiter prophylaxis rests. Marine has repeatedly stressed the need for making a distinction between goiter due to absolute and relative deficiencies of iodine. The absolute deficiency of iodine is due to a shortage or absence of this essential element in soil, food, and water. On the other hand, a goiter due to a relative deficiency of iodine is caused by various infections and intoxications, by puberty, pregnancy, and lactation, and by partaking of abnormal food combinations. Furthermore, the essentials of successful goiter prophylaxis, namely, efficiency, harmlessness, palatability, minute dosage, low cost, and ease of administration of the iodine preparation employed, should be clearly understood.

Obviously it is desirable, though difficult, to establish a satisfactory line of demarcation between prophylaxis and treatment on the basis of thyroid size. Prophylaxis, of course, concerns the maintenance of normal thyroid equilibrium, while treatment aims to restore an enlarged gland to normal or alleviate the symptoms arising from thyroid disease. Normal and readily palpable thyroids classed as normal undoubtedly furnish the ideal conditions for prophylaxis. Whether the very slight thyroid enlargements, believed by the writer to constitute a departure from normal, though possibly physiological in character, would respond to routine prophylaxis, is open to question.

The expectation that the minute quantity of iodine capable of maintaining normal thyroid equilibrium will likewise reduce existing enlargements has caused much disappointment, dissatisfaction, and even condemnation of prophylactic procedure. If prophylaxis is to occupy its rightful position, the limitations of the measure must be better and more generally understood. While very slight thyroid enlargements may at times be reduced to normal by iodine in prophy-

lactic doses, it is believed to be more satisfactory to individualize in the treatment of this as well as the more marked degrees of enlargement. Finally, it may be noted that the treatment of goiter, being frequently disappointing in its results, is not lightly to be undertaken by the inexperienced and unskilled.

PUBLIC HEALTH IN ENGLAND AND WALES, 1926

In his annual report to the Minister of Health, Sir George Newman, chief medical adviser, stresses the importance of the sanitary duties of the local authorities in the nation's welfare and enumerates seven important public-health services which have contributed to the excellent health conditions in England, viz, notification, maternity and child welfare, school medical services, national health insurance, poor-law medical services, factory acts, and special campaigns against such diseases as smallpox, tuberculosis, venereal diseases, and mental diseases. "In spite of an enormous increase of population," he says, "without increase of home territory, the total death rate and infant mortality of the nation have been halved inside four generations. The mortality of childhood is one-third of what it was 80 years ago, and the expectation of life to-day is 17 years longer than in 1876."

The indirect consequences of the war are shown in the decrease in the proportion of males aged 20–40 from 155 per 1,000 in 1911 to 141 in 1921. The birth rate for 1926 was 17.8, the lowest on record, but this is compensated for in part by a low infant mortality, 70 per 1,000 live births in 1926.

The death rate in 1926 was 11.6 per 1,000 population, representing 19,037 fewer deaths than in 1925. Increase in the mortality from diphtheria, cancer, and diseases of the heart was more than counterbalanced by the decline in deaths from influenza, pneumonia, bronchitis, and diseases of infancy. All classes suffered severely from whooping cough; and the incidence of diphtheria, poliomyelitis, and smallpox increased.

In England and Wales (population, 39,067,000) during 1926, among insured persons alone, a total of 28,250,000 weeks' work (equivalent to 12 months' work of over 540,000 people) was lost through sickness.

In regard to accuracy of statements of causes of death the chief medical adviser considers that it is hardly too much to say that the fabric of the art and practice of preventive medicine is founded upon the accuracy of the registration of the causes of death. He says that "unless and until a nation has adopted a sound system of vital statistics, 'the bookkeeping of humanity,' which is both uniform and universal, there can be no evaluation of assets and liabilities."

The following table shows the number of deaths and proportion per 1,000 deaths, from principal causes, in England and Wales in 1926:

Number of deaths from principal causes and proportion per 1,000 deaths from all causes in England and Wales, 1926

Cause of death	1926	
	Number of deaths	Proportion per 1,000 deaths from all causes
Measles	3,483	8
Whooping cough	4,118	9
Diphtheria	2,994	7
Influenza	8,936	20
Tuberculosis of respiratory system	30,108	66
Other forms of tuberculosis	7,417	16
Cancer (malignant)	53,220	117
Diseases of the nervous system and sense organs	46,569	103
Diseases of the heart	64,465	142
Other diseases of the circulatory system	20,739	46
Bronchitis	30,187	67
Pneumonia (all forms)	32,339	71
Other diseases of the respiratory system	5,303	12
Diarrhea and enteritis	8,415	19
Other diseases of the digestive system	19,234	42
Nonvenereal diseases of the genito-urinary system	19,083	42
Premature birth and diseases of early infancy	19,012	42
Old age	24,564	54
Violence (all forms)	18,620	41
Other causes	34,998	76
Total	453,804	1,000

MORBIDITY

Smallpox.—In 1926 there were 10,146 cases of smallpox notified in England and Wales, and the report states clearly that the time has come for the public to choose between smallpox and vaccination.

Enteric fever.—There were 2,739 cases of enteric fever, a slight decrease as compared with 1925.

Diphtheria.—In 1926 there were 51,069 cases of diphtheria, with 2,994 deaths. Local authorities are advised to aim primarily at offering protection to the preschool population through infant welfare or special clinics.

Influenza.—A mild epidemic of influenza broke out in London early in 1926 and spread slowly northward. The death rate was low. Among the researches carried out under the auxiliary scientific investigation fund was the prosecution of a study of the respiratory flora of apparently normal persons. There was found to be no increase in the pneumococcus during the late autumn of 1925, although there was some increase in Pfeiffer's bacillus. In 1926, the situation completely changed; the pneumococcus rose from under 10 per cent to 60 per cent between October and November, and remained high up until the end of January. Pfeiffer's bacillus also increased, less notably, but in January suddenly became very prevalent. It

would thus appear that a sudden increase in the frequency of healthy carriers of pneumococci precedes an epidemic manifestation of influenza.

Infections of the nervous system.—While the reported prevalence of cerebrospinal fever (meningococcus meningitis) and lethargic encephalitis was less than in 1925, there was a striking increase in poliomyelitis. In a review of poliomyelitis it is concluded that Wickman's original findings in favor of contact transmission have been amply confirmed.

Cancer.—The mortality rate for cancer was 136.2 per 100,000. A study of cancer indicated that many supposed predisposing conditions had no influence in encouraging cancer growth, while the predisposing significance of injury, infertility, and chronic mastitis was confirmed. A form of "follow-up" system is being instituted in the large county hospitals. All clinical data collected are submitted to careful analysis. Where deductions are adequately supported, reports are prepared for practitioners.

Tuberculosis.—Notification of cases of tuberculosis is inadequate. It is stated that many cases are not notified before death and still more only during the last six months before death from the disease. The decline in this disease is attributed to the public-health campaign against it. On February 1, 1927, there were 442 dispensaries in England, 69 special centers, and 367 tuberculosis officers. The time is considered opportune for a few colony schemes to be tried experimentally. The second report on "sanocrysin" from the Medical Research Council concluded that it is of value in certain carefully selected cases only.

Venereal diseases.—At the close of 1926 there were 181 treatment centers in England and 9 in Wales—3 less than in 1925. These centers were staffed by 391 approved venereal disease officers. The returns from these centers show a total of 2,008,063 attendances, some other than venereal diseases, however. The total number of persons having venereal disease dealt with for the first time was 58,752.

Maternity and child welfare.—The forecasts of the effect of the strike on the physique and vigor of school children were not fulfilled—partly as a result of the provision of meals at school and the distribution of free milk. The maternal mortality rate, 4.12, showed a slight rise. There are now 772 prenatal centers, 105 homes for unmarried mothers, and 2,324 infant welfare clinics. The report notes that the money spent on centers and health visitors brings the greatest return on expenditure for maternity and child welfare.

Research work.—Published studies on the hemolytic streptococci support the view that these organisms are the cause of scarlet fever.

Studies were also made on the virulence of pneumococci and immunity. Other research work included school anthropometry, the factors in puerperal mortality, incidence of disease in cotton spinners in wet and dry sheds, and health in the printing industry.

A disquieting increase was noted in deaths from anesthesia, and it is intended to secure data giving the fatality ratio and to relate it to different anesthetics and methods of administration.

The Chief Medical Adviser notes in his summary that "the progress of a nation's health is * * * a passage through the centuries, and founded mainly on an exclusive regard to the immediate interests and problems of human survival. We are dealing with the proposition of remaining alive in the world, of enlarging the content of life, of increasing its capacity * * *. Can any enterprise be greater? There is hardly a department of the State which will not, consciously or unconsciously, make a contribution to the condition of the public health."

POLIOMYELITIS CASES REPORTED BY STATES, OCTOBER 16 TO NOVEMBER 5, 1927, AND CORRESPONDING WEEKS OF 1925 AND 1926

The following table gives a comparison of the telegraphic reports from State health officers for the three-week period from October 16 to November 5, 1927, with the reports from the same sources for the corresponding period of the years 1925 and 1926. This table is a continuation of tables appearing in the Public Health Reports October 7, 1927, page 2452, November 4, 1927, page 2726, and November 11, 1927, page 2794. Reports for the week ended November 12, 1927, will be found on page 2866 of this issue.

Cases of poliomyelitis reported by State health officers October 16–November 5, 1927, compared with reports for the corresponding weeks of 1925 and 1926

State	Week ended—								
	Oct. 22, 1927	Oct. 23, 1926	Oct. 24, 1925	Oct. 29, 1927	Oct. 30, 1926	Oct. 31, 1925	Nov. 5, 1927	Nov. 6, 1926	Nov. 7, 1925
Alabama	2	1	2	1	0	0	0	1	1
Arizona	4	0	0	1	0	0	0	0	0
Arkansas	2	2	0	2	0	1	1	0	0
California	32	6	9	30	1	4	35	5	11
Colorado	7	0	0	6	0	1	7	1	0
Connecticut	9	1	1	9	4	0	7	0	1
Delaware	0	0	0	0	0	0	1	0	0
District of Columbia	3	0	0	1	1	0	0	1	1
Florida	0	0	1	3	0	0	1	0	1
Georgia	1	0	2	0	0	2	0	0	2
Idaho	0	0	0	2	0	-------	8	0	-------
Illinois	37	5	15	25	4	7	14	2	11
Indiana	11	2	2	19	2	3	11	2	7
Iowa	-------	0	9	8	0	-------	3	0	-------
Kansas	8	0	5	14	3	6	4	1	4

Cases of poliomyelitis reported by State health officers October 16–November 5, 1927, compared with reports for the corresponding weeks of 1925 and 1926—Con.

State	Week ended—								
	Oct. 22, 1927	Oct. 23, 1926	Oct. 24, 1925	Oct. 29, 1927	Oct. 30, 1926	Oct. 31, 1925	Nov. 5, 1927	Nov. 6, 1926	Nov. 7, 1925
Louisiana	2	0	0	2	0	1	0	1	3
Maine	13	1	0	6	1	0	5	0	0
Maryland	2	2	19	3	1	4	1	1	1
Massachusetts	99	9	10	66	6	4	56	10	5
Michigan	18	0	0	18	0	0	14	0	0
Minnesota	8	0	17	6	2	18	3	0	5
Mississippi	2	2	0	0	1	0	3	0	0
Missouri	9	1	2	12	0	4	7	0	1
Montana	2	0	3	0	0	0	1	0	0
Nebraska	5	0	16	14	1	7	10	3	2
New Jersey	11	3	3	8	1	2	9	2	4
New Mexico	7	0	0	3	0	1	2	0	1
New York	32	23	28	31	14	6	23	9	23
North Carolina	1	2	1	1	2	0	2	3	2
North Dakota	0	0	3	0	0	1	----	0	3
Ohio	46	----	----	51	----	----	54	----	----
Oklahoma	10	1	1	7	0	0	3	2	1
Oregon	31	1	0	26	1	0	20	1	2
Pennsylvania	45	9	----	18	3	----	18	6	6
Rhode Island	3	2	----	4	----	0	3	0	1
South Carolina	3	3	3	2	10	4	4	2	2
South Dakota	5	0	2	6	0	2	7	1	0
Tennessee	7	0	----	2	0	----	4	0	----
Texas	9	0	1	3	0	0	11	2	2
Utah	0	0	1	2	1	0	2	0	1
Vermont	7	0	5	6	0	2	----	0	2
Virginia	0	0	1	2	0	0	0	0	0
Washington	22	0	7	21	0	9	26	1	4
West Virginia	17	0	0	9	2	0	12	0	0
Wisconsin	8	5	7	9	4	14	8	2	7
Wyoming	1	0	0	1	0	0	0	2	0

COURT DECISIONS RELATING TO PUBLIC HEALTH

Reporting of suspected cases of communicable diseases; quarantine where health official had reasonable grounds to believe public health required same.—(Missouri Supreme Court, Division No. 1; McGuire *v.* Amyx et al., 297 S. W. 968; decided September 16, 1927.) The plaintiff, a 7-year old girl, accompanied her mother to the office of the family physician, the purpose of the visit being the examination and treatment of the mother. The physician's attention was attracted to a "breaking out" on the child, and he concluded that she was afflicted with smallpox. Upon his report to the city health authorities the child and mother were taken in an ambulance to the dispensary where the chief diagnostician of the division of health of the city examined the child and, having diagnosed the case as smallpox, committed her to the quarantine hospital. At the hospital the child was confined in the smallpox ward with persons suffering from smallpox, and, after remaining there for several days, was discharged as cured. A few days after her discharge the child was taken ill, and, the sickness being diagnosed as smallpox, was again

committed to the hospital where she remained until again discharged as cured. An action for damages was brought against the family physician and the chief diagnostician, it being alleged that, at the time of the first commitment, the plaintiff was suffering from no disease but contracted smallpox while in the hospital the first time. The evidence for plaintiff tended to show that while in the hospital the first time she was not sick and spent the time playing in the yard and helping the nurses. There was a verdict and judgment in the trial court for the defendants, which judgment was affirmed by the supreme court. The following is excerpted from the appellate court's opinion:

* * * The public health is of the greatest concern to all. By law its keeping rests with the attending physicians, householders, and health officers. Public policy favors the discovery and confinement of persons afflicted with contagious diseases, and we think it is not only the privilege, but the duty, of any citizen acting in good faith and on reasonable grounds to report all suspected cases that examination may be made by experts and the public health thereby protected. We hold this may be done without being subjected to liability for damages. To hold otherwise would not only invite indifference at the expense of society, but the fear of liability would well-nigh destroy the efforts of officials to protect the public health. Any citizen may without malice and with probable cause bring about the arrest and prosecution of another without liability in damages. We think one who reports a suspected case of a contagious disease to the health officers in good faith and on reasonable grounds should have like protection. Respondent Amyx [the family physician] did not commit appellant to Koch's Hospital. She was committed by the proper city authority. Amyx's interest in making the report was that of a citizen interested in the public health and the health officers had a corresponding interest. The report of Amyx to the health department may be likened to communications classified as qualifiedly privileged in libel and slander cases. * * *

The supreme court also approved, as correctly declaring the law, an instruction to the jury that the chief diagnostician was not liable if he had reasonable grounds to believe that the public health required that the plaintiff be quarantined to prevent other persons from becoming infected with smallpox.

