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MENINGOCOCCUS MENINGITIS IN THE UNITED STATES, 1928

During the first 12 weeks of 1928, more cases of meningococcus meningitis were reported in the United States than were reported during the corresponding period of 1926 or 1927. However, the total number of cases is small in proportion to the population, and some of the increase may be accounted for by better reporting, resulting in the recording of a larger percentage of the cases which occurred in 1928 than was recorded for the other years.

The figures for 42 States, having a population of about 105,000,000, are as follows:

Cases of meningococcus meningitis reported by 42 States, January 1 to March 24, 1928, inclusive, and corresponding periods of 1926 and 1927

	Cases
1926	562
1927	698
1928	1,179

The highest prevalence is reported from the Mountain States and the lowest case rates are in the South Atlantic States.

The following table shows the distribution of the cases and the case rates in different sections of the country.

Cases of meningococcus meningitis reported during the first 12 weeks of 1928, with annual rates per 100,000 population, by geographical divisions

	Number of cases	Rate per 100,000
New England (5 States)	40	2.23
Middle Atlantic (3 States)	229	3.96
East North Central (4 States)	203	4.88
West North Central (7 States)	153	5.03
South Atlantic (6 States and District of Columbia)	35	1.30
East South Central (3 States)	35	2.22
West South Central (4 States)	59	2.18
Mountain (7 States)	282	32.06
Pacific (3 States)	143	8.84
Total (42 States and District of Columbia)	1,179	4.86

ALCOHOLISM AND DRUG ADDICTION AS SEEN IN UNITED STATES MARINE HOSPITALS

By H. McG. Robertson, *Surgeon, United States Public Health Service*

This brief report was intended, primarily, to cover this subject as personally known to the writer at the United States Marine Hospital in Chelsea (Boston), Mass., for the period July 1, 1924, to June 30, 1927. However, as figures covering all hospital operation of the Public Health Service for the three fiscal years were easily available, it is deemed advisable to set forth all the data in a report separate from the annual reports of the service. In giving the figures bearing on these two causes for hospitalization, no comparison is made with former years, neither before nor after the eighteenth amendment went into effect, nor before more stringent efforts were made to curb the narcotic evil. Neither is any comparison attempted with figures from other hospitals during the same period. It is believed that anyone interested may easily make these comparisons.

In regard to the types of patients treated by the Public Health Service in its marine hospitals and in its many contract hospitals, it may be said that they are practically all adult males, usually between the ages of 18 and 50 years. No children of either sex are admitted, and women constitute much less than 1 per cent of all patients. In the service at large approximately 65 per cent of the persons hospitalized are from American merchant vessels; about 12.5 per cent are from the Coast Guard, while the remainder are from the Veterans' Bureau, United States Employees' Compensation Commission, and other Government services whose personnel are legally entitled to treatment by the Public Health Service. American merchant vessels and the Coast Guard furnish, it is seen, about 77.5 per cent of the patients. It is probably correct to say that 2.5 per cent of these represent officers of the two services, while the remaining 75 per cent—or three-fourths of all patients treated—are from the crews of merchant vessels and from the enlisted personnel of the Coast Guard. These men are usually employed at a reasonable wage and may be assumed to possess some money, for a time at least, after reaching port. It may be mentioned that it is with this personnel that tradition has long associated "hard drinking" and other forms of debauchery. Here again no comparison is attempted with other types of workers, but the figures seem to speak well for the "seamen."

In regard to the patients of the Marine Hospital in Chelsea (Boston), Mass., it may be said that there is a somewhat larger number of Coast Guard patients, the percentage there being at least 15, and seamen not less than 65 per cent. Incidentally, the opportunities for obtaining alcoholic drinks about the Chelsea water front are

probably not excelled at this time in any of our ports. The large foreign population has made difficult the enforcement of laws dealing with the manufacture and sale of alcohol.

TABLE 1.—*Alcoholism and drug addiction, United States Marine Hospital, Boston (Chelsea), Mass., July 1, 1924, to June 30, 1927*

Fiscal year	Patients treated (all causes)	Deaths (total)	Patients treated for alcoholism, acute and chronic	Deaths from alcoholism	Cases of drug addiction
1925	1,464	40	7	0	0
1926	1,567	38	5	1	0
1927	1,759	44	5	0	0
Total	4,790	122	17	1	0

Of the 17 alcholic patients treated at this hospital during the three years under consideration, all but two were men in their forties, most of them old alcoholics who were in for acute "exacerbations." The period of treatment was usually very short, seldom more than three or four days. There was no case of delirium tremens admitted to the hospital during this period, nor did such a case develop in any patient after admission. There were no cases of Korsakow's psychosis or acute alcoholic hallucinosis among the several psychotic patients sent for observation from the Marine Hospital to the Boston Psychopathic Hospital during the period under consideration. No patient was under treatment in this period for alcoholic multiple neuritis.

