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PREVALENCE OF CERTAIN DISEASES IN THE UNITED STATES

MENINGOCOCCUS MENINGITIS, SMALLPOX, POLIOMYELITIS

Meningococcus meningitis.—A report dated December 19, 1927, shows an outbreak of meningococcus meningitis among Indians on the Shoshone Indian Reservation, Wyo. Exact information is not yet available, but there were probably 8 cases with 4 deaths to December 19, 1927.

Reports of meningococcus meningitis are not complete from many States, but during the year 1927 to date more cases of this disease have been reported in the United States than were reported during the preceding two years. Weekly reports are available for the three years 1925 to 1927 for 37 States and the District of Columbia, having an aggregate estimated population of more than 90,000,000. These States reported 2,317 cases of meningococcus meningitis for the 49 weeks from January 2, 1927, to December 10, 1927; 1,571 cases for the corresponding period of 1926, and 1,226 cases for the 49 weeks in 1925.

The following table gives a comparison of the reports of cases of meningococcus meningitis for the 16 weeks ended December 10, 1927, with the corresponding weeks of the two preceding years:

Meningococcus meningitis cases

Four weeks ended—	1927	Corresponding weeks	
		1926	1925
Sept. 17, 1927	122	85	101
Oct. 15, 1927	182	97	91
Nov. 12, 1927	102	96	66
Dec. 10, 1927	172	119	82
Total, 16 weeks	638	397	340

Smallpox.—Weekly telegraphic reports from the health officers of 37 States and the District of Columbia for the 16 weeks ended December 10, 1927, show an increase in cases of smallpox of 16 per cent over the reports for the corresponding period of last year and

an increase of 43 per cent over the reports received in 1925. The form of the disease is mild.

The following table gives a summary of the reports for 16 weeks of the years 1925, 1926, and 1927, the period covered in 1927 being from August 21 to December 10. The population of the 37 States is nearly 88,000,000:

Smallpox cases

Four weeks ended—	1927	Corresponding weeks	
		1926	1925
Sept. 17, 1927.....	556	421	373
Oct. 15, 1927.....	569	416	375
Nov. 12, 1927.....	1,227	1,017	875
Dec. 10, 1927.....	2,182	2,054	1,548
Total, 16 weeks.....	4,534	3,908	3,171

Poliomyelitis.—Although the incidence of poliomyelitis in the United States is steadily declining, the reports indicate more cases than are usual at this season of the year. The following table gives a summary of the reports of cases of poliomyelitis from the State health officers of 38 States for the 16 weeks from August 21 to December 10, 1927, arranged by four-week periods, compared with similar reports for the same periods of the years 1925 and 1926.

Poliomyelitis cases

Four weeks ended—	1927	Corresponding weeks	
		1926	1925
Sept. 17, 1927.....	1,751	474	1,120
Oct. 15, 1927.....	2,078	344	956
Nov. 12, 1927.....	1,374	217	466
Dec. 10, 1927.....	675	126	182
Total, 16 weeks.....	5,878	1,161	2,723

ENDEMIC GOITER AMONG SCHOOL CHILDREN

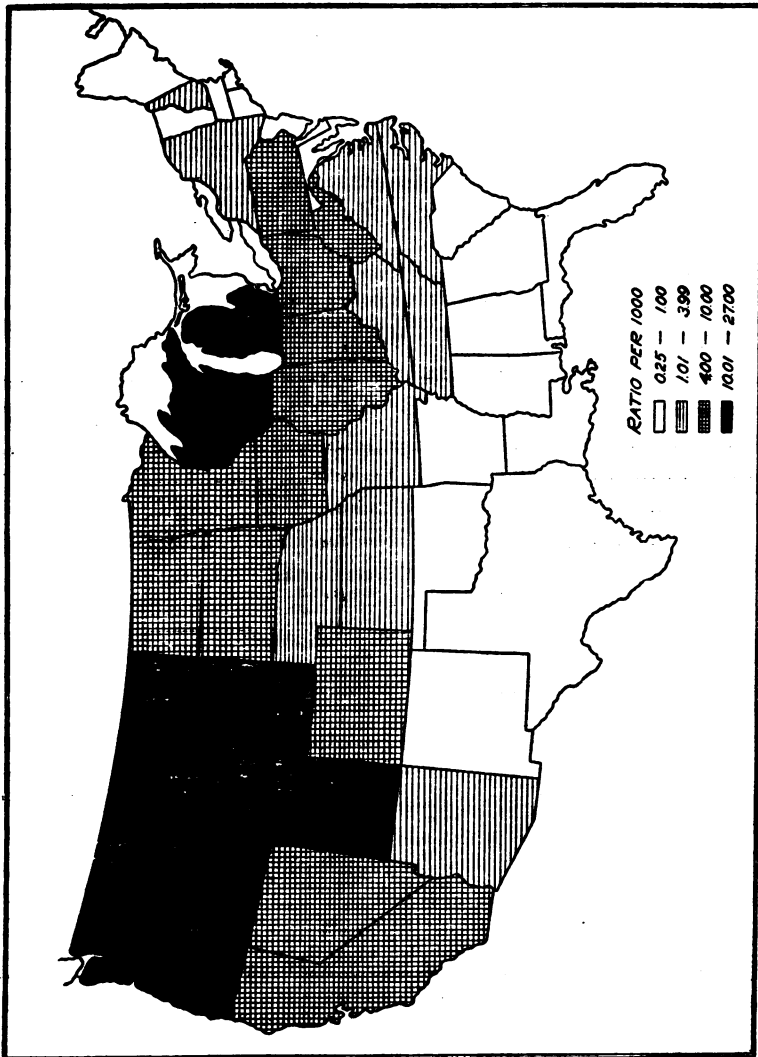
COMPARISON OF ENDEMIC GOITER INCIDENCE AMONG SCHOOL CHILDREN IN THE STATES OF MINNESOTA, OREGON, COLORADO, MONTANA, CONNECTICUT, AND MASSACHUSETTS, AND IN THE CITY OF CINCINNATI, OHIO

By ROBERT OLESEN, Surgeon, United States Public Health Service

INTRODUCTION

Information concerning the regional distribution of endemic goiter in the United States is available from numerous sources. Unfortunately, these data suffer from the obvious defect of having been gathered by many investigators, possessing varying degrees of skill and experience in examining thyroids, as well as employing different

methods of examination. Inasmuch as a knowledge of the distribution of simple thyroid enlargement is essential to a more accurate understanding of the cause of the malady and the intelligent application of prophylactic measures, it is to be regretted that the available records are not more uniform in character.



Map showing ratio of simple goiter per 1,000 men examined for military service in each State of the United States during the World War. The rates are based on a total of 2,510,701 examinations

THE DRAFT EXAMINATIONS

Relatively few thyroid surveys had been made prior to the World War. However, even these preliminary investigations, while meager in scope and number, served to indicate variations in goiter incidence in different sections of the country. When the results of the draft examinations were made known, it was apparent that information of

value was at hand, especially as regards the amount of simple goiter among men of draft age. Because of the continued interest in the thyroid findings disclosed by the draft examinations, the tabulation summarizing the results is reproduced as Table 1. The rate of simple goiter per 1,000 men examined indicates that the disease was most frequent among those residing in the Pacific Northwest and Great Lakes region. Goiter was less frequently encountered among the drafted men from the Southern and Atlantic Coast States. The incidence of the malady in each State, as disclosed by the examinations of 2,510,701 men, for military service, is shown graphically on the map. This map, being based upon the thyroid findings among all of the drafted men, is more indicative of nation-wide conditions than the incidence map usually reproduced, which is based upon the first million examinations.

TABLE 1.—Number of instances of endemic goiter and ratio per 1,000 examinations among 2,510,701 men examined for military service in the United States during the World War (by States)¹

State	Number of cases	Rate per 1,000	State	Number of cases	Rate per 1,000
Idaho.....	396	26.91	Kentucky.....	90	1.41
Oregon.....	421	26.31	District of Columbia.....	16	1.39
Washington.....	832	23.40	Kansas.....	48	1.25
Montana.....	576	21.00	Arizona.....	10	1.21
Utah.....	185	15.72	New York.....	308	1.19
Wyoming.....	102	15.37	Maryland.....	35	.94
Wisconsin.....	886	14.02	South Carolina.....	37	.94
Alaska.....	16	13.14	Connecticut.....	32	.89
Michigan.....	1,131	11.43	New Mexico.....	9	.88
North Dakota.....	156	8.73	Oklahoma.....	44	.72
Minnesota.....	578	8.04	New Hampshire.....	6	.70
West Virginia.....	307	7.89	Maine.....	13	.66
Illinois.....	1,397	7.79	Mississippi.....	24	.64
Iowa.....	458	6.68	Louisiana.....	32	.62
Indiana.....	464	6.49	Delaware.....	3	.59
Nevada.....	21	6.38	Alabama.....	29	.56
Ohio.....	798	5.59	Rhode Island.....	8	.55
Colorado.....	119	5.29	Georgia.....	33	.62
California.....	359	4.45	New Jersey.....	33	.43
Pennsylvania.....	829	4.10	Arkansas.....	17	.40
South Dakota.....	85	4.09	Massachusetts.....	29	.32
Missouri.....	342	3.99	Texas.....	36	.30
Virginia.....	188	3.38	Florida.....	6	.25
Nebraska.....	63	2.14	State not specified.....	186	1.96
Vermont.....	18	2.14			
Tennessee.....	120	1.96			
North Carolina.....	100	1.81	Total.....	11,971	4.35

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. H. Ireland, War Department, Washington, D. C., 1920.

Probable sources of errors in the draft examinations.—In evaluating the returns from the physical examinations of drafted men it may be recalled that many physicians participated in the work. Consequently, it may be expected that the skill and experience of the examiners in detecting thyroid disorders varied considerably. Moreover, the extent to which simple goiter prevails among male adults is much less than the incidence among adolescent children, particularly girls. Despite the obvious defects in the goiter statistics produced by the draft examinations, these data constitute the most complete

information concerning the nation-wide distribution of the disease yet available.

INDEPENDENT THYROID SURVEYS

Many thyroid surveys have been made in different sections of the country since the draft figures became available. These later investigations were made largely by health officers and others interested in determining goiter incidence as a preliminary or concurrent aid to intelligent prophylaxis and treatment. A record of the results of independent goiter surveys has been published in Public Health Reports (1). A comparison of the results of thyroid surveys made by a large number of observers must be limited by a consideration of the conditions under which the data were secured. Differences in methods of examining and classifying thyroid enlargements, uncertainty as to what constituted a departure from normal thyroid status, and variations in skill and experience on the part of the examiners are factors influencing the validity of such surveys. However, the general trend of the surveys made by independent investigators is similar to that disclosed by the draft examiners.

SURVEYS BY THE PUBLIC HEALTH SERVICE

Representatives of the Public Health Service have made extensive goiter surveys in the States of Minnesota, Oregon, Colorado, Montana, Connecticut, and Massachusetts, and in the city of Cincinnati, Ohio, the results being recorded in separate publications (2), (3), (4), (5), (6), (7), (8). These surveys have included 55,179 boys and 70,307 girls in 192 localities.¹ In Oregon, Colorado, Connecticut, Massachusetts, and Cincinnati the surveys were conducted by the same examiners, enabling comparisons which serve to indicate differences in general prevalence, in degrees of enlargement, and in geographical distribution. The methods employed in examining and the classification used in recording thyroid status are set forth in two of the reports which have been published (4), (8). The outstanding features of these comparative data have been assembled in Table 2. An examination of the material contained in this table shows that endemic goiter is most frequent in Minnesota and least frequent in Connecticut and Massachusetts, the other States occupying intermediate positions.

¹ In 1927 there was a resurvey of 12,722 boys and 12,818 girls in the elementary and high schools of Cincinnati, the result indicating a reduction in the number of moderate and marked thyroid enlargements since the original survey in 1924. The results of the 1927 survey have not been included in the present total.

TABLE 2.—Comparison of percentages of all degrees, slight degrees, and marked degrees of thyroid enlargement among boys and girls examined in six States and one city by the United States Public Health Service

State or city	Sex	Number of examinations	Percentage of enlargements		
			All degrees	Slight	Moderate and marked
Minnesota.....	Boys.....	1,770	40.9	35.0	5.9
	Girls.....	2,201	71.0	47.0	24.0
Cincinnati.....	Boys.....	21,314	26.6	24.7	1.8
	Girls.....	21,018	39.8	32.1	7.6
Oregon.....	Boys.....	8,181	22.3	22.2	.086
	Girls.....	9,427	38.3	37.3	1.0
Colorado.....	Boys.....	3,950	25.6		
	Girls.....	13,451	30.4		
Montana.....	Boys.....	4,631	13.4		
	Girls.....	4,690	32.0		
Connecticut.....	Boys.....	5,797	7.0	6.9	.017
	Girls.....	6,608	29.4	28.0	1.4
Massachusetts.....	Boys.....	7,140	8.7	8.6	.14
	Girls.....	7,844	22.0	21.3	.8

Comparisons of goiter incidence.—The incidence of goiter among the boys and girls examined in Minnesota, Cincinnati, Oregon, Colorado, Montana, Connecticut, and Massachusetts is displayed graphically in Chart 1. The greatest proportionate difference between the per-

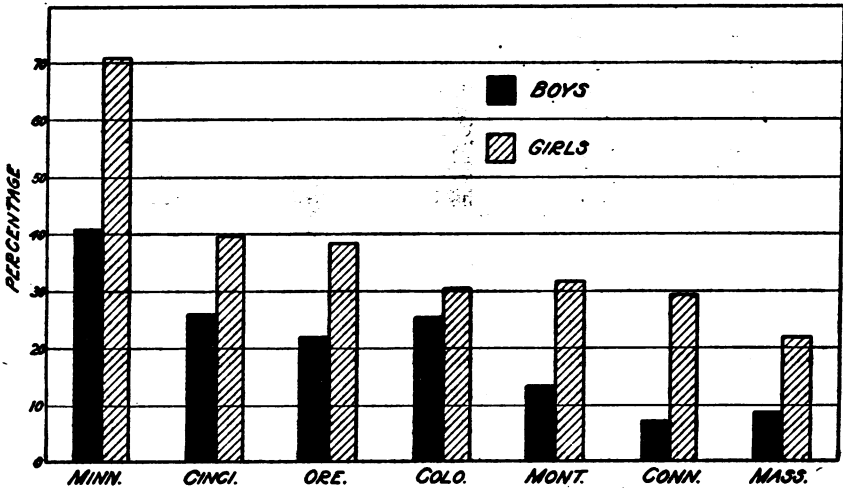


CHART 1.—Comparison of percentages of endemic thyroid enlargement (by sex) among 55,179 boys and 70,307 girls in 192 localities in six States and one city surveyed by representatives of the Public Health Service

centages of goitrous involvement in boys and girls is found in Connecticut and the least in Colorado. In the States under consideration the greatest percentage of goiter was found among the girls of Minnesota and the least among the girls of Massachusetts. Goiter prevailed to about the same extent among the girls of Cincinnati and Oregon. In Colorado, Montana, and Connecticut approxi-

mately the same incidence of goiter prevailed among the girls, though the rates are less than in Minnesota, Cincinnati, and Oregon.

Chart 1 also shows that endemic goiter was most frequent among the boys examined in Minnesota and least frequent among those of Connecticut. In Cincinnati and Colorado the rates among the boys were approximately the same. In Oregon, Montana, and Massachusetts the goiter rates among boys were less than in Colorado, in the order named. This chart affords considerable assistance to an understanding of the nation-wide prevalence of simple goiter.

Variations in degrees of thyroid enlargement.—The percentages of slight thyroid enlargement among boys and girls of Minnesota, Cincinnati, Oregon, Massachusetts, and Connecticut, examined under comparable conditions, are displayed graphically in Chart 2.

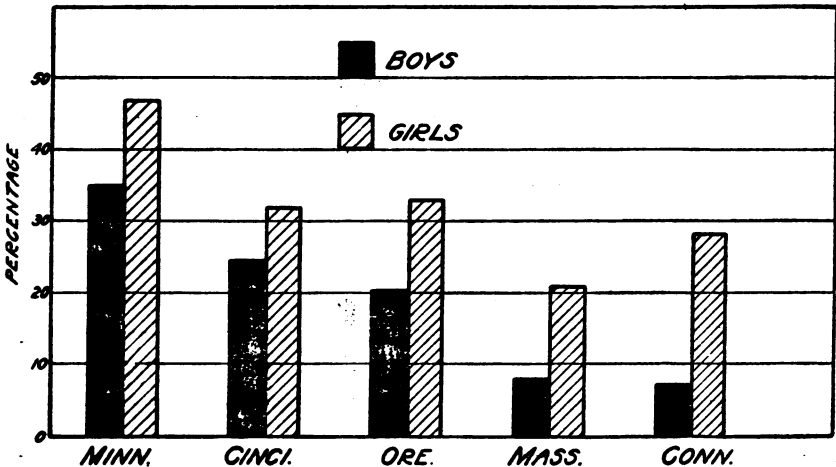


CHART 2.—Comparison of percentages of slight thyroid enlargement (by sex) among 46,598 boys and 52,166 girls in 131 localities in four States and one city surveyed by representatives of the Public Health Service employing uniform methods

Included in the surveys upon which these percentages are based were 46,598 boys and 52,166 girls in 131 communities examined by or under the supervision of the same physicians. Slight enlargements were more frequent among the girls than among the boys of Minnesota, Cincinnati, Oregon, Massachusetts, and Connecticut to the extent shown in the following ratios: 1.3 to 1, 1.3 to 1, 1.6 to 1, 2.5 to 1, and 3.8 to 1, respectively. According to Marine, the intensity of general thyroid incidence in a locality is indicated by the ratio of prevalence among girls to that among the boys. The more nearly this ratio approaches 1 to 1, the more general is the distribution of endemic goiter. The order of frequency of slight enlargement among the boys of the five sections shown in Chart 2 was Minnesota, Cincinnati, Oregon, Massachusetts, and Connecticut, the first named State having the greatest amount.

