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SOME TESTS OF THE LARVICIDE "STOXAL"

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In 1920 Roubaud (1) (2) recommended the use of trioxymethylene (paraformaldehyde) as a larvicide for anopheline larvæ. The dry material, used alone or mixed with some inert substance, as flour or powdered chalk, is spread in the form of a dust cloud on the surface of the water, where it is ingested by the larvæ. More recently Roubaud (3) has described a larvicide bearing the trade name of "stoxal," the active principle of which is trioxymethylene, to which is added a special medium in the form of a fine dry powder. This medium is designed to increase the efficiency of trioxymethylene by preventing too rapid wetting, by increasing its flotability by holding it in suspension, and by otherwise rendering it more likely to be ingested by the larvæ.

The stoxal which we used in our tests was kindly furnished by the American manufacturers (Powers-Weightman-Rosengarten Co., Philadelphia). It is described on the label as containing an active ingredient, paraformaldehyde 32.5 per cent, and inert ingredients 67.5 per cent.

We used this larvicide undiluted, and soon after its arrival from the manufacturers. We were careful to use no material which had been long exposed to the air; many tests were made with samples from the freshly opened tin containers, and a tin once opened was carefully closed. In almost all of the experiments on *Anopheles* we used a hand duster to spread the dust. All experiments were done in May and June, months during which the water in southern United States is warm and the larvæ are in full activity.

In many experiments we used Paris green, aceto-arsenite of copper, for comparison. Our Paris green has been kept in the laboratory for four years or longer, without apparent loss of activity. We used it diluted 1 part to 100 of fine road dust, and a mixture once made was kept for weeks with no precautions against deterioration except that of keeping the mixture dry.

LABORATORY TESTS OF STOXAL—ANOPHELES

We performed two types of laboratory experiments with stoxal—one in which the water surface was kept free, another in which the water surface was partially covered by water plants, driftwood, or other débris in such a way as to imitate the natural water surfaces on which *Anopheles* ordinarily breed. In most of the laboratory experiments, larvæ were placed in shallow water contained in photographic developing trays, 6 inches by 8 inches, or 9 inches by 11 inches in area. The dust was usually applied by means of a hand duster, sometimes in the open and sometimes in a closed or partially closed room.

The number of experiments with free water surface was large, since we used these as controls on other experiments. We found a wide variation in the results of such experiments, even where stoxal was used in large amounts. It was obviously impossible to estimate exactly the amount used per unit of water surface when the dust was spread by a mechanical duster over a very small area, but we always took pains to have a distinct film of stoxal, the thickness of which was made to vary in different experiments. Where Paris green was used as a control, we always used a lighter film of the 1 to 100 dilution than we did of stoxal.

We found a wide variation in the results obtained with stoxal on water with free surface, a variation which a few protocols will illustrate:

Experiment No. 1.—Ten anopheline larvæ were placed in tap water contained in a 6 by 8 inch white enameled developing tray. Two centigrams of stoxal were applied evenly on the surface. At the end of 20 hours only three-tenths of the larvæ were dead; after 44 hours, four-tenths were dead; at the end of 90 hours, one-half were still surviving. In the Paris green control, about a centigram of a 1 to 100 dilution had killed all larvæ at the end of 44 hours.

Experiment No. 2.—Ten anopheline larvæ in a 9 by 11 inch developing tray were treated in the open by a wind-borne cloud of stoxal. A very distinct film was deposited. The next day, seven-tenths were dead; two days after application, eight-tenths were dead. In the Paris green control a lighter film of a one-one hundredths dilution applied in the same way destroyed all larvæ by the following day.

Experiment No. 3.—Fifteen anopheline larvæ contained in a 6 by 8 inch developing tray were placed in a partially inclosed building in which stoxal dust was blown and allowed to settle on the larvæ. On the next day all were dead.

In the second type of laboratory experiments, in which water plants or other means of protection were placed on the water, the efficiency of stoxal was much less than where the water surface was free. In these experiments the water plants or débris were never placed so thickly as to prevent the larvicide from reaching the water, and the dosage used was always high enough to leave a distinct and

often thick film on the surface of the water. A few protocols of experiments will illustrate the method and results.

Experiment No. 1.—Nine by eleven inch developing trays were provided with water containing *Spirogyra* and *Jussiaea*, the latter growing on small islands of mud, one island to each tray. Each tray was supplied with 10 anopheline larvæ. One tray was treated with a heavy film of stoxal, another with a lighter film of one one-hundredths Paris green, and the third left as a control. The trays were left in the open during the day and night. After one day nine-tenths of the larvæ treated with stoxal and all of those treated with Paris green were dead. All controls were surviving.

Experiment No. 2.—A 9 by 11 inch developing tray was provided with a mat of green grass so arranged that the grass blades projected above the water. A second tray (6 by 8 inches) was partly covered by the floating water plant *Azolla*. Each tray was provided with 10 anopheline larvæ and placed in a small room which could be kept closed. Stoxal was blown into the room until each tray was covered with a light but distinct film. On the following day only two-tenths of the larvæ were dead in each tray. A Paris green control, with similar trays, surface débris, and larvæ, showed no survivors on the following day, although the film of one one-hundredths dilution was so light as to be hardly perceptible. A similar experiment in which a much larger amount of stoxal was blown into the room gave fifteen-fifteenths killed by the larvicide in the grass, and twelve-fifteenths in the *Azolla*.

We made much use of these artificial breeding places in the tests of larvicides, since the conditions in them closely resembled those found in small natural pools, and the results of the experiments could be more closely observed than in those done under wholly natural conditions. In addition to those mentioned, several experiments were done in containers covered by dead leaves, by *Lemna*, or by the floating woody drift commonly found in natural waters. Almost always the proportion of larvæ killed by stoxal in these vegetation-covered waters was less than in controls not covered, and less than with very light treatments of the one one-hundredths dilution of Paris green, which almost invariably gave a complete destruction after one day. Trioxymethylene (Merck's) diluted with two volumes of fine road dust was tested in one experiment done on larvæ in floating woody débris. The proportion killed, 90 per cent, was the same as that in a parallel experiment done with stoxal.

In the laboratory experiments the mortality after the use of heavier doses of stoxal was usually greater than after the use of lighter doses, but not invariably so. In practically all cases the dosage was far in excess of any which could be economically used in field experiments. In all experiments a portion of the larvæ were killed; but there were usually some survivors after 24 hours. Larvæ placed in a thick dust which had remained on the water for 24 hours usually survived.

Paris green controls almost invariably caused complete destruction of the anopheline larvæ with a much smaller dose of the 1 to

100 dilution than that of the undiluted stoxal. The variability of the action of stoxal in laboratory experiments did not seem to be due to wind, temperature, or sunlight, except as these factors may have affected the activity of the larvæ. There was no evidence of variability of the quality of the larvicide taken from different containers. Dosage of the larvicide and the voracity of the larvæ seemed to have been the more important factors. That the larvæ were ingesting food during these experiments was indicated by their almost complete destruction in the Paris green controls.

FIELD EXPERIMENTS—ANOPHELES

In some preliminary field experiments a large dosage of stoxal was blown by a hand duster directly on very small shallow pools containing *Anopheles* larvæ (*A. quadrimaculatus*). The proportion killed was large, but the pools were drying up so rapidly that the exact proportion destroyed was hard to estimate.

In a second experiment a pond 3,150 square feet in area was treated with 350 cubic centimeters, about 5¼ ounces, of stoxal. The pond swarmed with top minnows, and was partly covered by *Jussiæa* in which *Anopheles* larvæ occurred in small numbers. In the treatment of so small an area a part of the larvicide was necessarily lost by being blown ashore, but enough was deposited to leave a very distinct film on the water over the whole area. The pond was examined on the day after treatment and about 40 per cent of the larvæ were found surviving. Four days later the pond was again examined and the number of larvæ found was about the same as on the day following the treatment. The conditions of this experiment were hardly such as to make a fair test of the proportion killed by the larvicide, since the numbers of larvæ, estimated by dipping, were too few to provide a reliable comparison. The experiment showed clearly, however, that a relatively heavy film of stoxal in water, even where the larvæ were very accessible to the powder, did not give a very efficient result.

We found a terrain more favorable for quantitative experiments in a swampy area formed by a series of hillside springs. This area had many small pools, free from fish, and teeming with *A. punctipennis*, in which the larvæ could be more or less definitely counted. There was little vegetation high enough to obstruct the spread of the dust, and woods partially protected the swamp from winds.

We outlined definite parcels of ground for treatment, selecting and marking a series of pools, "stations," in which the numbers of larvæ were counted. The day after treatment the area was revisited and the diminution of larvæ estimated, not only by the decrease in the several stations, but by the numbers found in random dips taken

before and after treatment. The results of these experiments were as follows:

May 23, 1927: Area 1,200 square feet. Treated with 4 ounces of undiluted stoxal spread by a hand duster. Some of the dust was undoubtedly lost by being carried beyond the treated area by winds, but examination of the several pools after treatment showed a very distinct film over the whole area. Approximately 150 larvæ were found in 11 stations before treatment. After treatment approximately 83 were found, a diminution of nearly 50 per cent in 24 hours.

May 26, 1927: A second area, of 600 square feet, was marked out in another part of the same swamp. This was treated with 5 ounces of undiluted stoxal. A warm, cloudless day; about the same amount of wind as during the last experiment. Average temperature of 8 pools, 92° F.

A distinct film of stoxal was seen on each of the marked pools. Twelve stations before treatment gave 102 larvæ. The day after treatment 25 larvæ were found in the same stations, a diminution of about 75 per cent. A series of random dips taken before and after treatment gave a diminution of approximately 65 per cent.

On the same date another area of 600 square feet was marked off and treated with Paris green as a control on the stoxal. Two hundred and fifty cubic centimeters, or approximately 12 ounces, of a 1 to 100 dilution in road dust, containing 30 grains (2 grams) of Paris green, was applied to this area. Six stations before treatment gave 27 larvæ, and 10 random dips, 10 larvæ. The day following treatment not a single larva could be found in any of the stations, and only two very small ones in a large series of random dips.

June 8, 1927: An area of 800 square feet was treated with 530 cubic centimeters, or 8 ounces, of undiluted stoxal. Six stations before treatment gave 51 larvæ. The day after treatment these stations gave 8 larvæ, a reduction of about 85 per cent. The dimunition as measured by random dips taken before and after treatment was approximately 75 per cent.

On the same date another area was marked out and treated with trioxymethylene (Merck's), 3 ounces diluted with two volumes of fine sand. Six stations before treatment gave 60 larvæ; the same stations the day after gave 6 larvæ, a reduction of about 90 per cent. The reduction as measured by a series of random dips was approximately the same.

A mechanical hand duster was used in all of these swamp experiments and great pains were taken to get the dust spread as evenly as possible, and to avoid loss by wind. In only the last experiment, that of June 8, was the result with stoxal at all satisfactory, in which the use of one-half pound on an area of 800 square feet gave a reduction in the number of larvæ of about 85 per cent. If one-half of the dust

had been lost by being carried by the wind beyond the treated area, the amount used would still be at the rate of about 14 pounds per acre.

EXPERIMENTS WITH CULICINE LARVÆ

In our experience stoxal gives rather unsatisfactory results as a larvicide for culicine mosquitoes. In a laboratory experiment, larvæ of *Orthopodomyia signifer* and of *Culex quinquefasciatus* were exposed in developing trays to stoxal dust. Enough was added to make a heavy brown film. The water was about half an inch deep in each tray. In one tray the water was stirred immediately after dusting; in the other it was left untouched. At the end of 20 hours there were but one or two dead in each tray out of an original number of 40 larvæ per tray. There was little difference between the two trays, and both were like an untreated control. At the end of 44 hours the number of survivors in all trays was about the same as at the end of 20 hours. Eggs hatched out and produced healthy larvæ in a stoxal-containing tray on the day following treatment.

In field experiments a distinct film blown over shallow pools containing *Culex testaceus* (*C. territans*) caused a very inconsiderable mortality even in a pool stirred immediately after dusting. The best result we obtained was in a cement tank about 7 square yards in area and 20 inches deep. Seven teaspoonfuls, the teaspoon rounded full, about 50 cubic centimeters or nearly 1 ounce of stoxal was dissolved in water and spread over the surface of the tank. The water in the tank was not very foul and contained larvæ of *Culex quinquefasciatus*. On the following day there were still a few surviving larvæ, but the reduction was about 90 per cent.

Roubaud (3) has recommended the use of stoxal mixed with sand for some conditions. We had an opportunity in New Mexico for testing sand-diluted stoxal in a borrow-pit where larvae of *Aëdes dorsalis* were abundant. The area treated was about 3 by 12 yards in extent; the water, only 1 to 2 inches deep in the middle, was turbid and somewhat foul, as is frequently the case with culicine breeding-places. The larvae were nearly full-grown, and the numbers varied from about 40 to 100 per square foot. The pool was treated with 75 c. c., or approximately 1.1 ounces of stoxal thoroughly mixed with 19 parts of dry sand. The larvicide was spread at mid-day in full sunshine. The temperature of the water at the surface was 96° F. One hour after the pool had been treated a light shower fell, a little more than enough to lay the dust. The next day about 50 per cent of the larvae were still surviving. Many of them had pupated.

We made many tests of stoxal and trioxymethylene in a series of fire barrels. These barrels contained water having a depth of from

20 to 26 inches, and a superficial area of about one-fourth square yard. The water varied greatly in degree of foulness; in some barrels it was nearly clean, but in most of them the water was dark in color and rich in organic matters. Most of the barrels were indoors, but two stood in the open, and one contained algæ.

All contained larvæ of *C. quinquefasciatus* and some, in addition, *Aëdes ægypti* (*Stegomyia fasciata*). The larvæ occurred in varying numbers, but were usually very plentiful and of all sizes.

We began the series of tests with stoxal using a rounded teaspoonful, or about 6 cubic centimeters, per barrel, a dose about four times larger than that recommended in the directions which accompany the larvicide. This dosage proved to be wholly inadequate, and was gradually raised to 20 and finally to 30 cubic centimeters per barrel, the last dose being about 20 times that recommended. In a few tests the stoxal was simply spread over the surface of the water, but in most of the tests, including those with the higher dosage, the larvicide was either dissolved in water before spreading, or the water was well stirred immediately after the larvicide had been applied.

Comparative tests were made on other barrels with trioxymethylene in doses varying from 2½ to 30 cubic centimeters per barrel. This substance was applied in the same way as stoxal. Both trioxymethylene and stoxal were used undiluted.

The effects of these larvicides were observed on the day following their application, and in some cases on the third day as well. In nearly every case the results were disappointing, the proportion of larvæ destroyed being so small as to hardly warrant the trouble of application, especially when other cheaper and more efficient larvicides are available for such breeding places. The higher doses may have somewhat diminished the numbers of the larvæ, but the proportion surviving was so large that the results should rank as a failure. The only success was obtained in a barrel containing relatively clear water which was treated with a large dose of trioxymethylene.