In the Marine Hospital at Chelsea there was, during these three years, one death attributed to cirrhosis of the liver. This patient had been a user of alcohol, but was also a syphilitic. It was the belief of the staff that the latter factor was the predominating one in this case. Of the two alcoholic patients under 40 years of age, one was the man who died in 1926. There was little to connect this case with alcohol. The immediate cause of death was complete suppression of urine, and the death certificate was given by the medical examiner to whom the case was referred because of a somewhat doubtful alcoholic connection.

No patient was treated for drug addiction in the Chelsea (Boston) Marine Hospital between July 1, 1924, and June 30, 1927. No such patient applied for admission. Further, it may be said that there was nothing which led to the belief that any patients treated during this period were using drugs or had used such in the past. No unusual desire for narcotics was noted in any postoperative case during this time.

TABLE 2.—*Alcoholism and drug addiction—Total for all marine hospitals for period July 1, 1924, to June 30, 1927*

Fiscal year	Patients discharged	Deaths (total)	Alcoholism, acute and chronic	Deaths from alcoholism	Cases of drug addiction
1925	31,908	879	240	1	30
1926	33,275	872	225	5	17
1927	33,531	901	283	1	8
Total	98,714	2,652	748	7	55

A comment that may be made on the above table is that the figures are based on "discharges" rather than "patients treated," as was the case in the table for the Chelsea marine hospital. This was necessary because of the method of preparing tables for the annual reports of the Public Health Service, but it is of no consequence.

In all marine and contract hospitals of the Public Health Service during the three-year period under consideration there were nine deaths reported as due to cirrhosis of the liver.

There are 25 marine hospitals operated by the service on the Atlantic, Pacific, Gulf, Great Lakes, and rivers of the United States. There are 125 contract hospitals—second, third, and fourth class stations—in the United States, Alaska, Hawaii, the Philippines, Porto Rico, Virgin Islands, and Canal Zone, where patients of the service are treated. These 150 hospital stations treated or discharged 748 patients in a period of three years who were victims of acute or chronic alcoholism.

The percentage of such patients varies slightly. For 1925 it is three-fourths of 1 per cent, for 1926 this dropped to two-thirds of 1 per cent, while for 1927 the percentage rose to a little more than four-fifths of 1 per cent.

The decline in cases of drug addiction—about 50 per cent for each year—is interesting, though no explanation is attempted.

Personal experience in the Marine Hospital in Chelsea leads to the remark that alcoholism and drug addiction present no problem of consequence there. Apparently the same is true for the other hospitals of the United States Public Health Service.

NATIONAL LEPER HOME (UNITED STATES MARINE HOSPITAL), CARVILLE, LA.

Review of the More Important Activities During the Fiscal Year Ended June 30, 1927

By O. E. DENNEY, *Surgeon (R), United States Public Health Service, Medical Officer in Charge*

The 12-month period here reported on has been especially satisfactory in that an increasing number of patients have shown gratifying progress toward permanent arrestment of leprosy. It is difficult, however, to measure this improvement in general health and morale,

and equally difficult to point to any one treatment or condition as being responsible.

During the year, 56 patients were admitted; 40 absconded; 12 absconders were readmitted; 2 patients were discharged on parole, leprosy arrested and as no longer a menace to public health; 1 leper was deported and several additional cases are receiving consideration by the Bureau of Immigration pending deportation; 103,337 hospital days of relief were furnished; and 17 deaths occurred, giving a mortality rate of 60 per thousand. The causes of death were as follows:

Mortality by cause

Arteriosclerosis, coronary	2	Pneumonia, bronchial, nephritis, acute parenchymatous	2
Cardiac asthma	1	Pneumonia, hypostatic	1
Enterocolitis (*Ameba histolitica*)	1	Pneumonia, lobar	3
Leprosy, mixed	1	Pneumonia, lobular, hypostatic	1
Leprosy, nodular	1	Tuberculosis, pulmonary	1
Nephritis, acute parenchymatous	3		