In Chart 3 the percentages of moderate and marked thyroid enlargements combined among the boys and girls of four States and one city are shown graphically. These degrees of thyroid involvement are most frequently encountered in Minnesota. Moreover, when compared with slight enlargement, their rate of frequency is much higher among girls than boys. In Minnesota, Cincinnati, Massachusetts, Oregon, and Connecticut the ratios between per-

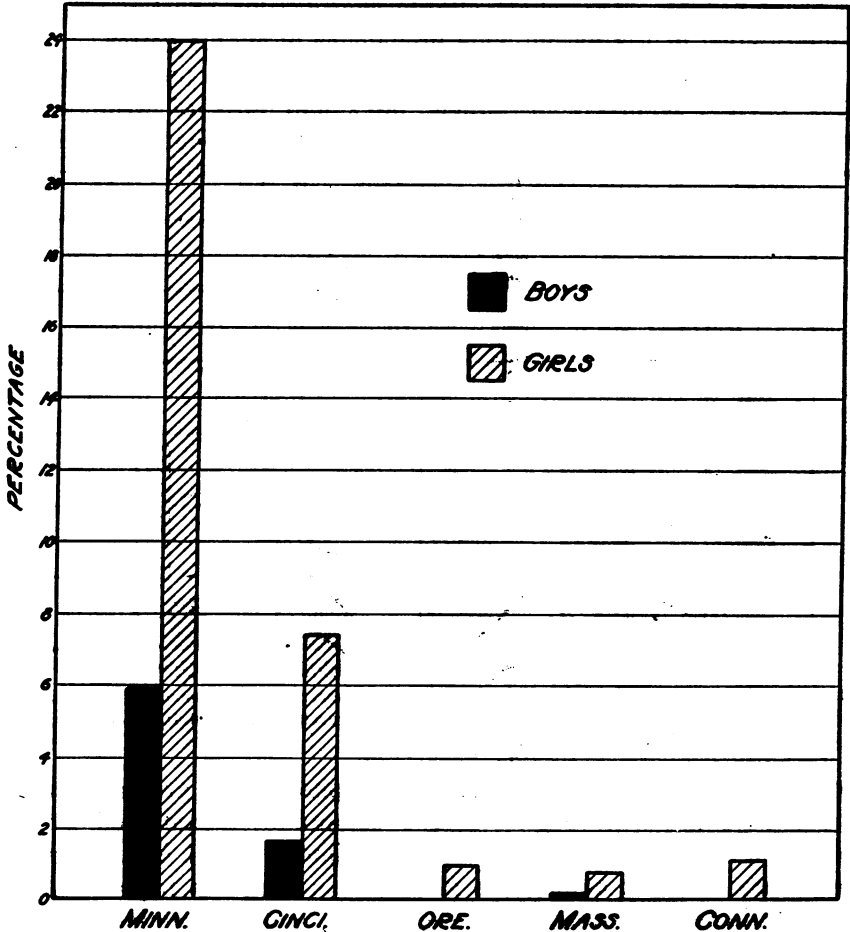


CHART 3.—Comparison of percentages of moderate and marked thyroid enlargements combined (by sex) among 46,598 boys and 52,166 girls in 131 localities in four States and one city surveyed by representatives of the Public Health Service employing uniform methods

centage incidence of moderate and marked enlargements combined among girls and boys were 4.1 to 1, 4.2 to 1, 5.7 to 1, 12.5 to 1, and 82.4 to 1, respectively. Moderate and marked thyroid thickenings are relatively infrequent among the girls of Oregon, Massachusetts, and Connecticut, and also rare among the boys of those States.

The incidence of certain degrees of thyroid enlargement, among the boys and girls of different ages in four States and one city, is presented graphically in Chart 4. The differences in goiter incidence

in the several States are clearly indicated. Moreover, the greater incidence among girls, the similarity in trends, the decrease in preva-

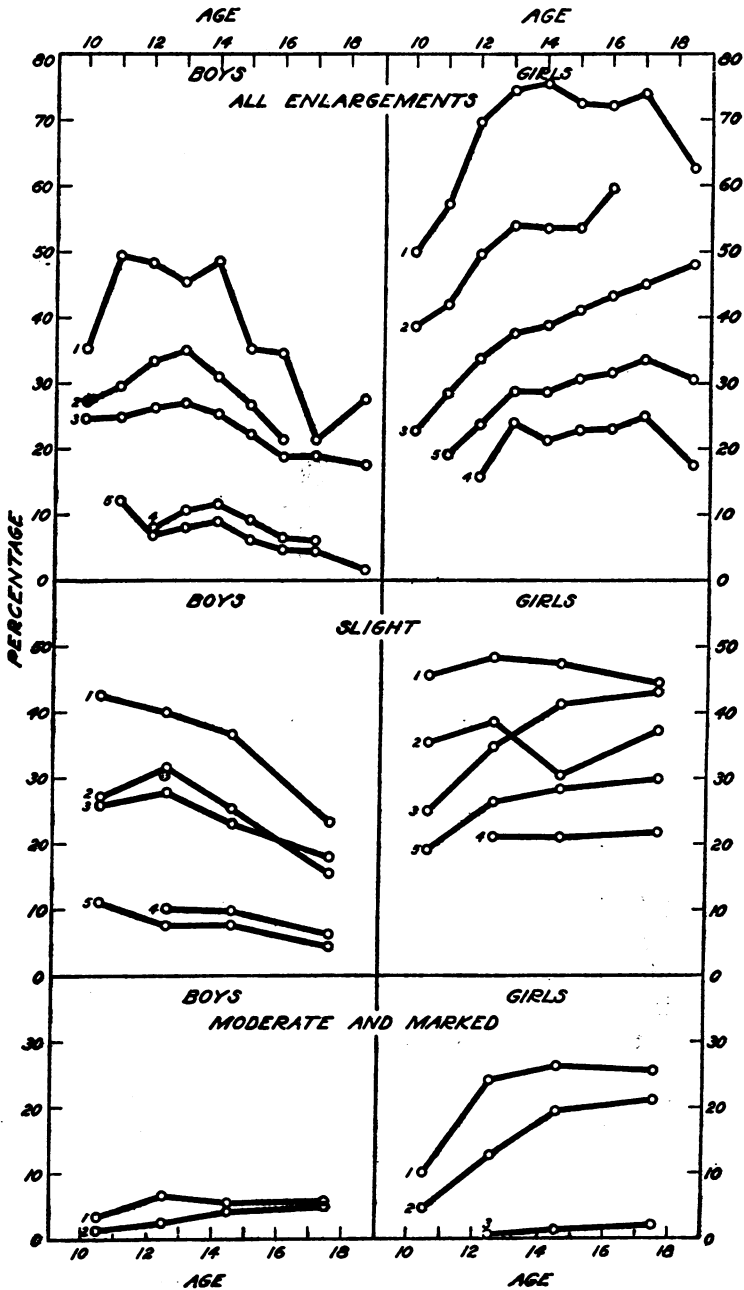


CHART 4.—Percentages of children of each age group (by sex), according to degrees of thyroid enlargement, in the States of Minnesota, Oregon, Massachusetts, and Connecticut, and in the city of Cincinnati, Ohio. (1. Minnesota; 2. Cincinnati; 3. Oregon; 4. Massachusetts; 5. Connecticut)

lence among the boys of the higher ages, and the maintained increase among the girls are clearly shown.

SUMMARY

1. The physical examinations of drafted men disclosed a higher incidence of simple goiter among those from the Pacific Northwest and the Great Lakes region.
2. Independent goiter surveys tend, in general, to support the main indications of the draft examinations.
3. Goiter surveys made in six States and one city, by representatives of the Public Health Service, likewise confirm, in the main, the chief findings of the draft examinations. It appears, however, from the Public Health Service surveys, that endemic goiter is probably more common in some portions of the Middle West than in the Pacific Northwest.
4. A comparison of goiter rates in Minnesota, Cincinnati, Oregon, Colorado, Montana, Connecticut, and Massachusetts shows prevalence of the disease in these localities in the order named, the greatest incidence being in the State first named.
5. Slight thyroid enlargements are present in approximately the same relative proportion among the boys and girls of the four States and one city surveyed by the same representatives of the Public Health Service, and considerably more frequent among the girls. Goiter of marked size is relatively infrequent among the girls and rare among the boys of Oregon, Massachusetts, and Connecticut.
6. Comparisons of age incidence of goitrous individuals in the places studied by the Public Health Service show similar trends.

COMMENT

There are manifestly wide variations in the methods of determining thyroid status. Moreover, the classification of various degrees and types of thyroid involvement range within unnecessarily great limits. If accurate and useful information is to be secured in the future, it is essential that uniform methods be adopted.

The training of examiners in comparable diagnostic procedure, together with a reasonable amount of practice, interest, and care, will do much to insure improvement in the records hereafter gathered.

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THE TADPOLE OF THE SPADEFOOT TOAD AN ENEMY OF MOSQUITO LARVÆ

By M. A. BARBER, *Special Expert*, and C. H. KING, *Technical Assistant, United States Public Health Service*

The tadpoles of most toads and frogs are herbivorous, and live in entire harmony with mosquito larvæ. However, in 1914, one of us (Barber (1)) observed tadpoles apparently preying on mosquito larvæ in a brackish pool in the island of Palawan, P. I. A tadpole was dissected and mosquito larvæ were found in the upper part of the gut. The species of this tadpole is unknown.

In early July, 1927, a certain kind of tadpole was abundant in shallow borrowpits near Espanola, N. Mex. We observed that pools in which this tadpole was plentiful were comparatively free from mosquito larvæ, which abounded in other pools near by. We caught some specimens of tadpoles and brought them to the laboratory where we carried out the following experiments:

We put three tadpoles into a pan with 75 culicine larvæ. In the course of half an hour the tadpoles were seen to catch five larvæ. On the following day, all but five of the larvæ had disappeared. Then 11 culicine pupae and one larva were put into the pan. Within five and one-half hours all had disappeared. On the following day, we put 26 larvæ of *Anopheles pseudopunctipennis* into the pan. In half an hour all but two had been eaten. A tadpole was seen to catch and ingest an anopheline larva.

The following field experiments were done:

1. We put mosquito larvæ into a pool containing many tadpoles. The tadpoles were seen to congregate in places where the larvæ were put in, but later it was observed that they tend to congregate at margins wherever water is poured in, whether it contains larvæ or not. Within two days all larvæ had disappeared.

2. We divided a borrow pit containing many larvæ of *Aedes dorsalis* into two nearly equal parts by means of a dam. The pool was about 6 yards long, 2 yards wide, and 2 inches deep at the middle. Into one end of the pool we placed about 100 tadpoles. These were large, and the most of them had begun to develop legs. The portion of the pool into which we put the tadpoles contained approximately 1,000

larvæ and 300 pupæ. The control end contained about an equal number. Twenty-six hours later we found approximately 230 larvæ and pupæ with the tadpoles, a reduction of over 80 per cent. The surviving larvæ and pupæ were mostly crowded in out-of-the-way corners. The control end of the pool had about as many larvæ and pupæ as it had at the beginning of the experiment.

We took some tadpoles out of the divided borrow pit about 2½ hours after they had been put in with the larvæ, and dissected them. In one specimen we found two larva siphons and one larva head, both in the upper part of the gut. In a second tadpole we found the remains of a pupa, and one nearly intact larva. Living crustaceans were abundant in the intestines of the tadpoles. The pool swarmed with these crustaceans; so it seems that the tadpoles ate larvæ in spite of the presence of an abundance of other living food.

In preying on larvæ the tadpoles rarely, if ever, pursued a wriggling larva after the manner of the top-feeding minnow, *Gambusia*; but they combed the water industriously at the surface and beneath, and when they came in contact with larvæ they would often seize them mumble them in the mouth a moment, then swallow them. They did not always try to capture a larva when they touched it, but they were so persistent in their search for food that they eventually caught large numbers.

Specimens of two tadpoles known to have eaten larvæ, and of one nearly mature toad were sent to Prof. A. H. Wright of Cornell University, who identified the species as *Scaphiopus hammondii*, Hammond's spadefoot.

It is clearly proved by our observations that *S. hammondii* is an active and efficient enemy of mosquito larvæ, and was instrumental in considerably reducing the numbers of such larvæ in the borrow pits of a certain neighborhood. Whether it would be worth while to colonize this toad in new localities, as is commonly done with larvivorous fish, is yet to be proved. Its habitat is said to be limited to temporary pools, while most of the *Anopheles* are produced in more permanent waters, rich in aquatic vegetation. However, culicines often swarm in rain-filled pools, and *Anopheles* may occur there in large numbers, especially where fish have been killed out by the previous drying-up of the water. A toad has at least the advantage of being able to travel overland. The season of the spadefoot is usually short and limited to early summer, a marked disadvantage as an enemy of *Anopheles*, as well as of other mosquitoes. Its range is western,³ but it is possible that it might be colonized in other regions. Sometimes an animal or plant will multiply more extensively in an alien environment than in its native habitat.

³ Stejneger and Barbour, in their check list of 1923, give the following range of Hammond's spadefoot: Western and southwestern States from Montana south to Texas and Mexico, westward to the Pacific coast States and northern Lower California.

On the whole, no such antilarval efficiency can be expected of this tadpole as is exhibited by certain larvivorous fish; but its propagation, if such is practicable, could not interfere with any other enemy of mosquito larvæ, and the more abundant and the greater the variety of natural enemies of mosquito larvæ the better. The spadefoot would probably find its greatest usefulness in localities where there is extensive breeding of mosquitoes in shallow, temporary waters.

The following account of the spadefoot toad is abridged, and in part quoted, from a description of the life history and feeding habits of the spadefoot toad of the western plains (*Scaphiopus hammondi* *bombifrons* Cope) published by Professor Gilmore (2) of Colorado College. If *bombifrons* is not identical with our species, its habits are probably essentially the same.

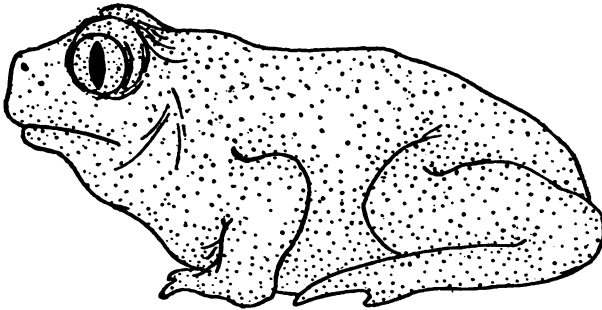


FIGURE 1.—Adult spadefoot toad. (After Gilmore)

The spadefoot toad is rather small, the total length of the body being two inches. The legs are short; the hands are unusually small and the fingers short. The foot is webbed, the webs deeply indented. On the inner sole, a black horny sharp-edged tubercle—the “spade”—is developed. This is the principal instrument for burrowing.

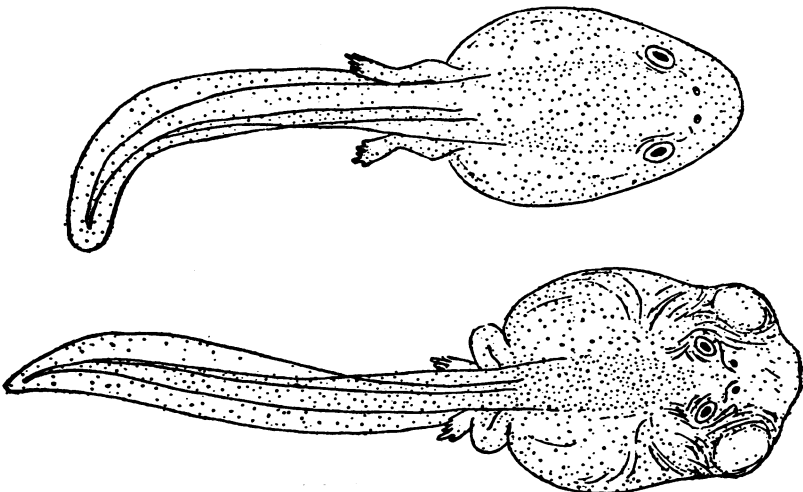


FIGURE 2.—Dorsal view of spadefoot tadpole—below. Dorsal view of tadpole of common frog—above

The skin is smooth and fine in texture, yellowish olive to dark gray in color. Two curving dark bands extend backward from the eyes. These bands are made of spots, each of which has a smooth orange-colored tubercle in its center. In some specimens the bands are indistinct, the entire back being of uniform color. The underparts are dingy white, purplish posteriorly, the throat blackish. The snout is short; the end rather squarely truncated. The end of the snout is covered with heavy horny skin, which is continued posteriorly between the eyes to the top of the head. Between the eyes it is thickened to form a marked elevation.