Workmen's compensation act construed.—(Washington Supreme Court; Depre *v.* Pacific Coast Forge Co., 259 P. 720; decided October 4, 1927.) The plaintiff was employed for 23 months by the defendant in a room where there was a tank into which was poured each day a large quantity of sulphuric acid and muriatic acid. He brought an action for damages, claiming that gases and vapors were released in the room where he worked which inflamed and affected his lungs and lessened his resistance to tuberculosis, and that, as a result, he contracted the said disease, which permanently incapacitated him. The complaint charged negligence in failing to provide the workroom with sufficient ventilation, and alleged a request for such ventilation and a promise by the defendant to provide it. The

defendant insisted that the workmen's compensation act was a complete defense to the action, and that, by its terms, plaintiff was entitled to compensation from the State. The supreme court pointed out that the said act had been in existence some 16 years and that this was the first time it had been contended that a disability such as plaintiff suffered came under its provisions, and held that the act was no defense to the action, stating:

* * * We think it sufficient to adhere to our former holding that "fortuitous event" and "accident" as used in the act are synonymous and that to receive compensation from the State there must be some unexpected or sudden happening from which a report or claim can be made which is referable to a definite time, place, and cause.

Action against city for negligent disposal of sewage.—(Oklahoma Supreme Court; City of Lawton *v.* Wilson, 259 P. 650; decided September 27, 1927.) An action was brought against the city of Lawton for damages on account of alleged negligence in the disposal of sewage. The plaintiff alleged that the city had for 15 years discharged its sewage into a certain creek, which ran across plaintiff's farm, in such a manner as to cause pollution of the waters. The defendant contended that the statute of limitations was a bar to the action, but the supreme court, after quoting from several cases, said:

From the above authorities it seems clear to us that, when the plaintiff below by competent evidence showed that the defendant was negligent in the manner in which it operated the disposal plant, and it was further shown that by the use of labor and money the city could have repaired the defect in said plant, and said acts of negligence occurred within two years last past prior to the commencement of plaintiff's cause of action, under this showing by the plaintiff the statute of limitations could not be pleaded in bar of plaintiff's right of recovery.

PUBLIC HEALTH ENGINEERING ABSTRACTS

The Removal of Household Garbage in Paris. Anon. *Journal of the American Medical Association*, vol. 89, No. 4, July 23, 1927, p. 305. (Abstract by R. J. Morton.)

During the last 30 years the garbage of Paris has been deposited in zinc boxes, uncovered, which were placed on the sidewalks every evening, where they remained from 8 to 10 hours publicly displayed and subjected to ransacking by ragpickers. Numerous complaints to the public health council have been unavailing until recently, when it was decided that after January 1, 1929, all garbage boxes must be covered. It was further decided that boxes must not be placed on the sidewalks earlier than 5 a. m. and that an adequate fleet of automobile trucks, having closed bodies, should be organized to start at 5 o'clock each morning, rapidly collecting the garbage and hauling it out of the city.

Disposal has been effected by burning the garbage and forming the calcined residue into bricks for construction purposes, an expensive process requiring large crews. Experiments are being started at Versailles, investigating the digestion process introduced in Florence by the Italian engineer, Beccari, with a view to

adoption of this process for Paris if the results of the experiments promise good returns. The claims for the process state that it is inexpensive to operate, requires 40 days' digestion in 20-cubic-meter concrete tanks, yields a pulpy fertilizing substance containing 1.3 per cent nitrogenous products, requires small area for plant, and can be built in immediate proximity to the city without trouble from odors. Final judgment as to the value of this system will be based on results of the present study.

A Study of Refuse Collection and Disposal in Sydney, Australia. R. K. Newman, *American City*, vol. 37, No. 1, July, 1927, pp. 61–63. (Abstract by A. S. Bedell.)

This article is an abstract of Mr. Newman's comprehensive report on the subject. The refuse burnt in the destructors in Sydney is of three types—household refuse, early morning refuse, and trade refuse. Household refuse represents 60 per cent of the total and consists of garbage, dirt, ashes, cans, and paper, weighing 750 to 800 pounds per cubic yard. Early morning refuse, the refuse collected between 6.30 and 8.30 a. m., is intermediate in composition between household and trade refuse, consisting of shop, office, cafe, and hotel refuse, averaging 36 per cent paper and weighing 500 pounds per cubic yard. Refuse from municipal fish, fruit, and vegetable markets is converted by a private company into fertilizer.

Owing to mixed collection, the results of analyses of Sydney refuse differ from those prevailing in America, being 44.7 per cent water, 29.7 per cent combustible, and 25.6 per cent ash, and having a calorific value of 3,007 British thermal units. The recommended method of disposal is separation-incineration, and the specifications for a new destructor should provide that it burn, without additional fuel, mixed refuse containing not over 900 pounds of water per ton and not less than 800 pounds of combustibles.

Purification of Waste Water in Industry, Especially of Water from Dye Works. Dr. Drechsler. *Gesundheits-Ingenieur*, vol. 46 (1926), pp. 709–715. (Abstract by J. K. Hoskins.)

Liquid wastes of varied character are produced from the many processes employed in the textile trades. For a clearer understanding of their composition, some of these manufacturing processes are briefly described, such as wool scouring and washing, mercerizing, linen bleaching, and cotton dyeing and bleaching. Representative analyses are presented of the wastes resulting from the latter two processes.

The greater part of the impurities contained in these waste waters is of colloidal formation, for the removal of which two procedures are available—precipitation or absorption by cinders or other filtering material. After setting forth the general requirements of treatment plants of this nature, the author divides existing installations into three classes: (1) Those which retain the combined wastes in settling basins and, depending on the receiving stream, may or may not employ chemical precipitants; (2) those in which the concentrated wastes are separated from the more dilute ones and either receive chemical treatment or plain sedimentation previous to mixing with the dilute wash waters; and (3) those which clarify the combined wastes by filtration through cinders, sand, etc., with or without previous sedimentation in basins.

A description of existing installations of each of the above classes treating various textile and dye wastes is given, together with operating data and analytical results.

The Significance of Nitrogen Determinations in Sanitary Analysis. L. L. Necol and A. M. Buswell. *Journal American Water Works Association*, vol. 17, No. 3, March, 1927, pp. 388–395. (Abstract by M. S. Foreman.)

Free ammonia is perhaps the oldest of the nitrogen methods in sanitary analysis. As an end product in bacterial metabolism of nitrogenous compounds, ammonia determinations may signify remote pollution of water by organic matter. Many difficulties have arisen in accurately determining ammonia by distillation. It is impossible to distinguish sharply between preexisting free ammonia (of ammonia salts) and that formed by the alkaline permanganate, the albuminoid ammonias. Direct nesslerization followed by copper sulphate clarification, although quite accurate, is an uncertain procedure when dealing with a mixture like sewage. Sulphur compounds and aldehydes produce too dark a color; protective colloids like proteins and peptones, which are not removed by $CuSO_4$ treatment, inhibit color formation.

Urea, during permanganate digestion, is incompletely hydrolyzed. It was soon recognized that albuminoid ammonia nitrogen represented only a fraction of the total, and various multiples of it have been adopted as measures of total nitrogen. The authors conclude that the Kjeldahl method for total nitrogen determinations is preferable. Since free ammonia may be subtracted from it to give total organic nitrogen, in this way amine-nitrogen is included in the total nitrogen.

Summary.—(1) The authors' analyses show that the main nitrogenous components of sewage are urea and ammonia; (2) these components bear no constant relation to the oxidizable organic matter; (3) the albuminoid ammonia test, since it measures an indefinite portion of urea, is worthless; (4) free ammonia also includes some of the urea and is erroneous if distillation is used; (5) if nitrogen data are desirable, suitable methods could be chosen for nitrogenous constituents.

Efficiency of Chlorinating Sewage Tank Effluents. W. V. D. Tiedeman. *Engineering News-Record*, vol. 98, No. 23, June 9, 1927, pp. 944–948. (Abstract by G. H. Hazlehurst.)

This article takes up the practicability of chlorination of sewage and the advantages of control by the orthotolidine test for residual chlorine.

For the purpose of determining the bacterial efficiency of chlorination of sewage tank effluent under varying seasonal conditions, the sewage treatment plant at Huntington, Long Island, was operated during 1926 on a residual chlorine basis, using the orthotolidine test.

A record of the findings is given in detail, with the following conclusions being drawn from the work: (1) The method of operating sewage chlorinating plants by setting a fixed minimum dosage to be used the year round is inefficient or uneconomical, or both; (2) the orthotolidine test for residual chlorine, while perhaps not giving an exact quantitative measure of the free chlorine in concentrated sewages, is a valuable index and offers a method of control by nontechnical operators; (3) liquid chlorine, when applied in sufficient quantities to produce a residual of 0.2 p. p. m., as indicated by the orthotolidine test, will effectively disinfect a poorly clarified tank effluent from concentrated domestic sewage; (4) contact periods in excess of five minutes are nonessential where residual chlorine is maintained, except for the purpose of smoothing out minor fluctuations in quantity and quality of the sewage; (5) the fine solids in tank effluents are penetrated by chlorine when a residual of 0.2 p. p. m. or more is maintained, and efficient disinfection results; (6) chlorination of the tank effluent at Huntington results in a noteworthy *permanent* reduction in the biochemical oxygen demand of the effluent; (7) there are various means of practically applying chlorine control through use of the orthotolidine test to effect varying degrees

of economy; (8) on large plants the saving in chlorine may be sufficient to justify the additional labor necessary to provide hourly control by the orthotolidine test.

Effect of Chlorine on Nitrogenous Bodies in Sewage Effluent Treatment. Frank E. Hale. *Water Works Engineering*, vol. 80, No. 16, August 3, 1927, pp. 1135–1136. (Abstract by L. H. Enslow.)

Chlorine applied to sewage effluents at the Mount Kisco and Bedford, N. Y., plants has been shown to destroy certain nitrogenous bodies. Apparently the chlorine replaces the nitrogen and thus forms chlorinated end products from the amines and similar compounds. Kjeldahl determination of organic nitrogen would seem to indicate that organic nitrogen bodies have been so changed in composition by chlorination that losses in recoverable organic nitrogen varying from 47 per cent to 94 per cent occur. In addition to this displacement of organic nitrogen the "free" ammonia content is reduced to a considerable extent by chlorine. Apparently the nitrite nitrogen is displaced rather than oxidized.

The basic reaction which explains the observed results is most probably

$$2NH_3+3Cl_2=6HCl+N_2$$

with the probability that various intermediate products are first formed.

The conclusion drawn is that chlorine not only forms substitution products with amino compounds, but actually destroys them. It is likewise suggested that in all probability "sterilizing action is due to the destruction of the amino compounds in the protoplasm."

Antimalaria Work at Moascar, Egypt, in 1925 and 1926, and the Results Compared with the Previous Two Years. Kenneth Comyn. *Journal of the Royal Army Medical Corps*, vol. 49, No. 1, July, 1927, pp. 14–26. (Abstract by C. H. Kibbey.)

The author prefaces a comprehensive study of the malaria control problems presented in the immediate vicinity of Moascar, and a report of experiences of the Royal Army Medical Corps for the years 1923, 1924, 1925, and 1926, with a historical sketch of the Suez Canal Zone from 1877. Malaria statistics covering both civil and military population are given and a report of the Anti-Malaria Commission of 1919 is quoted.

Antimalaria work at Moascar seems to have been started in earnest by Maj. N. Low in 1923, and consisted mainly of draining and oiling certain local marshlands and supervising cultivated, irrigated areas in the vicinity to prevent mosquito breeding. The present antimalaria scheme, combining antimosquito work and quinine prophylaxis, was begun in November, 1924.

The author here enters a discussion of the general principles involved in a malaria control campaign, together with a description of the many phases of the local problem, and summarizes the measures adopted for relief. A mosquito squad, consisting of a chief and three men, was organized and trained to search out and destroy all larvæ breeding in the camp, keeping a record of all findings. Mosquitoes were captured and examined to identify species and determine proportionate numbers of each variety. Each malaria patient was given 30 grains of quinine daily for a period of three weeks and then 10 grains daily for six days out of every seven for a further period of two months. Every man in each military unit with a history of malaria was given 10 grains of quinine once each week from May 1 to October 31. All night guards were given 5 grains of quinine when going on duty and another 5 grains on being relieved the following morning.

The incidence of malaria for the four years under review is shown by tabulation and graphic chart, the influence of previous infection in a unit is comprehensively discussed, and a comparison is made of recurrence by units. Five

recurrences were noted among a total of 164 men who were previously infected, in four units. The seasonal incidence is not associated with the rainy season, but with a rising temperature. The swamps from which *Anopheles* invade Moascar exist all the year round. *Anopheles* mosquitoes begin to come in by the middle of July, and are at their maximum in August before the rising of the Nile with its consequent flooding of swamp area. The author believes the main factor in *Anopheles* production around Moascar to be "the temperature, and more especially the mean temperature of the ground."

No *Anopheles* mosquitoes were found in camp during the winter months. They began to appear in July and increased in number to a maximum during August to October and disappeared entirely by December. *Anopheles* larvæ were never found in the camp area, notwithstanding that sump pits, grease traps, etc., afforded excellent breeding places for the culicines. The anophelines show a marked preference for clear water, whereas the culicines, especially *C. pipiens*, may be found even in sump pits, grease traps, and any dirty, foul water.

The *Anopheles* varieties identified are *A. pharoensis* and *A. multicolor*, of which the former are far the more abundant, with *A. multicolor* appearing only in small numbers and late in the year. The number of mosquitoes found in the wards varies with the month and without reference to weather conditions. Prevailing wind direction did not appear to influence the influx of anophelines. It is probable that anophelines may come many miles from their breeding grounds irrespective of wind direction.

The author concludes that: (1) Malaria can not be stamped out completely; (2) attention to source of infection (infected individual) and the treatment of cases are more important than trying to exterminate the carrier (mosquito); (3) a regiment with a previous malarial history should not be a source of danger if strict supervision is maintained; (4) prophylactic quinine is of great benefit if the source of infection is known, and it can be given to persons known to be exposed as in case of night guards on duty near an infected village; (5) most carefully planned antimalarial measures may be annulled by failure of a unit to carry them out.

A New Species of Anopheline, A. pseudojamesi, Common in Bengal. C. Strickland and K. L. Chowdhury. *Indian Medical Gazette*, vol. 62, No. 5, May, 1927, pp. 240–243. (Abstract by C. T. Butterfield.)