Some 18 different experiments were made on these barrels. We kept in mind the possibility of rendering the larvæ resistant by repeated small doses, and for later experiments used new barrels.

COST

Stoxal is quoted by the American manufacturers at 51 cents per pound in 25-pound containers for lots of less than 100 pounds, or 50 cents in 100-pound lots. The lowest quotation we have received of Merck's trioxymethylene is 80 cents per pound in 25-pound lots. Probably a lower quotation would be made for larger lots, and possibly for a product of less, but sufficient, purity. Paris green has been quoted at 21 cents per pound, in 100-pound lots, and 23 cents in 25-pound lots.

In our field experiments against *Anopheles*, stoxal distributed at the rate of 27 pounds per acre gave an efficiency of 85 per cent. Smaller amounts gave a much lower rate of destruction. The Paris green treatment of May 26, affording an efficiency of nearly 100 per cent, required slightly over 3 pounds of Paris green per acre, the 3 pounds being one one-hundredth of the dilution used. The trioxymethylene treatment, affording an efficiency of nearly 90 per cent, required 10.2 pounds of trioxymethylene per acre. If the dust lost by windage in these experiments be put at 50 per cent, the cost of all treatments would be reduced by half, the ratio of loss being about the same for each larvicide.

It is evident that the "minimum active dose" of one-fourth pound to 2½ acres as described in the directions for the use of stoxal can not be expected to destroy a very high percentage of larvæ. The frequent repetition of such light doses would hardly mend matters, for the cost of spreading is a large item in any larvicidal work. Further, according to Roubaud (3) larvæ surviving a sublethal dose of trioxymethylene acquire a resistance to the poison which lasts some days. He recommends, therefore, that the treatment should not be repeated too frequently, not oftener than once a week during hot weather.

It would seem that stoxal has a very limited field of service in this country, at least. For culicines, there are few places where oil or fish would not be more economical, and in such places trioxymethylene alone, or diluted with some inexpensive dust as originally recommended by Roubaud, should be much cheaper than, and fully as efficient as, stoxal, which consists essentially of trioxymethylene diluted with an inert dust. In the case of *Anopheles*, wherever a dust larvicide is indicated, Paris green is certainly far cheaper than stoxal. In this country, at least, *Anopheles*-producing waters where Paris green is unavailable on account of its poisonous properties are few. In the experiment of May 26, above described, the area treated by Paris green was invaded by cattle and mules, which pastured there, immediately after the spreading of the dust. There were no untoward effects, and none was expected, for in order that even a fraction of a 30-grain dose be ingested, a single animal would have to eat all the grass and drink all the water over the entire treated area of 600 square feet.

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CURRENT WORLD PREVALENCE OF DISEASE

REVIEW OF THE MONTHLY EPIDEMIOLOGICAL REPORT PUBLISHED JUNE 15, 1927, BY THE HEALTH SECTION OF THE LEAGUE OF NATIONS' SECRETARIAT[1]

Plague incidence continued low during April and May in practically all endemic centers, according to the data received by the health section of the League of Nations' Secretariat and published in the Monthly Epidemiological Report for June. Very few ports reported any cases or deaths to the Far Eastern Bureau during the five weeks ended May 28. One case was reported at Port Said the last week in April; one at Bangkok the week ended April 14; 12 cases were reported at Colombo during the five weeks; and, in India, only Bassein, Bombay, Calcutta, and Rangoon reported deaths, Bombay, with 81 deaths, being the only port having any considerable number.

The latest figures available for the Provinces of India are for the four weeks ended April 9, and they indicate the most favorable plague situation on record for India at this season. The improvement over previous years was most marked in the Punjab and in the United Provinces, in both of which the disease ordinarily reaches its maximum incidence during April. "The winter and spring have been unusually dry in the whole of northern India west of Bihar," says the Report, "and the drought has undoubtedly helped to check the progress of plague."

TABLE 1.—*Deaths from plague in the Provinces of India in the four weeks' period March 13 to April 9, 1927, and the corresponding period of preceding years*

Province	1922	1923	1924	1925	1926	1927
	Mar. 12–Apr. 8	Mar. 18–Apr. 14	Mar. 16–Apr. 12	Mar. 15–Apr. 11	Mar. 14–Apr. 10	Mar. 13–Apr. 9
Northwest frontier	0	8	778	27	26	31
Punjab	1,359	6,856	29,467	7,458	16,258	1,562
Punjab States	225	603	2,303	556	2,530	520
Delhi	0	1,054	890	10	84	13
United Provinces	3,686	16,507	9,597	9,963	8,522	2,474
Bihar and Orissa	2,351	7,181	1,429	1,320	1,588	1,390
Bengal and Assam	32	36	7	0	0	0
Central Provinces	556	2,420	1,291	632	792	683
Madras Presidency	477	606	79	123	90	50
Hyderabad	26	786	138	129	697	35
Mysore	115	224	37	18	205	21
Bombay Presidency	416	1,640	485	437	460	174
Burma	700	582	310	306	415	357
Other Indian States	116	442	601	380	966	91
Total	10,059	38,939	47,412	21,379	32,633	7,410

Plague reappeared in May in southern Tunisia, where 92 cases were reported during the first 20 days in inland localities of the district of Susa and Sfax.

In Madagascar, the reported cases of plague declined from 236 in March to 156 in April.

[1] From the Office of Statistical Investigations, U. S. Public Health Service.

Cholera.—An "explosive outbreak" of cholera occurred in the southern part of Bombay Presidency, India, at the end of March, and has been the most severe for many years in that part of India. The disease had been practically absent from Bombay Presidency for two years, and serious outbreaks in that section have rarely occurred before August. Only 33 cases were reported in the week ended March 19, but in the following week there were 2,224 cases and 801 deaths. During the two weeks ended April 9, 5,924 cases and 2,591 deaths were reported in the districts of Belgaum, Dharwar, and Bijapur, with an indicated case fatality of 44 per cent.

No other part of India has reported any unusual prevalence of cholera. Outside of Bombay Presidency, there were 5,714 deaths from cholera in India during the four weeks ended April 9, as compared with 8,254 in the corresponding period of 1926. In Bengal, the cholera incidence was less than half as high as in the corresponding period last year.

In French Indo-China there was a serious outbreak of cholera in April in Tonkin, where 1,356 cases were reported during the month. The disease was prevalent, but not epidemic, in Cochin-China and Cambodia, and toward the end of the month also in parts of Annam.

Haiphong was the port most severely infected with cholera in the Far East in May; 728 cases and 631 deaths were reported during the three weeks ended May 21. Cases were reported during these three weeks also at Saigon (76 cases), Turane, Bangkok, Calcutta (221 deaths), Negapatam (28 deaths), Rangoon, and Bassein.

Yellow fever.—Cases of yellow fever continued to be reported from time to time at certain localities on the west coast of Africa. In the Gold Coast, 31 cases were reported in February, March, and April. The disease also reappeared in Senegal in May, where no cases had been reported since January. There was 1 fatal case on May 22 at M'bour, and 4 fatal cases were reported between May 22 and 29 in the district of Tivaouane. In the French mandated territory of Togo, at Lome, 6 fatal cases were reported between May 7 and 24; and in Dahomey, at Porto Novo, 2 fatal cases were reported on May 26 and May 29, respectively.

Smallpox.—In European countries, other than Great Britain, France, Spain, and the Union of Socialist Soviet Republics, only 75 cases of smallpox were reported during the first quarter of 1927, or about half as many as in the corresponding period of 1926. In 18 countries, no case was reported in the first three months of 1927. In France, there was a considerable increase in smallpox during the past winter, 227 cases having been reported in the fourth quarter of 1926, and 170 cases in the first quarter of 1927. No data for 1927 are available for Spain and the Union of Socialist Soviet Republics,

but in both countries smallpox has been declining for several years. In England and Wales, smallpox cases have shown a marked increase during the past winter, and 6,166 cases were reported in the first quarter of 1927, as compared with 3,380 cases in the first quarter of 1926. The number of cases was diminishing in May, but the incidence was still in excess of that for previous years.

TABLE 2.—*Smallpox cases notified in Europe, 1924–1927* [1]

Country	Annual totals			First quarter 1926 and 1927	
	1924	1925	1926	1926	1927
Germany	16	24	7	1	1
England and Wales	3,766	5,365	10,155	3,380	6,166
Belgium	31	12	13	3	0
Bulgaria	5	0	1	0	2
Denmark	25	0	0	0	0
Scotland (16 principal towns)	4	2	0	0	64
Spain (deaths)	1,214	851	114	76	-------
Estonia	4	5	6	0	0
Finland	1	2	1	0	0
France	210	456	554	164	170
Gibraltar	6	3	0	0	0
Greece	250	23	104	36	47
Hungary	1	2	1	0	0
Italy	430	204	112	42	8
Latvia	25	17	3	0	0
Lithuania	58	12	3	1	1
Luxemburg	0	0	2	0	0
Malta	0	84	20	20	0
Norway (towns)	0	1	0	0	0
Netherlands	3	2	13	3	3
Poland	861	77	74	24	10
Rumania	9	28	7	3	0
Kingdom of the Serbs, Croats, and Slovenes	330	14	4	1	3
Sweden	1	0	0	0	0
Switzerland	1,234	331	57	41	0
Czechoslovakia	2	1	1	1	0
Ukraine	1,188	591	274	77	-------
Union of Socialist Soviet Republics (other European territories)	20,412	10,927	[2] 4,052	1,709	-------
Algeria	483	1,747	2,483	847	557
Egypt	799	762	2,677	891	149
Tunis	606	1,270	198	123	28

[1] No case of smallpox was reported in the following countries: Austria, Danzig, Irish Free State, Saar Territory.
[2] Data for October have not been received.

The prevailing type of smallpox in England is very mild, and deaths are extremely rare. "The mild type of smallpox seems to have made its appearance in England and Wales in 1919," states the Report. "It was, however, only in 1921 that it became so much more prevalent than the severe type that it affected the case mortality rate of the whole country. Smallpox, which had given rise to the very serious epidemics in 1893 and in 1902, had become fairly rare since 1906. The case mortality oscillated around 11 per cent up to 1920. In 1921, it fell to 1.6 and was 2.8 in 1922. Of the 27 deaths, occurring in 1922, 24 resulted from an outbreak of 78 cases in London and its neighborhood. Apart from this outbreak, the case mortality was only 3 per thousand as during the two following years; in 1925 and 1926 it was less than 2 per thousand."

Epidemic prevalence of smallpox exclusively of the mild type has been met with on the Continent only in Switzerland. During the Swiss epidemics from 1921 to 1925 the fatality was about one per thousand cases. Elsewhere the severe type is more common. In eight continental countries reporting both cases and deaths, 129 cases and 14 deaths were reported in 1926, giving a case fatality of 11 per cent.

The following table, showing the vaccinal condition of smallpox cases in England in 1925, reprinted in the Epidemiological Report from the Annual Report of the Chief Medical Officer of England and Wales for 1925, is of considerable interest. It shows conclusively that successful vaccination, if of sufficiently recent date, confers immunity from smallpox. The increasing number of cases among vaccinated persons in the older ages shows how the protection of vaccination gradually wears off. The cases among vaccinated persons at ages from about 25 to 35, and to some extent in older age groups, is undoubtedly lowered by the vaccination of soldiers during the war, with the result that large numbers of men had been vaccinated more recently than would otherwise have been the case.

TABLE 3.—*Vaccinal condition of cases of smallpox occurring in England and Wales during 1925*

Age	Vaccinated as evidenced by scars A	Unvaccinated B	Vaccinated during incubation period C	Ratio A:B
Under 5	0	402	50	0
5–9	0	881	44	0
10–14	5	1,151	49	0.004
15–19	29	695	38	0.042
20–24	37	360	19	0.10
25–29	27	229	8	0.12
30–34	46	136	5	0.34
35–39	85	73	5	1.16
40–49	291	104	2	2.80
50–59	268	77	2	3.48
60–69	108	21	3	5.14
70 and over	29	3	3	9.67
Total	925	4,132	228	0.224

Influenza.—A comparison of the mortality from influenza in small and large towns during the first quarter of 1927 in the Netherlands, in England and Wales, and in Switzerland shows that the mortality was higher in the small communities.

TABLE 4.—*Mortality attributed to influenza in certain countries, according to size of communities, during the first quarter of 1927*

Country and size of community	Population in thousands	Deaths from influenza	Rate per 100,000
The Netherlands:			
Over 20,000	3,492	1,086	31.1
Under 20,000	4,035	2,370	58.7
Total	7,527	3,456	45.9
England and Wales:			
Over 50,000	19,411	7,477	38.5
20,000–50,000	5,056	2,412	47.7
Total	24,467	9,889	40.4
Switzerland:			
Over 50,000	781	393	50.3
Under 50,000	3,140	1,952	62.2
Total	3,921	2,345	59.8

In Switzerland, if the canton of Geneva is excluded, the mortality in towns over 50,000 becomes 41 per 100,000, as compared with 61 in the smaller communities.

Also in Scotland the mortality in the towns was lower than that in the smaller communities and rural districts. The death rate from influenza during the first quarter of 1927 was 18 per 100,000 in towns of over 30,000 population and 35 per 100,000 in the remainder of the country.

Syphilis.—Statistics of reported cases of syphilis for a number of years are given for the Scandinavian countries and Australia in the Epidemiological Report. Satisfactory reporting of this disease is difficult to obtain, and most countries have not yet made it notifiable. In the Scandinavian countries a system of confidential notification is used and, according to the Report, the statistics obtained probably are as complete as for measles or whooping cough and can at least be used to show the trend of the disease from year to year.

TABLE 5.—*Syphilis cases reported in various countries, 1919–1926*

Year	Denmark		Sweden		Norway		Norwegian towns		Australia	
	Cases	Rate[1]	Cases	Rate[1]	Cases	Rate[1]	Cases	Rate[1]	Cases	Rate[1]
1919	4,471	147	6,451	110	2,128	82	1,814	234	------	------
1920	4,329	141	3,725	63	1,667	64	1,501	191	------	------
1921	3,955	121	2,596	44	1,651	61	1,285	162	4,232	84
1922	2,611	77	1,573	26	1,106	41	1,138	143	3,272	64
1923	2,496	75	1,189	20	1,099	40	906	114	2,573	49
1924	2,431	72	922	15	------	------	837	106	2,311	43
1925	2,281	67	764	13	------	------	803	101	------	------
1926	2,401	75	981	16	------	------	798	100	------	------

[1] Rate per 100,000 inhabitants.

The number of cases of syphilis reported in the 3 Scandinavian countries increased markedly from 1913 to 1919. "From 1920 to 1923 the incidence decreased to about one-half or less, probably largely under the influence of the generalization of modern methods of salvarsan treatment" states the Report. After 1923 the decrease was much smaller, and there was even a slight increase in Sweden and Denmark from 1925 to 1926. The Australian statistics also show a reduction of about one-half from 1921 to 1924, and the rates correspond closely to those of Norway for the years 1919 to 1922.