The large eyes face forward and outward. The pupil is vertical, a characteristic found only in spadefoot toads and one other very rare form found in the State of Washington. The iris is golden; the ear not distinct.

The short body, the large eyes, the shortness and thickness of the snout give to the spadefoot a curious pug-dog expression. (Fig. 1.)

The spadefoot lives underground in burrows of its own making and is seldom seen above ground except during continuous rains. It usually chooses soft ground in which to burrow. With its spade-armed feet it pushes the soil aside, and by a slow rocking movement sinks backwards beneath the surface of the ground. The heavy skin of the head is probably used to keep the burrow open in front or to pack the earth of the walls of the burrow. The descending toad leaves no trace on the surface to indicate its course.

The feeding habits of the spadefoot are probably similar to those of the eastern representatives of the genus. These come to the surface at night. In Colorado this toad breeds in temporary pools formed by the rains of early summer. Egg masses are elliptical in shape and are attached to submerged vegetation or to any object protruding from the bottom. Its incubation period seems to be less than 48 hours, and the tadpoles develop into adult toads in 36 to 40 days.

Tadpoles are found in roadside mudholes and low areas in fields, the water ranging in depth from a few inches to a few feet. They feed in waters usually poor in vegetable life but rich in crustacea, protozoa, and smaller worms.

The larger tadpoles, at least, seem to live on a strictly carnivorous diet. The structures about the mouth are adapted for seizing and holding their prey, and on the roof of the mouth is a median horny recurving tooth not found in herbivorous tadpoles. The length of the intestine may vary from 2 to 30 inches in tadpoles of the same size. The short intestine is an adaptation to a carnivorous habit. "It seems probable that the spadefoot tadpole is departing from the traditions of its ancestors and relatives and adjusting itself to a new type of diet. This adjustment is approaching perfection in the jaws, lips, roof of the mouth, and jaw muscles. The long intestine character has not been eliminated, but is in process of elimination. It seems to persist during early tadpole life and is later supplanted by a short intestine. The short intestine character will be subject to a wide range of variability until it has firmly established itself on the race." (Loc. Cit. (2), pp. 11 and 12.)

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RECENT POLIOMYELITIS REGULATION OF FLORIDA STATE BOARD OF HEALTH

Owing to the greatly increased number of cases of infantile paralysis in a number of States and wishing to protect the children not only of our own State but also those who spend only a part of the year in the State, no children coming from without the State shall be admitted to the schools until they have been in the State for at least two weeks and a certificate of freedom from disease signed by the city health officer or city physician, in cities where there is such official, and for those localities outside such jurisdiction, by a duly qualified physician, must be presented.

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Following a case of infantile paralysis, a certificate is required of the patient from either a city or county health officer or from a representative of the State board of health before admittance to school.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Sodium Aluminate as an Adjunct to Alum for the Coagulation of Public Water Supplies. Sheppard T. Powell. *American Journal of Public Health*, vol. 17, No. 8, August, 1927, pp. 804-809. (Abstract by C. T. Butterfield.)

Results obtained with sodium aluminate used in conjunction with alum for the treatment of waters that resisted coagulation are given. The study covers a period of one to two years. The results given are detailed as to methods, analytical data, efficiency of coagulation, and costs. The author summarizes as follows: (1) Possible net saving is effected in plant operation due to reduction in alum doses and to better plant control; (2) the filtered water is less corrosive, due to the lower free CO₂ content; (3) better flocculation in cold water; (4) better agglomeration and more rapid subsidence of the coagulated material; (5) less residual alumina in the filtered water; (6) higher pH values in the filtered water, thereby requiring less lime or soda to raise the reaction to the desired pH for the inhibition of corrosion; (7) possible reduction in subsidence capacities of coagulation and settling basins and reduced mixing periods; (8) longer run between cleaning of filters and reduced wash water as a result of the more efficient coagulation and settling.

Common Faults in Filter Plant Operation. J. L. Barron. *Public Works*, vol. 58, No. 9, September, 1927, pp. 327-330. (Abstract by E. L. Filby.)

A summary of common faults in filter plant operation as applied to small filter plants is given: (1) Trying to do more than operate a plant. Any small plant is worthy of one man's full time; (2) lack of coordination in filtering rate

with service demand, leading to intermittent filtration giving poor results; (3) having only one filter unit; (4) not cleaning settling basins at right time; (5) failure to provide for and maintain the coagulant mat on filters; (6) incomplete washing at low rates; (7) failure to use rate controllers and loss-of-head gauges; (8) tendency to believe chemical solutions and feeds are of proper strength and amounts without testing; (9) lack of daily records and tests; (10) lack of metering devices; (11) failure to recognize that a water plant is a mercantile shop and that attractiveness, courtesy, etc., are good points of salesmanship.

Water Purification at Richmond, Va.—Wellington Donaldson and Frank O. Baldwin. *Public Works*, vol. 58, No. 7, July, 1927, pp. 241–245. (Abstract by H. H. Hasson.)

At Richmond, Va., the water supply is taken from the James River about 5 miles north of the city, diverted through a canal to the filter plant, where the water is purified by a process of sedimentation, coagulation, rapid sand filtration, and aeration.

An unusual feature of the plant is the aeration system. Trouble from tastes and odors indicated that more complete aeration than that ordinarily needed was required. Aeration is obtained by a grid system of cast-iron pipes with a battery of 300 nozzles.

Pollution of the raw water by sulfite wastes is the main factor in the purification treatment. During the low stage of the river the sulfite wastes affect coagulation, and increased doses of alum and chlorine are required. The efficiency of the filters is lowered due to "gumming" of the beds by a sticky substance resulting from coagulation of the colored water. Cleaning the beds once every six months with sodium carbonate and sodium hydroxide is necessary. The presence of sulfite wastes is quite expensive to the city and offers one of the principal problems of plant operation.

Durham's New Water Works. D. M. Williams. *Public Works*, vol. 58, No. 6, June, 1927, pp. 197–203. (Abstract by M. S. Foreman.)

The city of Durham, N. C., in 1921 found that, with an average daily consumption of 3,000,000 gallons, the flow of the Flat River, from which it drew its supply, was inadequate for a considerable period of the year. Hence a dam was built on Flat River, 80 feet high, creating a lake covering 547 acres and containing 4,600,000,000 gallons.

Some of the unusual features of this development are: "(1) Large impounding reservoir for municipal water supply containing 4,600,000,000 gallons; (2) combination pumping and power plant containing vertical generators, horizontal water-wheel-driven pumps, and motor-driven pumps; (3) accessibility for handling all machinery; (4) flexibility of operating pumping units, including steam stations 1 mile away. The pipe connections permit the use of the steam plant 1 mile downstream to pump from the lake with a positive suction head instead of a 20-foot suction lift; (5) underdriven system for relieving upward thrusts; (6) tunnel communication from station through spillway to opposite side of river; (7) electrically operated elevator at top of dam; (8) individual motor and hand operated sluice gates; (9) recording lake and tailrace gauges; (10) floating dock for motor boats; (11) mechanically operated trash rack rakes; (12) stream gauging stations above the lake and in channel below tailrace; (13) preparation for studying silting; (14) rain gauges over entire watershed; (15) evaporation pans for measuring evaporation in lake; (16) wind gauge."

L'Épuration des Eaux D'Égout (The Purification of Sewage). E. Rolants. *Rev. d'Hyg.-et de Med. Preventive*. 1927, v. 49, 196–216. From *Bulletin of Hygiene*, vol. 2, No. 7, July, 1927. p. 553. (Abstracted by C. O. Stallybrass.)

"This is a combined review of a large number of recent papers, mainly from the Surveyor and the Engineering News Records, about 10 of which have already

been reviewed in this Bulletin. (See this Bulletin, v. 1, 604-613 and 898-905.) Rolants notices a tendency to revert to disposal of sewage by irrigation in semi-rural communities, and to the separate digestion of sludge apart from the separating tanks. This method of partial separation which is used in the Imhoff tank is a reversion to the method of Lawrence. The separate treatment of sludge by the activated sludge method is in operation in a number of towns.

"Imhoff has recently made a tour of inspection in the United States. He finds that the higher the temperature the more rapid the separation and the greater the volume of gas evolved. When a separation tank is first brought into use during the early winter an excessive production of scum has been observed, due to a heavy deposit of undigested sludge, which evolves large quantities of gas in the ensuing spring. When this occurs some of the sludge should be run off.

"Schmrikg has invented a new arrangement of the Imhoff tank in which the partition between the decantation chamber and the sludge fermentation chamber is in the form of the ridges of a roof which, it would seem, presents considerable advantage.

"The 'Spiroflow' system of treatment by activated sludge as operated at Hanley is described. The installation consists of a series of shallow tanks made of two channels which reunite at each end, thus forming a circuit. At the point of junction there is a paddle and there are baffle plates at intervals along the channels. Each basin opens into the succeeding one by an opening in the partition wall. The combined action of the paddle and the baffle plates causes the sewage to follow a spiral course which facilitates aeration. This permits the suspension of the sludge at a minimum cost—about half the usual cost. The tank for sedimentation after the completion of aeration is provided with means for easily removing the sludge, a portion of which is returned through a valve to the aerating tanks.

"The statement is made that Imhoff proposes to use the gases discharged during the digestion of sludge to produce the force necessary to compress the air in the activated sludge treatment.

"(This paper is well written and provides a readable review of recent progress in sewage treatment, more especially in Great Britain and the United States.)"

Sur Le Mecanisme de L'Épuration des Eaux D'Égout Par Les Boues Actives. (Mechanism of Sewage Purification by Activated Sludge.) F. Dienert. *Ann. d'Hyg. Pub. Indust. et Sociale*, 1926, v. 4, 732-43. From *Bulletin of Hygiene*, vol. 2, No. 7, July, 1927, p. 551. (Abstracted by C. O. Stallybrass.)

"This is a careful description of the mode of action of activated sludge, based apparently on the author's own experience and experiments. It is necessary that the sludge should consist mainly of organic matter; either too heavy or too light a sludge will not work well; the sewage should be first well decanted from mineral matters.

"The author describes the method of producing an activated sludge that will give a clear effluent in which ammonia has been replaced by nitrates. This will take 15 to 20 days to obtain; at first fresh quantities of sewage are admitted to the tank and aerated by blowing in air until about 5 per cent of the sewage remains in the tank as sludge. The next batch of sewage is aerated continuously for 8 or 10 days. It is then necessary to decant the effluent in a second tank and pump the sludge back into the first tank. After this it is only needful to regulate the time that the sewage remains in the tank in accordance with the strength of the sewage in order invariably to obtain a clear imputrescible effluent. The stronger the sewage the greater the amount of air that must be blown in. The amount of ammonia destroyed is often greater than the nitrates produced, so that some

nitrogen is either absorbed in the sludge or given off into the atmosphere. Addition of phenol will stop this oxidizing activity of the sludge, which is clearly due to the agency of bacteria.

"A description is given of the method of making activated sludge with manganese dioxide. From this can be obtained an 'activated casein' which will act on milk and oxidize lactose, but not milk proteins. Nevertheless the effluent is imputrescible; the casein is precipitated at the rate of 0.32 gm. per liter per day.

"If the sewage is rich in colloidal organic matters it is slightly viscous; this renders the precipitation of the sludge very slow. Bacterial action is necessary to effect rapid precipitation; this is effected either by the production of coagulase or of acids. The colloidal substances then become oxidized and can not again be suspended.

"Activated sludge is composed of organic substances which have not been broken down to the same extent as have those in bacterial beds. A sterilized activated sludge treated with a sludge from a bacterial bed produces indol and considerable quantities of amino acids; this does not occur with the bacterial bed sludges by themselves.

"The presence of antiseptic substances or of sulphuretted hydrogen will slow down the rate of action of the sludge. 'Bulking' is the term applied to the production of excessive quantities of sludge due to the growth of protozoa and of a species of *Cladotrix*; it occurs in hot weather. These troubles require a more prolonged aeration than normally. A badly aerated sludge loses its activity. Aeration must also be proportionate to the amount of organic matter to be transformed, and in some cases dilution may be necessary.

"When the pH of the sewage falls below 6.0 then the microbial floc work disappears and the sludge becomes inactive."

Sewage Chlorination at Fort Worth, Tex. W. S. Mahlie. *Public Works*, vol. 58, No. 7, July 1927, pp. 264-265. (Abstract by H. H. Hasson.)

At Fort Worth a set of experiments was started to determine what advantage there was in chlorination of sprinkling filter effluent prior to its entering the secondary settling tanks (with Dorr clarifiers) over the customary method of chlorinating the effluent from the secondary settling tanks.

It was found that in the clarifier when not prechlorinated there was an increase in total bacteria and *B. coli* were greatly reduced. There was, also, under the system of the clarifier receiving chlorinated effluent, a decrease in suspended matter leaving the secondary settling tanks, a retardation of free ammonia during passage through clarifiers, an increased removal of total organic nitrogen, a retention of stability due to a prevention of loss of nitrate nitrogen, a lowered oxygen consumed value, an increase in dissolved oxygen, and the elimination of algae in the clarifiers.

Disposal of Drainage from Coal Mines. Andrew B. Crichton. *Water Works*, vol. 66, No. 1, January 1927, pp. 30-34. (Abstract by E. A. Reinke.)

Coal-mine drainage waters contain sulphuric acid in such quantities that the alkalinity of 80 to 100 gallons of fresh water is necessary to neutralize the acidity of 1 gallon of waste. Coal is produced in 28 States at a rate of 550,000,000 tons annually, and the industry employs 850,000 men. The pollution is most acute in West Virginia, Pennsylvania, and Ohio. Many water supplies in Pennsylvania have been abandoned due to mine drainage pollution. The Sanderson case dating back to 1886, is summarized. In this case the courts held that trifling inconvenience to individual riparian owners must give way to a leading industrial interest of the State.

The Indian Creek pollution suit is also summarized. In this case a water company serving 75,000 people and the Pennsylvania Railroad obtained an injunction, which was sustained by the United States Supreme Court, prohibiting the dis-

charge of mine drainage into Indian Creek above their diversion, on the ground of public nuisance being created. In this case a public use of the water was shown and no other supply was available.

The character and composition of various mine drainage waters is given and analyses shown in tables. The occurrence of water in mines is described. Methods of treatment and costs are given. The cost to neutralize (but not redeem) streams in Pennsylvania alone is estimated at \$75,000,000 for plants and \$41,062,500 to \$68,437,500 annually for operation.

The author suggests that any solution must be economically sound and commends the policy of the Pennsylvania Department of Health, which is to protect all unpolluted streams; to stop further pollution of all streams that can be restored; and to use those now destroyed for carrying sewage, industrial wastes, and mine drainage.

The North Carolina Sanitary Privy Law. G. M. Cooper. *Southern Medical Journal*, vol. 20, No. 8, August, 1927, pp. 655-657. (Abstract by A. L. Dopmeyer.)

The State sanitary privy law of North Carolina was passed on February 24, 1919. This article gives a copy of the law and shows methods used and results obtained in its enforcement.

The law requires the construction of an approved type of sanitary privy at every residence in North Carolina within 300 yards of any other residence. The success of this work is attributed to the fact that the law was actually enforced and by a suitable enforcement officer. The courts have universally upheld the enforcement of the law.

The property owner is given a choice of several types of privies. At present there are in use over 100,000 earth pit privies. Eighty-two per cent of all the privies under the jurisdiction of the State law are pits, which are built at an average cost of \$22.50 each. The law has been enforced at an average cost of about 68 cents per privy. More than 184,000 open surface privies have been eliminated since the law was enacted, 130 new sewerage systems have been installed in the smaller towns, as well as 126 new public water supplies. About 50,000 open-surface privies have been eliminated by extensions to town sewerage system.

Sewage Disposal of the City of Manila. Santiago Artiaga and M. Manos. *Unitas*, Official Organ of University of Santo Tomas, vol. 6, No. 1, July 15, 1927, pp. 16-26. (Abstract by H. B. Foote.)

The city, which is quite level, has been divided into seven zones. Each zone is independent of the others. In these zones there are several collection wells and pumping stations collecting the sewage and discharging it in series from one to the next until it finally reaches one such station located on the shore line at the end of Azcarraga Street, which pumps the entire flow into Manila Bay one and one-fourth miles from shore.