New species described, of which the larvæ resemble and were at first thought to be *pulcherimus*. The adult was at first mistaken for *jamesi*. Later they were quite generally found and identified as a new species.

Structural descriptions of the larvæ and adult are given with descriptive charts.

Flies and Their Eradication. W. C. Carr. *U. S. Naval Bulletin* vol. 25. No. 3, July, 1927, pp. 528–542. (Abstract by J. L. Robertson.)

This article treats of the order DIPTERA, family *Sarcophagidæ*. Herein is discussed the characteristics, construction, and life habits of the blue bottle and green bottle flies, the screw-worm fly, and the common house fly.

The house fly lays about 120 eggs at one time in small irregular clusters, preferably in moist, fermenting horse manure, but also decaying vegetable matter in absence of the former. These eggs, oval, elongated, and glistening white, hatch in 8 to 10 hours under favorable conditions. The white conical larva (maggot) sheds its skin twice, in four or five days, and burrows just beneath the surface of the earth. The outer skin hardens and turns brown. This pupa stage lasts for four or five days and then the adult fly emerges. Flies do not hibernate during the winter months; winters are passed in the larva and pupa states.

Eradication efforts must be concentrated along two lines, viz, (1) prevention of breeding and (2) destruction of the adult fly. A workable line of campaign is—

I. Prevention of fly breeding:
  A. Efficient waste disposal.
    1. Garbage—houses, containers, collecting, and disposal.
    2. Rubbish.
  B. Care of barns, pens, and dovecotes.
    1. Screening.
    2. Manure.
    3. Spraying.
  C. Care of streets.
  D. Care of ravines.

II. Destruction of adult fly:
  A. Swatting.
  B. Trapping.
  C. Use of chemicals.

This article treats further and at length of the construction, care, and operation of garbage houses, incinerators, barns, pens, and dovecotes. Diagrams are given. Care of streets and the campaign against the adult fly are discussed.

Conclusions.—(1) Breeders and breeding materials are the real sources of all flies of a season; (2) attacks directed toward eradication of the adult are only of secondary importance; (3) in order to diminish the fly nuisance, the breeding must be prevented or eliminated; (4) coal tar, creosote oil containing 14 to 18 per cent coal-tar acids and 4 per cent bases, was the most effectual spray used in the campaign, being both a fly repellent and larvicide; (5) a thorough and early study of the problem must be instituted to insure a successful antifly campaign.

The Use of Fishes for the Control of Mosquitoes. Sunder Lal Hors. *Indian Medical Gazette*, vol. 62, No. 4, April, 1927, pp. 187–188. (Abstract by P. S. Fox.)

The writer laments the fact that there are no fish hatcheries within reasonable distances from which to procure larvicidal fishes. He brings out the need of investigation to determine the various types of native fishes, of a larvicidal character, which could be propagated in lieu of importing fishes which might lose their larvicidal properties in case of a change of environment. "Biological control" by the introduction of hostile insects, etc., is favored instead of spraying or fumigation.

The Biological Control of Impounding Reservoirs. Carl Wilson. *American Water Works Journal*, vol. 17, No. 2, February, 1927, pp. 247–252. (Abstract by W. L. Havens.)

The knowledge of biological factors is becoming very important both in the design of storage reservoirs and in the development of new ways for improving water under storage. In Southern California, where the reservoirs often receive no influx of new water for months at a time, stratification of the water takes place on account of temperature differences. As a result of this condition, bacterial activity quickly absorbs the available oxygen and decomposition takes place with attendant odors. In the case of the Lower Franklin Reservoir, this condition has been eliminated by the introduction of the water through jets in pipe lines on the lake bottom, thus preventing stagnation. Plankton growths are often found helpful in furnishing oxygen for a water in which the oxygen supply has been depleted by fish life. Considerable trouble has been experienced in the case of Los Angeles supply by pollution from birds, chiefly sea gulls and mudhens. This trouble has not been from a bacterial standpoint, however, because chlorination can be used to remove the bacteria, but in some cases at least the amount of oxygen consumed in the reduction of fecal matter has been enough to deplete the available reserve. Another instance of biological action is the reduction of temporary hardness by plankton algæ. The article

concludes that the amount of work done by living plants and animals in storage reservoirs is astonishingly great, and means will be found to direct at least part of these activities for the benefit of man.

City Water Supplies in Arkansas. Harrison Hale. *American Water Works Journal*, vol. 17, No. 2, February, 1927, pp. 261–262. (Abstract by W. L. Havens.)

Data soon to be published as a bulletin of the Engineering Experiment Station, University of Arkansas, show that the water of that State is generally clear and free from odor and any considerable amount of color. Fifty-eight per cent of the supplies reported are from wells. In the larger cities and towns, filtration and a germicide, usually chlorination, are generally used. In some only chlorination is used, while in a majority treatment is not yet given.

Twenty Years of Chlorination of Public Water Supplies. N. J. Howard. *American City*, vol. 36, No. 6, July, 1927, pp. 791–794. (Abstract by S. H. Smith.)

This is a discussion of the prechlorination of waters as a substitute for alum, either entirely or partly, in physically good raw waters, thereby effecting a saving in cost of operation. Other advantages claimed for prechlorination are reduction of filter loading in heavily polluted water, increased rates of filtration, reduced operating costs, and added safeguards in water subject to rapid periodic changes in quality. There is no evidence that prechlorination increased the residual colloidal alumina, and theoretical considerations would indicate a decrease. Increased use of chlorine for the prevention of algal growths in filter drains and sedimentation basins, for the sterilization of new water mains, and for sterilization of swimming pools, is noted. Chloramine and dichloramine, which consist of mixtures of chlorine and ammonia, have sterilizing powers not possessed by ammonia, have great possibilities for cities troubled with after-growths in mains or troublesome spore-forming bacteria, and are said not to cause taste in the treated water. Superchlorination and dechlorination for the removal of tastes are discussed. Experiments in Canada and England are mentioned.

Sanitary Engineering Problems of the Mississippi Flood. W. H. Weir. *Public Works*, vol. 58, No. 8, August, 1927, pp. 288–290. (Abstract by W. A. Hardenbergh.)

Sanitation methods in the flood area were worked out very hurriedly, from necessity, but, as a rule, good results were obtained. Labor companies were organized, and the company leader was made responsible to the camp commander for the sanitation of a definite section of the camp. Latrines of the pit type were constructed, but the high water level, often only a few inches below the ground surface, necessitated frequent moves. Sand bags piled around the pits formed a water-tight base for the seats, and extended the life of the toilets by increasing the space above the level of the ground water. All water for camp use, with few exceptions, was obtained from temporary sources. Small wells were driven and equipped with hand pumps. Where possible, water considered dangerous was chlorinated in barrels, or boiled, the latter method being relied on very largely.

As the water subsided, towns were cleaned up. Crude oil was used freely to burn waste, trash, and dead animals. Public water supplies were generally in bad shape. As soon as pumping equipment was put in condition, wells were pumped to discharge flood waters, and distribution systems flushed to eliminate mud. Chloride of lime in sufficient quantities to give free chlorine at the ends of mains was mixed in elevated tanks and reservoirs. Where the type of well pump permitted, emergency chlorinators were installed and mains and water were sterilized with a heavy dosage of chlorine. In some areas, despite all this, the boiling of water was necessary, as it was throughout the rural sections.

How to Safeguard the Milk We Use. J. W. S. McCollough. *Public Health Journal* (Canada), vol. 18, No. 6, June, 1927, pp. 255–257. (Abstract by W. D. Tiedeman.)

This article was prepared for use as a pamphlet for the Canadian public and municipal authorities. The importance of milk as a food is stressed, and it is pointed out that milk is consumed raw while other animal foods are cooked. A series of fairly recent milk-borne typhoid fever epidemics in Canada are mentioned in order to stress the dangers of a raw milk supply. These include the recent epidemic at Montreal, where it is stated that 4,500 cases of typhoid fever resulting in 200 deaths occurred during March, April, May, and June, 1927. The possible dangers from other milk-borne diseases are pointed out.

Pasteurization of all milk at a temperature of 140° F. to 145° F. for 30 minutes is advocated to avoid this danger to the public health. The use of certified milk is not advocated, since it is not only expensive but unsafe, owing principally to the continued development of tuberculosis among regularly tuberculin tested herds. The usual objections to Pasteurization, such as unnatural souring, destruction of vitamins, use of dirty milk, creation of monopolies in local markets, and effect on taste, are stated and answered.

It is pointed out that, under the amended milk act of 1927, local laws may be enacted requiring Pasteurization of all milk sold in any community.

DEATHS DURING WEEK ENDED NOVEMBER 5, 1927

Summary of information received by telegraph from industrial insurance companies for week ended November 5, 1927, and corresponding week of 1926. (From the Weekly Health Index, November 9, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Nov. 5, 1927	Corresponding week, 1926
Policies in force	68, 981, 301	65, 817, 537
Number of death claims	11, 878	10, 837
Death claims per 1,000 policies in force, annual rate	9. 0	8. 6

Deaths from all causes in certain large cities of the United States during the week ended November 5, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 9, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Nov. 5, 1927		Annual death rate per 1,000 corresponding week, 1926	Deaths under 1 year		Infant mortality rate, week ended Nov. 5, 1927 [2]
	Total deaths	Death rate [1]		Week ended Nov. 5, 1927	Corresponding week, 1926	
Total (67 cities)	6,709	11.9	[3] 11.8	646	[3] 705	[4] 54
Akron	43			5	7	54
Albany [5]	32	13.9	19.7	0	1	0
Atlanta	76			11	7	
White	41			5	2	
Colored	35	([6])		6	5	
Baltimore [5]	228	14.5	12.5	25	23	79
White	177		10.8	17	17	68
Colored	51	([6])	21.9	8	6	125
Birmingham	67	16.2	11.6	9	7	
White	35		11.8	4	5	
Colored	32	([6])	11.3	5	2	
Boston	193	12.7	12.3	30	22	84
Bridgeport	17			1	2	17
Buffalo	125	11.9	13.7	18	17	76
Cambridge	23	9.7	11.5	4	2	71
Camden	34	13.3	13.9	6	4	103

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 62 cities.
[5] Deaths for week ended Friday, Nov. 4, 1927.
[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore, 15, Birmingham 39, Dallas 15, Fort Worth, 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Richmond 32, and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended November 5, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 9, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Nov. 5, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Nov. 5, 1927
	Total deaths	Death rate		Week ended Nov. 5, 1927	Corresponding week 1926	
Canton	21	9.7	10.0	2	2	48
Chicago [5]	626	10.5	10.3	43	62	37
Cincinnati	147	18.6	16.2	9	11	54
Cleveland	193	10.2	10.3	16	18	43
Columbus	60	10.8	14.5	11	8	102
Dallas	48	12.0	11.8	9	7	
White	38		10.4	8	6	
Colored	10	(6)	21.2	1	1	
Dayton	45	13.0	10.6	5	2	83
Denver	76	13.7	14.5	8	6	
Des Moines	32	11.2	7.1	2	2	35
Detroit	261	10.2	11.4	32	46	49
Duluth	27	12.2	11.1	3	2	65
El Paso	33	15.1	13.4	5	7	
Erie	19			3	4	64
Fall River [5]	28	11.0	11.1	3	4	51
Flint	35	12.8	9.2	10	7	157
Fort Worth	23	7.3	11.5	2	5	
White	16		10.1	2	5	
Colored	7	(6)	22.0	0	0	
Grand Rapids	34	11.2	11.4	2	4	29
Houston	62			9	6	
White	49			7	6	
Colored	13	(6)		2	0	
Indianapolis	92	12.8	12.4	11	10	84
White	73		11.8	7	9	61
Colored	19	(6)	16.6	4	1	242
Jersey City	58	9.4	9.7	7	7	53
Kansas City, Kans	23	10.3	15.6	1	2	21
White	17		14.6	1	1	25
Colored	6	(6)	20.3	0	1	0
Kansas City, Mo	104	14.2	12.8	10	9	
Knoxville	30	15.3		3		
White	17			2		
Colored	13	(6)		1		
Los Angeles	239			14	23	40
Louisville	64	10.4	12.6	8	6	67
White	53		11.1	7	5	66
Colored	11	(6)	20.9	1	1	69
Lowell	26	12.3	11.8	2	1	42
Lynn	16	7.9	11.0	0	0	0
Memphis	56	16.3	17.4	6	8	
White	29		12.9	5	4	
Colored	27	(6)	25.6	1	4	
Milwaukee	118	11.6	10.1	12	14	55
Minneapolis	89	10.5	10.0	3	4	17
Nashville [5]	42	15.9	24.7	3	14	
White	26		23.4	3	10	
Colored	16	(6)	28.1	0	4	
New Bedford	25	10.9	11.3	5	1	94
New Haven	39	11.0	10.9	4	4	56
New Orleans	135	16.6	19.0		18	
White	87		15.1		10	
Colored	48	(6)	30.1		8	
New York	1,316	11.5	11.1	129	109	54
Bronx Borough	154	8.7	8.1	12	16	38
Brooklyn Borough	437	10.0	10.6	52	42	54
Manhattan Borough	576	16.5	14.3	52	43	62
Queens Borough	116	7.5	7.7	10	5	44
Richmond Borough	33	11.7	13.5	3	3	57
Newark, N. J	90	10.1	10.3	10	8	50
Oakland	62	12.1	11.0	10	6	118
Oklahoma City	20			4	5	
Omaha	55	13.1	10.4	2	5	23

[5] Deaths for week ended Friday, Nov. 4, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Richmond 32, and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended November 5, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, November 9, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Nov. 5, 1927		Annual death rate per 1,000 corresponding week, 1926	Deaths under 1 year		Infant mortality rate, week ended Nov. 5, 1927
	Total deaths	Death rate		Week ended Nov. 5, 1927	Corresponding week, 1926	
Paterson	45	16.3	12.4	2	2	36
Philadelphia	456	11.7	13.4	38	45	51
Pittsburgh	181	14.7	10.2	23	22	80
Portland, Oreg	68			2	4	21
Providence	65	12.1	10.4	6	6	52
Richmond	56	15.2	18.8	10	9	130
White	32		16.0	6	4	121
Colored	24	(6)	25.4	4	5	147
Rochester	79	12.7	10.4	9	13	76
St. Louis	182	11.3	12.9	11	25	
St. Paul	46	9.6	12.6	0	5	0
Salt Lake City [5]	27	10.4	12.9	4	7	64
San Antonio	50	12.4	11.2	8	6	
San Diego	36	16.3	14.2	5	0	110
San Francisco	170	15.4	10.6	6	7	37
Schenectady	17	9.5	6.2	1	3	30
Seattle	71			5	3	53
Somerville	14	7.2	17.2	2	5	58
Spokane	24	11.5	13.9	3	2	72
Springfield, Mass	31	11.0	9.3	2	4	32
Syracuse	37	9.8	11.6	3	6	39
Toledo	58	9.9	15.7	3	11	29
Trenton	30	11.4	15.6	3	6	53
Utica	20	10.1	13.7	1	3	23
Washington, D. C	123	11.9	12.9	14	11	82
White	72		12.6	5	8	43
Colored	51	(6)	14.0	9	3	164
Waterbury	16			0	1	0
Wilmington, Del	36	14.9	10.9	4	1	99
Worcester	44	11.8	11.1	5	8	60
Yonkers	20	8.8	7.2	2	1	46
Youngstown	31	9.6	11.4	1	2	13

[5] Deaths for week ended Friday Nov. 4, 1927.