"The preponderance of the syphilis incidence among males over females is, at least in the Scandinavian countries, smaller than stated by most authors," says the Report. In 1926, there were 497 cases of acquired syphilis reported among men and 399 among women in Denmark. In Sweden, during the same year, there were 613 cases of acquired syphilis reported in men and 299 in women. The excess of the incidence of gonorrhea among men was much greater.

SEASONAL AND AGE FACTORS IN MEASLES

A study of case reports from 10 States during the five-year period 1922–1926, made by the Metropolitan Life Insurance Co., shows that, although measles is a "cold-weather disease" from the standpoint of the relative danger of contracting it, from the standpoint of the relative danger of dying from it when once contracted, it is decidedly a "hot-weather disease." Without exception these reports show that the peak of measles prevalence occurred during the late winter and spring months, and that with the coming of warm weather the case incidence dropped very sharply and continued the decline to a low point, which was reached in September. On the other hand, the case fatality rate was highest in the summer, the records uniformly showing that a greater proportion of measles cases terminated fatally during August and September than at any other time of year.

Another contrast between maximum morbidity and maximum case fatality rate in measles is shown in relation to age—the maximum prevalence occurring in the fifth year, whereas the maximum case fatality rate occurs in the first year of age.

While the actual death rate—that is, the number of deaths per 100,000 living—reaches its maximum in the second year of life, there are many more cases in the third, fourth, and fifth years than in the second year.

The following figures showing the case fatality rate of measles during childhood are based on a study made by the company in New Jersey during the six-year period 1919–1925:

Age	Deaths per 1,000 cases
Under 1 year	125.3
1 year	71.2
2 years	17.9
3 years	9.9
4 years	4.9
5 to 9 years	1.7
10 years and over	4.3

It is worthy of emphasis, however, that, regardless of the age or season when the disease is contracted, the period of convalescence is the most important stage of measles. It is when the child is recovering that he is the weakest from the effects of the disease, and it is then that dangerous complications are most likely to develop.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Public Health Engineering in European Countries. George W. Fuller, consulting engineer, New York City. *American Journal of Public Health*, vol. 17, No. 5, May, 1927, pp. 466–469. (Abstract by D. W. Evans.)

England.—Since 1919 the Ministry of Health has had jurisdiction over problems relating to sewerage, sewage disposal, river pollution, disposal of industrial wastes and their bearing upon water-supply projects. They also have jurisdiction over certain housing activities and supervision of collection and disposal of refuse. Inquiries or public hearings are held and encouraged in order to bring out local viewpoints. Valuable data are assembled in this manner. Sewage treatment projects have gone forward since the war as the result of financial aid from the central government and to aid in the solution of the unemployment situation. Most surface waters are filtered by slow sand beds. Mechanical filters are used in several places as preliminary filters to the slow sand filters. Chlorination is rarely practiced except in emergency cases.

France.—Water supplies are mostly from underground sources. Sewage from larger communities is disposed of on sewage farms. All projects are subject to approval by Superior Council of Public Health.

Holland.—The central government has established a bureau which deals with design, construction, and operation of sewage disposal plants, particularly in respect to protection of shellfish layings and bathing beaches. Chlorination is used to some extent.

Switzerland.—The individual state, or canton, is usually the agency for administering questions on public health, especially sewage disposal in order to divert pollution from water supplies, many of which are mountain streams or lakes. Treatment is seldom given the water supplies. Zurich uses both mechanical and slow sand filters in series. Chlorination is not used.

Germany.—The Imperial Health Board has jurisdiction over public health engineering and is limited to nation-wide problems such as epidemics and the pollution of interstate streams. The best known central authority is that of the Institute of Hygiene of Prussia, comprising the bureaus of engineering, chemistry, and biology. Its activities are largely the development of education relating to public health work. The Emscher and Ruhr drainage districts are very effective in their work. Direct representation is given to municipal and industrial concerns related to the pollution question. Chlorination is practiced at a number of water works, particularly at Essen, when the wells are subject to flooding. Ham-

burg uses chlorine in connection with slow sand filters on account of lack of funds for coagulants. Few plants having a relation to public health have been built in Germany since the late war.

Typhoid in Large Cities of the United States in 1926 (Fifteenth Annual Report). Special article. *The Journal of the American Medical Association*, vol. 88, No. 15, April 9, 1927, pp. 1148–1150. (Abstract by C. H. Kibbey.)

This is a most interesting and instructive survey of the typhoid fever mortality in the 78 cities of the United States that had a population in 1926 of 100,000 or more. The total 78 cities were divided into groups according to geographic location, and the group mortality rate is shown below:

Geographic division	Population of cities	Death rate per 100,000	
		1926	1925
New England States	2,521,608	1.51	2.37
Middle Atlantic States	11,399,000	2.12	3.01
South Atlantic States	2,226,488	5.38	5.71
East North Central States	8,117,000	1.69	2.19
East South Central States	836,000	14.47	14.30
West North Central States	2,479,000	2.22	3.31
West South Central States	1,478,000	11.69	13.27
Mountain and Pacific States	3,430,795	1.98	2.19

Attention is called to the remarkable showing made by the New England group as being one which would be creditable to any similar population anywhere in the world. Of the 12 New England cities considered in the group, and presenting a group death rate of 1.51 per 100,000, 7 report a typhoid death rate of less than 1 per 100,000. New Bedford and Lowell of this group have had rates below 1 per 100,000 for two years in succession, the average in Lowell for the two years being less than 0.5 per 100,000, or less than one-twentieth of the average for the years 1911 to 1915, inclusive.

Cambridge, with the best typhoid record in New England for the 16 years prior to 1920, stands out prominently with the highest death rate of the group for 1926, its rate for that year being 4.9 per 100,000.

Albany, Utica, and Yonkers, of the Middle Atlantic group, achieve the enviable distinction of having had no typhoid death in 1926. Rochester and Scranton had not only a higher typhoid mortality than in 1925, but presented a higher rate than for the two preceding five-year periods. Chicago establishes a new low record, the rate (0.8) being the lowest reported in 1926 for any American city with over 500,000 population. Toledo and Indianapolis continue to have rates considerably higher than the average.

The four cities in the East South Central group present for the second successive year a higher rate for the group than that of any other geographic division, although the fact that Memphis reports a lower rate than for previous years and the figure for Birmingham (8.5) is considered especially encouraging. Nashville, having suffered early in the summer from an old-fashioned typhoid epidemic, presented the highest rate of any American city (35). The highest rate in 1925 was 28.6 (Memphis), and the highest in 1924 was 41.2 (Memphis).

An honor roll of the 35 cities having a typhoid death rate below 2 per 100,000 is presented, with Albany, Utica, Yonkers, and Youngstown conspicuously at the head of the list with clean records of no typhoid deaths.

Public Health Engineering Progress in Palestine. Louis Cantor. *American Journal of Public Health*, vol. 17, No. 4, April, 1927, pp. 341–348. (Abstract by Chester Cohen.)

This article deals with the various influencing conditions affecting the problems of public health engineering in Palestine. The climatic conditions are discussed,

together with the various obstacles that are present in such regions where religious prejudices and centuries of backwardness have to be overcome. Malaria has been the prevalent disease for centuries, and preventive measures taken by the department of health consist of the following: (1) Town areas organized with control of prevention of mosquito-breeding, mainly of cistern, well, and cesspit origin; (2) drainage and reclamation of swamp areas forming extensive breeding grounds; (3) treatment of infected persons; (4) educational work among the people, giving information as to the origin and prevention of the disease.

The mosquito proofing of wells through covering and the installation of simple lift-type pumps, the draining of malarious areas, and other antilarval measures resulted in reducing the malaria death rate. As an example, in Jerusalem in 1918 there were 113 deaths from malaria, whereas in 1924 there were only 2 deaths from this cause.

Careful supervision of the water supply and disinfection through means of stabilized bleaching powder, where necessary, are practiced. The temporary charter of the town water supply does not justify the installation of automatic liquid chlorine installations.

Plans are being prepared for providing methods of sewage disposal for the larger towns to take the place of disposal through the use of cesspools. Improvements in house sanitation and plumbing will be a necessary portion of the activities of the department. Classes of instruction for architects, engineers, and plumbers, and sanitary exhibitions and health shows in the different towns are important factors in stimulating this work and in creating a demand for these improvements. Arrangements for scavenging and refuse disposal in larger towns and villages are being perfected. The refuse from the garbage destructors is used as a land fertilizer and is in considerable demand.

"In spite of the many difficulties, previously referred to, as regards the complicated political, religious, economic, and social problems, in overcoming the rooted prejudices of ages, the department of health is succeeding in placing Palestine upon a sure footing of modern hygienic and sanitary science."

Solving Sanitary Engineering Problems of Tuberculosis Hospitals. C. A. Holmquist and Charles R. Cox, division of sanitation, New York State Department of Health. *Modern Hospital*, vol. 28, No. 3, March, 1927, pp. 75–79. (Abstract by Charles R. Cox.)

Most of the problems involved in the design, construction, and operation of tuberculosis hospitals are specific and are thus understood by experienced hospital authorities. This is not true, however, in regard to the special problems of a sanitary engineering character. The paper summarizes the sanitary engineering aspect of the selection of hospital sites and suitable water supply and refuse and sewage disposal systems for tuberculosis hospitals.

The site should be selected to afford convenience to the staff, patients, and their friends, and access to available markets. The securing of sufficient area for the desirable distribution of buildings, isolated sites for nuisance-producing structures, dairy and poultry farms, and vegetable gardens is advocated. A well-drained site with porous soil is recommended, although high altitudes are not essential, because it is pointed out that altitude itself has little connection with the cure of tuberculosis. A variable, bracing climate with moderate to cool temperatures is advocated. The possibility of carrying on heliotherapy at all altitudes is indicated, provided cloudy weather is not too prevalent.

The use of properly protected wells or springs as sources of water supply is advocated instead of streams, ponds, or lakes, because surface water should be treated even though trained operators are not provided at most small water purification plants. The methods of protecting dug, driven, and drilled wells are discussed. Slow and rapid sand filters, chlorination plants, and pumping

equipment are also discussed. The careful supervision essential for satisfactory results with such equipment is stressed.

Disposal of sewage by subsurface drainage systems is advocated when feasible. The statement is made that typical sewage disposal methods may not be capable of removing *Bacillus tuberculosis*, which is known to persist at least 10 days in the septic sludge of tanks and to resist the effect of very large concentrations of chlorine. The cost and difficulty of sewage disposal may warrant the selection of another hospital site at a more favorable location. The possibility of housing sewage disposal equipment and providing ventilation equipment with deodorizers is mentioned.

Disposal of infected objects such as sputum cups and handkerchiefs by burning in special incinerators or in the boiler plant of the institution is advocated. Disposal of garbage by burial, incineration, and hog feeding is mentioned.

Cooling Milk. T. J. McInerney, assistant professor of dairy industry, Cornell University. Annual Report, 1927, Pennsylvania Association of Dairy and Milk Inspectors, pp. 114–123. (Abstract by F. J. Moss.)

Many dairymen find it difficult to understand why they are expected to keep milk cold, when it is heated during the processing at the dairy plant. This clearly shows a lack of appreciation of the real reason for cooling milk and keeping it cold, and also a lack of understanding of the heating process. Rapid cooling of milk to 50° F., or lower, is imperative if low bacterial count and high keeping quality are desired. Pasteurization by the dealer can not be expected to correct the results of careless handling by the producer.

As air and water are the two most commonly used means of cooling milk, an experiment was made to determine their relative efficiency. Five cans of milk having a temperature of 95° F. were treated in the following manner: Can A was placed in a tub of ice water, the depth of water being sufficient to reach above the breast of the can. Enough ice was used that the water temperature was kept at about 36° F. The milk was stirred every half hour, when the temperature was taken; can B stood in a refrigerator, the temperature of which was 0° F. Milk was stirred every half hour, and temperature noted; cans C, D, and E stood in a refrigerator having an air temperature of 30° F. Variations in the treatment were: C—Still air, milk stirred every half hour; D—In strong wind (large electric fan), milk stirred every half hour; E—Still air, milk unstirred. A graph is given which shows the results of the five different treatments outlined above. The most interesting thing brought out in the graph is the extreme rapidity of cooling by means of ice water at 36° F. as compared with air at 0° F. Occasional stirring of the milk is shown to hasten the cooling process.

An example is given showing the method of calculating the approximate amount of ice needed when milk is cooled by setting the cans in a tank of ice water. A cement tank, insulated on all sides with 3-inch cork board, provides one of the most permanent and economical units for cooling and storage.

Insulation of cans during transportation is considered both desirable and feasible.

Carriers Excluded from Handling Oysters. Millard Knowlton. State of Connecticut *Health Bulletin*, vol. 41, No. 3, March, 1927, pp. 67–68. (Abstract by E. C. Sullivan.)

The Connecticut State Sanitary Code requires that specimens of feces and urine from oyster shuckers and packers be found negative for typhoid fever and the paratyphoids before cards are issued permitting them to handle oysters. This procedure was commenced in 1925, when 298 cards were issued, and continued in 1926, when 251 cards were issued.

Specimens have been examined either in the laboratory of the Connecticut State Department of Health or in the laboratory of the New Haven Health Department. Altogether more than 600 specimens have been examined in the State laboratory during the two-year period. As a result of the laboratory

examinations, 5 paratyphoid carriers were discovered in 1925 and 1 paratyphoid carrier was discovered in 1926. All of the paratyphoid carriers discovered in 1925 were located in one city. Four of them were carriers of paratyphoid B and one of paratyphoid A.

Scarlet Fever Outbreak due to Infected Food. Clarence L. Scamman and others, *American Journal of Public Health*, vol. 17, No. 4, April, 1927. pp. 311–316. (Abstract by Chester Cohen.)

The Massachusetts Department of Public Health began an investigation to determine the cause of the simultaneous outbreak of a large number of cases of scarlet fever among the attendants at banquets from three geographically distinct localities. Suspicion was immediately directed towards lobster salad, which was the only food served at each of the three dinners. Although not all the cases were diagnosed as scarlet fever, the coefficient of association pointed strongly to the common article of food. The details of the investigation are given and the epidemiological data obtained are presented in a very interesting manner. Throat cultures were made from the employees who handled and prepared the salad. Six of the 33 employees gave positive cultures for hemolytic streptococci, which agglutinated with the serum of the rabbit immunized against the known scarlet fever strain. It was impossible to determine which of the six employees were directly responsible or how many of the six had harbored the streptococci prior to the date of the banquets. An interesting experiment was performed to determine whether or not a recently isolated strain of hemolytic streptococci, beta type, would remain viable in lobster meat and lobster salad during a period of 18 hours. Briefly, the experiments indicated that the streptococci could be recovered with ease from the lobster meat after having been incubated from 12 to 18 hours at 37° C., and it is even possible that an increase in numbers may have occurred during this period.