The laterals or street sewers (8 inches in diameter) start at a minimum of 5 feet in depth and slope to the submains (10 to 24 inches in diameter). These have an average covering of 10 feet and slope directly to the pumping stations or to mains. The main pipes connecting the various pump stations vary in shape and in size from 2 feet 3 inches by 3 feet 4 inches oval to 5 feet circular at the lower end. At the upper ends they start from about 15 feet in depth and discharge by gravity into the various deep wells.

The sewage is all pumped by electric motor and centrifugal pump. An inverted siphon through the bottom of the Pasig River carries the flow from the south side to the north.

The whole system includes approximately 65 miles of pipes, 7.5 miles of which are built of concrete and brick, 2.5 miles of 2 and 3 feet egg-shaped sewer and

55 miles, approximately, of vitrified pipe from 8 to 24 inches. It has been in use since 1908 and has been very successful in operation. There is no other treatment of the sewage than dilution.

A Study of the Pollution and Natural Purification of the Illinois River. I. Surveys and Laboratory Studies. J. K. Hoskins, C. C. Ruchhoff, and L. G. Williams. U. S. Public Health Service Bulletin No. 171, May, 1927. 208 pages. (Abstract by J. K. Hoskins.)

In Pursuance of its policy in research investigations of the phenomena of stream pollution and rates of natural purification of polluted water, the United States Public Health Service, in cooperation with the Sanitary District of Chicago instituted a study of the Illinois River, the field work of which was carried out during the years 1921-22. Surveys were made to ascertain the sources and amounts of polluting materials discharged to the stream. Hydrographic features of the river and its principal tributaries were ascertained and observations were made over a period of about a year to determine the chemical, bacteriological and biological condition of the river water throughout the stream length. The present report discusses the sources and extent of pollution and presents the base data collected in the form of monthly average results, describes the methods adopted in their collection and discusses the outstanding features which they portray.

Laundry Wastes in Sewage. I. R. Riker. *Public Works*, vol. 58, No. 9, September, 1927, pp. 337-339. (Abstract by E. L. Filby.)

Increased Monday flows in sewers, largely due to laundering, gave poor sewage plant effluents until Tuesday noon. Laundry wastes are much stronger than sewage—oxygen consumed 277 p. p. m. Oaklyn, N. J., a plant having coarse bar screens, Imhoff tank, sprinkling filter, final settling basins, chlorination and sludge drying beds, operated satisfactorily, for two years until a wet wash laundry connected thereto. Tests showed poor operation, while laundry was in operation and tendency of effluent to improve last of week when laundry was not in operation. Laundry wastes ordered out of sanitary sewers. Laundry should use acid alum treatment before discharge into sanitary sewers.

Ueber Die Neueren Verfahren der Abwasserbeseitigung. (The Newer Methods of Sewage Treatment.) P. Kuhn. (*Gesundheits-Ingenieur*. 1927, v. 50, 209-19.) From *Bulletin of Hygiene*, vol. 2, No. 7, July 1927. (Abstracted by M. E. Delafield.) P. 550.

"The more important aspects of the newer methods of sewage treatment are reviewed. Dealing first with the activated sludge process, which was introduced into Germany only after its success in England and America, the early methods of using only compressed air are described shortly. Developed out of this were the mechanical agitation methods of paddle wheels, of scoops, and by whirling.

"The process was first used at Bergedorf in 1915. Since then it has been used at Essen-Rellinghausen and elsewhere. A development introduced by Bach was to employ tanks filled with some contact material and then to aerate from below. In this way strong sewages containing trade and gas works wastes are dealt with adequately and even phenol is got rid of. The general difficulty of the disposal of the surplus sludge is referred to and mention made of its use as a food for fishes. A suggestion is also made to use artificial aeration to purify foul streams.

"It has long been the practice in certain parts of Germany to lead sewage wastes into special ponds in which fish such as carp are kept to convert the waste matters into human food.

"The disinfection of sewage with chlorine as an emergency measure, the treatment of dye-works wastes, and the production of gas for power purposes from sewage are mentioned.

"The general aspects of sewage purification are reviewed particularly with reference to the growing pollution of streams and the consequent expense of sewage treatment. Particular stress is also laid on the problem of recovering the valuable substances in sewage which in existing methods of treatment are lost as sludge and effluent."

Fate of Grease in Sludge Digestion. S. L. Neave with A. M. Buswell. *Ind. Eng. Chem.* 19, 1012-4 (1927). From *Chemical Abstracts*, vol. 21, No. 20, October 20, 1927, p. 3409. (Abstracted by J. A. Kennedy.)

In the acid type of sludge digestion, a rapid destruction of grease and Ca soaps occurs with the production of lower fatty acids. Some of the lower fatty acids ferments further to give methane. Proteolysis is hindered by the low pH and, as a result, the sludge is not digested. The rate of fermentation, as measured by gas production, is roughly proportional to the grease content of the solids, a scum high in grease being the most vigorous gas producer. Cellulose is believed to undergo little, if any, digestion during the ordinary sludge-digestion period."

The Sanitary Privy. W. R. Culbertson. *Southern Medical Journal*, vol. 20, No. 8, August, 1927, pp. 657-662. (Abstract by A. L. Dopmeyer.)

This article gives detailed information concerning the design and construction of the various types of sanitary privies in use. The types discussed are: (1) Common pit type; (2) double wood slab pit; (3) reinforced concrete slab; (4) concrete vault; (5) Kentucky type septic; (6) box and can; (7) chemical commode.

A galvanized sheet iron privy seat and riser which may be used with any type of sanitary privy is also described. There is also a sketch showing construction of a sanitary privy.

Following this article are discussions by a number of health officials from various parts of the country.

Milk Production Regulations. Anon. *Sanitary Bulletin*, Buffalo, N. Y. Department of Health, January, 1927, pp. 5-6. (Abstract by J. R. Hoffert.)

This article covers 30 specific regulations including provisions for: Exclusion of milk from dairy farm where case of contagious disease exists except under prescribed conditions; licensed veterinarians' examination of cows at least annually with filing or reports; conditions of milking, including cleansing of udders, cleanliness of attendants' clothing and milking equipment; sanitary quality of water and food of cows; specified barn conditions including tight floors and ceiling, amount of air space, window area, ventilation, whitewashing, cleaning, removal of manure, etc.; requires certain conditions for milk house, milk cooler and cooling tank and in operation of cooler; specifies small topped milk pails, straining and cleansing of milking equipment, including sterilization of milking machines.

DEATHS DURING WEEK ENDED DECEMBER 17, 1927

Summary of information received by telegraph from industrial insurance companies for week ended December 17, 1927, and corresponding week of 1926. (From the Weekly Health Index, December 21, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Dec. 17, 1927	Corresponding week, 1926
Policies in force.....	69, 626, 833	66, 290, 845
Number of death claims.....	12, 573	12, 729
Death claims per 1,000 policies in force, annual rate.....	9. 4	10. 0

Deaths from all causes in certain large cities of the United States during the week ended December 17, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, December 21, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week, ended Dec. 17, 1927		Annual death rate per 1,000 corresponding week, 1926	Deaths under 1 year		Infant mortality rate, week ended Dec. 17, 1927 ¹
	Total deaths	Death rate ¹		Week ended Dec. 17, 1927	Corresponding week, 1926	
Total (67 cities).....	7,109	12.7	13.1	700	791	68
Albany.....	57	24.8	16.3	5	1	104
Atlanta.....	86	18.0	13.7	10	5	.....
White.....	48	14.3	8.8	6	2	.....
Colored.....	38	26.8	25.1	4	3	.....
Baltimore.....	207	13.2	14.3	21	24	67
White.....	162	12.1	12.3	16	16	64
Colored.....	45	19.5	26.3	5	8	78
Birmingham.....	66	15.8	13.6	9	10	.....
White.....	28	11.0	11.4	1	4	.....
Colored.....	38	23.4	17.0	8	6	.....
Boston.....	217	14.3	13.8	19	31	53
Bridgeport.....	38	.....	.....	2	5	34
Buffalo.....	146	13.8	12.2	14	12	59
Cambridge.....	20	8.4	12.0	1	8	18
Camden.....	34	13.3	14.7	1	9	17
Canton.....	24	11.1	13.3	1	3	24
Chicago.....	679	11.4	11.9	78	64	68
Cincinnati.....	150	19.0	16.1	7	9	42
Cleveland.....	189	10.0	10.0	22	16	59
Columbus.....	64	11.5	17.0	7	7	65
Dallas.....	50	12.3	12.8	10	5	.....
White.....	41	11.6	11.5	9	5	.....
Colored.....	9	17.1	21.5	1	0	.....
Denver.....	107	16.4	16.4	9	15	.....
Des Moines.....	35	12.2	14.3	3	6	53
Detroit.....	249	9.7	11.1	41	48	63
Duluth.....	16	7.3	11.1	2	6	43
El Paso.....	44	20.1	12.4	4	6	.....
Erie.....	28	.....	.....	1	5	21
Fall River.....	32	12.5	13.1	4	6	68
Flint.....	27	9.8	15.3	5	16	79
Fort Worth.....	29	9.2	12.4	2	3	.....
White.....	27	9.8	12.7	2	2	.....
Colored.....	2	5.3	10.8	0	1	.....
Grand Rapids.....	29	9.5	10.7	5	6	74
Houston.....	45	.....	.....	8	4	.....
White.....	25	.....	.....	7	4	.....
Colored.....	20	.....	.....	1	0	.....
Indianapolis.....	86	12.0	14.8	6	7	46
White.....	71	11.2	14.0	6	5	32
Colored.....	15	17.3	20.4	0	2	0
Jersey City.....	62	10.0	10.2	6	6	45
Kansas City, Kans.....	30	13.3	11.2	2	1	42
White.....	24	13.0	11.9	1	1	25
Colored.....	6	14.8	7.6	1	0	145
Kansas City, Mo.....	94	12.8	16.1	10	9	.....
Knoxville.....	25	12.8	.....	7	.....	.....
White.....	22	12.8	.....	7	.....	.....
Colored.....	3	12.8	.....	0	.....	.....
Los Angeles.....	258	.....	.....	28	31	80
Louisville.....	82	14.4	14.4	3	4	26
White.....	61	11.7	12.3	2	3	19
Colored.....	21	22.4	26.4	1	1	69
Lowell.....	26	12.3	10.4	1	1	21
Lynn.....	18	8.9	12.5	3	1	83
Memphis.....	65	18.9	19.5	5	9	.....
White.....	33	14.9	13.3	3	2	.....
Colored.....	32	26.3	30.6	2	7	.....
Milwaukee.....	136	13.4	10.8	16	19	74
Minneapolis.....	123	14.5	12.1	8	6	45

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 60 cities.

⁵ Deaths for week ended Friday, Dec. 16, 1927.

⁶ In the cities for which deaths are shown by color, the colored population in 1926 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, and Richmond 32.

Deaths from all causes in certain large cities of the United States during the week ended December 17, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, December 21, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week, ended Dec. 17, 1927		Annual death rate per 1,000 corresponding week, 1926	Deaths under 1 year		Infant mortality rate, week ended Dec. 17, 1927
	Total deaths	Death rate		Week ended Dec. 17, 1927	Corresponding week, 1926	
Nashville ⁶	54	20.4	17.1	4	4	-----
White.....	40	21.1	14.9	3	1	-----
Colored.....	14	18.8	22.7	1	3	-----
New Bedford.....	22	9.6	8.7	3	2	57
New Haven.....	37	10.4	13.2	2	4	28
New Orleans ⁶	179	22.0	20.3	27	14	-----
White.....	104	17.3	15.1	10	8	-----
Colored.....	75	35.5	34.9	17	6	-----
New York.....	1,352	11.8	13.4	113	161	47
Bronx Borough.....	170	9.6	10.0	13	17	41
Brooklyn Borough.....	459	10.5	12.8	39	58	41
Manhattan Borough.....	552	15.9	17.5	51	66	61
Queens Borough.....	138	8.9	8.7	9	16	39
Richmond Borough.....	33	11.7	15.7	1	4	19
Newark, N. J.....	104	11.6	10.2	10	14	50
Oakland.....	72	14.1	10.4	4	6	47
Oklahoma City.....	21	-----	-----	3	4	-----
Omaha.....	70	16.7	14.0	8	6	91
Paterson.....	40	14.5	12.8	4	5	72
Philadelphia.....	492	12.6	13.2	50	46	67
Pittsburgh.....	191	15.5	14.4	27	25	94
Portland, Oreg.....	63	-----	-----	3	2	32
Providence.....	46	8.5	11.2	8	5	69
Richmond ⁶	57	15.5	14.6	11	8	143
White.....	34	13.0	13.6	4	4	81
Colored.....	23	21.6	16.9	7	4	256
Rochester.....	64	10.3	10.1	9	5	76
St. Louis.....	218	13.6	13.8	16	15	-----
St. Paul.....	58	12.1	12.2	2	2	18
Salt Lake City ⁶	42	16.1	10.9	4	8	64
San Antonio.....	61	15.1	10.2	14	11	-----
San Diego.....	49	22.2	24.1	2	3	44
San Francisco.....	148	13.4	14.2	11	6	69
Schenectady.....	17	9.5	14.0	1	7	30
Seattle.....	87	-----	-----	8	10	85
Somerville.....	7	3.6	15.1	1	1	29
Spokane.....	41	19.6	11.5	2	1	48
Springfield, Mass.....	30	10.6	13.3	2	5	32
Syracuse.....	48	12.7	14.9	5	3	65
Tacoma.....	37	18.0	14.3	3	1	70
Toledo.....	76	13.0	13.2	6	11	57
Trenton.....	42	16.0	13.2	5	6	89
Utica.....	27	13.7	18.3	1	3	23
Waterbury.....	16	-----	-----	2	1	47
Wilmington, Del.....	27	11.2	8.8	1	4	25
Worcester.....	48	12.8	14.3	3	5	36
Yonkers.....	24	10.5	15.7	2	6	46
Youngstown.....	31	9.6	12.0	1	9	13

¹ Deaths for week ended Friday, Dec. 16, 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 20, and Richmond 32.

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 Weeks Ended December 25, 1926, and December 24, 1927

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 25, 1926, and December 24, 1927

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927
New England States:								
Maine.....	1	12	4	6	78	72	0	0
New Hampshire.....								
Vermont.....					23		0	0
Massachusetts.....	104	138	14	11	59	535	2	4
Rhode Island.....	1	31	6		2	10	0	0
Connecticut.....	18	41	2	15	29	35	1	0
Middle Atlantic States:								
New York.....	228	380	50	121	589	318	6	4
New Jersey.....	78	133	11	7	21	54	0	2
Pennsylvania.....	189	166			413	256	1	3
East North Central States:								
Ohio.....		77		10		109		1
Indiana.....	28	35	19	19	72	42	1	0
Illinois.....	110	219	37	43	577	33	3	9
Michigan.....	63	73		6	66	174	0	1
Wisconsin.....	45	49	20	70	588	106	1	1
West North Central States:								
Minnesota.....	34	17		1	142	3	0	1
Iowa ¹	30	22			46	6	2	0
Missouri ¹	46	46	2	4	74	18	0	3
North Dakota.....	11				94		0	
South Dakota.....	1	1	1	2	35	13	1	1
Nebraska.....	6	20		2	13		0	0
Kansas.....	19	31	6	8	34	24	0	1
South Atlantic States:								
Delaware.....		4	2			2	0	0
Maryland ²	48	38	42	23	27	105	2	0
District of Columbia.....	27				1		0	
Virginia.....								
West Virginia.....	33	26	30	14	103	48	0	0
North Carolina.....	86				36		1	
South Carolina.....	41	25	843	339	9	520	0	0
Georgia.....	45	15	27	86	17	63	0	1
Florida.....	30	14	3	4	8	5	1	2
East South Central States:								
Kentucky.....								
Tennessee.....	18	11	55	49	4	56	1	0
Alabama.....	59	18	19	49	17	43	0	0
Mississippi.....	15	25					1	
West South Central States:								
Arkansas.....	8	33	35	61	1	16	0	0
Louisiana.....	17	57	11	30	24	53	0	0
Oklahoma ³	28	37	121	80	9	31	0	2
Texas.....	52	104	22	83	9	55	0	0
Mountain States:								
Montana.....	7	2			73	1	0	1
Idaho.....	3	5			57	1	0	1
Wyoming.....	1				5		0	2
Colorado.....	9	21		1	4	16	1	1
New Mexico.....	1	5		1	5	25	0	0
Arizona.....	3	3				2	0	0
Utah ²	2	7			179	2	0	0

¹ New York City only.

² Week ended Friday.

³ Exclusive of Tulsa.

⁴ 1927 figures exclusive of Kansas City.