[6] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City (Kans.) 14, Knoxville 15, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Richmond 32, and Washington, D. C., 25.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Week Ended November 12, 1927

DIPHTHERIA	Cases
Alabama	122
Arizona	17
Arkansas	30
California	129
Colorado	30
Connecticut	30
Delaware	2
Florida	33
Georgia	46
Idaho	2
Illinois	141
Indiana	54
Iowa [1]	26
Kansas	32
Louisiana	64
Maine	1
Maryland [1]	46
Massachusetts	109
Michigan	99
Minnesota	47
Mississippi	61
Missouri	65
Montana	1
Nebraska	21
New Jersey	142
New Mexico	1
New York	318
North Carolina	129
Ohio	304
Oklahoma [2]	92
Oregon	17
Pennsylvania	307
Rhode Island	19
South Carolina	84
South Dakota	5
Tennessee	48
Texas	121
Utah [1]	16
Washington	16
West Virginia	25
Wisconsin	85

[1] Week ended Friday.

INFLUENZA	Cases
Alabama	41
Arkansas	59
California	14
Connecticut	6
Delaware	1
Florida	3
Georgia	68
Illinois	5
Indiana	26
Kansas	5
Louisiana	8
Maine	2
Maryland [1]	18
Massachusetts	6
Minnesota	2
Missouri	10
Nebraska	1
New Jersey	6
New York	13
Ohio	16
Oklahoma [2]	45
Oregon	5
South Carolina	485
South Dakota	4
Tennessee	38
Texas	47
Utah [1]	4
West Virginia	11
Wisconsin	23
Wyoming	1
MEASLES	
Alabama	15
Arizona	45
Arkansas	4
California	58
Colorado	11
Connecticut	25
Delaware	15
Florida	3
Georgia	12
Idaho	3

[2] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended November 12, 1927—Continued

MEASLES—continued	Cases
Illinois	9
Indiana	9
Kansas	30
Louisiana	10
Maine	53
Maryland [1]	25
Massachusetts	203
Michigan	116
Minnesota	3
Missouri	21
Nebraska	5
New Jersey	42
New Mexico	8
New York	156
North Carolina	448
Ohio	34
Oklahoma [2]	29
Oregon	15
Pennsylvania	414
Rhode Island	1
South Carolina	140
South Dakota	1
Tennessee	58
Texas	6
Washington	111
West Virginia	15
Wisconsin	61
Wyoming	16

MENINGOCOCCUS MENINGITIS	
California	5
Florida	2
Idaho	1
Illinois	5
Iowa [1]	1
Kansas	2
Massachusetts	3
Michigan	4
Minnesota	1
Missouri	2
Montana	1
New Jersey	1
New York	5
Ohio	5
Oklahoma [2]	2
Pennsylvania	2
Utah [1]	1
Washington	4
West Virginia	1
Wisconsin	6

POLIOMYELITIS	
Alabama	1
Arkansas	1
California	23
Colorado	6
Connecticut	3
Florida	2
Idaho	11
Illinois	18
Indiana	7

POLIOMYELITIS—continued	Cases
Iowa [1]	7
Kansas	3
Maine	7
Maryland [1]	2
Massachusetts	38
Michigan	8
Minnesota	2
Missouri	6
Montana	1
Nebraska	5
New Jersey	3
New Mexico	3
New York	18
Ohio	26
Oklahoma [2]	3
Oregon	22
Pennsylvania	27
Rhode Island	2
South Carolina	1
South Dakota	6
Tennessee	5
Texas	5
Virginia	1
Washington	26
West Virginia	8
Wisconsin	9
Wyoming	1

SCARLET FEVER	
Alabama	37
Arizona	2
Arkansas	18
California	109
Colorado	55
Connecticut	45
Delaware	1
Florida	3
Georgia	32
Idaho	16
Illinois	215
Indiana	121
Iowa [1]	65
Kansas	98
Louisiana	17
Maine	70
Maryland [1]	56
Massachusetts	215
Michigan	171
Minnesota	127
Mississippi	26
Missouri	82
Montana	16
Nebraska	22
New Jersey	88
New Mexico	11
New York	258
North Carolina	84
Ohio	202
Oklahoma [2]	30
Oregon	19
Pennsylvania	313

[1] Week ended Friday.

[2] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended November 12, 1927—Continued

SCARLET FEVER—continued	Cases
Rhode Island	14
South Carolina	36
South Dakota	20
Tennessee	37
Texas	68
Utah [1]	14
Washington	47
West Virginia	84
Wisconsin	94
Wyoming	7

SMALLPOX	
Alabama	1
Arkansas	2
California	6
Colorado	6
Florida	5
Idaho	1
Illinois	45
Indiana	65
Iowa [1]	54
Kansas	37
Louisiana	3
Massachusetts	1
Michigan	21
Minnesota	1
Mississippi	1
Missouri	52
Montana	3
Nebraska	6
New York	6
North Carolina	14
Ohio	6
Oklahoma [2]	2
Oregon	5
South Carolina	7
South Dakota	3
Tennessee	1
Texas	12
Utah [1]	9
Washington	24
West Virginia	5
Wisconsin	19

TYPHOID FEVER	Cases
Alabama	18
Arizona	5
Arkansas	17
California	9
Colorado	6
Connecticut	3
Florida	5
Georgia	30
Idaho	1
Illinois	32
Indiana	10
Iowa [1]	2
Kansas	9
Louisiana	11
Maine	6
Maryland [1]	22
Massachusetts	6
Michigan	20
Minnesota	8
Mississippi	6
Missouri	16
Nebraska	3
New Jersey	5
New Mexico	8
New York	56
North Carolina	10
Ohio	34
Oklahoma [2]	89
Oregon	11
Pennsylvania	35
Rhode Island	1
South Carolina	30
South Dakota	4
Tennessee	25
Texas	16
Utah [1]	1
Washington	1
West Virginia	18
Wisconsin	3
Wyoming	1

[1] Week ended Friday.
[2] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended November 5, 1927

DIPHTHERIA	Cases
District of Columbia	20
North Dakota	4

INFLUENZA	
District of Columbia	1

POLIOMYELITIS	
North Dakota	1
Ohio	54

SCARLET FEVER	Cases
District of Columbia	24
North Dakota	35

SMALLPOX	
District of Columbia	1
North Dakota	3

TYPHOID FEVER	
District of Columbia	2
North Dakota	1

Reports for week ended October 29, 1927

DIPHTHERIA	Cases
Colorado	22
North Dakota	7

MEASLES	
Colorado	1
North Dakota	1

MENINGOCOCCUS MENINGITIS	
Colorado	1

POLIOMYELITIS	
Colorado	6
North Dakota	2

SCARLET FEVER	Cases
Colorado	43
North Dakota	33

SMALLPOX	
North Dakota	12

TYPHOID FEVER	
Colorado	12
North Dakota	1

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
April, 1927										
Indiana	0	152	226	----	1,283	----	0	992	872	16
June, 1927										
Indiana	1	98	14	----	388	----	1	368	487	18
September, 1927										
Hawaii Territory	3	25	5	----	26	----	0	----	0	10
New Hampshire	0	8	48	----	----	----	18	17	0	3
Washington	10	63	10	----	112	----	59	71	37	41
October, 1927										
Arizona	0	50	1	----	8	----	17	10	0	21
Connecticut	5	143	11	1	47	----	42	114	0	18
Massachusetts	4	432	33	1	526	2	377	728	0	48
Nebraska	2	60	7	----	6	----	49	168	8	12

April, 1927

	Cases
Indiana:	
Chicken pox	731
Mumps	10
Whooping cough	272

June, 1927

	Cases
Indiana:	
Chicken pox	236
Mumps	9
Whooping cough	221

September, 1927

	Cases
Chicken pox:	
Hawaii Territory	5
Washington	72
Conjunctivitis (follicular):	
Hawaii Territory	81
Dysentery:	
Washington	1
German measles:	
Washington	14
Impetigo contagiosa:	
Washington	3
Leprosy:	
Hawaii Territory	5
Lethragic encephalitis:	
Washington	5
Mumps:	
Washington	75
Paratyphoid fever:	
Washington	2
Scabies:	
Washington	12
Tetanus:	
Hawaii Territory	3
Washington	1
Trachoma:	
Hawaii Territory	47

September, 1927—Continued

	Cases
Vincent's angina:	
Washington	2
Whooping cough:	
Hawaii Territory	12
Washington	52

October, 1927

	Cases
Actinomycosis:	
Massachusetts	1
Anthrax:	
Connecticut	1
Chicken pox:	
Arizona	11
Connecticut	220
Massachusetts	412
Nebraska	80
Conjunctivitis (infectious):	
Connecticut	2
Dysentery (bacillary):	
Connecticut	2
German measles:	
Connecticut	6
Massachusetts	24
Lead poisoning:	
Massachusetts	3
Lethargic encephalitis:	
Connecticut	2
Massachusetts	5
Mumps:	
Arizona	6
Connecticut	66
Massachusetts	181
Nebraska	44
Ophthalmia neonatorum:	
Arizona	1
Massachusetts	168
Paratyphoid fever:	
Connecticut	2
Rabies in animals:	
Connecticut	8

October, 1927—Continued

	Cases
Rabies in man:	
Massachusetts	1
Septic sore throat:	
Connecticut	5
Massachusetts	2
Nebraska	5
Tetanus:	
Connecticut	1
Massachusetts	4

October, 1927—Continued

	Cases
Trachoma:	
Arizona	7
Trichinosis:	
Connecticut	1
Whooping cough:	
Arizona	3
Connecticut	157
Massachusetts	341
Nebraska	32

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 101 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 30,960,000. The estimated population of of the 95 cities reporting deaths is more than 30,290,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended October 29, 1927, and October 30, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
40 States	2,599	2,634	----
101 cities	1,160	1,241	1,187
Measles:			
39 States	1,506	2,494	----
101 cities	418	371	----
Poliomyelitis:			
41 States	399	65	----
Scarlet fever:			
40 States	2,695	,956	----
101 cities	865	985	801
Smallpox:			
41 States	289	199	----
101 cities	42	17	33
Typhoid fever:			
40 States	698	967	----
101 cities	100	159	121
Deaths reported			
Influenza and pneumonia:			
101 cities	573	611	----
Smallpox:			
101 cities	1	0	----
Salt Lake City	1	0	----

City reports for week ended October 29, 1927

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

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	5	2	1	0	0	0	0	0
New Hampshire:									
Concord	22,546	0	1	0	0	0	1	0	0
Manchester	83,097	0	3	0	0	0	0	0	2
Vermont:									
Barre	10,008	0	0	0	0	0	0	0	0
Massachusetts:									
Boston	779,620	31	45	22	2	0	74	4	8
Fall River	128,993	0	4	3	0	0	0	0	3
Springfield	142,065	2	3	3	0	0	0	0	1
Worcester	190,757	9	6	8	2	0	1	11	1
Rhode Island:									
Pawtucket	69,760	0	1	0	0	0	1	6	2
Providence	267,918	3	7	13	0	0	1	2	6
Connecticut:									
Bridgeport	(1)	0	10	3	0	0	1	0	3
Hartford	160,197	3	6	5	0	0	2	1	2
New Haven	178,927	5	3	0	1	0	1	15	2
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	26	16	18	-------	1	11	12	9
New York	5,873,356	-------	135	216	15	4	14	24	113
Rochester	316,786	6	11	3	-------	1	1	0	4
Syracuse	182,003	12	10	2	-------	0	9	2	1
New Jersey:									
Camden	128,642	10	9	5	0	0	0	14	3
Newark	452,513	12	11	24	0	1	5	25	6
Trenton	132,020	0	3	1	0	0	1	1	3
Pennsylvania:									
Philadelphia	1,979,364	27	69	61	-------	0	3	26	30
Pittsburgh	631,563	14	30	56	-------	2	101	7	16
Reading	112,707	8	3	1	-------	0	1	0	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	2	15	5	0	1	2	0	6
Cleveland	936,485	49	50	115	3	1	2	39	10
Columbus	279,836	5	9	11	0	0	0	1	5
Toledo	287,380	15	14	3	2	2	6	3	3
Indiana:									
Fort Wayne	97,846	1	4	12	0	0	0	0	3
Indianapolis	358,819	11	14	10	0	0	2	23	9
South Bend	80,091	0	3	1	0	0	0	0	1
Terre Haute	71,071	0	2	1	0	0	0	0	2
Illinois:									
Chicago	2,995,239	67	107	95	7	3	7	26	50
Springfield	63,923	0	4	1	0	0	0	1	1

[1] No estimate made.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Michigan:									
Detroit	1,245,824	35	75	96	3	0	11	15	20
Flint	130,316	6	12	9	0	0	0	0	4
Grand Rapids	153,698	10	6	0	0	2	0	0	2
Wisconsin:									
Kenosha	50,891	21	2	0	1	0	0	2	0
Madison	46,385	1	1	2	0	0	0	0	1
Milwaukee	509,192	45	29	15	1	1	2	11	8
Racine	67,707	2	3	4	1	0	1	0	1
Superior	39,671	0	1	0	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	0	3	0	0	0	0	0	4
Minneapolis	425,435	45	34	11	0	2	1	4	11
St. Paul	246,001	22	19	6	0	0	3	11	8
Iowa:									
Davenport	52,469	0	2	2	0	----	0	0	----
Des Moines	141,441	0	8	1	0	----	0	0	4
Sioux City	76,411	17	3	0	0	----	3	12	----
Waterloo	36,771	2	1	0	0	----	0	1	----
Missouri:									
Kansas City	367,481	7	13	8	0	1	3	6	7
St. Joseph	78,342	4	4	0	0	0	0	0	0
St. Louis	821,543	8	51	38	0	0	4	2	----
North Dakota:									
Fargo	26,403	9	0	0	0	0	0	2	0
Grand Forks	14,811	27	0	0	0	----	0	0	----
South Dakota:									
Aberdeen	15,036	1	0	0	0	----	0	0	----
Sioux Falls	30,127	0	0	2	0	----	0	0	----
Nebraska:									
Lincoln	60,941	3	3	2	0	0	0	6	0
Omaha	211,768	23	11	0	0	0	1	0	1
Kansas:									
Topeka	55,411	5	2	4	0	0	1	0	1
Wichita	88,367	7	6	3	0	0	1	0	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	4	1	0	0	0	0	3
Maryland:									
Baltimore	796,296	28	31	21	9	4	12	1	18
Cumberland	33,741	0	1	1	0	0	0	0	0
Frederick	12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	9	18	25	0	0	3	0	7
Virginia:									
Lynchburg	30,395	2	3	8	0	0	0	1	0
Norfolk	(1)	14	4	7	0	0	0	0	3
Richmond	186,403	1	25	12	0	0	5	1	2
Roanoke	58,208	2	7	4	0	2	0	0	1
West Virginia:									
Charleston	49,019	0	3	1	2	0	0	0	1
Wheeling	56,208	10	3	0	0	0	1	0	0
North Carolina:									
Raleigh	30,371	8	4	3	0	0	0	0	0
Wilmington	37,061	0	1	0	0	0	5	0	0
Winston-Salem	69,031	1	4	4	0	0	0	2	2
South Carolina:									
Charleston	73,125	5	1	0	39	0	1	0	3
Columbia	41,225	1	3	1	0	----	8	0	1
Greenville	27,311	0	2	2	0	0	1	3	0
Georgia:									
Atlanta	(1)	1	12	11	27	1	1	0	5
Brunswick	16,809	0	0	0	0	0	0	3	0
Savannah	93,134	1	3	2	5	0	22	1	2
Florida:									
Miami	69,754	0	----	3	0	0	0	3	0
St. Petersburg	26,847	----	0	----	----	0	----	----	0
Tampa	94,743	1	2	3	2	0	0	0	1