Epidemiological interest centers in the occurrence of outbreaks of scarlet fever and sore throat from a common source of infection with secondary cases of scarlet fever following contact with sore throat patients. Of the 592 persons attending these banquets, 138 persons developed illness. In 98 of the cases of illness, scarlet fever was diagnosed, and in the other 40 cases there was not sufficient evidence to warrant positive diagnosis. "It is a fair assumption that one of the employees of either the dealer or the caterer was harboring streptococci and infected the lobster at some time between midnight and noon, June 24 (the period of preparation of the salad). It is impossible to ascertain the identity of this person or the place and exact time the infection occurred."

Classification and Grading of Milk. Ernest Kelly. *American Journal of Public Health*, vol. 17, No. 3, March, 1927, pp. 224–226. (Abstract by Malcolm Lewis.)

Grading is a further refinement of inspection—inspection separating the food fit for consumption from the unfit; grading specifies certain superior qualities of a food already passed by inspection. The trend should be toward uniformity of grade requirements. Advantages of grading are: (1) Reward of dairyman who exceeds minimum legal requirements; (2) improvement at dairy farms stimulated by competition and better price commanded by higher grade; (3) allowing consumer to purchase grade of personal preference and according to individual means. Grading as a public health function should be confined to sanitary conditions and not concern commercial considerations of butter fat percentage and chemical composition above legal standards. Grades should be few to avoid confusion on the part of consumers as to their relative significance, and the difference between any two grades should mean a very real distinction in quality. Only milk that is fit for drinking purposes should be included in the grades. One grade of raw milk and two grades of Pasteurized milk are suggested as the maximum number allowable.

DEATHS DURING WEEK ENDED JULY 23, 1927

Summary of information received by telegraph from industrial insurance companies for week ended July 23, 1927, and corresponding week of 1926. (From the Weekly Health Index, July 28, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended July 23, 1927	Corresponding week 1926
Policies in force	67,795,816	64,999,105
Number of death claims	11,211	11,099
Death claims per 1,000 policies in force, annual rate	8.6	8.9

Deaths from all causes in certain large cities of the United States during the week ended July 23, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 28, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended, July 23, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 23, 1927 [2]
	Total deaths	Death rate [1]		Week ended July 23, 1927	Corresponding week 1926	
Total (67 cities)	5,963	10.5	[3] 11.6	596	[3] 763	[4] 50
Akron	39			9	4	97
Albany [5]	43	18.7	18.0	4	1	83
Atlanta	59			9	21	
White	30			3	9	
Colored	29	(6)		6	12	
Baltimore [5]	189	12.0	13.3	20	26	62
White	156		12.0	18	16	69
Colored	33	(6)	21.0	2	10	31
Birmingham	69	14.3	16.3	6	5	
White	25		14.7	1	3	
Colored	34	(6)	18.8	5	2	
Boston	151	9.9	13.2	15	26	42
Bridgeport	31			1	5	19
Buffalo	114	10.8	12.4	16	18	67
Cambridge	21	8.8	12.8	2	2	36
Camden	31	12.2	6.4	3	2	52
Canton	14	6.5	10.0	3	2	71
Chicago [5]	534	9.0	10.5	60	69	52
Cincinnati	130	16.5	16.9	11	20	69
Cleveland	163	8.6	9.9	25	21	66
Columbus	76	13.6	15.2	3	8	28
Dallas	51	12.7	11.3	11	6	
White	45		10.7	11	6	
Colored	6	(6)	15.4	0	2	
Denver	53	9.5	11.3	5	7	
Des Moines	27	9.4	12.5	1	1	17
Detroit	199	7.8	11.4	29	57	46
Duluth	21	9.5	12.5	2	1	43
El Paso	27	12.3	17.7	4	6	
Erie	20			2	4	39
Fall River [5]	23	9.0	8.0	1	5	18
Flint	21	7.7	11.1	4	3	65
Fort Worth	29	9.2	6.2	2	0	
White	23		6.3	2	0	
Colored	6	(6)	5.5	0	0	
Grand Rapids	25	8.2	9.4	5	4	73
Houston	70			9	0	
White	50			7	0	
Colored	20	(6)		2	0	
Indianapolis	85	11.9	11.8	6	11	47
White	67		11.0	5	11	45
Colored	18	(6)	17.8	1	0	61
Jersey City	63	10.2	10.7	7	9	52
Kansas City, Kans	28	12.5	12.5	1	2	19
White	24		11.9	1	1	22
Colored	4	(6)	15.3	0	1	

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 66 cities.
[4] Data for 62 cities.
[5] Deaths for week ended Friday, July 22, 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, 30; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

Deaths from all causes in certain large cities of the United States during the week ended July 23, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, July 28, 1927, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended, July 23, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended July 23, 1927
	Total deaths	Death rate		Week ended July 23, 1927	Corresponding week 1926	
Kansas City, Mo	83	11.3	12.0	4	6	
Knoxville	18	9.2		0		
White	12			0		
Colored	6	(6)		0		
Los Angeles	253			23	15	66
Louisville	81	13.2	16.8	4	16	34
White	66		14.8	3	12	29
Colored	15	(6)	27.7	1	4	70
Lowell	28	13.2	9.9	8	0	154
Lynn	14	7.0	12.5	2	3	53
Memphis	64	18.6	22.7	9	8	
White	33		15.1	8	2	
Colored	31	(6)	36.4	1	6	
Milwaukee	84	8.2	10.5	15	18	70
Minneapolis	71	8.4	9.4	6	9	34
Nashville [5]	44	16.6	19.4	4	10	
White	23		17.6	2	7	
Colored	21	(6)	24.1	2	3	
New Bedford	19	8.3	8.7	4	5	69
New Haven	34	9.6	9.5	2	2	28
New Orleans	133	16.4	14.3	16	22	
White	78		12.1	8	13	
Colored	55	(6)	20.6	8	9	
New York	1,150	10.0	10.8	105	121	43
Bronx Borough	157	8.8	9.4	15	8	48
Brooklyn Borough	363	8.3	10.1	37	52	38
Manhattan Borough	457	13.1	12.8	39	43	46
Queens Borough	127	8.2	9.4	12	12	51
Richmond Borough	46	16.3	13.1	2	6	37
Newark, N. J	87	9.7	10.2	9	16	45
Oakland	42	8.2	9.2	3	3	35
Oklahoma City	40			5	3	
Omaha	50	11.9	12.1	3	6	33
Paterson	31	11.2	9.1	6	2	106
Philadelphia	454	11.6	10.3	36	38	48
Pittsburgh	102	8.3	12.8	9	24	31
Portland, Oreg	58			4	0	42
Providence	49	9.1	11.2	5	6	42
Richmond	48	13.0	17.4	5	11	66
White	24		12.5	1	6	20
Colored	24	(6)	29.4	4	5	152
Rochester	52	8.4	10.1	4	1	34
St. Louis	193	12.0	13.6	11	28	
St. Paul	45	9.4	9.5	9	3	82
Salt Lake City [5]	30	11.5	11.4	2	4	30
San Antonio	70	17.3	15.3	8	12	
San Diego	33	15.0	18.0	2	5	43
San Francisco	152	13.8	12.0	8	7	50
Schenectady	15	8.4	7.3	1	0	30
Seattle	64			3	3	31
Somerville	11	5.6	9.9	0	5	0
Spokane	29	13.9	11.5	1	4	25
Springfield, Mass	34	12.1	11.9	2	3	31
Syracuse	38	10.1	13.8	5	4	64
Tacoma	18	8.8	9.3	0	1	0
Toledo	52	8.9	12.4	6	7	58
Trenton	33	12.6	12.5	2	6	35
Utica	19	9.5	20.8	2	8	46
Washington, D. C	124	12.0	14.5	13	12	75
White	72		10.8	7	7	59
Colored	52	(6)	25.3	6	5	110
Waterbury	17			1	5	24
Wilmington, Del	29	12.0	7.1	2	1	50
Worcester	52	13.9	11.9	4	6	48
Yonkers	24	10.5	8.1	7	0	159
Youngstown	37	11.4	11.7	6	6	84

[5] Deaths for week ended Friday, July 22, 1927.

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

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Week Ended July 30, 1927

DIPHTHERIA	Cases
Alabama	13
Arkansas	5
California	73
Colorado	4
Connecticut	23
Delaware	1
Georgia	21
Idaho	2
Illinois	78
Indiana	12
Iowa [1]	15
Kansas	8
Louisiana	14
Maine	2
Maryland [1]	32
Massachusetts	61
Michigan	40
Minnesota	30
Mississippi	10
Missouri [2]	16
Montana	1
Nebraska	3
New Jersey	57
New Mexico	1
New York [3]	35
North Carolina	17
Oklahoma [4]	10
Oregon	9
Pennsylvania	104
Rhode Island	6
South Carolina	16
South Dakota	2
Tennessee	12
Texas	15
Utah [1]	5
Washington	17
West Virginia	14
Wisconsin	40
Wyoming	1

INFLUENZA	Cases
Alabama	18
California	3
Connecticut	3
Georgia	17
Illinois	91
Indiana	7
Kansas	2
Louisiana	11
Massachusetts	4
Michigan	2
Mississippi	2
New Jersey	1
Oklahoma [4]	6
Oregon	9
South Carolina	100
South Dakota	1
Tennessee	2
Texas	14
Utah [1]	2
West Virginia	1
Wisconsin	12
Wyoming	2

MEASLES	
Alabama	14
Arizona	230
Arkansas	6
California	77
Colorado	11
Connecticut	10
Delaware	1
Georgia	9
Illinois	81
Indiana	10
Iowa [1]	4
Kansas	77
Louisiana	16
Maine	25
Maryland [1]	9

[1] Week ended Friday.
[2] Exclusive of Kansas City.
[3] Exclusive of New York City.
[4] Exclusive of Oklahoma City and Tulsa.

MEASLES—continued	Cases
Massachusetts	151
Michigan	158
Minnesota	12
Missouri [2]	16
Montana	6
Nebraska	21
New Jersey	28
New Mexico	28
New York [3]	160
North Carolina	188
Oklahoma [4]	30
Oregon	28
Pennsylvania	134
Rhode Island	2
South Carolina	44
South Dakota	1
Tennessee	3
Texas	3
Utah [1]	2
Vermont	3
Washington	108
West Virginia	32
Wisconsin	124
Wyoming	3

MENINGOCOCCUS MENINGITIS	
Arkansas	1
California	5
Colorado	1
Illinois	3
Massachusetts	1
Michigan	7
Missouri	1
Montana	2
New Jersey	1
Oklahoma [4]	1
Oregon	1
Pennsylvania	2
Tennessee	1
Texas	1
Washington	2
Wisconsin	3

POLIOMYELITIS	
Alabama	1
California	59
Colorado	1
Connecticut	1
Illinois	6
Kansas	4
Massachusetts	1
Michigan	1
Minnesota	5
Mississippi	1
Montana	2
New Jersey	1
New Mexico	16
New York [3]	5
North Carolina	1
Oklahoma [4]	9
South Carolina	1
Texas	11
Utah [1]	1
Wisconsin	3

[1] Week ended Friday.
[2] Exclusive of Kansas City and St. Louis.

SCARLET FEVER	Cases
Alabama	11
Arkansas	2
California	53
Colorado	16
Connecticut	10
Georgia	5
Idaho	4
Illinois	75
Indiana	15
Iowa [1]	15
Kansas	17
Louisiana	5
Maine	7
Maryland [1]	15
Massachusetts	117
Michigan	73
Minnesota	53
Mississippi	7
Missouri [2]	22
Montana	10
Nebraska	7
New Jersey	36
New Mexico	8
New York [3]	64
North Carolina	30
Oklahoma [4]	19
Oregon	6
Pennsylvania	112
Rhode Island	3
South Carolina	8
South Dakota	10
Tennessee	14
Texas	8
Utah [1]	5
Vermont	3
Washington	21
West Virginia	42
Wisconsin	46

SMALLPOX	
Alabama	9
Arkansas	1
California	6
Idaho	4
Illinois	15
Indiana	24
Iowa [1]	12
Kansas	12
Michigan	15
Minnesota	2
Mississippi	6
Missouri [2]	4
Montana	1
Nebraska	3
New York [3]	3
North Carolina	12
Oklahoma [4]	7
Oregon	10
South Carolina	4
South Dakota	3
Tennessee	1
Texas	5
Utah [1]	3

[3] Exclusive of New York City.
[4] Exclusive of Oklahoma City and Tulsa.

SMALLPOX—continued	Cases
Washington	37
West Virginia	13
Wisconsin	11
Wyoming	2
TYPHOID FEVER	
Alabama	63
Arkansas	23
California	19
Connecticut	3
Delaware	2
Georgia	72
Idaho	1
Illinois	53
Indiana	7
Iowa [1]	6
Kansas	15
Louisiana	23
Maryland [1]	26
Massachusetts	7
Michigan	19
Minnesota	5

TYPHOID FEVER—continued	Cases
Mississippi	31
Missouri [2]	15
Montana	6
Nebraska	1
New Jersey	12
New Mexico	9
New York [3]	11
North Carolina	78
Oklahoma [4]	95
Oregon	6
Pennsylvania	41
Rhode Island	1
South Carolina	113
South Dakota	1
Tennessee	165
Texas	9
Utah [1]	1
Washington	14
West Virginia	22
Wisconsin	2
Wyoming	1

[1] Week ended Friday.
[2] Exclusive of Kansas City and St. Louis.
[3] Exclusive of New York City.
[4] Exclusive of Oklahoma City and Tulsa.

Reports for Week Ended July 23, 1927

DIPHTHERIA	Cases
District of Columbia	7
Mississippi	4
MEASLES	
District of Columbia	3
North Dakota	1
MENINGOCOCCUS MENINGITIS	
North Dakota	1
POLIOMYELITIS	
Mississippi	1
North Dakota	1

SCARLET FEVER	Cases
District of Columbia	5
Mississippi	3
North Dakota	21
SMALLPOX	
District of Columbia	1
Mississippi	3
North Dakota	1
TYPHOID FEVER	
District of Columbia	5
Mississippi	34

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
June, 1927										
Alabama	2	65	48	290	820	108	5	35	97	210
Idaho	4	7	------	------	163	------	0	25	34	8
Illinois	41	475	130	4	2,084	2	5	806	63	70
Kansas	3	35	2	1	1,253	2	5	169	74	31
Maine	0	9	14	------	339	------	1	88	0	9
Maryland	2	232	18	1	81	1	1	160	5	44
Mississippi	------	38	896	8,222	856	1,735	6	21	10	237
Montana	9	6	16	------	71	------	0	62	45	7
North Carolina	3	53	------	4	4,974	------	0	49	94	151
Ohio	9	388	54	7	467	------	2	750	197	50
Oklahoma [1]	------	24	70	205	875	65	4	43	161	153
Oregon	8	24	24	1	618	------	0	45	69	24
South Carolina	0	55	744	1,058	824	837	7	13	35	378
Washington	11	45	------	------	1,714	------	0	173	145	20
Wyoming	1	------	------	------	161	------	0	38	7	------

[1] Exclusive of Oklahoma City and Tulsa.