Reports for Weeks Ended December 25, 1926, and December 24, 1927—Con.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 25, 1926, and December 24, 1927—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927
Pacific States:								
Washington.....	23	11			117	138	1	5
Oregon.....	12	11	15	18	32	7	1	2
California.....	99	114	11	13	460	17	2	0

Division and State	Pollomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927	Week ended Dec. 25, 1926	Week ended Dec. 24, 1927
New England States:								
Maine.....	0	2	42	36	0	0	1	15
New Hampshire.....								
Vermont.....	9	0	4	6	0	0	0	0
Massachusetts.....	1	11	236	227	0	0	31	6
Rhode Island.....	0	0	7	38	0	0	0	1
Connecticut.....	1	0	60	65	0	0	2	2
Middle Atlantic States:								
New York.....	2	5	392	382	6	10	16	17
New Jersey.....	0	1	127	106	0	2	1	4
Pennsylvania.....	2	4	405	289	1	0	19	10
East North Central States:								
Ohio.....		3		165		15		12
Indiana.....	0	1	103	45	79	48	4	3
Illinois.....	0	3	234	267	20	12	16	18
Michigan.....	0	5	154	140	19	27	1	7
Wisconsin.....	0	0	136	144	6	30	6	1
West North Central States:								
Minnesota.....	1	1	207	125	8	2	2	1
Iowa.....	0	3	27	60	6	100	1	3
Missouri.....	0	2	91	88	3	41	4	8
North Dakota.....	0		64		6		0	
South Dakota.....	0	2	27	54	4	1	0	1
Nebraska.....	0	1	47	28	9	6	0	3
Kansas.....	0	1	77	145	29	30	1	10
South Atlantic States:								
Delaware.....	0	0	14	4	0	0	2	0
Maryland.....	0	0	68	26	0	0	11	9
District of Columbia.....	0		14		0		1	
Virginia.....								
West Virginia.....	0	0	59	53	1	23	16	19
North Carolina.....	0		74		19		6	
South Carolina.....	0	3	19	20	11	3	12	13
Georgia.....	0	0	16	10	76	0	6	15
Florida.....	0	0	13	8	39	2	4	1
East South Central States:								
Kentucky.....								
Tennessee.....	0	0	21	16	6	3	21	10
Alabama.....	2	1	19	16	82	4	52	6
Mississippi.....	0	0	9	14	32	0	5	1
West South Central States:								
Arkansas.....	0	0	9	22	1	1	3	9
Louisiana.....	1	1	9	16	1	0	6	9
Oklahoma.....	1	0	50	27	35	54	13	11
Texas.....	0	6	38	98	24	7	1	26
Mountain States:								
Montana.....	0	1	103	13	10	16	3	0
Idaho.....	0	0	42	9	1	1	1	1
Wyoming.....	0	0	2	15	0	3	0	0
Colorado.....	0	1	31	94	1	12	0	5
New Mexico.....	0	2	15	15	0	0	3	0
Arizona.....	0	1	3	3	1	2	1	0
Utah.....	0	0	4	6	0	18	0	0
Pacific States:								
Washington.....	0	7	91	50	38	23	4	2
Oregon.....	0	10	32	22	17	34	1	3
California.....	0	7	138	132	9	11	15	10

* Week ended Friday.

* Exclusive of Tulsa.

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	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Ma- laria	Mea- sles	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>November, 1927</i>										
Georgia.....	0	178	287	145	86	20	0	112	7	86
Indiana.....	5	245	62	-----	44	-----	27	481	287	27
Iowa.....	3	96	1	-----	7	-----	17	237	185	12
Maryland.....	1	177	107	1	206	1	6	233	0	72
Minnesota.....	4	240	7	-----	16	-----	16	632	5	24
New York.....	14	1,515	-----	14	738	-----	78	1,290	35	204
Ohio.....	3	987	41	1	193	-----	121	1,013	46	109
West Virginia.....	3	99	69	-----	48	-----	34	238	18	62
Wyoming.....	0	8	3	-----	33	-----	1	88	33	3

November, 1927

	Cases	Mumps—Continued.	Cases
Actinomycosis:		Ohio.....	514
Iowa.....	1	Wyoming.....	4
Anthrax:		Ophthalmia neonatorum:	
New York.....	1	Maryland.....	1
Chicken pox:		New York.....	7
Georgia.....	58	Ohio.....	111
Indiana.....	272	Paratyphoid fever:	
Iowa.....	180	Georgia.....	1
Maryland.....	378	New York.....	3
Minnesota.....	678	Puerperal fever:	
New York.....	1,840	New York.....	5
Ohio.....	1,473	Rabies in animals:	
West Virginia.....	179	Maryland.....	3
Wyoming.....	112	New York.....	6
Conjunctivitis:		Scabies:	
Georgia.....	4	Maryland.....	1
Dengue:		Wyoming.....	4
Georgia.....	3	Septic sore throat:	
Dysentery:		Georgia.....	48
Georgia.....	13	Iowa.....	2
Iowa.....	1	Maryland.....	15
Maryland.....	5	New York.....	5
Minnesota.....	1	Ohio.....	83
New York.....	9	Tetanus:	
Ohio.....	5	Maryland.....	1
German measles:		Minnesota.....	1
Georgia.....	1	New York.....	5
Iowa.....	7	Trachoma:	
Maryland.....	7	New York.....	5
New York.....	88	Ohio.....	24
Ohio.....	35	Tularaemia:	
Wyoming.....	1	Minnesota.....	1
Hookworm disease:		Typhus fever:	
Georgia.....	10	Georgia.....	1
Impetigo contagiosa:		New York.....	1
Iowa.....	4	Vincent's angina:	
Maryland.....	20	Maryland.....	9
Lead poisoning:		New York.....	117
Ohio.....	6	Whooping cough:	
Lethargic encephallitis:		Georgia.....	12
Maryland.....	4	Indiana.....	86
Minnesota.....	1	Iowa.....	25
New York.....	24	Maryland.....	110
Ohio.....	2	Minnesota.....	33
Mumps:		New York.....	1,511
Georgia.....	21	Ohio.....	403
Indiana.....	16	West Virginia.....	32
Iowa.....	143	Wyoming.....	74
Maryland.....	53		
New York.....	965		

Number of Cases of Certain Communicable Diseases Reported for the Month of October, 1927, by State Health Officers

	Chick- en pox	Diph- theria	Measles	Mumps	Scarlet fever	Small- pox	Tuber- culosis	Ty- phoid fever	Whoop- ing cough
Alabama.....	25	551	89	29	133	9	341	183	119
Arizona.....	11	50	8	6	10	0	226	21	3
Arkansas.....	45	90	49	160	68	8	141	127	47
California.....	639	499	199	249	485	22	747	49	396
Colorado.....	13	89	25	15	175	1	87	59	53
Connecticut.....	220	143	47	66	114	0	154	18	157
Delaware ¹									
District of Columbia.....	22	92	8		63	0	92	10	23
Florida.....	3	181	5	9	33	22	68	52	20
Georgia.....	17	240	55	24	151	18	78	138	34
Idaho.....	47	11	7	96	59	47	13	5	12
Illinois.....	563	587	99	279	677	39	974	163	694
Indiana ²									
Iowa.....	76	59	12	40	148	84	37	14	34
Kansas.....	263	216	146	32	392	80	172	74	214
Kentucky ¹									
Louisiana.....	9	163	15	4	43	13	164	68	4
Maine.....	92	10	218	15	158	0	17	30	80
Maryland.....	124	142	69	22	133	0	191	114	103
Massachusetts.....	412	432	526	181	728	0	485	48	341
Michigan.....	197	403	144	237	489	38	523	77	442
Minnesota.....	291	250	17		396	5	308	30	83
Mississippi.....	250	421	632	195	174	46	288	102	997
Missouri.....	145	334	29	77	428	70	240	137	251
Montana.....	92	15	12	4	65	79	37	7	30
Nebraska.....	80	60	6	44	168	8	24	12	32
Nevada ¹									
New Hampshire.....		17			44	0		3	
New Jersey.....	319	566	64		272	0	403	39	378
New Mexico ¹									
New York.....	865	292	422	506	468	18	1,346	124	1,062
North Carolina.....	98	717	749		535	41		88	566
North Dakota.....	76	41	27	26	159	12	6	9	6
Ohio.....	646	779	113	232	842	50	551	159	375
Oklahoma ³	41	609	108	6	201	57	109	398	73
Oregon.....	95	57	52	49	91	94	44	69	23
Pennsylvania ¹									
Rhode Island.....	10	61	11	15	94	4	45	6	5
South Carolina.....	34	591	595		143	14	194	233	248
South Dakota.....	19	23	26	28	126	45	5	18	7
Tennessee.....	31	289	232	27	292	35	245	362	193
Texas ¹									
Utah ¹									
Vermont.....	117	14	16	43	53	0	12	4	103
Virginia.....	281	507	291		358	14	162	125	292
Washington.....	248	79	206	135	202	63	152	23	50
West Virginia.....	86	125	37		344	22	55	205	198
Wisconsin.....	425	143	252	169	368	52	162	30	315
Wyoming.....	31	12	45	8	54	2		9	47

¹ Pulmonary.² Report not received at time of going to press.³ Reports received weekly.⁴ Reports received annually.⁵ Exclusive of Oklahoma City and Tulsa.

Case Rates per 1,000 Population (Annual Basis) for the Month of October, 1927

	Chick- en pox	Diph- theria	Measles	Mumps	Scarlet fever	Small- pox	Tuber- culosis	Ty- phoid fever	Whoop- ing cough
Alabama	0.12	2.55	0.41	0.13	0.61	0.04	1.58	0.85	0.55
Arizona	.28	1.28	.21	.15	.26	0.	5.80	.54	.08
Arkansas	.28	.55	.30	.08	.42	.06	1.25	.78	.29
California	1.70	1.33	.53	.06	1.29	.06	1.98	.13	1.05
Colorado	.14	.98	.27	.16	1.92	.01	.95	.65	.58
Connecticut	1.58	1.03	.34	.48	.82	0.	1.11	.13	1.13
Delaware ¹									
District of Columbia	.48	2.01	.17		1.37	0.	2.01	.22	.50
Florida	.03	1.56	.04	.08	.29	.19	.59	.45	.17
Georgia	.06	.89	.20	.00	.56	.07	.29	.51	.13
Idaho	1.04	.24	.15	2.12	1.30	1.04	1.07	.11	.26
Illinois	.91	.95	.16	.45	1.09	.06	1.57	.26	1.12
Indiana ¹									
Iowa	.37	.29	.06	.19	.72	.41	.18	.07	.17
Kansas	1.60	1.39	.94	.21	2.52	.52	1.11	.48	1.38
Kentucky ¹									
Louisiana	.05	.99	.09	.02	.26	.06	1.00	.41	.02
Maine	1.37	.15	3.24	.22	2.35	0	.25	.45	1.19
Maryland	.91	1.05	.51	.16	.98	0	1.41	.84	.76
Massachusetts	1.14	1.20	1.46	.50	2.02	0	1.35	.13	.95
Michigan	.52	1.06	.38	.02	1.28	.10	1.37	.20	1.16
Minnesota	1.28	1.10	.07		1.74	.02	1.35	.13	.36
Mississippi	1.64	2.77	4.16	1.28	1.14	.30	1.89	.67	6.56
Missouri	.49	1.12	.10	.26	1.44	.23	.80	.46	.84
Montana	1.52	.25	.20	.07	1.07	1.30	.61	.12	.49
Nebraska	.67	.51	.05	.37	1.42	.07	.20	.10	.27
Nevada ⁴									
New Hampshire		.44			1.14	0		.08	
New Jersey	1.00	1.78	.20		.85	0	1.27	.12	1.19
New Mexico ¹									
New York	.89	.30	.44	.61	.48	.02	1.39	.13	1.09
North Carolina	.40	2.91	3.04		2.17	.17		.36	2.30
North Dakota	1.40	.75	.50	.48	2.92	.22	.11	.17	.11
Ohio	1.13	1.37	.20	.41	1.48	.09	.97	.28	.66
Oklahoma ⁴	.23	3.38	.60	.65	1.11	.32	.60	2.21	.40
Oregon	1.26	.75	.69	.65	1.20	1.24	.68	.91	.30
Pennsylvania ¹									
Rhode Island	.17	1.02	.18	.25	1.57	.07	.75	.10	.08
South Carolina	.22	3.77	3.80		.91	.09	1.24	1.49	1.68
South Dakota	.32	.39	.44	.47	2.13	.76	.08	.30	.12
Tennessee	.15	1.37	1.10	.13	1.38	.17	1.16	1.72	.91
Texas ¹									
Utah ¹									
Vermont	3.91	.47	.53	1.44	1.77	0.	.40	.13	3.44
Virginia	1.30	2.34	1.35		1.66	.06	1.29	.58	1.35
Washington	1.87	.60	1.55	1.02	1.53	.47	1.15	.17	.38
West Virginia	.60	.87	.26		2.39	.15	.38	1.42	1.31
Wisconsin	1.71	.58	1.02	.68	1.48	.21	.65	.12	1.27
Wyoming	1.51	.69	2.20	.39	2.64	.10		.44	2.30

¹ Pulmonary,

² Report not received at time of going to press.

³ Reports received weekly.

⁴ Reports received annually.

⁵ Exclusive of Oklahoma City and Tulsa.

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of November, 1927, to other State health departments by departments of health of certain States

Referred by—	Diph- theria	Measles	Polio- myelitis	Scarlet fever	Small- pox	Tuber- culosis	Typhoid
California							
Connecticut	1				1		1
Illinois			1				2
Massachusetts							5
Minnesota	2					50	15
New York	1			3			1
Ohio			1				

¹ One of these cases was a carrier.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 98 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 30,450,000. The estimated population of the 94 cities reporting deaths is more than 30,260,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended December 10, 1927, and December 11, 1926

	1927	1926	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
42 States.....	2,539	2,429	-----
98 cities.....	1,196	1,164	1,257
Measles:			
41 States.....	4,649	5,698	-----
98 cities.....	1,291	1,042	-----
Poliomyelitis:			
42 States.....	152	31	-----
Scarlet fever:			
42 States.....	3,473	4,116	-----
98 cities.....	1,069	1,356	1,102
Smallpox:			
41 States.....	730	679	-----
98 cities.....	64	63	48
Typhoid fever:			
42 States.....	344	467	-----
98 cities.....	62	73	65
<i>Deaths reported</i>			
Influenza and pneumonia:			
94 cities.....	709	832	-----
Smallpox:			
94 cities.....	0	0	-----

City reports for week ended December 10, 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 non-epidemic 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.

City reports for week ended December 10, 1927—Continued.

Division, State, and city	Population July 1, 1925, estimated	Chick- en pox, cases re- ported	Diphtheria		Influenza		Meas- les, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
			Cases, esti- mated expec- tancy	Cases re- ported	Cases re- ported	Deaths re- ported			
NEW ENGLAND									
Maine:									
Portland	75,333	0	2	1	1	0	2	0	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	3	0	1
Manchester	83,067	1	4	0	0	0	0	0	0
Nashua	29,723		0	1	0	0	1		0
Vermont:									
Earre	10,008	1	0	0	0	0	0	0	0
Massachusetts:									
Boston	779,620	58	54	29	3	2	185	3	6
Fall River	128,998	2	5	3	0	0	0	0	1
Springfield	142,065	10	5	14	0	0	0	3	1
Worcester	190,757	12	4	10	0	0	1	43	0
Rhode Island:									
Pawtucket	69,760	0	2	2	0	0	0	4	0
Providence	267,918	9	10	20	0	1	8	4	6
Connecticut:									
Bridgeport	(1)	0	10	7	0	1	0	0	2
Hartford	160,197	1	8	7	0	0	1	1	4
New Haven	178,927	15	4	0	0	0	32	6	1
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	66	24	34		1	60	26	10
New York	5,873,356	161	186	264	25	6	47	17	186
Rochester	316,786	12	10	10		0	2	2	9
Syracuse	182,003	44	8	2		0	25	15	5
New Jersey:									
Camden	128,642	5	7	7	0	0	2	0	3
Newark	452,513	26	14	38	3	1	33	15	13
Trenton	132,020	3	7	0	0	0	3	0	1
Pennsylvania:									
Philadelphia	1,979,364	165	83	56		2	9	61	43
Pittsburgh	631,563	46	25	49		5	223	64	20
Reading	112,707	19	5	3		0	0	1	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	29	18	13	0	5	44	1	14
Cleveland	936,485	78	54	78	1	0	21	95	12
Columbus	279,826	28	11	23	0	0	0	2	4
Toledo	287,380	97	15	9	1	0	35	17	6
Indiana:									
Fort Wayne	97,846	1	6	8	0	0	1	0	4
Indianapolis	358,819	26	14	24	0	0	1	47	6
South Bend	80,091	5	2	2	0	0	0	0	2
Terre Haute	71,071	2	3	2	0	0	2	0	3
Illinois:									
Chicago	2,995,239	127	117	116	18	5	12	27	65
Springfield	63,923	5	3	1	0	0	0	3	0
Michigan:									
Detroit	1,245,824	67	80	56	3	2	103	42	20
Flint	130,316	16	14	1	0	0	3	28	2
Grand Rapids	153,698	2	5	0	0	1	23	3	8
Wisconsin:									
Kenosha	50,891	20	2	2	0	0	0	4	1
Milwaukee	509,192	86	30	11	1	0	0	21	7
Racine	67,707	8	3	4	0	0	0	2	3
Superior	39,671	16	1	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	4	2	0	0	1	0	0	2
Minneapolis	425,435	67	29	10	0	0	0	4	10
St. Paul	246,001	15	20	1	0	0	0	9	14
Iowa:									
Davenport	52,469	0	1	0	0		1	0	
Des Moines	141,441	0	6	0	0		0		3
Sioux City	76,411	4	3	0	0		1	8	
Waterloo	36,771	11	0	0	0		1	0	