[1] No estimate made.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Population, July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	3	0	0	0	0	0	0
Louisville	305,935	0	11	4	1	0	0	0	10
Tennessee:									
Memphis	174,533	0	12	7	0	2	37	0	3
Nashville	136,220	4	6	6	0	3	0	3	6
Alabama:									
Birmingham	205,670	0	7	24	8	1	2	0	3
Mobile	65,955	0	2	3	1	2	0	0	0
Montgomery	46,481	1	3	7	0	0	1	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	1	2	5	0	----	1	0	----
Little Rock	74,216	0	3	0	0	2	0	0	2
Louisiana:									
New Orleans	414,493	2	11	12	4	2	2	0	22
Shreveport	57,857	0	1	4	0	0	0	0	4
Oklahoma:									
Oklahoma City	(1)	0	4	12	0	0	2	0	2
Tulsa	124,478	1	----	2	0	----	0	1	----
Texas:									
Dallas	194,450	1	13	32	0	0	0	0	3
Galveston	48,375	0	1	1	0	0	0	0	1
Houston	164,954	0	5	9	0	0	0	3	3
San Antonio	198,069	0	2	8	0	0	2	0	9
MOUNTAIN									
Montana:									
Billings	17,971	0	0	0	0	0	1	0	0
Great Falls	29,883	0	1	0	0	0	0	0	0
Helena	12,037	2	0	0	0	0	1	0	1
Missoula	12,668	6	1	1	0	0	0	0	0
Idaho:									
Boise	23,042	0	0	0	0	0	1	1	0
Colorado:									
Denver	280,911	10	16	4	----	3	3	5	6
Pueblo	43,787	1	4	1	0	0	0	0	3
New Mexico:									
Albuquerque	21,000	1	0	0	0	0	1	1	0
Utah:									
Salt Lake City	130,948	19	4	5	0	0	1	1	6
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	(1)	16	8	10	0	----	17	3	----
Spokane	108,897	19	4	1	0	----	0	1	----
Tacoma	104,455	0	4	2	0	0	0	0	1
Oregon:									
Portland	282,383	16	12	9	1	1	6	0	6
California:									
Los Angeles	(1)	20	44	34	11	2	5	2	18
Sacramento	72,260	4	2	0	0	0	2	0	2
San Francisco	557,530	29	18	11	0	1	11	7	7

[1] No estimate made.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	0	2	0	0	0	1	1	0	0	0	11
New Hampshire:											
Concord	1	1	0	0	0	0	0	0	0	0	5
Manchester	1	2	0	0	0	0	0	0	0	0	13
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	----
Massachusetts:											
Boston	35	52	0	0	0	19	3	2	1	33	----
Fall River	2	6	0	0	0	4	1	4	0	0	28
Springfield	5	5	0	0	0	2	0	1	0	0	30
Worcester	9	5	0	0	0	2	0	0	0	0	36
Rhode Island:											
Pawtucket	0	0	0	0	0	0	0	0	0	0	21
Providence	4	11	0	4	0	3	1	0	0	2	77
Connecticut:											
Bridgeport	5	6	0	0	0	1	0	0	0	0	21
Hartford	4	2	0	0	0	0	0	0	0	3	34
New Haven	5	1	0	0	0	2	1	1	0	5	43
MIDDLE ATLANTIC											
New York:											
Buffalo	15	26	1	0	0	3	1	0	0	14	137
New York	72	73	0	0	0	[1]82	21	18	1	125	1,304
Rochester	6	5	0	0	0	2	1	1	1	1	68
Syracuse	7	4	0	0	0	1	1	0	0	5	39
New Jersey:											
Camden	4	3	0	0	0	2	0	2	0	0	33
Newark	10	13	0	0	0	12	1	0	0	24	117
Trenton	1	0	0	0	0	1	0	0	0	0	30
Pennsylvania:											
Philadelphia	50	39	0	0	0	30	8	3	1	24	435
Pittsburgh	34	30	0	0	0	12	2	1	1	17	191
Reading	1	4	0	0	0	2	0	0	0	1	30
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	11	10	1	0	0	8	0	4	0	0	124
Cleveland	22	17	0	0	0	14	2	5	1	6	169
Columbus	8	18	1	0	0	6	1	0	1	2	74
Toledo	10	16	1	0	0	3	2	3	0	2	57
Indiana:											
Fort Wayne	1	3	0	0	0	0	0	2	0	1	20
Indianapolis	9	20	1	0	0	0	1	0	0	1	87
South Bend	3	3	0	0	0	0	0	0	0	1	14
Terre Haute	3	1	0	0	0	2	1	0	0	3	17
Illinois:											
Chicago	80	70	1	0	0	49	6	2	0	79	702
Springfield	2	2	0	0	0	0	1	0	0	1	20
Michigan:											
Detroit	62	56	1	0	0	25	5	6	0	59	292
Flint	9	20	1	0	0	1	0	0	0	3	35
Grand Rapids	8	5	0	0	0	0	0	0	0	0	22
Wisconsin:											
Kenosha	2	2	1	0	0	0	0	0	0	0	8
Madison	1	2	1	0	0	0	0	0	0	0	8
Milwaukee	19	15	2	0	0	7	0	0	0	12	103
Racine	4	2	0	0	0	2	0	1	0	1	10
Superior	2	5	1	0	0	0	0	0	0	0	13
WEST NORTH CENTRAL											
Minnesota:											
Duluth	6	7	1	0	0	3	0	0	0	4	28
Minneapolis	40	37	1	0	0	7	1	0	0	0	111
St. Paul	17	17	2	1	0	5	1	1	1	6	63
Iowa:											
Davenport	0	0	0	0	----	----	0	1	----	0	----
Des Moines	8	19	0	22	----	----	0	3	----	0	----
Sioux City	3	3	0	0	----	----	0	0	----	0	----
Waterloo	2	4	0	0	----	----	0	0	----	0	----

[1] Pulmonary tuberculosis only.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL—continued											
Missouri:											
Kansas City	10	19	0	1	0	9	2	1	0	5	86
St. Joseph	4	2	0	22	0	0	0	1	1	0	21
St. Louis	32	19	0	1	0	18	4	4	0	25	255
North Dakota:											
Fargo	2	2	0	0	0	0	0	0	0	5	9
Grand Forks	1	2	0	0	---	---	0	0	---	0	---
South Dakota:											
Aberdeen	1	2	0	0	---	---	0	0	---	0	---
Sioux Falls	1	8	0	0	---	---	0	0	---	0	7
Nebraska:											
Lincoln	1	6	0	0	0	0	0	0	0	3	18
Omaha	4	3	1	0	0	0	0	0	0	0	42
Kansas:											
Topeka	4	5	0	0	0	0	0	1	0	6	10
Wichita	4	7	1	1	0	1	0	0	0	2	21
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	3	0	0	0	0	1	0	0	0	25
Maryland:											
Baltimore	13	9	0	0	0	16	7	4	0	28	224
Cumberland	0	0	0	0	0	1	1	0	0	0	7
Frederick	1	2	0	0	0	0	0	0	0	0	4
District of Col.:											
Washington	14	16	0	0	0	13	3	0	0	3	128
Virginia:											
Lynchburg	1	0	0	0	0	0	1	0	0	4	6
Norfolk	2	5	0	0	0	4	1	0	0	5	---
Richmond	9	11	0	0	0	2	1	1	0	2	48
Roanoke	3	2	0	0	0	0	1	0	0	0	17
West Virginia:											
Charleston	1	5	0	0	0	1	0	1	0	1	10
Wheeling	3	1	0	0	0	0	1	0	0	0	13
North Carolina:											
Raleigh	3	2	0	0	0	0	1	0	0	1	10
Wilmington	1	3	0	0	0	0	1	0	0	1	13
Winston-Salem	2	12	1	0	0	1	0	0	0	4	19
South Carolina:											
Charleston	1	1	0	0	0	1	1	3	1	4	25
Columbia	0	2	0	0	---	1	0	0	---	1	12
Greenville	0	1	0	0	0	0	1	0	0	3	5
Georgia:											
Atlanta	7	15	0	0	0	5	1	1	2	0	71
Brunswick	0	0	0	0	0	0	0	0	0	0	3
Savannah	0	1	0	0	0	3	1	1	0	0	32
Florida:											
Miami	---	1	---	0	0	1	---	4	0	0	17
St. Petersburg	0	---	0	---	0	0	0	---	0	---	11
Tampa	0	2	1	0	0	2	0	1	0	1	19
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	2	0	0	0	2	0	0	0	0	---
Louisville	5	5	0	0	0	3	2	0	0	0	83
Tennessee:											
Memphis	5	10	0	0	0	1	3	0	0	0	60
Nashville	4	5	1	0	0	3	2	[1]4	0	2	59
Alabama:											
Birmingham	4	4	0	1	0	3	2	5	1	0	52
Mobile	1	1	0	0	0	1	0	0	0	0	19
Montgomery	1	0	0	0	0	0	0	0	0	3	---
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0	---	---	1	0	---	0	---
Little Rock	2	5	0	0	0	3	1	0	0	0	---
Louisiana:											
New Orleans	4	2	0	0	0	6	3	5	1	1	142
Shreveport	0	4	0	0	0	0	1	0	0	0	30

[1] In addition to 22 cases in delayed reports.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL—continued											
Oklahoma:											
Oklahoma City	2	2	0	5	0	0	0	2	0	0	27
Tulsa	----	1	----	0	----	----	----	1	----	4	----
Texas:											
Dallas	4	14	0	0	0	2	2	0	0	7	52
Galveston	0	0	0	0	0	0	1	0	0	0	7
Houston	2	4	1	0	0	5	0	0	0	0	55
San Antonio	0	1	0	0	0	6	1	4	0	0	66
MOUNTAIN											
Montana:											
Billings	1	0	0	0	0	0	0	0	0	4	8
Great Falls	1	3	1	4	0	0	0	0	0	1	8
Helena	0	1	0	0	0	1	0	0	0	0	5
Missoula	1	0	1	0	0	0	1	0	0	0	5
Idaho:											
Boise	0	0	0	0	0	0	0	0	0	0	3
Colorado:											
Denver	8	8	1	0	0	9	1	1	0	0	74
Pueblo	1	2	0	0	0	1	0	1	0	0	10
New Mexico:											
Albuquerque	0	2	0	0	0	1	1	0	0	0	5
Utah:											
Salt Lake City	2	2	0	1	1	0	2	1	0	7	30
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle	8	1	2	0	----	----	0	0	----	1	----
Spokane	8	6	2	5	----	----	1	5	----	0	----
Tacoma	3	2	2	0	0	0	0	0	0	0	21
Oregon:											
Portland	9	3	3	4	0	2	1	0	0	0	58
California:											
Los Angeles	15	15	3	0	0	20	3	0	0	10	223
Sacramento	1	0	0	0	0	4	1	0	0	0	20
San Francisco	8	13	0	1	0	7	1	1	0	16	156

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston	1	0	1	0	0	0	1	25	5
Fall River	0	0	0	0	0	0	0	4	0
Springfield	0	0	0	0	0	0	0	1	0
Rhode Island:									
Providence	0	0	0	0	0	0	0	3	2
Connecticut:									
Bridgeport	0	0	1	1	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	1	2	3	5	0	0	9	14	2
New Jersey:									
Camden	0	0	0	0	0	0	0	1	0
Trenton	0	0	0	0	0	1	0	0	0
Pennsylvania:									
Philadelphia	2	1	0	0	0	1	1	5	0
Pittsburgh	0	0	0	0	0	0	0	2	0
Reading	0	0	0	0	0	0	0	2	0

City reports for week ended October 29, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases estimated expectancy	Cases	Deaths
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	1	7	2
Cleveland	2	0	0	0	0	0	1	3	0
Columbus	0	0	0	1	0	0	0	0	0
Toledo	0	0	0	0	0	0	1	3	0
Indiana:									
Fort Wayne	0	0	0	0	0	0	0	2	0
Indianapolis	0	0	0	0	0	0	0	1	1
Illinois:									
Chicago	4	3	1	0	1	1	2	9	2
Michigan:									
Detroit	0	1	0	0	0	0	1	6	2
Grand Rapids	0	0	0	0	0	0	0	1	0
Wisconsin:									
Madison	1	0	0	0	0	0	0	0	0
Milwaukee	3	2	0	0	0	0	0	1	1
Racine	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	1	0	0	0	1	1	0
Iowa:									
Waterloo	0	-------	0	-------	0	-------	0	1	-------
Missouri:									
Kansas City	0	0	0	0	0	0	0	1	0
St. Joseph	1	0	0	0	0	0	0	0	0
St. Louis	1	1	0	0	0	0	1	2	1
North Dakota:									
Fargo	0	1	0	0	0	0	0	0	0
Nebraska:									
Omaha	0	0	0	0	0	0	0	4	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	0	1	2	0	0	1	4	0
District of Columbia:									
Washington	0	0	0	0	0	0	0	1	1
Virginia:									
Lynchburg	0	0	0	0	0	1	0	0	0
Richmond	0	0	0	0	0	0	1	1	0
West Virginia:									
Charleston	0	0	0	0	0	0	0	1	0
Wheeling	0	0	0	0	0	0	0	2	0
North Carolina:									
Raleigh	0	0	0	0	0	3	0	0	0
Winston-Salem	0	0	0	0	3	2	0	0	0
South Carolina:									
Charleston [1]	0	0	0	0	2	0	0	0	0
Columbia	0	0	0	0	0	2	0	0	0
Georgia:									
Brunswick	0	0	0	0	0	1	0	0	0
Savannah [2]	0	0	0	0	0	1	0	1	0
Florida:									
Tampa	0	0	0	0	0		0	1	0
EAST SOUTH CENTRAL									
Tennessee:									
Nashville	0	2	0	0	0	0	0	1	0
Alabama:									
Birmingham	0	0	0	0	2	0	0	0	0
Montgomery	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	0	0	0	0	2	0	0	0	0
Shreveport	0	0	0	1	0	1	0	1	0
Texas:									
Dallas	1	1	1	1	1	1	0	6	1
Houston	0	0	0	0	0	0	0	1	0

[1] Dengue: 10 cases at Charleston, S. C.