June, 1927

	Cases
Chicken pox:	
Alabama	65
Idaho	18
Illinois	873
Kansas	217
Maine	59
Maryland	300
Mississippi	249
Montana	43
North Carolina	247
Ohio	6,706
Oklahoma	41
Oregon	74
South Carolina	214
Washington	265
Wyoming	9
Dengue:	
Alabama	4
Mississippi	8
South Carolina	11
Dysentery:	
Illinois	25
Maryland	3
Mississippi (amebic)	111
Mississippi (bacillary)	3,253
North Carolina	2
Oklahoma	99
Oregon	12
German measles:	
Illinois	84
Kansas	14
Maine	81
Maryland	19
Montana	3
North Carolina	42
Ohio	69
Washington	399
Wyoming	29
Hookworm disease:	
Mississippi	353
South Carolina	112
Impetigo contagiosa:	
Maryland	5
Oregon	1
Washington	1
Lead poisoning:	
Illinois	12
Ohio	9
Lethargic encephalitis:	
Alabama	4
Illinois	7
Kansas	2
Maryland	1
Montana	1
Ohio	4
Oregon	1
Mumps:	
Alabama	44
Idaho	12
Illinois	1,453
Kansas	67
Maine	18
Maryland	79
Mississippi	330
Montana	3

June, 1927—Continued

	Cases
Mumps—Continued.	
Ohio	670
Oklahoma	19
Oregon	59
South Carolina	14
Washington	150
Wyoming	2
Ophthalmia neonatorum:	
Illinois	37
Maryland	3
Mississippi	13
Ohio	132
Oklahoma	1
Paratyphoid fever:	
Illinois	2
Kansas	2
Maine	1
South Carolina	15
Puerperal septicemia:	
Illinois	4
Mississippi	28
Rabies in animals:	
Idaho	2
Maryland	10
Mississippi	6
Oregon	2
South Carolina	18
Rabies in man:	
Alabama	1
Rocky Mountain spotted or tick fever:	
Idaho	6
Montana	10
Oregon	5
Washington	1
Wyoming	41
Scabies:	
Oregon	4
Septic sore throat:	
Illinois	9
Kansas	1
Maryland	7
North Carolina	9
Ohio	92
Oregon	6
Wyoming	3
Tetanus:	
Illinois	7
Kansas	3
Maryland	8
Oklahoma	1
Wyoming	1
Trachoma:	
Illinois	7
Mississippi	14
Ohio	4
Tularaemia:	
Idaho	1
Montana	1
Wyoming	1
Typhus fever:	
Alabama	5
South Carolina	2
Vincent's angina:	
Kansas	2
Maine	5

June, 1927—Continued

Vincent's angina—Continued.	Cases
Maryland	10
Oklahoma	2
Wyoming	1
Whooping cough:	
Alabama	225
Idaho	25
Illinois	1,069
Kansas	389
Maine	129
Maryland	350

June, 1927—Continued

Whooping cough—Continued.	Cases
Mississippi	1,737
Montana	54
North Carolina	2,204
Ohio	576
Oklahoma	68
Oregon	74
South Carolina	661
Washington	146
Wyoming	27

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

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	82	70	953	76	30	101	318	101	221
Arizona	33	5	223	17	54	1	83	8	14
Arkansas [1]									
California	1,602	501	6,642	1,029	719	120	823	47	1,055
Colorado	176	69	1,332	54	689	38	115	40	79
Connecticut	502	103	215	211	390	0	163	2	163
Delaware	10	5	44	11	31	0	10	3	9
District of Columbia	134	79	34		81	9	104	3	48
Florida	96	47	409	32	27	185	122	66	125
Georgia	106	32	492	65	50	93	[2] 53	105	180
Idaho	34	9	248	25	56	52	[2] 10	11	57
Illinois	1,058	466	4,562	2,085	1,043	150	1,157	52	906
Indiana	247	81	687	10	472	443	133	8	195
Iowa	111	84	1,282	146	126	39	66	2	90
Kansas	330	29	3,828	155	267	85	243	12	303
Kentucky [3]									
Louisiana	19	78	255	66	21	20	[2] 197	76	121
Maine	55	27	410	37	146	0	20	4	125
Maryland	382	197	119	134	266	0	[2] 236	25	303
Massachusetts	954	336	1,761	1,610	1,811	0	568	27	474
Michigan	1,175	368	1,177	1,140	1,100	187	506	24	759
Minnesota	735	140	611		758	6	208	13	100
Mississippi	553	27	1,760	600	29	31	280	140	2,054
Missouri	231	166	954	442	339	69	102	57	284
Montana	66	11	71	5	102	23	36	10	26
Nebraska	63	12	1,017	128	111	30	27	4	44
Nevada [4]									
New Hampshire		6			36	0		2	
New Jersey	1,267	488	429		1,374	0	455	12	664
New Mexico [1]									
New York	2,426	2,042	3,889	2,711	3,943	41	1,765	70	1,178
North Carolina	431	52	7,220		68	179		57	2,490
North Dakota	30	12	249	25	140	3	6	2	12
Ohio	1,551	470	870	749	1,279	204	701	48	736
Oklahoma [5]	47	17	1,287	66	101	165	78	89	88
Oregon	107	42	1,298	80	117	72	77	25	72
Pennsylvania	1,921	729	2,962	1,926	2,027	1	1,023	77	813
Rhode Island	59	46	16	27	77	0	[2] 43	1	8
South Carolina	265	67	913	15	28	67	[2] 202	132	661
South Dakota	11	13	342	11	121	16	3	2	35
Tennessee	85	26	352	62	108	68	201	89	316
Texas [1]									
Utah [3]									
Vermont	72	4	594	231	29	0	16	0	79
Virginia	507	83	3,698		121	172	[2] 157	50	1,661
Washington	310	46	1,844	356	175	195	185	14	169
West Virginia	109	44	638		137	116	63	32	216
Wisconsin	913	125	2,954	1,257	589	147	143	13	516
Wyoming	34	5	467	2	90	13	[2] 3	0	12

[1] Reports not received at time of going to press.
[2] Pulmonary.
[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 May, 1927

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	0.38	0.32	4.40	0.35	0.14	0.47	1.47	0.47	1.02
Arizona	.85	.13	5.72	.44	1.39	.03	2.13	.21	.36
Arkansas [1]									
California	4.25	1.33	17.64	2.73	1.91	.32	2.19	.12	2.80
Colorado	1.93	.76	14.60	.59	7.55	.42	1.26	.44	.87
Connecticut	3.61	.74	1.55	1.52	2.81	.00	1.17	.01	1.17
Delaware	.48	.24	2.13	.53	1.50	.00	.48	.15	.44
District of Columbia	2.92	1.72	.74		1.77	.20	2.27	.07	1.05
Florida	.83	.41	3.53	.28	.23	1.60	1.05	.57	1.08
Georgia	.39	.12	1.83	.24	.19	.35	[2] .20	.39	.67
Idaho	.75	.20	5.47	.55	1.23	1.15	[2] .22	.24	1.26
Illinois	1.71	.75	7.36	3.37	1.68	.24	1.87	.08	1.46
Indiana	.92	.30	2.57	.04	1.76	1.66	.50	.03	.73
Iowa	.54	.41	6.22	.71	.61	.19	.32	.01	.44
Kansas	2.13	.19	24.66	1.00	1.72	.55	1.57	.08	1.95
Kentucky [3]									
Louisiana	.12	.47	1.55	.40	.13	.12	[2] 1.20	.46	.74
Maine	.82	.40	6.09	.55	2.17	.00	.30	.06	1.86
Maryland	2.82	1.45	.88	.99	1.96	.00	[2] 1.74	.18	2.23
Massachusetts	2.65	.93	4.89	4.47	5.03	.00	1.58	.07	1.32
Michigan	3.08	.96	3.09	2.99	2.88	.49	1.33	.06	1.99
Minnesota	3.22	.61	2.68		3.32	.03	.91	.06	.44
Mississippi	3.64	.18	11.57	3.95	.19	.20	1.84	.92	13.51
Missouri	.77	.56	3.20	1.48	1.14	.23	.34	.19	.95
Montana	1.09	.18	1.17	.08	1.66	.38	.59	.16	.43
Nebraska	.53	.10	8.58	1.06	.94	.25	.23	.03	.37
Nevada [4]									
New Hampshire		.16			.93	.00		.05	
New Jersey	3.98	1.53	1.35		4.32	.00	1.46	.04	2.09
New Mexico [1]									
New York	2.50	2.11	4.01	2.80	4.07	.04	1.82	.07	1.21
North Carolina	1.75	.21	20.34		.28	.73		.23	10.12
North Dakota	.55	.22	4.57	.46	2.57	.06	.11	.04	.22
Ohio	2.72	.82	1.53	1.31	2.24	.36	1.23	.08	1.29
Oklahoma [5]	.26	.09	7.13	.37	.56	.91	.43	.49	.49
Oregon	1.42	.56	17.17	1.06	1.55	.95	1.02	.33	.95
Pennsylvania	2.32	.88	3.58	2.33	2.45	.00	1.24	.09	.98
Rhode Island	.99	.77	.27	.45	1.29	.00	[2] .72	.02	.13
South Carolina	1.69	.43	5.83	.10	.18	.43	[2] 1.29	.84	4.22
South Dakota	.19	.22	5.79	.19	2.05	.27	.05	.03	.59
Tennessee	.40	.12	1.67	.29	.51	.32	.95	.42	1.50
Texas [1]									
Utah [3]									
Vermont	2.41	.13	19.84	7.72	.97	.00	.53	.09	2.64
Virginia	2.34	.38	17.10		.56	.80	[2] .73	.23	7.68
Washington	2.34	.35	13.90	2.68	1.32	1.47	1.39	.11	1.27
West Virginia	.76	.31	4.43		.95	.81	.44	.22	1.50
Wisconsin	3.68	.50	11.92	5.07	2.38	.59	.58	.05	2.08
Wyoming	1.66	.24	22.82	.10	4.40	.64	[2] .15	.00	.59

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

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 99 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 30,640,000. The estimated population of the 94 cities reporting deaths is more than 30,000,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended July 16, 1927, and July 17, 1926

	1927	1926	Estimated expectancy
Cases reported			
Diphtheria:			
42 States	1,150	907	
99 cities	676	537	563
Measles:			
41 States	2,711	5,289	
99 cities	913	1,315	
Poliomyelitis:			
42 States	106	54	
Scarlet fever:			
42 States	1,442	1,335	
99 cities	486	540	346
Smallpox:			
42 States	398	299	
99 cities	54	41	57
Typhoid fever:			
41 States	866	835	
99 cities	121	127	143
Deaths reported			
Influenza and pneumonia:			
94 cities	349	363	
Smallpox:			
94 cities	0	1	
Omaha	0	1	

City reports for week ended July 16, 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.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	2	0	0	0	0	0	1	1
New Hampshire:									
Concord	22,546	0	0	0	0	0	1	0	0
Manchester	83,097	0	1	0	0	0	1	0	0
Vermont:									
Barre	10,008	1	0	0	0	0	0	0	0
Burlington	24,089	0	1	0	0	0	1	0	0
Massachusetts:									
Boston	779,620	34	38	31	0	0	87	19	12
Fall River	128,993	2	2	3	0	0	5	0	0
Springfield	142,065	2	1	0	0	0	0	2	2
Worcester	190,757	6	2	0	0	0	0	0	2
Rhode Island:									
Pawtucket	69,760	0	1	1	0	0	0	0	1
Providence	267,918	0	4	6	0	0	1	0	4
Connecticut:									
Bridgeport	[1]	1	4	15	0	1	0	0	1
Hartford	160,197	4	3	1	1	0	0	4	0
New Haven	178,927	6	1	0	0	1	10	0	1

[1] No estimate made.

City reports for week ended July 16, 1927—Continued

Division, State, and city	Population July 1, 1926, 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			
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	11	8	8	-------	0	9	8	5
New York	5,873,356	73	153	237	3	2	43	48	72
Rochester	316,786	2	5	0	-------	0	2	1	5
Syracuse	182,003	13	3	0	-------	0	77	5	0
New Jersey:									
Camden	128,642	1	2	6	0	0	0	0	0
Newark	452,513	37	8	12	0	0	6	19	3
Trenton	132,020	1	2	1	0	0	0	1	0
Pennsylvania:									
Philadelphia	1,979,364	40	44	53	-------	1	29	68	27
Pittsburgh	631,563	22	12	15	-------	1	59	4	10
Reading	112,707	5	1	2	-------	0	22	4	1
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	4	5	2	0	1	6	5	3
Cleveland	936,485	35	16	31	0	0	6	61	14
Columbus	279,836	0	2	5	0	0	0	0	3
Toledo	287,380	24	3	4	0	0	11	1	1
Indiana:									
Fort Wayne	97,846	1	1	1	0	0	0	0	0
Indianapolis	358,819	2	3	4	0	0	1	13	4
South Bend	80,091	0	1	0	0	0	2	0	0
Terre Haute	71,071	0	0	0	0	0	2	0	0
Illinois:									
Chicago	2,995,239	44	58	52	1	0	41	50	26
Springfield	63,923	2	0	1	0	0	2	1	0
Michigan:									
Detroit	1,245,824	20	33	25	0	0	6	20	11
Flint	130,316	6	2	5	0	0	8	1	3
Grand Rapids	153,698	1	2	0	0	0	13	0	2
Wisconsin:									
Kenosha	50,891	2	1	0	0	0	1	7	0
Madison	46,385	13	0	2	0	0	0	1	0
Milwaukee	509,192	24	10	9	1	1	76	26	2
Racine	67,707	3	1	4	0	0	1	2	0
Superior	39,671	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	6	0	0	0	0	4	0	0
Minneapolis	425,435	65	10	8	0	0	5	0	4
St. Paul	246,001	10	9	0	0	0	12	0	0
Iowa:									
Davenport	52,469	0	1	0	0	-------	0	0	-------
Des Moines	141,441	0	2	0	0	-------	0	0	-------
Sioux City	76,411	0	1	0	0	-------	1	0	-------
Waterloo	36,771	0	0	0	0	-------	1	0	-------
Missouri:									
Kansas City	367,481	1	2	4	0	1	8	0	5
St. Joseph	78,342	0	0	0	0	0	1	0	1
St. Louis	821,543	3	20	11	0	0	12	43	-------
North Dakota:									
Fargo	26,403	0	0	0	0	0	0	0	0
Grand Forks	14,811	0	0	0	0	-------	0	0	-------
South Dakota:									
Aberdeen	15,036	0	0	0	0	-------	0	0	-------
Sioux Falls	30,127	0	0	0	0	-------	4	0	-------
Nebraska:									
Lincoln	60,941	3	0	2	0	1	3	6	0
Omaha	211,768	0	4	3	0	0	2	2	3
Kansas:									
Topeka	55,411	1	0	1	0	0	6	0	1
Wichita	88,367	0	1	0	0	0	1	3	1
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	0	0	0	0	0	0	0	0