1 No estimate made.

City reports for week ended December 10, 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			
WEST NORTH CENTRAL—continued									
Missouri:									
Kansas City.....	367,481	65	13	4	0	0	2	49	10
St. Joseph.....	78,942	4	3	1	0	0	0	0	3
St. Louis.....	821,543	20	52	46	0	0	18	14	—
North Dakota:									
Fargo.....	26,403	42	0	0	0	0	0	0	0
Grand Forks.....	14,811	12	0	0	0	0	0	0	—
South Dakota:									
Aberdeen.....	15,036	1	0	0	0	0	0	0	—
Sioux Falls.....	30,127	0	0	0	0	0	0	0	—
Nebraska:									
Lincoln.....	60,941	33	2	0	0	0	1	7	0
Omaha.....	211,768	21	6	3	0	0	2	0	6
Kansas:									
Topeka.....	55,411	18	3	0	0	2	0	0	2
Wichita.....	88,367	22	9	0	0	0	1	0	1
SOUTH ATLANTIC									
Delaware:									
Wilmington.....	122,049	0	2	3	0	0	0	2	2
Maryland:									
Baltimore.....	796,296	80	41	29	16	2	72	7	24
Cumberland.....	33,741	0	1	1	0	0	0	0	1
Frederick.....	12,035	0	1	2	0	0	0	0	0
District of Columbia:									
Washington.....	407,906	18	22	20	0	0	4	0	5
Virginia:									
Lynchburg.....	30,395	7	2	5	0	0	0	0	2
Norfolk.....	(¹)	29	4	2	0	0	1	0	4
Richmond.....	186,403	4	14	18	0	0	9	1	6
Roanoke.....	58,208	2	4	1	0	0	8	0	1
West Virginia:									
Charleston.....	49,019	2	3	2	0	1	0	0	3
Wheeling.....	56,208	16	3	0	0	0	0	0	1
North Carolina:									
Raleigh.....	30,371	12	2	2	0	0	3	0	3
Wilmington.....	37,061	8	1	2	0	0	136	0	1
Winston-Salem.....	69,031	1	2	5	0	1	4	8	4
South Carolina:									
Charleston.....	73,125	0	2	0	16	0	0	0	0
Columbia.....	41,225	13	1	0	0	0	17	11	2
Greenville.....	27,311	2	0	0	0	0	16	1	1
Georgia:									
Atlanta.....	(¹)	3	6	3	27	2	0	2	13
Brunswick.....	16,809	0	0	0	0	0	1	4	1
Savannah.....	93,134	0	2	6	8	2	20	0	2
Florida:									
Miami.....	69,764	0	—	3	1	0	1	0	1
St. Petersburg.....	26,847	—	0	—	—	0	—	—	0
Tampa.....	94,743	3	2	4	0	1	0	0	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington.....	58,309	0	3	0	0	0	0	0	2
Louisville.....	305,935	3	10	2	3	1	4	1	7
Tennessee:									
Memphis.....	174,533	17	9	5	0	3	61	24	7
Nashville.....	136,220	2	4	2	0	2	2	2	6
Alabama:									
Birmingham.....	205,670	14	6	4	10	4	5	1	7
Mobile.....	65,955	0	2	0	5	1	0	0	0
Montgomery.....	46,481	1	1	1	3	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith.....	31,643	0	2	1	0	—	0	0	—
Little Rock.....	74,216	0	2	2	1	0	12	0	4
Louisiana:									
New Orleans.....	414,483	4	12	19	10	9	0	0	5
Shreveport.....	57,857	2	2	0	0	0	11	0	2

¹ No estimate made.

City reports for week ended December 10, 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			
WEST SOUTH CENTRAL—continued									
Oklahoma:									
Oklahoma City.....	(1)	1	3	6	2	0	4	0	3
Tulsa.....	124,478	4		3	0		1	5	
Texas:									
Dallas.....	194,450	11	14	14	1	1	0	0	2
Galveston.....	43,375	0	1	1	0	0	0	0	1
Houston.....	164,954	0	5	10	0	0	0	0	5
San Antonio.....	198,069	0	4	5	0	1	9	0	5
MOUNTAIN									
Montana:									
Billings.....	17,971	0	0	0	0	0	1	0	0
Great Falls.....	29,883	0	0	0	0	0	0	1	1
Helena.....	12,037	9	0	0	0	0	0	0	0
Missoula.....	12,068	2	0	0	0	0	0	0	0
Idaho:									
Boise.....	23,042	0	0	0	0	0	0	2	0
Colorado:									
Denver.....	280,911	36	14	7		1	3	10	16
Pueblo.....	43,787	18	4	0	0	0	0	0	4
New Mexico:									
Albuquerque.....	21,000	1	1	0	0	0	0	0	3
Utah:									
Salt Lake City.....	130,948	34	5	9	0	0	0	0	2
Nevada:									
Reno.....	12,665	0	0	0	0	0	0	0	1
PACIFIC									
Washington:									
Seattle.....	(1)		8						
Spokane.....	108,897		4						
Tacoma.....	104,455	4	3	1	0	0	2	5	2
Oregon:									
Portland.....	283,383	30	11	6	0	1	3	2	6
California:									
Los Angeles.....	(1)	26	42	30	13	1	3	14	24
Sacramento.....	72,260	4	3	1	0	0	4	2	1
San Francisco.....	557,530	77	18	15	2	0	12	25	5

Division, State, and city	Scarlet fever		Smallpox			Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported	Tuberculosis, deaths reported	Cases, estimated expectancy	Cases reported		
NEW ENGLAND										
Maine:										
Portland.....	2	4	0	0	0	0	0	1	0	5
New Hampshire:										
Concord.....	0	3	0	0	0	1	0	0	0	16
Manchester.....	2	0	0	0	0	1	0	0	0	20
Nashua.....	0	1	0	0	0	2	0	0	0	12
Vermont:										
Barre.....	1	1	0	0	0	0	0	0	0	2
Massachusetts:										
Boston.....	51	64	0	0	0	10	1	3	0	215
Fall River.....	2	5	0	0	0	3	1	0	0	21
Springfield.....	7	5	0	0	0	2	0	0	0	30
Worcester.....	12	10	0	0	0	1	0	0	0	57
Rhode Island:										
Pawtucket.....	0	2	0	0	0	0	0	0	0	13
Providence.....	7	25	0	0	0	5	1	0	0	62

¹No estimate made.

City reports for week ended December 10, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
NEW ENGLAND— continued											
Connecticut:											
Bridgeport.....	8	3	0	0	0	1	0	1	0	4	26
Hartford.....	6	9	0	0	0	3	0	0	0	3	38
New Haven.....	7	7	0	0	0	1	1	0	0	17	47
MIDDLE ATLANTIC											
New York:											
Buffalo.....	22	25	0	0	0	4	1	2	0	22	119
New York.....	161	152	0	0	0	89	15	11	3	175	1,306
Rochester.....	10	8	0	0	0	3	1	1	0	7	68
Syracuse.....	12	4	0	0	0	1	1	0	0	4	37
New Jersey:											
Camden.....	5	1	0	0	0	1	1	0	0	0	26
Newark.....	17	14	0	0	0	7	1	1	0	60	116
Trenton.....	2	1	0	0	0	2	0	0	0	0	18
Pennsylvania:											
Philadelphia.....	70	68	0	0	0	28	4	2	0	32	415
Pittsburgh.....	36	34	0	0	0	10	1	0	0	12	187
Reading.....	1	10	0	0	0	2	0	0	0	0	22
EAST NORTH CENTRAL											
Ohio:											
Cincinnati.....	15	10	0	0	0	9	1	1	0	1	158
Cleveland.....	34	27	1	0	0	10	2	3	1	28	177
Columbus.....	11	24	0	0	0	2	0	4	2	4	73
Toledo.....	14	18	0	0	0	10	1	3	0	2	83
Indiana:											
Fort Wayne.....	3	8	0	0	0	1	0	0	0	0	26
Indianapolis.....	13	13	4	2	0	2	0	0	0	0	94
South Bend.....	4	1	1	0	0	0	0	0	0	0	16
Terre Haute.....	4	1	0	3	0	0	0	0	0	0	11
Illinois:											
Chicago.....	114	110	1	0	0	53	4	2	0	76	680
Springfield.....	2	3	0	0	0	1	0	0	0	2	24
Michigan:											
Detroit.....	87	60	1	0	0	23	2	1	0	35	248
Flint.....	8	18	0	0	0	0	0	0	0	5	31
Grand Rapids.....	10	4	0	0	0	1	0	0	0	2	38
Wisconsin:											
Kenosha.....	1	5	0	0	0	0	0	0	0	0	8
Milwaukee.....	18	33	1	1	0	3	0	2	0	17	106
Racine.....	5	3	1	0	0	2	0	0	0	5	14
Superior.....	2	4	1	0	0	0	0	0	0	0	10
WEST NORTH CENTRAL											
Minnesota:											
Duluth.....	8	7	1	0	0	1	0	2	0	0	17
Minneapolis.....	50	19	5	0	0	4	1	1	0	0	76
St. Paul.....	25	7	3	0	0	5	1	1	1	2	69
Iowa:											
Davenport.....	1	3	1	0	0	0	0	0	0	0	30
Des Moines.....	6	19	0	9	0	0	0	0	0	0	0
Sioux City.....	3	7	1	0	0	0	1	0	0	1	0
Waterloo.....	2	1	0	0	0	0	0	0	0	0	0
Missouri:											
Kansas City.....	12	8	1	1	0	4	1	2	0	3	89
St. Joseph.....	3	0	0	17	0	2	0	0	0	0	32
St. Louis.....	36	31	1	0	0	10	2	1	0	2	207
North Dakota:											
Fargo.....	2	6	0	0	0	0	0	0	0	3	0
Grand Forks.....	1	0	0	0	0	0	0	0	0	0	0
South Dakota:											
Aberdeen.....	1	0	0	0	0	0	0	0	0	0	0
Sioux Falls.....	1	5	0	0	0	0	0	0	0	0	9
Nebraska:											
Lincoln.....	2	3	0	0	0	0	0	0	0	2	15
Omaha.....	6	8	2	0	0	1	0	0	0	0	43
Kansas:											
Topeka.....	2	0	0	1	0	0	0	0	0	0	21
Wichita.....	3	10	0	19	0	4	0	0	1	0	31

City reports for week ended December 10, 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		
MOUNTAIN—CON.											
Idaho:											
Boise.....	1	0	1	0	0	0	0	0	1	8	
Colorado:											
Denver.....	12	13	1	0	0	13	0	1	2	89	
Pueblo.....	2	1	0	0	0	1	0	0	3	13	
New Mexico:											
Albuquerque.....	1	1	0	0	0	2	0	0	0	9	
Utah:											
Salt Lake City.....	2	9	1	7	0	0	0	0	5	37	
Nevada:											
Reno.....	0	1	0	4	0	0	0	0	0	3	
PACIFIC											
Washington:											
Seattle.....	9		2				0				
Spokane.....	6		5				0				
Tacoma.....	4	1	5	2	0	0	1	0	0	28	
Oregon:											
Portland.....	8	5	6	16	0	1	0	1	0	76	
California:											
Los Angeles.....	26	20	4	0	0	26	2	0	13	310	
Sacramento.....	2	4	1	0	0	2	0	0	0	26	
San Francisco.....	12	15	1	0	0	5	1	2	0	133	

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.....	0	1	0	0	0	0	0	5	1	
Fall River.....	0	0	0	0	0	0	0	1	0	
MIDDLE ATLANTIC¹										
New York:										
New York.....	4	3	5	2	0	0	2	0	0	
EAST NORTH CENTRAL										
Ohio:										
Cleveland.....	1	0	0	0	0	2	0	0	0	
Columbus.....	0	0	0	0	0	0	0	1	0	
Indiana:										
Indianapolis.....	0	1	0	0	0	0	0	0	0	
Illinois:										
Chicago.....	4	1	0	0	0	0	1	0	0	
Michigan:										
Detroit.....	1	1	0	0	0	0	0	1	0	
Wisconsin:										
Milwaukee.....	1	1	0	0	0	0	0	0	0	
WEST NORTH CENTRAL										
Minnesota:										
Minneapolis.....	2	0	0	1	0	0	0	1	0	
St. Paul.....	1	1	0	0	0	0	0	0	0	
Iowa:										
Des Moines.....	0	1	0	0	0	0	0	0	0	
Missouri:										
Kansas City.....	1	0	0	0	0	0	0	2	1	
St. Joseph.....	1	1	0	0	0	0	0	0	0	
St. Louis.....	1	0	0	0	0	0	0	0	0	
South Dakota:										
Aberdeen.....	1		0		0		0	0		

¹ Rabies (human): 1 case and 1 death at New York, N. Y., and 1 case and 1 death at Pittsburgh, Pa.

City reports for week ended December 10, 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
SOUTH ATLANTIC									
District of Columbia:									
Washington.....	0	0	0	0	0	1	0	0	0
West Virginia:									
Wheeling.....	0	0	0	0	0	0	0	2	1
North Carolina:									
Winston-Salem.....	0	0	0	0	0	0	0	0	1
South Carolina:									
Charleston.....	0	0	0	0	1	0	0	0	0
Georgia:									
Atlanta.....	0	0	0	0	0	1	0	0	0
Savannah.....	0	0	0	0	1	1	0	0	0
Florida:									
Tampa.....	0	0	0	0	0	1	0	0	0
EAST SOUTH CENTRAL									
Alabama:									
Birmingham.....	0	0	0	0	1	1	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans.....	0	0	0	0	4	1	0	0	0
Shreveport.....	0	0	0	0	0	1	0	0	0
Texas:									
Dallas.....	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Colorado:									
Denver.....	1	2	0	0	0	0	0	1	0
Utah:									
Salt Lake City.....	0	0	0	0	0	0	0	2	1
PACIFIC									
Washington:									
Tacoma.....	0	0	0	0	0	0	0	2	1
Oregon:									
Portland.....	0	0	0	0	0	0	1	4	1
California:									
Los Angeles.....	0	0	0	0	0	0	1	7	2
Sacramento.....	1	0	0	0	0	0	0	1	0
San Francisco.....	2	1	1	1	0	0	0	1	0

* Tularaemia: Sacramento, 1 case.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended December 10, 1927, compared with those for a like period ended December 11, 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, November 6 to December 10, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926¹

DIPHTHERIA CASE RATES

	Week ended—									
	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927	Dec. 11, 1926	Dec. 10, 1927
101 cities.....	228	² 215	230	228	212	³ 204	224	⁴ 233	201	⁵ 205
New England.....	134	160	139	163	132	169	172	267	163	216
Middle Atlantic.....	163	205	159	234	155	213	177	252	161	228
East North Central.....	264	254	292	251	258	220	236	220	223	228
West North Central.....	222	161	214	153	192	179	210	179	194	⁶ 130
South Atlantic.....	387	190	276	217	281	⁷ 197	240	⁸ 230	237	190
East South Central.....	264	209	367	239	217	122	300	168	284	71
West South Central.....	378	298	326	348	301	306	318	273	266	218
Mountain.....	182	279	146	207	201	171	228	144	246	144
Pacific.....	230	² 224	324	223	303	162	268	259	238	⁹ 162

MEASLES CASE RATES

101 cities.....	106	² 96	135	125	134	³ 137	177	⁴ 190	197	⁵ 221
New England.....	31	341	47	390	57	499	101	539	165	539
Middle Atlantic.....	44	124	28	93	30	129	37	180	23	199
East North Central.....	101	27	120	54	135	60	151	122	212	140
West North Central.....	147	16	198	22	109	24	113	24	129	⁶ 50
South Atlantic.....	24	136	54	283	22	³ 202	48	⁴ 326	54	527
East South Central.....	10	76	31	148	16	163	26	224	78	367
West South Central.....	26	13	26	71	103	88	142	122	146	134
Mountain.....	1,531	18	1,950	72	2,543	27	2,844	27	3,217	36
Pacific.....	279	² 76	488	212	338	175	699	228	613	⁷ 72

SCARLET FEVER CASE RATES

101 cities.....	206	² 150	212	177	213	³ 159	242	⁴ 185	238	⁵ 183
New England.....	351	204	330	248	285	181	325	276	340	320
Middle Atlantic.....	125	110	130	152	138	122	157	155	178	156
East North Central.....	182	177	201	202	196	196	237	192	235	216
West North Central.....	347	185	407	232	411	204	436	250	432	⁶ 197
South Atlantic.....	177	183	143	156	156	⁷ 173	181	⁸ 176	173	134
East South Central.....	295	153	228	112	238	87	243	148	150	82
West South Central.....	142	105	116	105	198	168	210	143	142	117
Mountain.....	702	153	638	234	784	180	930	360	802	306
Pacific.....	279	² 117	335	154	249	131	265	128	230	⁹ 138

SMALLPOX CASE RATES

101 cities.....	5	² 16	5	19	5	³ 22	14	⁴ 17	11	⁵ 11
New England.....	0	0	0	0	0	0	0	0	0	0
Middle Atlantic.....	0	0	0	0	0	0	0	0	1	0
East North Central.....	10	4	3	6	7	1	21	10	7	4
West North Central.....	10	157	4	161	30	202	48	115	38	⁶ 76
South Atlantic.....	2	5	4	9	4	⁷ 2	19	⁸ 6	19	7
East South Central.....	10	0	0	5	5	0	0	10	21	5
West South Central.....	30	4	4	4	4	4	9	8	9	8
Mountain.....	9	27	0	27	0	54	18	45	18	99
Pacific.....	5	² 3	48	29	5	45	35	39	43	⁹ 7

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.