[2] Typhus fever: 6 cases at Savannah, Ga.

City reports for week ended October 29, 1927—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Csaes	Deaths	Cases, estimated expectancy	Cases	Deaths
MOUNTAIN									
Idaho:									
Boise	0	0	0	0	0	0	0	1	0
Colorado:									
Denver	6	3	0	0	0	0	0	4	
Utah:									
Salt Lake City	0	0	0	0	0	0	0	2	0
Nevada:									
Reno	1	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	0		0		0		1	3	
Spokane	1		0		0		0	6	
Tacoma	0	0	0	0	0	0	0	6	0
Oregon:									
Portland	0		1	0	0	0	0	6	1
California:									
Los Angeles	0	0	1	1	2	0	1	4	0
Sacramento	0	0	0	0	0	0	0	1	0
San Francisco	2	0	1	1	0	0	0	2	1

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended October 29, 1927, compared with those for a like period ended October 30, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,445,000 in 1926 and 30,966,000 in 1927. The 95 cities reporting deaths had nearly 29,785,000 estimated population in 1926 and nearly 30,296,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, September 25 to October 29, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927
101 cities	127	130	159	143	165	144	203	170	213	195
New England	66	109	66	132	85	128	85	123	106	135
Middle Atlantic	81	123	119	129	100	123	122	143	138	191
East North Central	133	130	188	158	218	138	260	199	241	232
West North Central	143	123	177	145	210	119	240	129	264	139
South Atlantic	162	165	214	170	216	203	300	194	354	192
East South Central	269	66	253	153	269	158	398	168	383	260
West South Central	210	197	176	197	219	256	279	268	331	298
Mountain	292	189	173	126	164	198	255	153	155	99
Pacific	174	120	198	99	174	154	190	220	204	152

[1] The figures given in this table are rates per 100,000 population. annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926, and 1927, respectively.

Summary of weekly reports from cities, September 25 to October 29, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

MEASLES CASE RATES

	Week ended—									
	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927
101 cities	37	25	31	40	43	50	49	55	64	70
New England	21	53	33	118	26	132	26	186	24	190
Middle Atlantic	10	33	11	56	9	53	12	64	13	72
East North Central	25	13	29	11	36	17	50	21	77	18
West North Central	10	6	26	12	44	14	42	22	85	34
South Atlantic	13	29	15	31	20	69	26	45	9	107
East South Central	5	20	5	56	0	127	21	51	21	204
West South Central	0	4	0	8	13	55	4	38	0	21
Mountain	109	0	109	27	237	18	337	72	392	63
Pacific	327	47	179	45	289	58	276	50	340	92

SCARLET FEVER CASE RATES

101 cities	100	84	111	103	129	96	152	117	169	146
New England	104	102	144	139	144	130	193	151	245	211
Middle Atlantic	51	59	57	101	62	63	51	74	92	97
East North Central	98	101	120	102	132	108	155	128	157	166
West North Central	198	79	216	107	319	175	373	137	355	248
South Atlantic	110	107	99	123	125	91	162	161	132	168
East South Central	98	117	145	66	145	82	222	148	331	188
West South Central	69	105	69	67	86	88	95	80	112	126
Mountain	319	36	301	126	264	108	447	279	365	144
Pacific	174	76	158	76	204	97	233	136	286	97

SMALLPOX CASE RATES

101 cities	1	4	3	5	4	6	3	7	3	7
New England	0	0	0	0	0	0	0	0	0	9
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	0	1	1	1	3	5	3	0	1	0
West North Central	2	12	2	14	6	26	0	42	2	52
South Atlantic	4	4	0	4	4	2	9	7	6	0
East South Central	0	0	10	0	0	0	10	5	5	5
West South Central	0	8	4	4	4	4	0	0	4	0
Mountain	9	54	9	54	9	72	0	72	9	45
Pacific	5	24	19	31	32	16	16	21	21	16

TYPHOID FEVER CASE RATES

101 cities	42	19	33	25	32	19	26	20	27	17
New England	17	12	17	23	57	16	19	16	12	19
Middle Atlantic	28	18	27	21	26	16	20	15	14	12
East North Central	33	8	23	17	16	18	12	16	17	13
West North Central	40	20	22	28	14	22	22	22	24	16
South Atlantic	114	20	76	47	65	27	76	33	75	22
East South Central	129	117	145	20	140	81	96	81	140	46
West South Central	47	17	21	71	26	29	21	29	39	33
Mountain	82	36	64	54	46	63	27	81	46	27
Pacific	19	18	21	8	16	8	13	16	19	16

Summary of weekly reports from cities, September 25 to October 29, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued.

INFLUENZA DEATH RATES

	Week ended—									
	Oct. 2, 1926	Oct. 1, 1927	Oct. 9, 1926	Oct. 8, 1927	Oct. 16, 1926	Oct. 15, 1927	Oct. 23, 1926	Oct. 22, 1927	Oct. 30, 1926	Oct. 29, 1927
95 cities	6	6	4	5	6	6	7	9	11	8
New England	2	0	0	5	5	2	7	5	7	0
Middle Atlantic	2	4	3	6	4	8	8	7	8	4
East North Central	5	5	2	1	2	3	5	5	14	5
West North Central	0	8	6	4	11	2	2	12	2	6
South Atlantic	9	4	6	4	8	7	8	11	21	13
East South Central	10	25	5	10	16	10	10	25	10	41
West South Central	35	22	13	9	13	13	13	13	26	17
Mountain	18	27	18	45	27	9	27	18	9	27
Pacific	7	7	0	3	11	3	0	14	7	10

PNEUMONIA DEATH RATES

95 cities	69	56	64	65	77	71	86	77	96	91
New England	87	58	33	81	75	95	83	86	99	65
Middle Atlantic	71	62	76	71	88	72	104	75	101	92
East North Central	59	41	54	58	62	49	61	66	86	82
West North Central	70	33	63	42	53	60	49	64	63	69
South Atlantic	66	66	61	57	89	108	113	72	108	88
East South Central	109	87	83	82	52	46	98	127	134	112
West South Central	66	95	88	69	106	69	53	86	88	190
Mountain	155	81	55	72	118	117	128	144	182	144
Pacific	28	45	53	69	81	83	99	100	88	97

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30, 443, 800	30, 966, 700	29, 783, 700	30, 295, 900
New England	12	12	2, 211, 000	2, 245, 900	2, 211, 000	2, 245, 900
Middle Atlantic	10	10	10, 457, 000	10, 567, 000	10, 457, 000	10, 567, 000
East North Central	16	16	7, 650, 200	7, 810, 600	7, 650, 200	7, 810, 600
West North Central	12	10	2, 585, 500	2, 626, 600	2, 470, 600	2, 510, 000
South Atlantic	21	20	2, 799, 500	2, 878, 100	2, 757, 700	2, 835, 700
East South Central	7	7	1, 008, 300	1, 023, 500	1, 008, 300	1, 023, 500
West South Central	8	7	1, 213, 800	1, 243, 300	1, 181, 500	1, 210, 400
Mountain	9	9	572, 100	580, 000	572, 100	580, 000
Pacific	6	4	1, 946, 400	1, 991, 700	1, 475, 300	1, 512, 800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended October 22, 1927.—The following report for the week ended October 22, 1927, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

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

PLAGUE

Ceylon.—Colombo.
India.—Bombay (last case Oct. 8, 1927), Rangoon.
Siam.—Bangkok.

CHOLERA

Iraq.—Basra.
India.—Rangoon.

CHOLERA—continued

Siam.—Bangkok.
China.—Canton, Shanghai (International Settlement).

SMALLPOX

India.—Bombay, Rangoon, Tuticorin.
Dutch East Indies.—Banjermasin, Samarinda.

Reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Aden Protectorate.—Perim, Kamaran, Aden.
Arabia.—Bahrein.
Persia.—Bender-Abbas, Mohammerah (last case of cholera, August 31, 1927), Abadan (last case of cholera, August 31, 1927), Bushire.
India.—Chittagong (last case of cholera, August 13, 1927), Cochin, Vizagapatam, Moulmein, Bassein (last case of plague, October 8, 1927; last case of cholera, July 23, 1927), Negapatam (last case of cholera, August 20, 1927).
Portuguese India.—Nova Goa.
Federated Malay States.—Port Swettenham.
Straits Settlements.—Penang, Singapore (last case of plague, August 30, 1927; last case of cholera, October 15, 1927).
Dutch East Indies.—Batavia, Semarang (last case of plague, January 8, 1927), Cheribon, Padang, Belawan-Deli, Tarakan, Palembang, Menado, Sabang, Surabaya (last case of plague, April 16, 1927), Makassar (last case of plague, August 27, 1927), Balik-Papan, Medan.
Sarawak.—Kuchin.
British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.
Portuguese Timor.—Dilly.
Philippine Islands.—Manila (last case of cholera, September 3, 1927), Iloilo, Jolo, Cebu, Zamboanga.
French Indo-China.—Saigon and Cholon (last case of plague, September 17, 1927; last case of cholera, October 8, 1927), Tourane (last case of cholera, October 1, 1927), Haiphong (last case of cholera, August 20, 1927).
China.—Tsingtao, Chinwang-Tao (last case of cholera, October 8, 1927), Tien-Tsin (last case of cholera, October 1, 1927), Newchang (last case of cholera, September 24, 1927), Swatow (last case of cholera, October 8, 1927), Amoy (last case of cholera, October 15, 1927).
Hong Kong.
Macao.—(Last case of cholera, October 8, 1927.)
Wei-hai-wei.
Formosa.—Keelung, Takao.
Chosen.—Chemulpo, Fusan.
Manchuria.—Yingkow (last case of cholera, September 11, 1927), Antung, Harbin, Mukden, Changchun.
Kwantung.—Port Arthur, Dairen (last case of cholera, September 24, 1927).
Japan.—Nagasaki, Yokohama, Niigati, Shimonoseki, Tsuruga, Kobe, Osaka, Hakodate, Moji.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.
New Guinea.—Port Moresby.
New Britain Mandated Territory.—Rabaul and Kokopo.
New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.
Western Samoa.—Apia.
New Caledonia.—Noumea.
Fiji.—Suva.
Hawaii.—Honolulu.
Society Islands.—Papeete.

AFRICA

Egypt.—Alexandria (last case of plague, August 27, 1927), Port Said (last case of plague, July 19, 1927), Suez (last case of plague, September 3, 1927).
Anglo-Egyptian Sudan.—Port Sudan, Suakin.
Eritrea.—Massaua.
French Somaliland.—Djibouti.
British Somaliland.—Berbera.
Italian Somaliland.—Mogadiscio.
Kenya.—Mombasa (last case of plague July 30, 1927).
Zanzibar.—Zanzibar.
Tanganyika.—Dar es Salaam.
Seychelles.—Victoria.
Mozambique.—Mozambique, Beira, Lourenço-Marques.
Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.
Mauritius.—Port Louis (last case of plague September 16, 1927).
Reunion.—St. Denis (last case of plague January 22, 1927).
Madagascar.—Majunga, Diego-Suarez (last case of plague January 31, 1927), Tamatave (last case of plague March 5, 1927).

AMERICA

Panama.—Colon, Panama.

Returns for the week ended October 22, 1927, were not received from the following ports:

India.—Calcutta (last case of plague April 30, 1927; ast case of cholera, October 15, 1927), Karachil (last case of cholera June 4, 1927), Madras (last case of cholera, October 15, 1927).
Dutch East Indies.—Pontianak.
Union of Socialist Soviet Republics.—Vladivostok.

AZORES

Plague—St. Michaels—September 4–October 1, 1927.—During the three-week period ended October 1, 1927, three cases of plague with one death were reported in the Azores, one case occurring at Arrifes and one at San Antonio, 3 and 9 miles, respectively, from the port.

CANADA

Communicable diseases—Week ended October 29, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended October 29, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	5			6	3			14
Poliomyelitis		3	2	4			7	16
Smallpox				64	3	5	6	78
Typhoid fever	8	38	20	14	1	3	1	85

Communicable diseases—Quebec—Week ended October 29, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended October 29, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	16	Scarlet fever	66
Diphtheria	98	Smallpox	7
German measles	4	Tuberculosis	45
Influenza	3	Typhoid fever	20
Measles	78	Whooping cough	15
Poliomyelitis	2		

Typhoid fever—Montreal—January 2–November 5, 1927.—The following table gives the cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

Week ended—	Cases	Deaths	Week ended—	Cases	Deaths
Jan. 8, 1927	3	1	June 11, 1927	128	36
Jan. 15, 1927	4	3	June 18, 1927	86	18
Jan. 22, 1927	1	2	June 25, 1927	75	23
Jan. 29, 1927	3	1	July 2, 1927	66	21
Feb. 5, 1927	1	0	July 9, 1927	52	10
Feb. 12, 1927	0	0	July 16, 1927	39	4
Feb. 19, 1927	1	2	July 23, 1927	22	9
Feb. 26, 1927	1	1	July 30, 1927	23	10
Mar. 5, 1927	9	1	Aug. 6, 1927	16	5
Mar. 12, 1927	203	4	Aug. 13, 1927	20	5
Mar. 19, 1927	383	14	Aug. 20, 1927	14	4
Mar. 26, 1927	568	22	Aug. 27, 1927	8	3
Apr. 2, 1927	649	48	Sept. 3, 1927	27	0
Apr. 9, 1927	386	40	Sept. 10, 1927	17	0
Apr. 16, 1927	175	38	Sept. 17, 1927	13	2
Apr. 23, 1927	125	43	Sept. 24, 1927	6	3
Apr. 30, 1927	105	23	Oct. 1, 1927	18	1
May 7, 1927	106	19	Oct. 8, 1927	14	1
May 14, 1927	367	16	Oct. 15, 1927	5	1
May 21, 1927	770	26	Oct. 22, 1927	3	1
May 28, 1927	353	38	Oct. 29, 1927	9	1
June 4, 1927	239	37	Nov. 5, 1927	1	1

CUBA

Communicable diseases—Habana—October, 1927.—During the month of October, 1927, communicable diseases were reported in Habana, Cuba, as follows:

Disease	New cases	Deaths	Remaining under treatment Oct. 31, 1927	Disease	New cases	Deaths	Remaining under treatment Oct. 31, 1927
Diphtheria	4		1	Measles	12	1	19
Leprosy	2		18	Typhoid fever [1]	31	5	57
Malaria [1]	62	1	49				

[1] Many of these cases from the interior.