City reports for week ended July 16, 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			
SOUTH ATLANTIC—CON.									
Maryland:									
Baltimore	796,296	30	11	30	1	1	10	3	9
Cumberland	33,741	1	0	0	0	0	0	0	0
Frederick	12,035	1	0	0	0	0	0	0	0
District of Columbia:									
Washington	497,906	4	4	7	1	1	2	0	5
Virginia:									
Lynchburg	30,395	0	0	1	0	0	1	0	0
Norfolk	(1)	0	0	0	6	0	2	4	3
Richmond	186,403	1	1	2	0	1	9	2	5
Roanoke	58,208	1	0	0	0	0	0	0	0
West Virginia:									
Charleston	49,019	1	0	0	0	0	3	0	1
Wheeling	56,208	0	0	0	0	0	0	0	2
North Carolina:									
Raleigh	30,371	0	0	0	0	0	15	0	0
Wilmington	37,061	0	0	0	0	0	9	0	0
Winston-Salem	69,031	0	0	1	0	0	42	3	1
South Carolina:									
Charleston	73,125	0	0	0	7	0	0	1	1
Columbia	41,225	1	0	0	0		11	1	
Greenville	27,311	0	0	0	0	0	0	0	0
Georgia:									
Atlanta	(1)	0	2	0	4	0	4	4	5
Brunswick	16,809	0	0	0	0	0	0	6	0
Savannah	93,134	2	0	3	4	0	13	1	0
Florida:									
Miami	69,754	0		1	0	0	0	0	1
St. Petersburg	26,847		0			0			1
Tampa	94,743	0	0	2	0	0	1	0	2
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	1	0	0	0	0	0	1
Louisville	305,935	1	2	2	0	0	0	0	4
Tennessee:									
Memphis	174,533	0	1	2	0	0	4	0	2
Nashville	136,220	0	0	1	0	0	0	0	1
Alabama:									
Birmingham	205,670	0	1	2	0	1	2	0	3
Mobile	65,955	0	0	0	0	0	0	0	2
Montgomery	46,481	0	0	0	0	0	6	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643		0						
Little Rock	74,216	0	0	0	0	0	6	0	0
Louisiana:									
New Orleans	414,493	0	4	8	5	2	13	0	7
Shreveport	57,857	1	0	0	0	0	2	0	4
Oklahoma:									
Oklahoma City	(1)	0	0	0	2	0	3	0	1
Tulsa	124,478	0		0	0		0	0	
Texas:									
Dallas	194,450	0	2	2	0		3	0	
Galveston	48,375	0	0	1	0	0	0	0	0
Houston	164,954	0	1	6	0	0	0	0	0
San Antonio	198,069	0	1	0	0	0	1	0	4
MOUNTAIN.									
Montana:									
Billings	17,971	0	0	0	0	0	0	0	1
Great Falls	29,883	2	0	0	0	0	4	0	0
Helena	12,037	1	0	0	0	0	0	0	0
Missoula	12,668	0	0	1	0	0	1	0	1
Idaho:									
Boise	23,042	1	0	0	0	0	0	1	0
Colorado:									
Denver	280,911		8			1			
Pueblo	43,787	1	1	0	0	0	6	0	0

[1] No estimate made.

City reports for week ended July 16, 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			
MOUNTAIN—continued									
New Mexico:									
Albuquerque	21,000	0	1	0	0	0	3	0	1
Utah:									
Salt Lake City	130,948	18	2	5	0	0	3	0	2
Nevada:									
Reno	12,665	0	0	0	0	0	0	0	1
PACIFIC									
Washington:									
Seattle	(1)	5	4	8	0	--	125	7	--
Spokane	108,897	10	1	0	0	--	3	0	--
Tacoma	104,455	2	2	1	0	1	16	0	0
California:									
Los Angeles	(1)	16	33	24	5	1	15	4	15
Sacramento	72,260	0	2	1	0	0	0	0	2
San Francisco	557,530	13	11	9	2	0	12	10	11

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	0	0	0	0	0	0	1	2	0	2	20
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	7
Manchester	0	0	0	0	0	0	0	0	0	0	13
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	2
Burlington	0	0	0	0	0	0	0	0	0	0	12
Massachusetts:											
Boston	21	40	0	0	0	7	2	0	0	16	161
Fall River	1	2	0	0	0	3	1	2	1	0	30
Springfield	2	2	0	0	0	1	0	0	0	9	32
Worcester	3	4	0	0	0	2	0	3	0	4	40
Rhode Island:											
Pawtucket	0	2	0	0	0	0	0	0	0	0	19
Providence	3	4	0	0	0	6	0	0	0	0	61
Connecticut:											
Bridgeport	3	1	1	0	0	3	0	1	0	0	25
Hartford	2	1	0	0	0	0	0	0	0	6	43
New Haven	1	0	0	0	0	0	1	0	0	4	36
MIDDLE ATLANTIC											
New York:											
Buffalo	9	8	0	0	0	15	1	0	0	15	128
New York	53	108	1	0	0	[2] 109	22	17	0	106	1,222
Rochester	4	2	0	0	0	1	1	0	0	12	57
Syracuse	3	4	0	0	0	1	1	0	0	1	43
New Jersey:											
Camden	1	0	0	0	0	0	0	1	0	1	47
Newark	7	8	0	0	0	9	1	0	0	41	92
Trenton	0	0	0	0	0	1	0	2	0	1	27
Pennsylvania:											
Philadelphia	30	48	0	0	0	36	7	2	2	39	415
Pittsburgh	12	11	1	0	0	9	2	0	0	15	174
Reading	0	0	0	0	0	0	0	0	0	2	17

[1] No estimate made.

[2] Pulmonary tuberculosis only.

City reports for week ended July 16, 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		
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	5	7	0	6	0	12	2	0	0	3	113
Cleveland	14	13	2	0	0	18	2	4	0	43	196
Columbus	3	5	1	1	0	6	1	0	0	16	70
Toledo	4	2	0	0	0	3	0	4	0	18	61
Indiana:											
Fort Wayne	0	2	1	1	0	1	0	0	0	7	19
Indianapolis	3	2	2	5	0	5	1	1	0	9	94
South Bend	0	0	0	0	0	0	1	1	0	1	
Terre Haute	0	0	0	0	0	1	0	0	0	0	16
Illinois:											
Chicago	34	42	1	6	0	63	5	5	1	109	648
Springfield	1	0	0	0	0	0	1	0	0	1	24
Michigan:											
Detroit	29	28	3	1	0	27	4	0	0	107	243
Flint	2	13	0	4	0	1	0	0	0	8	26
Grand Rapids	3	7	0	2	0	1	0	1	0	1	31
Wisconsin:											
Kenosha	1	2	1	0	0	0	0	0	0	0	3
Madison	0	4	0	1	0	1	0	0	0	6	16
Milwaukee	10	8	1	0	0	1	1	0	0	18	95
Racine	2	2	1	0	0	1	0	0	0	10	7
Superior	1	3	2	0	0	0	0	0	0	0	7
WEST NORTH CENTRAL											
Minnesota:											
Duluth	3	7	1	0	0	1	0	0	1	3	21
Minneapolis	12	9	3	0	0	2	1	1	0	3	67
St. Paul	7	3	2	0	0	0	1	0	0	17	
Iowa:											
Davenport	0	0	0	0			0	0		0	
Des Moines	1	2	1	2		1	0	0		0	8
Sioux City	1	1	1	1			0	1		1	
Waterloo	1	0	0	0			0	0		0	
Missouri:											
Kansas City	2	3	1	0	0	5	2	2	0	7	76
St. Joseph	0	2	0	3	0	1	0	0	0	1	23
St. Louis	7	5	0	1	0	6	6	4	0	50	184
North Dakota:											
Fargo	1	0	0	0	0	1	0	0	0	0	11
Grand Forks	1	1	0	0			0	0		0	
South Dakota:											
Aberdeen	0	1	0	0			0	0		4	
Sioux Falls	0	0	0	0			0	0		0	
Nebraska:											
Lincoln	0	1	1	0	0	0	0	1	0	11	16
Omaha	1	5	3	0	0	1	1	0	0	1	43
Kansas:											
Topeka	1	1	0	0	0	1	1	0	0	26	17
Wichita	0	0	1	2	0	1	1	0	0	14	33
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	1	0	0	0	2	1	0	0	0	23
Maryland:											
Baltimore	7	10	0	0	0	12	6	3	0	49	197
Cumberland	1	0	0	0	0	0	0	0	0	0	9
Frederick	0	2	0	0	0	0	0	0	0	0	2
District of Columbia:											
Washington	5	5	0	1	0	10	3	2	0	5	138
Virginia:											
Lynchburg	0	1	0	0	0	0	0	0	0	1	8
Norfolk	0	5	1	0	0	2	2	1	0	0	
Richmond	1	1	0	0	0	4	2	1	0	1	57
Roanoke	0	0	0	1	0	1	1	1	0	2	10
West Virginia:											
Charleston	0	0	1	0	0	1	1	3	0	8	10
Wheeling	1	0	0	0	0	0	0	0	0	0	10
North Carolina:											
Raleigh	0	1	0	0	0	3	1	0	0	4	12
Wilmington	0	0	0	0	0	0	1	0	0	4	7
Winston-Salem	0	0	1	0	0	2	3	1	0	24	21

City reports for week ended July 16, 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		
SOUTH ATLANTIC—continued											
South Carolina:											
Charleston	0	1	0	0	0	4	2	3	0	0	28
Columbia	0	0	0	0		1	1	0		2	14
Greenville	0	0	0	0	0	0	1	0	0	2	4
Georgia:											
Atlanta	1	0	3	2	0	3	3	7	1	6	73
Brunswick	0	0	0	0	0	0	1	0	0	0	3
Savannah	0	4	0	1	0	4	1	1	0	3	26
Florida:											
Miami	0	1	0	0	0	0		1	0	3	31
St. Petersburg	0		0	1	0	0	0		0		16
Tampa	0	0	0	0	0	0	0	1	0	0	24
EAST SOUTH CENTRAL											
Kentucky:											
Covington	0	0	0	0	0	2	0	0	0	0	17
Louisville	2	2	0	1	0	3	5	3	0	5	72
Tennessee:											
Memphis	0	2	1	1	0	10	6	8	0	10	72
Nashville	0	2	1	0	0	4	6	14	2	3	39
Alabama:											
Birmingham	1	0	1	3	0	5	4	4	0	9	71
Mobile	0	0	1	0	0	0	0	1	1	0	18
Montgomery	0	0	1	0	0	0	1	0	0	0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1		0				2				
Little Rock	0	0	1	0	0	0	2	0	0	0	
Louisiana:											
New Orleans	1	3	0	0	0	12	4	4	1	5	163
Shreveport	0	0	1	0	0	3	0	0	0	7	30
Oklahoma:											
Oklahoma City	1	2	1	0	0	1	2	0	0	0	19
Tulsa		1		0				0		0	
Texas:											
Dallas	1	2	0	1			3	6		0	
Galveston	0	0	0	0	0	1	1	0	0	0	14
Houston	1	2	0	1	0	4	2	1	1	0	51
San Antonio	0	2	0	0	0	5	1	1	0	0	52
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	7	6
Great Falls	0	4	0	1	0	0	0	0	0	0	7
Helena	0	0	0	1	0	1	0	0	0	0	5
Missoula	0	0	0	0	0	0	0	1	0	2	6
Idaho:											
Boise	1	0	1	0	0	0	0	0	0	0	6
Colorado:											
Denver	6		2		0	9	1		0		68
Pueblo	0	3	0	0	0	1	0	0	0	0	10
New Mexico:											
Albuquerque	0	1	0	0	0	2	0	1	0	0	
Utah:											
Salt Lake City	1	4	0	2	0	1	0	1	0	28	16
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	4
PACIFIC											
Washington:											
Seattle	5	2	3	1			1	0		14	
Spokane	1	3	3	1			1	0		0	
Tacoma	1	0	2	1	0	1	0	0	0	0	15
California:											
Los Angeles	9	10	4	0	0	25	4	1	0	11	239
Sacramento	1	0	0	2	0	5	0	2	0	5	25
San Francisco	5	4	1	0	0	12	1	0	0	14	124

City reports for week ended July 16, 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
NEW ENGLAND									
Massachusetts:									
Boston	1	2	0	0	0	0	0	1	0
Springfield	0	0	0	0	0	0	0	1	0
Worcester	0	0	1	1	0	0	0	0	0
Connecticut:									
Bridgeport	0	0	0	0	0	0	0	1	0
Hartford	1	0	0	0	0	0	0	0	0
New Haven	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
New York	1	2	4	5	0	0	3	3	0
Pennsylvania:									
Philadelphia	2	1	0	0	1	1	0	0	1
Pittsburgh	0	0	1	1	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland	0	1	0	0	0	0	0	0	0
Columbus	0	0	0	2	0	0	0	0	0
Illinois:									
Chicago	5	5	1	0	0	0	1	5	1
Michigan:									
Detroit	2	0	1	0	0	0	1	1	0
Wisconsin:									
Milwaukee	0	0	1	1	0	0	0	0	0
WEST NORTH CENTRAL									
Iowa:									
Waterloo	1		0		0		0	0	
Missouri:									
Kansas City	0	0	0	0	0	0	0	2	0
St. Louis	1	1	0	0	0	0	1	1	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	2	2	1	1	0	0	1	0	0
Virginia:									
Richmond	0	0	0	0	0	1	0	0	0
North Carolina:									
Winston-Salem	0	0	0	0	2	0	0	0	0
South Carolina:									
Charleston [1]	0	0	0	0	1	3	0	0	0
Columbia	0	0	0	0	0	3	0	0	0
Georgia:									
Atlanta	0	0	0	0	0	2	0	0	0
Savannah	0	0	0	0	4	0	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington	0	1	0	0	0	0	0	0	0
Tennessee:									
Memphis [2]	0	0	0	0	0	1	0	0	0
Alabama:									
Mobile	0	0	0	0	0	1	0	0	0
Montgomery	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	0	0	1	1	2	0	0	4	1
Shreveport	0	0	0	0	0	2	0	0	0

[1] Dengue: 13 cases at Charleston, S. C.
[2] Rabies (human): 1 case and 1 death at Memphis, Tenn.