² Seattle, Wash., and Spokane, Wash., not included.

³ Frederick, Md., not included.

⁴ Norfolk, Va., not included.

⁵ Fargo, N. Dak., Seattle, Wash., and Spokane, Wash., not included.

⁶ Fargo, N. Dak., not included.

Summary of weekly reports from cities, November 6 to December 10, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Nov. 13, 1926	Nov. 12, 1927	Nov. 20, 1926	Nov. 19, 1927	Nov. 27, 1926	Nov. 26, 1927	Dec. 4, 1926	Dec. 3, 1927	Dec. 11, 1926	Dec. 10, 1927
101 cities.....	21	15	16	15	12	10	10	9	13	11
New England.....	9	16	7	23	7	14	7	7	2	12
Middle Atlantic.....	21	15	21	14	13	10	9	10	18	8
East North Central.....	10	9	5	7	3	6	6	5	3	9
West North Central.....	16	28	6	20	8	14	10	12	4	14
South Atlantic.....	35	20	22	25	19	9	17	17	24	9
East South Central.....	52	5	36	15	31	15	41	15	41	31
West South Central.....	34	34	12	29	17	13	9	21	13	21
Mountain.....	27	9	27	18	19	27	9	9	9	9
Pacific.....	20	17	29	13	21	5	16	5	16	10

INFLUENZA DEATH RATES

95 cities.....	14	8	10	9	10	11	14	12	17	12
New England.....	2	2	2	5	9	2	7	5	0	9
Middle Atlantic.....	10	9	10	7	7	10	13	11	12	7
East North Central.....	10	5	10	2	9	5	9	9	14	9
West North Central.....	13	2	6	10	2	6	4	4	15	6
South Atlantic.....	17	17	8	20	15	13	21	14	34	17
East South Central.....	26	15	31	20	41	46	41	46	41	56
West South Central.....	65	17	31	34	31	34	40	43	40	47
Mountain.....	27	18	9	36	36	18	46	27	36	9
Pacific.....	14	0	4	3	0	14	11	14	11	3

PNEUMONIA DEATH RATES

95 cities.....	106	104	123	112	126	97	123	114	129	110
New England.....	90	95	104	102	132	60	118	100	134	51
Middle Atlantic.....	115	112	136	119	138	98	151	123	140	119
East North Central.....	87	89	104	96	98	89	89	103	102	97
West North Central.....	76	75	129	81	74	87	74	71	118	101
South Atlantic.....	140	120	144	160	166	148	106	153	155	136
East South Central.....	165	138	171	148	108	127	134	199	171	148
West South Central.....	110	129	154	142	207	112	163	108	150	108
Mountain.....	155	144	109	99	146	99	210	54	109	216
Pacific.....	99	109	74	76	124	78	152	103	113	110

- ¹ Seattle, and Spokane, Wash., not included.
- ² Frederick, Md., not included.
- ³ Norfolk, Va., not included.
- ⁴ Fargo, N. Dak., Seattle and Spokane, Wash., not included.
- ⁵ Fargo, N. Dak., not included.
- ⁶ Frederick, Md., and Los Angeles, Calif., not included.
- ⁷ Los Angeles, Calif., not included.

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	85	30,443,800	30,966,700	29,782,790	30,295,900
New England.....	12	12	2,211,000	2,245,900	2,211,900	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	7,810,000	7,650,200	7,810,000
West North Central.....	12	10	2,585,600	2,625,000	2,470,000	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 the week ended November 26, 1927.—The following report for the week ended November 26, 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	SMALLPOX
<i>Egypt.</i> —Alexandria.	<i>Iraq.</i> —Basra.
<i>India.</i> —Rangoon, Bassein.	<i>India.</i> —Bombay, Calcutta, Madras, Tuticorin, Rangoon.
<i>Ceylon.</i> —Colombo.	<i>Dutch East Indies.</i> —Banjermasin, Samarinda, Surabaya, Balikpapan.
<i>Dutch East Indies.</i> —Makassar.	<i>Kwantung.</i> —Dairen.
CHOLERA	
<i>India.</i> —Calcutta, Madras, Tuticorin, Rangoon.	
<i>Straits Settlements.</i> —Singapore.	
<i>Dutch East Indies.</i> —Batavia.	

Returns for the week ended November 26 were not received from Canton, China, or Vladivostok, Union of Socialist Soviet Republics.

CANADA

Communicable diseases—Week ended December 10, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended December 10, 1927, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	2							2
Poliomyelitis	2			2			3	7
Smallpox				82	1	19	3	105
Typhoid fever		55	15	16		1		87

Communicable diseases—Quebec—Week ended December 10, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended December 10, 1927, as follows:

Disease	Cases	Disease	Cases
Chicken pox	38	Scarlet fever	77
Diphtheria	66	Smallpox	3
German measles	4	Tuberculosis	42
Influenza	4	Typhoid fever	15
Measles	59	Whooping cough	4

EGYPT

Plague—Alexandria—November 21-23, 1927.—During the period November 19 to 23, 1927, three cases of plague, of which two with one fatality were bubonic, and one fatal case septicemic, occurring in the same family, were reported at Alexandria, Egypt.

HAWAII TERRITORY

Plague-infected rats—November 23 and November 25, 1927.—Two plague-infected rats have been reported found on the island of Hawaii—one at Paauhau, on November 23, and one at Hamakua, November 25, 1927.

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 December 30, 1927¹

CHOLERA

Place	Date	Cases	Deaths	Remarks
India.....				Oct. 9-15, 1927: Cases, 6,142; deaths, 3,027.
Madras.....	Nov. 6-12.....	6	3	
Rangoon.....	Oct. 30-Nov. 5.....	1	1	
India (French Settlements in):				
Karikal.....	Aug. 26-Sept. 24.....	1	1	
Pondicherry.....	do.....	15	13	
Indo-China.....	Sept. 21-Oct. 20.....	586		
Annam.....	do.....	246		
Cambodge.....	do.....	139		
Cochin-China.....	do.....	171		
Laos.....	do.....	29		
Tonkin.....	do.....	1		

PLAGUE

Argentina:				Plague-infected rat. Do. Oct. 9-15, 1927: Cases, 920; deaths, 508.
Firmat.....	Dec. 11-17.....	1		
Rosario.....	do.....	1		
Ucacha.....	do.....	1		
Ecuador:				
Guayaquil.....	Sept. 1-30.....	3		
Egypt:				
Alexandria.....	Nov. 19-23.....	3	3	
Hawaii:				
Hamakua.....	Nov. 25.....			
Paauhau.....	Nov. 23.....			
India.....				
Madras Presidency.....	Oct. 16-22.....	172	84	
Rangoon.....	Oct. 30-Nov. 5.....	2	2	

SMALLPOX

Algeria.....				Sept. 21-Oct. 20, 1927: Cases, 578.
Arabia:				
Aden.....	Nov. 12-19.....	1		
British South Africa.....	Oct. 29-Nov. 4.....	10	23	Native.
Canada:				
Quebec.....	Dec. 2-10.....	3		
Chosen.....	Aug. 2-31.....	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 During Week Ended December 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Ecuador:				
Guayaquil.....	Sept. 1-30.....	2		
France.....	do.....	8		
Gold Coast.....	Aug. 1-31.....	1		
Great Britain:				
Newcastle-on-Tyne.....	Nov. 20-26.....	28		
India.....				Oct. 9-15, 1927: Cases, 777; deaths, 71.
Bombay.....	Oct. 23-29.....	2	2	
Madras.....	Nov. 6-12.....	2	1	
India (French Settlements):				
Karikal.....	Aug. 28-Sept. 24.....	1	1	
Pondicherry.....	do.....	37	37	
Indo-China.....				Sept. 21-Oct. 20, 1927: Cases, 13.
Iraq:				
Baghdad.....	Nov. 6-12.....	5	4	
Mexico.....				July 1-31, 1927: Deaths, 93.
Morocco.....	Sept. 1-30.....	51		

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria.....	July 11-Oct. 20.....	78	10	
Bulgaria.....	Aug. 11-Oct. 8.....	21	2	
Chosen.....				Aug. 1-31, 1927: Cases, 17.
Seoul.....	Oct. 1-31.....	2	1	
Japan.....				July 1-31, 1927: Cases, 1.
Lithuania.....				Sept. 1-30, 1927: Cases, 7; deaths, 1.
Mexico.....				July 1-31, 1927: Deaths, 12.
Mexico City.....	Nov. 13-19.....	11		Including municipalities in Federal District.
Palestine.....				Oct. 11-Nov. 7, 1927: Cases, 6.
Rumania.....				Aug. 28-Oct. 1, 1927: Cases, 21 deaths, 1.
Tunisia.....				Sept. 11-Oct. 22, 1927: Cases 4.

YELLOW FEVER

Place	Date	Cases	Deaths	Remarks
Gold Coast.....	July 1-Sept. 30.....	23	10	

Reports Received from June 25 to December 30, 1927¹

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy.....	May 22-Oct. 15.....	119	11	
Canton.....	May 1-Nov. 5.....	103	68	
Foochow.....	July 24-Oct. 22.....			Present.
Hong Kong.....	July 17-Sept. 3.....	3	3	
Kulangsu.....	June 21.....	1		
Shanghai.....	June 19-25.....	2		
Do.....	July 31-Oct. 22.....		119	In international settlement and French concession.
Swatow.....	May 15-Oct. 29.....	138	13	
Tientsin.....	Aug. 27-Oct. 1.....	14		
India.....	Apr. 17-Oct. 15.....			Cases, 194,768; deaths, 105,604.
Bombay.....	May 8-Sept. 17.....	127	57	
Calcutta.....	May 8-Nov. 5.....	891	527	
Karachi.....	May 29-June 4.....	1	1	
Madras.....	June 19-Nov. 12.....	839	445	
Rangoon.....	May 8-Nov. 5.....	27	22	
India, French Settlements in:	Mar. 30-Aug. 27.....	253	168	
Karikal.....	Aug. 28-Sept. 24.....	1	1	
Pondicherry.....	do.....	15	13	

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 December 30, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Indo-China (French).....	Apr. 1-Oct. 20.....			Cases, 16,150.
Annam.....	do.....	4,755		
Cambodia.....	do.....	542		
Cochin-China.....	do.....	1,777		
Saigon.....	June 4-Oct. 2.....	13	4	
Laos.....	July 11-Sept. 20.....	252		
Tonkin.....	Apr. 1-Oct. 20.....	9,819		
Iraq:				
Amarah.....	Oct. 2-Nov. 5.....	57	40	
Baghdad.....	July 24-Nov. 5.....	40	24	
Basra.....	July 17-Oct. 22.....	385	282	
Diwaniyah.....	Oct. 2-Nov. 5.....	79	44	
Hillah.....	do.....	23	15	
Kerbala.....	do.....	19	16	
Kut.....	do.....	22	13	
Muntafique.....	do.....	9	4	
Ramadi.....	Oct. 23-Nov. 5.....	37	33	
Japan:				
Yokohama.....	July 31-Aug. 6.....	1	1	
Java:				
Batavia.....	Reported Nov. 19.....	25	15	
Persia:				
Abadan.....	July 21-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:				
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		
Manila.....	July 17-Aug. 27.....	2		
Siam.....	May 1-Oct. 29.....			Cases, 396; deaths, 237.
Bangkok.....	do.....	54	18	
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 Safiagha, Egypt.

PLAGUE

Algeria:				
Algiers.....	Aug. 21-Oct. 20.....	3		
Oran.....	Aug. 21-Nov. 5.....	6	4	
Argentina:				Cases, 80; deaths, 44.
Bahia.....	Jan. 1-Aug. 2.....			In vicinity.
Province—				
Buenos Aires.....	Apr. 10-May 7.....	4	3	
Cordoba.....	Jan. 11-Aug. 6.....	52	29	
Do.....	Nov. 21.....	10		Reported as having occurred 3 weeks previously.
Corrientes.....	June 1.....	1		
Entre Rios.....	Mar. 29-Aug. 13.....	8	1	
Firmat.....	Dec. 11-17.....	1		
Sante Fe.....	Apr. 28-May 16.....	4	3	
Ucacha.....	Dec. 11-17.....	1		
Territory—				
Chaco—				
Barranqueras.....	May 29.....	2	2	
Formosa.....	June 25.....	3	2	
Pampa.....	July 27-Aug. 2.....	4		
Rio Negro.....	Aug. 6.....	1		
City—				Present.
Merou.....	Reported July 14.....			
Quilino.....	Nov. 26.....	1		
Rosario.....	May 7.....	1	1	
Do.....	Nov. 26-Dec. 17.....	2		
Santa Fe.....	May 16.....	4	2	
Azores:				
St. Michaels Island.....	May 15-Oct. 29.....	12	1	
Ribeira Grande.....	June 12-18.....	1		

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

Reports Received from June 25 to December 30, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
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-Oct. 1.....		70	
Uganda.....	Jan. 1-Feb. 28.....	138	121	
Do.....	Mar. 27-June 30.....	782	593	
Canary Islands:				
Laguna district—				
Tejina.....	June 17.....	1		
Las Palmas.....	Oct. 8-11.....	8		
Ceylon:				
Colombo.....	May 1-Oct. 22.....	24	14	Plague rats, 5.
China:				
Amoy.....	July 3-23.....			Present in surrounding country.
Mongolia.....	Reported Oct. 11.....		200	Approximate.
Tientsin.....	Aug. 14-20.....	2		
Tungliao.....	Reported Oct. 11-15.....	200		
Ecuador:				
Guayaquil.....	June 1-Oct. 30.....	10		Rats taken, 95,403; found infected, 53.
Egypt:				
Alexandria.....	June 4-Sept. 2.....	4		
Boni-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 Piræus.
Mytilene.....	Aug. 9-Sept. 26.....	6		
Patras.....	May 30-Nov. 5.....	10	3	
Hawaii Territory:				
Hamakua.....	July 15-Aug. 30.....			2 plague rodents.
Pohakaa.....	Nov. 10.....			Do.
Honokaa.....	May 17-23.....	2	2	
Kapulena.....	Oct. 22.....			Do.
Kukuihaele.....	Aug. 12-17.....	1	1	Do.
Paaulo.....	July 26-Aug. 1.....		4	
India.....	Apr. 17-Oct. 15.....			Cases, 27,693; deaths, 12,412.
Bombay.....	May 8-Oct. 22.....	106	89	
Calcutta.....	Aug. 21-Sept. 3.....	18	10	
Madras.....	May 1-Oct. 22.....	2,030	948	
Rangoon.....	May 8-Nov. 5.....	88	82	
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 23.....	12	1	
Java:				
Batavia.....	May 1-Nov. 5.....	489	469	Province.
East Java and Madura.....	May 22-Oct. 1.....	31	30	
Paseroean Residency.....	May 9.....			Outbreak reported at Nagdiwano.
Surabaya.....	Apr. 17-Oct. 22.....	108	106	
Madagascar.....				Mar. 16-Apr. 30, 1927: Cases, 256; deaths, 135.
Province—				
Ambositra.....	Mar. 16-Aug. 15.....	100	93	
Antsirabe.....	Mar. 16-Sept. 30.....	47	46	
Miarinarivo (Itasy).....	do.....	101	90	
Moramanga.....	May 16-Sept. 30.....	35	34	
Tananarive.....	Mar. 16-Sept. 30.....	423	374	
Tananarive Town.....	Mar. 16-June 30.....	22	20	
Mauritius:				
Port Louis.....	May 1-June 30.....	1	1	
Nigeria.....	Mar. 1-May 31.....	228	17	
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 December 30, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Senegal	May 23-Oct. 16.....	-----	-----	Cases, 1,159; deaths. 646.
Baol.....	June 2-Oct. 16.....	225	109	
Cayor Frontier.....	July 4-Nov. 13.....	1,040	569	
Dakar.....	June 20-Oct. 2.....	147	94	
Facel.....	July 6.....	17	8	
Guindel.....	June 20-26.....	11	2	
Louga district.....	Sept. 18-Oct. 16.....	13	4	
M' Bour.....	July 6-10.....	28	23	
Medina.....	June 13-19.....	2	2	
Pout.....	July 4-10.....	1	-----	
Rufisque.....	May 23-Sept. 25.....	223	167	
Thies district.....	May 23-Nov. 13.....	35	15	
Tivaouane.....	June 2-July 17.....	50	32	
Siam	Apr. 1-June 25.....	-----	-----	Cases, 12; deaths, 8.
Do.....	Oct. 2-22.....	2	1	
Bangkok.....	May 8-June 11.....	2	1	
Do.....	Oct. 2-22.....	2	-----	
Syria:				
Beirut.....	June 11-Sept. 10.....	4	-----	
Tunisia	Apr. 21-July 10.....	144	-----	
Tunis.....	July 25-Aug. 1.....	1	-----	
Turkey:				
Constantinople.....	May 13-19.....	1	-----	
Do.....	Sept. 18-Oct. 1.....	2	1	
Union of South Africa:				
Cape Province—				
Maraisburg district.....	May 1-14.....	2	2	Native.
Richmond district.....	Oct. 23-29.....	2	2	Do.
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. At Duala, French Cameroons, from Nigeria.
S. S. Capafric.....	Aug. 23.....	3	1	
S. S. Elcano.....	Aug. 19.....	1	-----	At Piraeus, 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-Oct. 20.....	-----	-----	Cases, 1,533.
Algiers.....	May 11-June 30.....	8	-----	
Oran.....	May 21-Nov. 12.....	88	-----	
Angola	June 1-Aug. 31.....	47	-----	
Loanda.....	Sept. 1-15.....	1	-----	
Portuguese Congo.....	do.....	4	-----	
Arabia:				
Aden.....	July 17-Aug. 1.....	2	1	
Do.....	Nov. 13-19.....	1	-----	
Brazil:				
Bahia.....	Aug. 7-13.....	1	-----	
Porto Alegre.....	July 1-Sept. 30.....	11	-----	
Rio de Janeiro.....	May 22-Oct. 29.....	26	22	
British East Africa:				
Kenya.....	Apr. 24-May 14.....	7	14	
Tanganyika.....	Mar. 29-June 18.....	-----	22	
Do.....	Aug. 7-Sept. 17.....	-----	29	
Zanzibar.....	Apr. 1-Aug. 31.....	121	41	
British South Africa:				
Northern Rhodesia.....	Apr. 30-Nov. 4.....	369	83	
Canada	June 5-Dec. 3.....	-----	-----	Cases, 1,240. Cases, 258.
Alberta.....	June 12-Dec. 3.....	-----	-----	
Edmonton.....	Oct. 23-Nov. 26.....	7	-----	
Calgary.....	June 12-Aug. 27.....	9	-----	
British Columbia—				
Vancouver.....	May 23-Sept. 4.....	4	-----	
Manitoba	June 5-Dec. 3.....	-----	-----	Cases, 68.
Winnipeg.....	June 12-Dec. 10.....	27	-----	
Nova Scotia.....	Sept. 11-Oct. 15.....	2	-----	
Halifax.....	Oct. 8-15.....	1	-----	