EGYPT

Communicable diseases—Two weeks ended September 16, 1927.—During the two weeks ended September 16, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Influenza	335		Typhoid fever	128	
Smallpox	4		Typhus fever	3	1

IRAQ

Cholera statistics—October 2–8, 1927—Summary.—Cholera cases and deaths have been reported in seven cities of Iraq for the week ended October 8, 1927, and from the beginning of the outbreak in July, 1927, to October 8, as follows:

City	Week ended Oct. 8, 1927		Total to Oct. 8, 1927	
	Cases	Deaths	Cases	Deaths
Amarah	10	3	131	103
Basra	1	1	416	337
Diwaniyah	44	26	53	30
Hillah	1		7	5
Kerbala	11	7	31	18
Kut	1		8	6
Muntafiq	5	3	185	118
Total	73	40	831	617

IRISH FREE STATE (IRELAND)

Typhus fever—Donegal County—October 16–22, 1927.—During the week ended October 22, 1927, four cases of typhus fever were reported in the urban district of Letterkenny, Donegal County, Irish Free State.

LIBERIA

Yellow fever—Monrovia—September 4–10, 1927.—During the week ended September 10, 1927, a case of yellow fever was reported at Monrovia, Liberia.

MADAGASCAR

Plague—August 1–15, 1927.—During the two-week period ended August 15, 1927, 42 cases of plague with 40 deaths were reported in the Island of Madagascar. The greatest number of cases occurred in the Province of Ambositra, viz, 22, with 22 deaths; type, pneumonic. The distribution of occurrence according to type was as follows: Bubonic cases, 13; pneumonic, 23; septicemic, 6.

MEXICO

Hemorrhagic malaria—State of Tabasco—October 22, 1927.—Information received under date of October 22, 1927, shows the occurrence of cases of hemorrhagic malaria in the State of Tabasco, Mexico, following a severe flood in that region. It was stated that a sanitary and medical brigade had been organized for the relief of the situation.

SENEGAL

Plague—Yellow fever—October 3–16, 1927.—During the two weeks ended October 16, 1927, plague and yellow fever were reported as follows:

Plague.—Cases, 129; deaths, 40. The occurrence was distributed according to locality as follows: Baol region—Cases, 56; deaths, 14. Cayor region—Cases, 65; deaths, 26. Louga district—Cases, 8.

Yellow fever.—Cases, 24; deaths, 18; of which 5 cases with 4 deaths occurred in interior localities. Urban occurrence was: Dakar—Cases, 12; deaths, 7. Rufisque—One fatal case (maritime towns). Thies (a railroad town situated a short distance from the coast)—Cases, 6; deaths, 6, one of these fatal cases being in an European.

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 November 18, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	Sept. 30-Oct. 1	10		
Canton	Sept. 18-Oct. 1	8	8	
India				Sept. 4-17, 1927: Cases, 15,021; deaths, 7,800.
Madras	Oct. 2-8	9	3	
Rangoon	Sept. 25-Oct. 1	3	3	
India, French Settlements in	July 17-Aug. 27	82	59	
Indo-China (French)	Aug. 11-Sept. 20	1,924		
Annam	do	1,573		
Cambodia	do	73		
Cochin-China	do	87		
Laos	do	86		
Tonkin	do	105		
Iraq				Oct. 2-8, 1927: Cases, 73; deaths, 40. July 24-Oct. 8, 1927: Cases, 831; deaths, 617.
City—				
Amarah	Oct. 2-8	10	3	July 24-Oct. 8, 1927: Cases, 131; deaths, 103.
Basra	do	1	1	July 24-Oct. 8, 1927: Cases, 416; deaths, 337.
Diwaniyah	do	44	26	July 24-Oct. 8, 1927: Cases, 53; deaths, 30.
Hillah	do	1		July 24-Oct. 8, 1927: Cases, 7; deaths, 5.
Kerbala	do	11	7	July 24-Oct. 8, 1927: Cases, 31; deaths, 18.
Kut	do	1		July 24-Oct. 8, 1927: Cases, 8; deaths, 6.
Muntafiq	do	5	3	July 24-Oct. 8, 1927: Cases, 185; deaths, 118.

PLAGUE

Azores:				
St. Michael's	Sept. 4-Oct. 1	3	1	
India				Sept. 4-10, 1927: Cases, 1,087; deaths, 569.
Bombay	Sept. 18-24	2	1	
Madras Presidency	Sept. 11-17	87	43	
Rangoon	Sept. 25-Oct. 1	3	3	
Java:				
Batavia	Sept. 18-24	21	21	Province.
East Java and Madura—				
Surabaya	Sept. 4-10	4	4	Received out of date. Aug. 7-13, 1927: Cases, 6; deaths, 5.
Madagascar				Aug. 1-15, 1927: Cases, 42; deaths, 40.
Provinces—				
Ambositra	Aug. 1-15	1	1	Bubonic.
Antisirabe	do	22	22	Pneumonic.
Itasy	do	3	1	Bubonic.
Moramanga	do	3	3	Septicemic.
Tananarivo—				
Town	do	4	4	Bubonic, 2; septicemic, 2.
Other localities	do	9	9	Bubonic, 7; pneumonic, 1; septicemic, 1.
Senegal	Oct. 3-16			Cases, 129; deaths, 40.
Baol	do	56	14	
Cayor	do	65	26	
Louga	do	8		
Syria:				
Beirut	Sept. 1-10	1		

SMALLPOX

Algeria	Aug. 1-Sept. 20	731		
Brazil:				
Porto-Allegre	Sept. 1-30	3		
Canada:				
Alberta—				
Edmonton	Oct. 23-29	1		
Ontario—				
Ottawa	do	47		
Toronto	do	2		
Quebec—				
Rivière du Loup	Oct. 30-Nov. 5	3		

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

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

Reports Received During Week Ended November 18, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Canton	Sept. 18–24	1	1	
Manchuria—				
Mukden	Sept. 25–Oct. 1	1		
Pensihu	do	1		
Chosen	July 1–31	19	6	
France	Aug. 1–31	6		
Gold Coast	July 1–31	1		
Great Britain:				
England and Wales	Oct. 16–22			Cases, 200.
Bristol	Oct. 16–22	6		
Leeds	do	6		
Sheffield	Oct. 10–22	4		
India				Sept. 4–10, 1927: Cases, 1,109; deaths, 266.
Bombay	Sept. 18–24	1		
Madras	Oct. 2–8	1		
Rangoon	Sept. 25–Oct. 1	2	1	
India, French Settlements in	July 17–Aug. 27	57	44	
Indo-China	Aug. 11–Sept. 20	14		
Italy:				
Rome	July 11–17	1		Including the entire Romna consular district.
Java:				
East Java and Madura—				
Surabaya	Aug. 7–13	8	1	
Mexico				June 1–30, 1927: Deaths, 64.
Morocco				Aug. 1–31, 1927: Cases, 76.
Nigeria				July 1–31, 1927: Cases, 492; deaths, 83.
Siam				Apr. 1–Sept. 24, 1927: Cases, 250; deaths, 67.
Syria:				
Damascus	Sept. 21–30	4		
Venezuela:				
Maracaibo	Sept. 27–Oct. 3		1	

TYPHUS FEVER

Bulgaria	July 11–Aug. 10	19	1	
Sofia	Oct. 15–21	2		
Chosen	July 1–31	72	8	
Egypt	Sept. 3–16	3	1	
Irish Free State (Ireland):				
Donegal County—				
Letterkenny	Oct. 16–22	4		Urban district.
Lithuania	Aug. 1–31	18	8	
Mexico	June 1–30		26	
Mexico City	Sept. 25–Oct. 22	20		Including municipalities in Federal district.
Morocco	Aug. 21–Sept. 20	29		
Poland	Sept. 18–24	6		
Rumania	July 24–Aug. 27	44	5	

YELLOW FEVER

Liberia:				
Monrovia	Sept. 4–10	1		
Senegal				Oct. 3–16, 1927: Cases, 24; deaths, 18.
Interior—				
Kebemer district	Oct. 9–16	1	1	
Kelle district	do	2	1	
Khombole district	Oct. 3–9	2	2	Including Gueoul; in Europeans.
Urban—				
Dakar	Oct. 3–16	12	7	
Rufisque	Oct. 9–16	1	1	
Thies	Oct. 3–16	6	6	One in European.
On vessel:				
S. S. Desirade	Sept. 16	1	1	At Leixoes, Portugal, in passenger embarked at Dakar, Senegal.

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

Reports Received from June 25 to November 11, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22–Sept. 24	103	11	
Canton	May 1–Sept. 17	81	46	
Foochow	July 24–Sept. 10			Present.
Hong Kong	July 17–Sept. 3	3	3	
Kulangsu	June 21	1		
Shanghai	June 19–25	2		
Do	July 31–Oct. 1		114	In international settlement and French concess on.
Swatow	May 15–Sept. 10	138	13	
Tientsin	Aug. 27–Sept. 17	9		
India	Apr. 17–Sept. 3			Cases, 159,454; deaths, 87,607.
Bombay	May 8–Sept. 17	127	57	
Calcutta	May 8–Sept. 24	727	426	
Karachi	May 29–June 4	1	1	
Madras	June 19–Oct. 1	823	437	
Rangoon	May 8–Sept. 24	20	16	
India, French Settlements in	Mar. 30–July 16	171	109	
Indo-China (French)	Apr. 1–Aug. 10			Cases, 13,640.
Annam	do	2,936		
Cambodia	do	335		
Cochin-China	do	1,519		
Saigon	June 4–Sept. 2	11	4	
Laos	July 11–Aug. 10	137		
Tonkin	Apr. 1–Aug. 10	9,713		
Iraq:				
Baghdad	July 24–30	29	18	
Basra	July 17–Sept. 17	383	288	
Japan:				
Yokohama	July 31–Aug. 6	1	1	
Persia:				
Abadan	July 24–Aug. 13	215	183	
Ahwaz	July 31–Aug. 13	20	13	
Minab	Aug. 7–13		23	
Mohammerah	July 17–Aug. 27	194	155	
Nasseri	July 19–31		10	
Philippine Islands:				
Manila	July 17–Aug. 27	2		
Bulacan Province	June 7–July 8	3	2	
Leyte Province—				
Barugo	June 29	1	1	
Carigara	June 23	1	1	Final diagnosis not received.
Palo	May 18	1		
Siam	May 1–Sept. 17			Cases, 356; deaths, 209.
Bangkok	do	48	15	
On vessel:				
S. S. Adrastus	Reported Aug. 6	1	1	At Yokohama, Japan.
S. S. Montreal Maru	Sept. 20			At Muke, Japan.
S. S. Tabaristan	Oct. 6	1		Case in coolie removed at Basra.
S. S. Morea	Sept. 2			At Hong Kong; cholera-infected.
S. S. War Mehtar (oil tanker).	Aug. 4	1	1	At Saffagha, Egypt.

PLAGUE

Algeria:				
Algiers	Aug. 21–31	1		
Oran	Aug. 21–Sept. 10	5	4	
Argentina	Jan. 1–Aug. 2			Cases, 80; deaths, 44.
Buenos Aires	Apr. 10–May 7	4	3	
Cordoba	Jan. 11–Aug. 6	52	29	
Corrientes	June 1	1	1	
Entre Rios	Mar. 29–Aug. 13	8	1	
Sante Fe	Apr. 28–May 16	4	3	
Territory—				
Chaco—				
Barranqueras	May 29	2	2	
Formosa	June 25	3	2	
Pampa	July 27–Aug. 2	4		
Rio Negro	Aug. 6	1		
City—				
Merou	Reported July 14			Present.
Rosario	May 7	1	1	
Santa Fe	May 16	4	2	

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

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

Reports Received from June 25 to November 11, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Azores:				
St. Michaels Island	May 15–Aug. 27	6		
Rebeira Grande	June 12–18	1		
Brazil:				
Sao Paulo	June 3–9	1	1	
British East Africa:				
Kenya	Apr. 24–July 31	73	14	
Mombasa	July 24–30	1	1	
Nairobi	May 22–28	6		
Tanganyika	Mar. 29–May 28		37	
Do	July 24–Aug. 28		40	
Uganda	Jan. 1–Feb. 28	138	121	
Do	Mar. 27–June 18	469	300	
Canary Islands:				
Laguna district—				
Tejina	June 17	1		
Las Palmas	Oct. 8–11	8		
Ceylon:				
Colombo	May 1–Sept. 24	21	14	Plague rats, 4.
China:				
Amoy	July 3–23			Present in surrounding country.
Mongolia	Reported Oct. 11		200	Approximate.
Tientsin	Aug. 14–20	2		
Tungliao	Reported Oct. 15			Outbreak.
Ecuador:				
Guayaquil	June 1–Aug. 31	7		Rats taken, 72,410; found infected, 45.
Egypt:				
Alexandria	June 4–Sept. 2	4		
Beni-Souef	June 4–July 13	5	2	
Biba	June 4–10	1		At Nama.
Dakhalia	June 24–July 9	6	1	
Minia	Aug. 8–9	4		
Port Said	June 24–July 21	4	1	
Suez	Sept. 4	1		
Tanta district	June 4–10	1		
Greece	May 1–June 30	4	3	
Athens	June 1–Aug. 29	3		Including Piraeus.
Mytilene	Aug. 9–Sept. 26	6		
Patras	May 30–Oct. 1	9	2	
Hawaii Territory:				
Hamakua	July 15–Aug. 30			2 plague rodents.
Honokaa	May 17–23	2	2	
Kukuihaele	Aug. 12–17	1	1	Do.
Paauilo	July 26–Aug. 1		4	
India	Apr. 17–Sept. 3			Cases, 23,708; deaths, 9,276.
Bombay	May 8–Sept. 17	100	85	
Calcutta	Aug. 21–Sept. 3	18	10	
Madras	May 1–Sept. 10	1,237	568	
Rangoon	May 8–Sept. 17	70	64	
Indo-China (French)	Apr. 1–Aug. 10	50		
Saigon	Sept. 2–16	2		
Kwang-Chow-Wan	May 21–July 31	73		
Iraq:				
Baghdad	Apr. 8–May 28	12	1	
Java:				
Batavia	May 1–Sept. 17	292	273	Province.
East Java and Madura	May 22–July 16	28	27	
Pasoerocan Residency	May 9			Outbreak reported at Nagdiwano.
Surabaya	Apr. 17–Sept. 3	75	74	
Madagascar				Mar. 16–Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra	Mar. 16–July 31	99	92	
Antisirabe	Mar. 16–May 15	8	8	
Miarinarivo (Itasy)	Mar. 16–July 31	69	63	
Moramanga	May 16–July 31	28	27	
Tananarive	Mar. 16–July 31	233	204	
Tananarive Town	Mar. 16–June 30	22	20	
Mauritius:				
Port Louis	May 1–June 30	1	1	
Nigeria	Mar. 1–May 31	228	117	
Peru	Apr.–May 31			Cases 22; deaths, 8.
Departments—				
Ica	Apr. 1–30	1		
Lambayeque	do	1		
Libertad	Apr. 1–May 31	7	4	
Lima	Apr. 1–July 31	13	8	
Lima City	Apr. 1–30	5	1	