City reports for week ended July 16, 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
WEST SOUTH CENTRAL—continued									
Oklahoma:									
Oklahoma City	0	0	0	0	0	0	0	1	0
Texas:									
Galveston	0	0	0	0	0	1	0	0	0
Houston	1	1	0	0	2	2	0	0	0
MOUNTAIN									
Montana:									
Billings	0	1	0	0	0	0	0	0	0
New Mexico:									
Albuquerque	0	0	0	0	0	0	0	1	0
Utah:									
Salt Lake City	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Seattle	0	----	0	----	0	----	0	1	----
California:									
Los Angeles	1	2	0	0	0	1	1	7	0
Sacramento	0	1	0	0	0	0	0	0	0
San Francisco	1	0	0	0	0	0	0	3	0

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended July 16, 1927, compared with those for a like period ended July 17, 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, June 12 to July 16, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927
101 cities	113	151	130	162	[2] 122	140	102	[3] 123	94	[4] 115
New England	78	118	59	116	64	88	57	[5] 92	78	132
Middle Atlantic	125	217	152	270	164	212	120	197	101	165
East North Central	131	142	162	132	117	119	106	102	110	93
West North Central	169	79	192	46	125	60	93	[6] 39	107	54
South Atlantic	67	118	45	107	82	143	65	[7] 86	32	83
East South Central	16	41	10	36	[2] 22	20	5	41	21	36
West South Central	43	55	43	67	47	122	43	[8] 52	26	[8] 73
Mountain	146	207	118	153	155	126	118	108	109	[9] 108
Pacific	102	115	131	113	129	76	179	86	158	113

MEASLES CASE RATES

101 cities	749	361	619	302	[2] 461	272	311	[3] 196	226	[4] 155
New England	493	406	425	327	318	341	245	[5] 322	179	241
Middle Atlantic	586	281	477	247	314	201	211	154	129	122
East North Central	1,003	261	838	214	739	206	481	182	412	110
West North Central	1,264	248	942	216	605	204	417	[6] 88	192	105
South Atlantic	818	694	695	531	432	447	291	[7] 249	201	221
East South Central	693	132	610	132	[2] 428	82	284	76	171	61
West South Central	77	268	95	190	52	151	47	[8] 116	17	[8] 108
Mountain	702	342	793	450	437	494	264	135	191	[9] 251
Pacific	597	971	482	843	458	775	335	539	327	448

SCARLET FEVER CASE RATES

101 cities	233	198	212	190	[2] 170	128	127	[3] 100	94	[4] 83
New England	203	265	236	287	186	221	158	[5] 182	99	130
Middle Atlantic	222	224	210	223	188	149	129	123	73	91
East North Central	273	216	251	209	187	132	145	91	119	89
West North Central	484	163	357	159	270	89	206	[6] 94	186	71
South Atlantic	130	82	151	96	65	82	63	[7] 56	45	56
East South Central	47	71	47	82	[2] 66	56	52	46	52	31
West South Central	69	8	30	38	60	17	34	[8] 43	52	[8] 39
Mountain	128	665	118	441	91	288	55	117	91	[9] 197
Pacific	214	181	158	139	150	86	121	60	94	50

SMALLPOX CASE RATES

101 cities	11	19	16	16	[2] 11	18	7	[3] 16	7	[4] 9
New England	0	0	0	0	0	0	0	[5] 0	0	0
Middle Atlantic	0	0	0	0	2	0	0	0	1	0
East North Central	10	21	14	12	10	21	7	15	6	17
West North Central	32	30	44	58	26	38	28	[6] 33	26	14
South Atlantic	30	36	26	29	11	18	9	[7] 24	6	9
East South Central	10	56	88	56	[2] 38	36	0	51	5	25
West South Central	26	13	17	13	21	13	4	[8] 0	13	[8] 9
Mountain	27	54	18	90	55	63	9	45	9	[9] 72
Pacific	24	65	32	21	19	73	24	73	21	13

[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] Covington, Ky., not included.
[3] Bridgeport, Conn., Sioux City, Iowa, Savannah, Ga., and Fort Smith, Ark., not included.
[4] Fort Smith, Ark., and Denver, Colo., not included.
[5] Bridgeport, Conn., not included.
[6] Sioux City, Iowa, not included.
[7] Savannah, Ga., not included.
[8] Fort Smith, Ark., not included.
[9] Denver, Colo., not included.

Summary of weekly reports from cities, June 12 to July 16, 1927—Annual rates per 100,000 population, compared with rates for the corresponding period of 1926—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	June 19, 1926	June 18, 1927	June 26, 1926	June 25, 1927	July 3, 1926	July 2, 1927	July 10, 1926	July 9, 1927	July 17, 1926	July 16, 1927
101 cities	11	13	12	11	[2] 16	15	13	[2] 17	22	[4] 21
New England	19	12	[5] 9	2	12	7	9	[5] 15	12	19
Middle Atlantic	9	6	10	4	11	6	7	8	11	11
East North Central	3	8	4	6	5	5	5	5	6	8
West North Central	10	6	4	6	10	8	16	[6] 10	14	16
South Atlantic	28	27	30	40	35	22	43	[7] 36	58	43
East South Central	21	32	36	61	[2] 126	132	52	163	165	153
West South Central	30	38	30	21	13	75	30	[8] 17	56	[8] 52
Mountain	0	18	0	18	27	9	0	18	[9] 0	[8] 36
Pacific	8	8	16	8	21	16	13	10	21	8

INFLUENZA DEATH RATES

95 cities	7	6	5	7	[2] 6	3	4	[10] 3	4	[11] 3
New England	9	2	0	5	5	5	7	[5] 2	0	5
Middle Atlantic	9	5	6	6	7	2	1	4	4	2
East North Central	3	5	3	5	5	3	7	3	4	1
West North Central	4	2	6	10	8	2	0	0	0	2
South Atlantic	4	9	6	2	8	6	0	[7] 4	6	8
East South Central	16	5	5	25	[2] 0	0	16	15	21	5
West South Central	22	17	22	4	13	4	4	[12] 0	9	[11] 10
Mountain	0	9	0	27	9	9	0	0	9	18
Pacific	4	0	0	10	4	3	4	3	4	7

PNEUMONIA DEATH RATES

95 cities	87	87	73	74	[2] 75	73	67	[10] 60	60	[11] 57
New England	87	107	68	86	92	60	54	[5] 60	57	56
Middle Atlantic	95	95	83	85	90	71	73	64	74	61
East North Central	74	86	60	71	61	80	65	49	46	45
West North Central	74	48	44	52	38	77	53	54	36	31
South Atlantic	112	61	95	46	89	57	72	[7] 59	55	63
East South Central	98	71	124	56	[2] 121	97	119	82	109	66
West South Central	66	95	71	43	53	73	53	[12] 99	79	[11] 78
Mountain	100	153	109	54	46	90	36	99	36	197
Pacific	74	100	42	131	42	69	53	55	46	97

[2] Covington, Ky., not included.
[4] Bridgeport, Conn., Sioux City, Iowa, Savannah, Ga., and Fort Smith, Ark., not included.
[5] Fort Smith, Ark., and Denver, Colo., not included.
[6] Bridgeport, Conn., not included.
[7] Sioux City, Iowa, not included.
[8] Savannah, Ga., not included.
[9] Fort Smith, Ark., not included.
[10] Denver, Colo., not included.
[11] Bridgeport, Conn., Savannah, Ga., Dallas, Tex., and San Antonio, Tex., not included.
[12] Dallas, Tex., not included.
[13] Dallas, Tex., and San Antonio, Tex., 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	95	30,443,800	30,966,700	29,783,700	30,295,900
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,650,200	7,810,600	7,650,200	7,810,600
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,000	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended July 9, 1927.—The following report for the week ended July 9, 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.

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Iraq: Basra	0	0	0	0	1	1
Ceylon: Colombo	0	0	0	0	1	0
British India:						
Bombay	----	5	----	2	21	17
Vizagapatam	----	0	----	0	2	1
Calcutta	----	0	----	12	11	10
Bassein	----	5	----	13	0	0
Rangoon	----	3	----	1	12	1
Siam: Bangkok	0	0	1	0	3	0
French Indo-China:						
Saigon and Cholon	0	0	1	1	0	0
Tourane	0	0	2	1	0	0
Haiphong	0	0	7	7	0	0
Hong Kong	0	0	0	0	1	1
China: Canton	0	0	1	1	0	0
Manchuria:						
Mukden	0	0	0	0	1	0
Changchun	0	0	0	0	1	0
Japan: Nagasaki	0	0	0	0	17	4

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

ASIA

Arabia.—Jeddah, Aden, Perim.

Persia.—Mohammerah, Bender-Abbas, Bushire, Lingah.

British India.—Karachi, Chittagong, Cochin, Tuticorin, Negapatam, Madras, Moulmein.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham.

Straits Settlements.—Singapore, Penang.

Dutch East Indies.—Batavia, Banjermasin, Pontianak, Semarang, Menado, Cheribon, Makassar, Balikpapan, Padang, Palembang, Surabaya, Belawan-Deli, Tarakan, Sabang.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

China.—Amoy, Shanghai, Tientsin, Tsingtao.

Macao.

Formosa.—Keelung, Takao.

Chosen.—Chemulpo, Fusan.

Manchuria.—Yingkow, Antung, Harbin.

Kwantung.—Port Arthur, Dairen.

Japan.—Yokohama, Niigata, Shimonoseki, Moji, Tsuruga, Kobe, Osaka, Hakodate.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island, Cairns.

AUSTRALASIA AND OCEANIA—continued

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

Samoa.—Apia.

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Port Said, Alexandria, Suez.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Djibouti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Zanzibar.—Zanzibar.

Kenya.—Mombasa.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reunion.—Saint Denis.

Mauritius.—Port Louis.

Madagascar.—Majunga, Tamatave, Diego-Saurez.

AMERICA

Panama.—Colon, Panama.

Reports had not been received in time for publication from—

Arabia.—Kamaran.
Dutch East Indies.—Samarinda.
U. S. S. R.—Vladivostok.

Belated information:

Week ended June 25: *Karikal*, 2 fatal cholera cases.
Week ended July 2: *Karikal*, 6 cholera cases and 5 deaths.

Movement of infected ships:

Penang.—The pilgrim ships *Antilochus* and *Adrastus* arrived from Jeddah infected with smallpox.

The following information has been received by cable from the Sanitary, Maritime and Quarantine Council of Egypt:

Pilgrims are beginning to arrive at El Tor from Medina via Yambo. The reports of health conditions at Medina are satisfactory. The last weekly bulletin from Jeddah and Mecca reports 11 cases of smallpox. The number of pilgrims who arrived at El Tor during the week ending July 13 was 2,697. No cases of infectious diseases were reported.

ANGOLA

Influenza—Malaria—April, 1927.—During the month of April, 1927, influenza was reported present in Angola, West Africa, with 1,302 reported cases, of which 880 cases were reported from the coast districts, 136 from the land frontier districts, and 286 from the interior, occurring in the districts of Cuanza-Norte, Malanje, and Bié.

Malaria.—During the same period 562 cases of malaria were reported in Angola, the occurrence being distributed as follows: Coast districts, 306 cases; land frontier, 172; the three interior provinces of Cuanza-Norte, Malanje, and Bié, 84. At the city of Loanda, during the last two weeks of April, 1927, 77 cases were reported in a population of 20,000.

May 1–15, 1927.—During the first half of May, 1927, continued prevalence of malaria was reported in Angola, with diminished prevalence at Loanda and other seaports, but with extension in interior districts. Many cases were reported throughout the colony.

CANADA

Communicable diseases—Week ended July 16, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases from six Provinces of Canada for the week ended July 16, 1927 as follows:

Disease	Nova Scotia	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Influenza	6						6
Lethargic encephalitis				1			1
Smallpox			12	4	7	13	36
Typhoid fever		47	12				59

Communicable diseases—Quebec—Two weeks ended July 23, 1927.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the two weeks ended July 23, 1927, as follows:

WEEK ENDED JULY 16, 1927

Disease	Cases	Disease	Cases
Chicken pox	20	Scarlet fever	43
Diphtheria	34	Smallpox	2
German measles	3	Tuberculosis	47
Influenza	2	Typhoid fever	47
Measles	43	Whooping cough	60

WEEK ENDED JULY 23, 1927

Cerebrospinal meningitis	1	Scarlet fever	27
Chicken pox	12	Smallpox	4
Diphtheria	32	Tuberculosis	19
German measles	2	Typhoid fever	30
Measles	21	Whooping cough	16

Typhoid fever—Montreal—January 2–July 23, 1927.—The following table gives the number of cases of typhoid fever and deaths from this disease reported at Montreal, Quebec, Canada, since January 1, 1927:

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

CUBA

Communicable diseases—Provinces—April 17–June 18, 1927.—Cases of disease were notified in the Provinces of Cuba for nine weeks ending June 18, 1927, as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguay	Oriente	Total
Cerebrospinal meningitis						1	1
Chicken pox		94	13	23	24	85	239
Diphtheria	3	22	8	3	5	5	46
Malaria	17	94	3	3	81	1,210	1,408
Measles	17	122	25	51	8	1	224
Scarlet fever		10	5				15
Paratyphoid fever	4	19	7	10	15	8	63
Tetanus	1					1	2
Typhoid fever	31	179	29	86	19	69	413

EGYPT

Communicable diseases—May 28–June 17, 1927.—During the period May 28 to June 17, 1927, communicable diseases were reported in Egypt as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Influenza	112		Typhoid fever	143	
Smallpox	5	1	Typhus fever	79	16

Plague—June 18–24, 1927.—During the week ended June 24, 1927, two cases of plague, occurring in the city of Port Said, were reported in Egypt.

Summary—January 1–June 24, 1927.—During the period January 1 to June 24, 1927, 44 cases of plague were reported in Egypt, as compared with 30 cases reported during the corresponding period of the preceding year.

IRISH FREE STATE

Typhus fever—Cork—July 3–9, 1927.—During the week ended July 9, 1927, a case of typhus fever was reported in the urban district of Cork County Borough, Irish Free State.

MADAGASCAR

Plague—April 16–30, 1927.[1]—During the two weeks ended April 30, 1927, 72 cases of plague with 67 deaths were reported in Madagascar. The occurrence was distributed in the five Provinces of the island as follows: Ambositra—cases and deaths, each, 25; Antisirabe—2 cases, 2 deaths; Miarinarivo (Itasy)—cases and deaths, 7; Moramanga—cases and deaths, 4; Tananarive—cases 34, deaths 29. The distribution of occurrence according to type was as follows: Bubonic, 40; pneumonic, 15; septicemic, 17. Mortality for the several types of the disease was—bubonic, 35 deaths; pneumonic, 15; septicemic, 17.

SENEGAL

Plague.—Under date of July 6, 1927, 8 cases of plague with 6 deaths, occurring during the week ended July 3, 1927, were reported at Dakar. At Rufisque 15 cases with 8 deaths were reported, occurring in suburbs, and in districts occurrence was reported as follows: Facel—17 cases, 8 deaths; M'Bour—28 cases, 21 deaths; Thies—1 case, 1 death. At Tivaouane 5 cases with 2 deaths were reported.