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

Reports Received from June 25 to December 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Canada—Continued.				
Ontario	June 5-Dec. 3.			Cases, 695.
Hamilton	Nov. 27-Dec. 3.	2		
Kingston	Nov. 13-19.		1	
Ottawa	June 12-Dec. 3.	268		
Sarnia	Aug. 7-13.	1		
Toronto	June 19-Dec. 3.	80		
Windsor	Oct. 2-15.	9		
Quebec	June 19-Dec. 10.	48		
Riviere du Loup.	Oct. 29-Nov. 19.	6		
Saskatchewan	June 12-Dec. 3.			Cases, 206.
Moose Jaw	Aug. 14-Oct. 22.	24		
Regina	July 17-Nov. 12.	16		
Ceylon	May 1-7.			Cases, 3; deaths, 2.
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		
Canton	Sept. 18-24.	1	1	
Chefoo	May 8-14.			Present.
Do.	Oct. 9-29.			Do.
Foochow	May 8-Oct. 22.			Do.
Hong Kong	May 8-Sept. 17.	22	21	
Manchuria—				
Anshan	May 22-28.	1		
Changchun	May 15-July 30.	8		
Dairen	May 2-June 3.	10	5	
Fushun	May 15-Nov. 12.	12		
Harbin	June 13-July 10.	4		
Kaiyuan	July 3-9.	2		
Mukden	May 22-Oct. 29.	9		
Pessibu	July 3-Oct. 1.	2		
Scapingkal.	May 8-July 9.	2		
Tientsin	May 8-Oct. 29.	39	4	
Chosen				
Chinnampo	Feb. 1-Aug. 21.			Cases, 528; deaths, 211.
Fusan	Apr. 1-May 31.	2		
Gensan	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-Oct. 31.	7		
Egypt				
Alexandria	May 7-Sept. 30.			Cases, 21; deaths, 4.
Cairo	May 21-June 17.	4	1	
Cairo	Jan. 22-Apr. 15.	14	3	
France				
Lille	Apr. 1-Sept. 30.			Cases, 215.
Lille	July 24-30.	1		
Paris	May 21-July 31.	14	2	
Gold Coast				
	Mar. 1-Aug. 31.	43	7	
Great Britain:				
England and Wales				
Birmingham	May 22-Nov. 19.			Cases, 4,702.
Bradford	Aug. 14-Sept. 30.	2		
Bradford	May 20-June 11.	2		
Do.	Oct. 23-Nov. 19.	11		
Bristol	Oct. 16-Nov. 26.	12		
Cardiff	June 19-July 2.	4		
Do.	Oct. 23-29.	1		
Leeds	July 17-Nov. 26.	31		
Liverpool	July 17-30.	1		
London	May 15-June 18.	2		
Manchester	Oct. 2-Nov. 26.	7		
Newcastle-upon-Tyne	June 12-Nov. 26.	42		
Nottingham	Nov. 20-29.	1		
Sheffield	June 12-Nov. 19.	42		
Stoke-on-Trent	Aug. 21-27.	1		
Scotland—				
Dundee	May 29-Sept. 3.	6		
Dundee	June 1-30.	14		
Greece				
Saloniki	July 12-Aug. 15.		2	
Guatemala:				
Guatemala City	June 1-30.		9	
Guinea (French)				
	June 4-10.	9		
India				
Bombay	Apr. 17-Oct. 15.			Cases, 80,177; deaths, 23,118.
Bombay	May 29-Oct. 29.	256	162	
Calcutta	May 8-Nov. 5.	418	320	
Karachi	May 15-Aug. 6.	10	5	

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

Reports Received from June 25 to December 30, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
India—Continued.				
Madras.....	May 22–Nov. 12....	44	10	
Rangoon.....	May 8–Oct. 29....	213	161	
India, French Settlements in	Mar. 20–Aug. 27....	174	155	
Karikal.....	Aug. 28–Sept. 24....	1	1	
Pondicherry.....	.....do.....	37	37	
Indo-China (French)	Mar. 21–Oct. 20....			Cases, 345.
Saigon.....	May 14–Sept. 9....	4	1	
Iraq:				
Baghdad.....	Apr. 10–Nov. 12....	17	10	
Basra.....	Apr. 10–Oct. 15....	11	10	
Italy.....				
Rome.....	Apr. 10–May 21....	13		
	June 13–July 17....	3		Including consular district. Reported as alastrim. Cases, 19.
	May 24–Nov. 26....	48		
Japan.....				
Nagasaki City.....	Apr. 3–May 7.....			
	June 20–Aug. 14....	26	7	
Taiwan Island.....	May 21–31.....	1		
Java:				
Batavia.....	May 22–Nov. 12....	36	15	
East Java and Madura.....	Apr. 24–Oct. 15....	53	2	
Latvia.....				
	Apr. 1–30.....	1		
Mexico.....				
	Mar. 1–July 31....			Deaths, 714.
Acapulco.....	Aug. 23–Sept. 17....	2	2	
Durango.....	June 1–30.....		1	
Guadalajara.....	Nov. 15–21.....		1	
Monterey.....	July 1–31.....	6	4	
San Luis Potosi.....	May 29–Aug. 13....		11	
Tampico.....	June 1–July 31....	1	2	
Torreón.....	Aug. 7–Oct. 1.....		2	
Morocco.....	Apr. 1–Sept. 30....	334		
Netherlands India:				
Borneo—				
Holoe Soengei.....	Apr. 21.....			Epidemic in 2 localities. Epidemic outbreak. Do.
Pasir Residency.....	Apr. 30–May 6....			
Samarinda Residency.....	May 21–27.....			
Nigeria.....				
	Mar. 1–July 31....	2,844	653	
Paraguay:				
Asuncion.....	July 10–23.....		2	
Persia:				
Teheran.....	Feb. 21–July 23....		16	
Poland.....	Apr. 10–Aug. 6....	20	2	
Portugal:				
Lisbon.....	May 29–Nov. 5....	32	1	
Oporto.....	Sept. 3–9.....	1		
Senegal:				
Medina.....	July 4–10.....	7		
Siam.....				
	Apr. 1–Oct. 29....			Cases, 276; deaths, 68.
Bangkok.....	May 1–Sept. 10....	16	8	
Spain:				
Madrid.....	Aug. 1–31.....		1	
Malaga.....	Nov. 11–25.....		1	
Valencia.....	May 29–June 4....	3		Cases, 3.
Do.....	Sept. 25–Oct. 1....	1		
			
Straits Settlements.....				
Singapore.....	June 12–18.....			Cases, 3.
	Apr. 1–June 18....	7	2	
Sumatra:				
Medan.....	June 5–Aug. 20....	8		
Switzerland:				
Berne.....	June 26–July 2....	1		
Syria:				
Damascus.....	Aug. 11–Nov. 10....	65		
Tunisia.....				
	Apr. 1–June 10....			Cases, 10.
Tunis.....	June 1–10.....	1		
Union of South Africa:				
Cape Province.....				
Do.....	July 7–Aug. 20....			Outbreaks. Do. Do. Do. Do. Do. Do. Do.
	Oct. 2–8.....			
Elliott district.....	May 11–June 10....			
Idutywa district.....	July 3–9.....			
Kalanga district.....	May 11–June 10....			
Mount Ayliffe district.....	July 31–Aug. 6....			
Orange Free State.....	Aug. 7–13.....			
Transvaal—				
Barberton district.....	May 1–7.....			
Johannesburg.....	Oct. 23–29.....	7		
Venezuela:				
Maracaibo.....	July 12–Oct. 3....		4	

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

Reports Received from June 25 to December 30, 1927—Continued

TYPHUS FEVER

Place	Date	Cases	Deaths	Remarks
Algeria.....	Apr. 21-Oct. 20.....			Cases, 477; deaths, 49.
Algiers.....	May 11-Oct. 20.....	34		
Oran.....	May 21-Aug. 31.....	34		
Argentina:				
Rosario.....	Aug. 1-31.....		1	
Bulgaria.....	Mar. 1-Oct. 8.....			Cases, 266; deaths, 23.
Sofia.....	June 4-Nov. 11.....	22	1	
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.....	2		
Santiago.....	do.....	5	1	
Talcahuano.....	July 10-16.....		1	
Valparaiso.....	Apr. 16-Sept. 3.....	5	3	
Do.....	Oct. 6-12.....	1	1	
China:				
Manchuria—				
Harbin.....	July 25-Aug. 21.....	5		
Mukden.....	May 29-June 4.....	1		
Tientsin.....	July 10-24.....	3		
Chosen.....	Feb. 1-Aug. 31.....			Cases, 810; deaths, 68.
Chemulpo.....	May 1-Aug. 31.....	3		
Gensan.....	do.....	4		
Seoul.....	Apr. 1-Oct. 31.....	37	4	
Czechoslovakia.....	Apr. 1-July 31.....			Cases, 55.
Egypt.....	May 28-Oct. 21.....			Cases, 129; deaths, 24.
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-Sept. 30.....	2	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.
Donegal County—				
Letterkenney.....	Oct. 16-22.....	4		
Italy.....	Year, 1926.....			Cases, 34.
Naples.....	do.....	31		
Japan.....	July 1-31.....	1		
Latvia.....	Apr. 1-July 31.....	32		
Lithuania.....	Feb. 1-Aug. 31.....	365	56	
Mexico.....	Feb. 2-July 31.....			Deaths, 178.
Guadalajara.....	Nov. 22-28.....		1	
Mexico City.....	May 29-Nov. 13.....	166		
San Luis Potosi.....	July 31-Aug. 6.....		1	Including municipalities in Fed- eral District.
Morocco.....	Apr. 1-Sept. 20.....	981		
Palestine.....	May 24-Nov. 7.....			Cases, 44.
Haifa.....	do.....	10		
Jaffa.....	Aug. 2-Oct. 5.....	3		
Jerusalem.....	June 28-Aug. 15.....	3		
Mahsaim.....	May 17-23.....	1		
Nazareth.....	July 19-25.....	1		
Safad.....	May 17-Aug. 8.....	19		
Tel Aviv.....	Oct. 1-10.....	1		
Peru:				
Arequipe.....	Apr. 1-30.....		1	
Do.....	Aug. 1-Sept. 30.....		3	
Poland.....	Apr. 10-Oct. 22.....	1,167	100	
Portugal:				
Lisbon.....	May 29-June 4.....	1		
Oporto.....	Aug. 20-27.....	1		
Do.....	Oct. 23-29.....	1		
Rumania.....	Apr. 3-Oct. 1.....	1,021	70	
Spain:				
Seville.....	Aug. 19-25.....		2	
Syria:				
Aleppo.....	Sept. 11-17.....	2		
Tunisia.....	Apr. 22-Oct. 22.....			Cases, 162.
Tunis.....	July 5-Aug. 21.....	2		

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

Reports Received from June 25 to December 30, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Turkey:				
Constantinople.....	May 13-19.....	-----	2	
Union of South Africa.....	Apr. 1-30.....	-----	-----	Cases, 55; deaths, 8, native. In
Cape Province.....	Apr. 1-Oct. 29.....	42	5	Europeans, cases, 2.
Albany district.....	June 5-11.....	-----	-----	Outbreaks.
East London.....	May 22-28.....	1	-----	Do.
Glen Gray district.....	May 1-7.....	-----	-----	Do.
Kantani district.....	June 26-July 2.....	-----	-----	Do.
Port Elizabeth.....	Aug. 7-13.....	1	-----	Do.
Qumbu district.....	May 1-7.....	-----	-----	Do.
Umzimkulu district.....	June 26-July 2.....	-----	-----	Do.
Natal.....	Apr. 1-Aug. 6.....	7	3	
Do.....	Oct. 16-22.....	-----	-----	Do.
Impendhle district.....	June 5-11.....	-----	-----	Do.
Orange Free State.....	Apr. 1-Oct. 1.....	5	-----	
Transvaal.....	Apr. 1-30.....	1	-----	
Johannesburg.....	July 3-Aug. 20.....	19	5	
Do.....	Oct. 9-15.....	5	-----	
Yugoslavia.....	May 1-Oct. 31.....	-----	-----	Cases, 25; deaths, 5.

YELLOW FEVER

Ashanti:				
Obuasi.....	Aug. 6.....	1	1	
Dahomey (West Africa):				
Porto Novo.....	July 1.....	1	1	In Syrian woman.
Gold Coast.....	Apr. 1-Sept. 30.....	83	32	
Ivory Coast.....	July 29.....	1	1	
Liberia:				
Monrovia.....	May 29-Sept. 10.....	5	5	
Senegal.....	Oct. 3-Nov. 13.....	-----	-----	Cases, 60; deaths, 55.
Dakar.....	July 9.....	1	-----	
Do.....	Aug. 8.....	-----	2	
Do.....	Sept. 17.....	-----	-----	Present.
Do.....	Oct. 3-Nov. 20.....	26	20	
Geoul.....	Sept. 26-Oct. 2.....	1	1	
Island of Goree.....	Aug. 22-Sept. 4.....	2	2	
Kebemer.....	Oct. 9-23.....	2	2	
Kelle.....	Oct. 9-30.....	3	2	
Keur Sanba Kane.....	Oct. 31-Nov. 6.....	1	1	
Keur Madiop.....	Oct. 24-30.....	1	1	
Khombole.....	Aug. 1-Nov. 20.....	7	4	
Louga.....	Sept. 26-Nov. 13.....	5	5	
Mehke.....	Oct. 17-Nov. 13.....	6	3	
M'Bour.....	May 27-June 19.....	5	5	
N'Dande.....	Oct. 17-Nov. 6.....	4	3	
Ouakam.....	June 2-Aug. 14.....	4	2	
Pout.....	Sept. 19-25.....	1	1	
Rufisque.....	Oct. 9-16.....	1	1	
Sebikotane.....	Oct. 17-Nov. 13.....	4	2	
St. Louis.....	Aug. 1-Oct. 2.....	3	3	
Thies.....	July 10.....	1	-----	In European.
Do.....	Sept. 12-Nov. 20.....	16	16	
Tiaroye.....	Aug. 22-Sept. 4.....	1	1	
Tivaouane.....	May 27-Sept. 11.....	6	5	
Togoland:				
Meiatza.....	Aug. 15-21.....	1	1	
On vessel:				
S. S. Desirade.....	Sept. 16.....	1	1	At Leixoes, Portugal, in passenger from Dakar, Senegal.