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

Reports Received from June 25 to November 11, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Senegal	May 23–Sept. 25			Cases, 1,030; deaths, 606.
Baol	June 2–Oct. 2	179	95	
Cayor Frontier	July 4–Oct. 2	917	530	
Dakar	June 20–Oct. 2	147	94	
Facel	July 6	17	8	
Guindel	June 20–26	11	2	
Louga district	Sept. 18–25	5	4	
M'Bour	July 6–10	28	23	
Medina	June 13–19	2	2	
Pout	July 4–10	1		
Rufisque	May 23–Sept. 25	228	167	
Thies district	do	34	15	
Tivaouane	June 2–July 17	50	32	
Siam	Apr. 1–June 25			Cases, 10; deaths, 7.
Bangkok	May 8–June 11	2	1	
Syria:				
Beirut	June 11–July 10	3		
Tunisia	Apr. 21–July 10	144		
Tunis	July 25–Aug. 1	1		
Turkey:				
Constantinople	May 13–19	1		
Do	Sept. 18–24	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1–14	2	2	Native.
Orange Free State—				
Edenburg district	July 17–26	3	3	Natives; on farm.
Rouxville district	July 24–Aug. 6	2	2	
On vessel:				
S. S. Avoroff	June 24–30	1		Greek warship at port of Athens.
S. S. Capafric	Aug. 23	3	1	At Duala, French Cameroons, from Nigeria.
S. S. Elcano	Aug. 19	1		At Piræus, Greece.
S. S. Madonna	Aug. 24	1		At Dakar, Senegal, from ports south
S. S. Ransholm	Aug. 5	3		At Gefle, Sweden, from Rufisque, Senegal.

SMALLPOX

Algeria	Apr. 21–July 31			Cases, 882.
Algiers	May 11–June 30	8		
Oran	May 21–Oct. 10	69		
Angola	June 1–July 31	45		
Arabia:				
Aden	July 17–Aug. 1	2	1	
Brazil:				
Bahia	Aug. 7–13	1		
Porto Alegre	July 1–Aug. 31	8		
Rio de Janeiro	May 22–Sept. 17	23	19	
British East Africa:				
Kenya	Apr. 24–May 14	7	14	
Tanganyika	Mar. 29–June 18		22	
Do	Aug. 7–28		21	
Zanzibar	Apr. 1–Aug. 31	121	41	
British South Africa:				
Northern Rhodesia	Apr. 30–Sept. 9	179	3	
Canada	June 5–Oct. 22			Cases, 698.
Alberta	June 12–Oct. 22			Cases, 233.
Calgary	June 12–Aug. 27	9		
British Columbia—				
Vancouver	May 23–Sept. 4	4		
Manitoba	June 5–Oct. 22			Cases, 45.
Winnipeg	June 12–Oct. 22	23		
Nova Scotia	Sept. 11–Oct. 15	2		
Halifax	Oct. 8–15	1		
Ontario	June 5–Oct. 22			Cases, 311.
Ottawa	June 12–Oct. 22	205		
Sarnia	Aug. 7–13	1		
Toronto	June 19–Oct. 22	21		
Windsor	Oct. 2–15	9		
Quebec	June 19–Oct. 22	23		
Saskatchewan	June 12–Oct. 22			Cases, 151.
Moose Jaw	Aug. 14–Oct. 22	24		
Regina	July 17–Oct. 8	15		

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

Reports Received from June 25 to November 11, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Ceylon	May 1-7			Cases, 3; deaths, 1.
Colombo	July 31-Aug. 6	1	1	
China:				
Amoy	May 8-28	1		
Do	July 3-16			Present in surrounding country.
Antung	July 4-31	3		
Chefoo	May 8-14			Present.
Foochow	May 8-Sept. 10			Do.
Hong Kong	May 8-Sept. 17	22	21	
Manchuria—				
Anshan	May 22-28	1		
Changchun	May 15-July 30	8		
Dairen	May 2-July 3	10	5	
Fushun	May 15-Sept. 17	11		
Harbin	June 13-July 10	4		
Kaiyuan	July 3-9	2		
Mukden	May 22-July 30	6		
Pensihu	July 3-9	1		
Ssupingkai	May 8-July 9	3		
Tientsin	May 8-Sept. 10	18	4	
Chosen	Feb. 1-June 30			Cases, 507; deaths, 205.
Chinnampo	Apr. 1-May 31	2		
Fusan	Apr. 1-30	1		
Gensan	May 1-31	1		
Seishin	Apr. 1-30	1		
Curacao	May 29-June 4	1		Alastrim.
Ecuador:				
Guayaquil	June 1-Aug. 31	4		
Egypt	May 7-July 29			Cases, 21; deaths, 3.
Alexandria	May 21-June 17	4	1	
Cairo	Jan. 22-Apr. 15	14	3	
France	Apr. 1-July 31			Cases, 201.
Lille	July 24-30	1		
Paris	May 21-July 31	14	2	
Gold Coast	Mar. 1-June 30	41	7	
Great Britain:				
England and Wales	May 22-Oct. 15			Cases, 3,610.
Birmingham	Aug. 14-Sept. 30	2		
Bradford	May 29-June 11	2		
Cardiff	June 19-July 2	4		
Leeds	July 17-Oct. 8	17		
Liverpool	July 17-30	1		
London	May 15-June 18	2		
Manchester	Oct. 2-15	3		
Newcastle-upon-Tyne	June 12-Oct. 15	11		
Sheffield	June 12-Oct. 8	29		
Stoke-on-Trent	Aug. 21-27	1		
Scotland—				
Dundee	May 29-Sept. 3	6		
Greece	June 1-30	14		
Saloniki	July 12-Aug. 15		2	
Guatemala:				
Guatemala City	June 1-30		9	
Guinea (French)	June 4-10	9		
India	Apr. 17-Sept. 3			Cases, 76,054; deaths, 20,070.
Bombay	May 28-Sept. 17	243	158	
Calcutta	May 8-Sept. 24	412	315	
Karachi	May 15-Aug. 6	10	5	
Madras	May 22-Oct. 1	34	8	
Rangoon	May 8-Sept. 24	192	157	
India, French Settlements in	Mar. 20-June 18	174	111	
Indo-China (French)	Mar. 21-Aug. 10			Cases, 318.
Saigon	May 14-Sept. 9	4	1	
Iraq:				
Baghdad	Apr. 10-Oct. 1	8	4	
Basra	Apr. 10-Sept. 17	9	8	
Italy	Apr. 10-May 21	13		
Rome	June 13-July 10	2		
Jamaica	May 29-Sept. 24	37		Reported as alastrim.
Japan	Apr. 3-May 7			Cases, 19.
Nagasaki City	June 20-Aug. 14	26	7	
Taiwan Island	May 21-31	1		
Java:				
Batavia	May 22-Aug. 20	7		
East Java and Madura	Apr. 24-Sept. 3	20		
Latvia	Apr. 1-30	1		

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

Reports Received from June 25 to November 11, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Mexico	Mar. 1–May 31			Deaths, 557.
Acapulco	Aug. 28–Sept. 17	2	2	
Durango	June 1–30		1	
Monterey	July 1–31	6	4	
San Luis Potosi	May 29–Aug. 13		11	
Tampico	June 1–July 31	1	2	
Torreon	Aug. 7–Oct. 1		2	
Morocco	Apr. 1–July 31	207		
Netherlands India:				
Borneo—				
Holoc Soengei	Apr. 21			Epidemic in 2 localities.
Pasir Residency	Apr. 30–May 6			Epidemic outbreak.
Samarinda Residency	May 21–27			Do.
Nigeria	Mar. 1–June 30	2,352	570	
Paraguay:				
Asuncion	July 10–23		2	
Porsia:				
Teheran	Feb. 21–July 23		16	
Poland	Apr. 10–Aug. 6	20	2	
Portugal:				
Lisbon	May 29–Oct. 8	26	1	
Oporto	Sept. 3–9	1		
Senegal:				
Medina	July 4–10	7		
Siam	Apr. 1–Sept. 3			Cases, 246; deaths, 66.
Bangkok	May 1–Sept. 10	16	8	
Spain:				
Madrid	Aug. 1–31		1	
Valencia	May 29–June 4	3		
Do	Sept. 25–Oct. 1	1		
Straits Settlements	June 12–18			Cases, 3.
Singapore	Apr. 1–June 18	7	2	
Sumatra:				
Medan	June 5–Aug. 20	3		
Switzerland:				
Berne	June 26–July 2	1		
Syria:				
Damascus	Aug. 11–Sept. 20	4		
Tunisia	Apr. 1–June 10			Cases, 10.
Tunis	June 1–10	1		
Union of South Africa:				
Cape Province	July 7–Aug. 20			Outbreaks.
Elliott district	May 11–June 10			Do.
Idutywa district	July 3–9			Do.
Kalanga district	May 11–June 10			Do.
Mount Ayliffe district	July 31–Aug. 6			Do.
Orange Free State	Aug. 7–13			Do.
Transvaal—				
Barberton district	May 1–7			Do.
Venezuela:				
Maracaibo	July 12–Sept. 12		3	

TYPHUS FEVER

Algeria	Apr. 21–July 20			Cases, 399; deaths, 39.
Algiers	May 11–Oct. 10	33		
Oran	May 21–Aug. 31	34		
Argentina:				
Rosario	Aug. 1–31		1	
Bulgaria	Mar. 1–July 10			Cases, 226; deaths, 20.
Sofia	June 4–Oct. 14	17		
Chile:				
Antofagasta	Apr. 16–May 31	1		
Do	Sept. 25–Oct. 1		1	
Concepcion	May 29–June 4		1	
La Calera	Apr. 16–May 31	1		
Ligua	Mar. 16–31	2		
Puerto Montt	Apr. 16–May 31	1		
Santiago	do	5	1	
Talcahuano	July 10–16		1	
Valparaiso	Apr. 16–Sept. 3	5	3	

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

Reports Received from June 25 to November 11, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Manchuria—				
Harbin	July 25–Aug. 21	5		
Mukden	May 29–June 4	1		
Tientsin	July 10–16	1		
Chosen	Feb. 1–June 30			Cases, 721; deaths, 60.
Chemulpo	May 1–Aug. 31	3		
Gensan	do	4		
Seoul	Apr. 1–Aug. 31	35	3	
Czechoslovakia	do			Cases, 55.
Eypt	May 28–Sept. 2			Cases, 127; deaths, 19.
Alexandria	May 21–Aug. 5	13	5	
Cairo	Jan. 15–July 1	43	16	
Port Said	Sept. 24–30	1		
Estonia	Apr. 1–June 30			Cases, 5.
Greece	June 1–30	2		
Athens	June 1–July 31		9	
Guatemala:				
Guatemala	Aug. 25–31		1	
Iraq:				
Baghdad	Apr. 24–30	1		
Irish Free State:				
Cork County	July 3–9	1		In urban district.
Latvia	Apr. 1–July 31	32		
Lithuania	Feb. 1–July 31	347	42	
Mexico	Feb. 2–May 31			Deaths, 140.
Mexico City	May 29–Sept. 24	59		Including municipalities in Federal district.
San Luis Potosi	July 31–Aug. 6		1	
Morocco	Apr. 1–Aug. 20	952		
Palestine	May 24–Sept. 26			Cases, 29.
Haifa	May 24–Aug. 29	8		
Jaffa	Aug. 2–Oct. 3	3		
Jerusalem	June 28–Aug. 15	3		
Mahnaim	May 17–23	1		In Safad district.
Nazareth	July 19–25	1		
Safad	May 17–Aug. 8	10		
Peru:				
Arequipa	Apr. 1–30		1	
Do	Aug. 1–31		2	
Poland	Apr. 10–Sept. 17	1,117	102	
Portugal:				
Lisbon	May 29–June 4	1		
Oporto	Aug. 20–27	1		
Rumania	Apr. 3–July 23	956	64	
Spain:				
Seville	Aug. 19–25		2	
Syria:				
Aleppo	Sept. 11–17	2		
Tunisia	Apr. 22–July 20			Cases, 158.
Tunis	July 5–Aug. 21	2		
Turkey:				
Constantinople	May 13–19		2	
Union of South Africa	Apr. 1–30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1–Aug. 27	42	5	
Albany district	June 5–11			Outbreaks.
East London	May 22–28	1		Do.
Glen Gray district	May 1–7			Do.
Kentani district	June 26–July 2			Do.
Port Elizabeth	Aug. 7–13	1		
Qumbu district	May 1–7			Do.
Umzimkulu district	June 26–July 2			Do.
Natal	Apr. 1–Aug. 6	7	3	
Impendhle district	June 5–11			Do.
Orange Free State	Apr. 1–July 23	5		
Transvaal	Apr. 1–30	1		
Johannesburg	July 3–Aug. 20	19	5	
Yugoslavia	May 1–Aug. 31			Cases, 24; deaths, 5.

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

Reports Received from June 25 to November 11, 1927—Continued

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Ashanti:				
Obuasi	Aug. 6	1	1	
Dahomey (West Africa):				
Porto Novo	July 1	1	1	In Syrian woman.
Gold Coast	Apr. 1–June 30	60	22	
Do	Aug. 4	2		
Ivory Coast	July 29	1	1	
Liberia:				
Monrovia	May 29–July 8	4	5	
Senegal:				
Dakar	July 9	1		
Do	Aug. 8		2	
Do	Sept. 17			Present.
Geoul	Sept. 26–Oct. 2	1	1	
Island of Goree	Aug. 22–Sept. 4	2	2	
Khombole	Aug. 1–Oct. 2	4	1	
Louga	Sept. 26–Oct. 2	1	1	
M'Bour	May 27–June 19	5	5	
Ouakam	June 2–Aug. 14	4	2	
Pout	Sept. 19–25	1	1	
St. Louis	Aug. 1–Oct. 2	3	3	
Thies	July 10	1	1	In European.
Do	Sept. 12–Oct. 2	4	4	
Tiaroye	Aug. 22–Sept. 4	1	1	
Tivaouane	May 27–Sept. 11	6	5	
Togoland:				
Meiatza	Aug. 15–21	1	1	