Yellow fever.—Under date of July 6, 1927, one case of yellow fever with one death was reported at M'Bour, occurring in a Syrian.

[1] Public Health Reports, July 22, 1927, p. 1933.

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 lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended August 5, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Kulangsu	June 21	1		
Shanghai	June 19–25	2		In International Settlement.
Swatow	June 12–18	7		Prevalent.
India				May 29–June 4, 1927: Cases, 7,787; deaths, 5,573.
Calcutta	June 12–18	77	43	
Madras	June 19–25	5	3	
Rangoon	June 12–18	1		May 29–June 4, 1927: One case, one death. Out of date.
Siam				June 5–11, 1927: Cases, 17; deaths, 14. Apr. 1–June 11, 1927: Cases, 498; deaths, 342.
Bangkok	June 5–11	3	2	District.

PLAGUE

Ceylon:				
Colombo	June 5–11	2	1	
Egypt				June 18–24, 1927: Cases, 2. Jan. 1–June 24, 1927: Cases, 44; corresponding period, 1926–cases, 30.
Port Said	June 18–24	2		
India				May 29–June, 4, 1927: Cases, 237; deaths, 149.
Bombay	June 19–25	6	5	
Madras Presidency	May 29–June 4	36	13	
Rangoon	June 12–18	1	1	
Madagascar				Apr. 16–30, 1927: Cases, 72; deaths, 67.
Province—				
Ambositra	Apr. 16–30	25	25	Bubonic.
Antisirabe	do	2	2	Pneumonic; septicemic.
Miarinarivo	do	7	7	Bubonic and septicemic, each, 3; pneumonic, 1.
Moramanga	do	4	4	Bubonic.
Tananarive	do	34	29	Bubonic, 17; pneumonic, 13; septicemic, 4. Including Tananarive Town: bubonic, 1; pneumonic, 2.
Senegal:				
Dakar	June 27–July 3	8	6	
Facel	July 6	17	8	District.
M'Bour	do	28	21	Do.
Rufisque	do	15	8	In suburbs.
Thies	do	1	1	District.
Tivaouane	do	5	1	
Siam				June 5–11, 1927: Cases, 1. Apr. 1–June 11, 1927; cases, 9; deaths, 7.
Bangkok	June 5–11	1		District.

SMALLPOX

Algeria:				
Algiers	June 21–30	1		
Oran	July 1–10	8		
Brazil:				
Rio de Janeiro	June 12–18	1	1	
British South Africa:				
Northern Rhodesia	June 11–17	2		Natives.
Canada:				
Alberta	July 10–16	7		
Manitoba	do	4		
Ontario	do	12		
Toronto	July 17–23	1		
Quebec	July 10–23	6		
Saskatchewan	July 10–16	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 During Week Ended August 5, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
China:				
Foochow	June 5-11			Present.
Hong Kong	June 12-18	1	1	
Manchuria—				
Dairen	May 9-22	3	1	
Harbin	June 13-19	1		
South Manchurian Ry.:				
Changchun	June 19-25	1		
Mukden	June 12-25	2		
Ssupingkai	June 12-18	1		
Egypt				May 28-June 17, 1927: Cases, 5; deaths, 1.
Cairo	Feb. 5-11	1		
Great Britain	June 19-July 9	672		
Sheffield	June 26-July 9	6		
India				May 29-June 4, 1927: Cases, 5,984; deaths, 1,396.
Bombay	June 19-25	37	24	
Calcutta	June 12-18	32	24	
Karachi	June 19-25	1		Imported.
Madras	do	1	1	
Rangoon	May 29-June 4	23	7	Received out of date.
Do	June 12-18	14	5	
Japan:				
Nagasaki	June 20-26	1	1	
Do	June 27-July 3	3		
Taiwan Island	May 21-31	1		
Java:				
East Java and Madura	May 8-21	4	2	
Mexico:				
La Oroya	Apr. 1-June 30			Present. Many deaths; number not known.
San Luis Potosi	July 10-16		1	
Portugal:				
Lisbon	July 3-9	1		
Siam				June 5-11, 1927: Cases, 27; deaths, 1. Apr. 1-June 11, 1927: Cases, 90; deaths, 22.
Straits Settlements:				
Singapore	May 22-28	1	1	
Sumatra:				
Medan	June 5-11	2		

TYPHUS FEVER

Algeria:				
Oran	June 21-30	8		
Egypt	May 28-June 17	79	16	
Alexandria	June 25-July 1	5	2	
Greece				May 1-30, 1927: Cases, 11.
Irish Free State (Ireland):				
Cork County	July 3-9	1		In urban district.
Poland				May 15-21, 1927: Cases, 107; deaths, 9.
Union of South Africa:				
Cape Province—				
Albany District	June 5-11			Outbreaks.
Natal—				
Impendhle District	do			Do.

Reports Received from June 25 to July 29, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Amoy	May 22-28	1	1	
Swatow	May 15-June 11	7	8	
India	Apr. 17-May 28			Cases, 30,334; deaths, 16,287.
Bombay	May 8-June 4	2	1	
Calcutta	do	319	204	
Karachi	May 29-June 4	1	1	
Rangoon	May 8-June 11	13	10	

[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 July 29, 1927—Continued

CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
India, French Settlements in	Mar. 30–Apr. 30	4	2	
Indo-China (French):				
Saigon	Apr. 30–June 3	127	92	Including Cholon.
Philippine Islands:				
Bulacan Province	June 7	1		At Mambog, Malalos.
Leyte Province—				
Palo	May 18	1		
Siam	May 1–June 4			Cases, 107; deaths, 48.
Bangkok	do	26	7	

PLAGUE

Argentina:				
Formosa	Reported July 6	3		
Azores:				
St. Michaels Island	May 15–June 3	2		
British East Africa:				
Kenya	Apr. 24–May 7	7	14	
Tanganyika	Mar. 29–May 7		36	
Uganda	Jan. 1–Feb. 28	138	121	
Do	Mar. 27–May 14	72	57	
Canary Islands:				
Laguna District—				
Tejina	June 17	1		
Ceylon:				
Colombo	May 1–June 4	11	7	Plague rats, 4.
Egypt	May 21–June 22			Cases, 4; deaths, 1.
Alexandria	June 4–10	1		
District—				
Biba	do	1		At Nana.
Beni-Souef	do	1		
Port Said	June 22	1	1	
Tanta District	June 4–10	1		
Greece	May 1–31	1	1	
Patras	May 30–June 11	4		
India	Apr. 17–May 28			Cases, 20,657; deaths, 7,579.
Bombay	May 8–June 11	62	56	
Madras	May 1–21	21	9	
Rangoon	May 8–June 11	18	16	
Indo-China (French)	Apr. 1–May 10	7		
Iraq:				
Baghdad	Apr. 8–16	3	1	
Java:				
Batavia	May 1–June 11	87	88	Province.
East Java and Madura	May 22–28	6	6	
Pasoeroean Residency	May 9			Outbreak reported at Ngadiwono.
Surabaya	Apr. 17–May 7	24	24	
Madagascar				Mar. 16–Apr. 15, 1927: Cases, 184; deaths, 168.
Province—				
Ambositra	Mar. 16–Apr. 15	32	27	
Antisirabe	do	6	6	
Miarinarivo (Itasy)	do	32	32	
Moramanga	do	8	8	
Tananarive	do	102	91	
Tananarive Town	do	6	6	
Peru	Apr. 1–May 31			Cases, 22; deaths, 8.
Departments—				
Ica	Apr. 1–30	1		
Lambayeque	do	1		
Libertad	Apr. 1–May 31	7	4	
Lima	do	13	4	
Lima City	Apr. 1–30	5	1	
Senegal	May 23–June 26			Cases, 77; deaths, 25.
Baol	June 2–19	4	1	
Dakar	June 20–26	5	3	
Guindel	do	11	2	
Medina	June 13–19	2	2	
Rufisque	May 23–June 26	44	27	
Thies District	do	20	6	
Tivaouane	June 2–19	7	3	
Siam	Apr. 1–May 21			Cases, 8; deaths, 7.
Bangkok	May 8–14	1	1	
Tunisia	Reported May 20	15		In districts of Sfax and Susa.

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

Reports Received from June 25 to July 29, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Turkey:				
Constantinople	May 13–19	1		
Union of South Africa:				
Cape Province—				
Maraisburg district	May 1–14	2	2	Native.

SMALLPOX

Algeria	Apr. 21–May 10	168		
Algiers	May 11–20	4		
Oran	May 21–June 30	34		
Brazil:				
Rio de Janiero	May 22–June 11	3	3	
British East Africa:				
Kenya	Apr. 24–May 14	7	14	
Tanganyika	Mar. 29–May 7		22	
British South Africa:				
Northern Rhodesia	Apr. 30–June 3	32		Native.
Canada	June 5–July 9			Cases, 173.
Alberta	June 12–July 9	48		
Calgary	June 12–25	5		
British Columbia—				
Vancouver	May 23–29	2		
Manitoba	June 5–July 9			Cases, 10.
Winnipeg	June 12–July 15	12		
Ontario	June 5–July 9			Cases, 99.
Ottawa	June 12–July 16	34		
Toronto	June 19–July 16	8		
Quebec	do	7		
Saskatchewan	June 12–July 2	16		
Ceylon	May 1–7			Cases, 3; deaths, 1.
China:				
Amoy	May 8–28	1		
Chefoo	May 8–14			Present.
Foochow	do			Do.
Hong Kong	May 8–June 11	12	13	
Manchuria—				
Anshan	May 22–28	1		
Changchun	May 15–June 5	3		
Dairen	May 2–8	3	3	
Fushun	May 15–June 5	9		
Mukden	May 22–28	2		
Ssupingkai	May 8–14	1		
Tientsin	May 8–28	11		
Chosen	Feb. 1–Apr. 30	354	84	
Chinnampo	Apr. 1–May 31	2		
Fusan	Apr. 1–30	1		
Gensan	May 1–31	1		
Seishin	Apr. 1–30	1		
Curaçao	May 29–June 4	1		Alastrim.
Egypt	May 7–27			Cases, 12; deaths, 2.
Alexandria	May 21–June 17	4	1	
Cairo	Jan. 22–28	3		
France	Apr. 1–30			Cases, 66.
Paris	May 21–June 30	8	2	
Gold Coast	Mar. 1–30	18	4	
Great Britain:				
England and Wales	May 22–June 18			Cases, 982.
Bradford	May 29–June 11	2		
Cardiff	June 19–July 2	4		
Liverpool	do	1		
London	May 15–June 18	2		
Newcastle on Tyne	June 12–July 2	2		
Sheffield	June 12–25	12		
Scotland—				
Dundee	May 29–July 2	5		
India	Apr. 17–May 28			Cases, 33,664; deaths, 8, 535.
Bombay	May 28–June 11	75	49	
Calcutta	May 8–June 11	238	182	
Karachi	May 15–June 4	7	5	
Madras	May 22–June 18	7	2	
Rangoon	May 8–June 11	88	26	
India, French Settlements in	Mar. 20–Apr. 30	96	59	

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

Reports Received from June 25 to July 29, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Indo-China (French)	Mar. 21–Apr. 10	190		
Saigon	May 14–20	1	1	
Iraq:				
Baghdad	Apr. 10–16	2		
Basra	do	1		
Italy	Apr. 10–May 7	5		
Jamaica	May 29–June 25	9		Reported as alastrim.
Japan	Apr. 3–May 7	19		
Nagasaki City	Reported July 9	20		
Java:				
Batavia	May 22–28	1		
East Java and Madura	Apr. 24–30	1		
Latvia	Apr. 1–30	1		
Mexico:				
Durango	June 1–30		1	
San Luis Potosi	May 29–July 2		6	
Tampico	June 1–10	1	1	
Morocco	Apr. 1–30	55		
Netherlands India:				
Borneo—				
Holoe Soengei	Apr. 21			Epidemic in two localities.
Persia:				
Teheran	Feb. 21–Apr. 20		5	
Poland	Apr. 10–May 14	6		
Portugal:				
Lisbon	May 29–July 2	11	1	
Siam	May 1–June 4			Cases, 12; deaths, 7.
Bangkok	May 15–28	4	2	
Spain:				
Valencia	May 29–June 4	2		
Straits Settlements:				
Singapore	Apr. 1–May 21	3	1	
Tunisia	Apr. 1–May 14	5		
Tunis	June 1–10	1		
Union of South Africa:				
Transvaal—				
Barberton District	May 1–7			Outbreaks.

TYPHUS FEVER

Algeria	Apr. 21–May 10	109	16	
Algiers	May 11–June 10	21		
Oran	May 21–June 30	22		
Bulgaria	Mar. 1–31	58	6	
Sofia	June 4–10	1		
Chile:				
Concepcion	May 29–June 4		1	
Ligua	Mar. 16–31	2		
China:				
Manchuria—				
Mukden	May 29–June 4	1		
Chosen	Feb. 1–Apr. 30			Cases, 330; deaths, 30.
Chemulpo	May 1–31	4		
Gensan	do	1		
Seoul	Apr. 1–May 31	9		
Czechoslovakia				Apr. 1–30, 1927: Cases, 21.
Egypt:				
Alexandria	May 21–June 3	3	1	
Cairo	Jan. 15–21	1		
Estonia	Apr. 1–30			Case, 1.
Iraq:				
Baghdad	Apr. 24–30	1		
Latvia	Apr. 1–30	12		
Mexico	Feb. 1–28			Deaths, 26.
Mexico City	May 29–June 11	7		Including municipalities in Federal District.
Morocco	Apr. 1–May 7	249		
Palestine	May 24–June 6			Cases, 3.
Haifa	do	2		
Mahnaim	May 17–23	1		In Safad District.
Safad	May 17–June 20	3		
Peru:				
Arequipa	Apr. 1–30		1	
Poland	Apr. 10–May 14	642	60	
Portugal:				
Lisbon	May 29–June 4	1		

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

Reports Received from June 25 to July 29, 1927—Continued

TYPHUS FEVER—Continued

Place	Date	Cases	Deaths	Remarks
Rumania	Apr. 3–May 7	583	41	
Tunisia	Apr. 21–May 10	78		
Turkey:				
Constantinople	May 13–19		2	
Union of South Africa	Apr. 1–30			Cases, 55; deaths, 8, native. In Europeans, cases, 2.
Cape Province	Apr. 1–May 18	42	5	
East London	May 22–28	1		
Glen Grey District	May 1–7			Outbreaks.
Qumbu District	do			Do.
Natal	Apr. 1–May 21	7	3	
Orange Free State	Apr. 1–May 28	5		
Transvaal	Apr. 1–30	1		
Yugoslavia	May 1–31			Cases, 4.

YELLOW FEVER

Liberia:				
Monrovia	May 29–July 8	4	5	
Senegal	May 27			Cases, 3.
M'Bour	May 27–June 19	5	5	
Ouakam	June 2–8	1	1	
Tivaouane	May 27–June 8	5	5	