Tabulation of nativity of patients in the hospital

Alabama	1	Bermuda	2
Arkansas	1	Bohemia	1
California	9	British Guiana	3
Florida	17	Canada	1
Georgia	3	Cape Verde Islands	1
Hawaii Territory	7	Central America	1
Kentucky	1	China	18
Louisiana	90	Dutch Guiana	1
Maryland	1	Finland	2
Minnesota	1	Germany	2
Mississippi	4	Greece	12
New Jersey	1	Hungary	1
New York	3	India	2
North Carolina	2	Ireland	1
Oklahoma	1	Italy	7
Pennsylvania	1	Mexico	12
Philippine Islands	5	Palestine	3
Porto Rico	2	Panama	1
Rhode Island	1	Portugal	1
South Carolina	1	Russia	2
Tennessee	1	Spain	5
Texas	17	Sweden	1
Virginia	1	West Indies	4
Virgin Islands	1		257
Bahama Islands	1		

Admission of patients by States

California	6	North Dakota	1
District of Columbia	1	Ohio	1
Florida	3	Oregon	1
Illinois	1	Pennsylvania	1
Louisiana	24	Tennessee	1
Montana	1	Texas	9
New York	4	Washington	1
North Carolina	1		56

The hospital, as in the past, has been available for undergraduate and postgraduate instruction in leprosy. Ninety-three medical students, 110 physicians, and 32 nurses visited the hospital during the year. The Sixth Louisiana District Medical Society convened in the hospital for its annual session, and 92 physicians attended the meeting, which was devoted exlusively to the subject of leprosy. A demonstration of cases and a visit through the hospital followed the meeting.

Medical service.—During the year 191 patients were admitted to the infirmary from their regular quarters for the treatment of acute or chronic manifestations of leprosy. Twelve males and 8 females remained in the infirmary throughout the entire 12 months, while the remainder, after longer or shorter periods, returned to their regular quarters in the cottages, or died.

Infirmary facilities are not completely satisfactory in that it has been necessary, in the absence of an infirmary building, to use cottages, with some remodeling, to furnish facilities for bed cases. The available bed space in the infirmary is always occupied. It has been necessary a number of times to place two beds in single rooms in order to accommodate lepers suffering from acute exacerbations of leprous symptoms. It should be noted that each patient in the institution has his private room in a cottage, which he retains during his temporary stay in the infirmary.

Plans have been drawn up and approved for the erection of a two-story, 100-bed infirmary building, in which can be satisfactorily housed the various important activities pertaining to patients acutely ill, simplifying the administration of the institution and rendering more efficient and economical the care of the patients. Congressional appropriation is necessary for the completion of this proposed infirmary building.

Of the 255 patients in the hospital, 154 are taking crude chaulmoogra oil by mouth, the dosage ranging from 3 drops to 400 drops daily, according to the tolerance of the individual. Twenty-eight patients have been placed on intramuscular injections of crude chaulmoogra oil, the oil, with an analgesic, being administered twice weekly in doses ranging from 3 to 8 c. c. This experiment, which will be reported in detail elsewhere, offers an opportunity to saturate the patient with chaulmoogra oil in what has so far proved to be a relatively painless manner. Previously reported chaulmoogra oil injections in this hospital and elsewhere have, of necessity, taken into consideration the considerable amount of pain from the injection of the preparations of chaulmoogra oil and its derivatives.

In the out-patient clinic, for the care of nonleprous Government employees and personnel, 381 patients were given emergency or routine treatment.

Surgical service.—During the year 70 surgical operations were performed, all of a relatively minor nature, extending in severity from the excision of ingrowing toenails to the excision of tumors. No deaths resulted from surgical procedures during the year. A total of approximately 75,000 surgical dressings were performed in the clinic for ambulatory lepers, under the supervision of the surgical staff. Fifty lepers are receiving experimental intravenous therapy, consisting largely of neosalvarsan, tryparsamide, and mercurochrome.

Recently, a group of advanced lepers was selected for experimental treatment by the intravenous injection of basic fuchsin, in increasing doses, with somewhat encouraging results to date.

Investigation in therapeutics.—Treatment has been continued with the ethyl esters of chaulmoogra oil augmented by the oral administration of the crude oil in specially formalized capsules. These latter seem to be resistant to the gastric juice; and the oil liberated in the intestines (and not in the stomach), does not provoke the same nausea and vomiting as when given in ordinary capsules.

A foreign protein is being used in two cases, in the hope that the reaction provoked may lead to improvement. The protein, an albumose (Hirudin), was selected because of its being a venom and also on account of its property of preventing the coagulation of blood. Reactions, febrile and cutaneous as well as local, have followed its use. Some clinical improvement has been noted in both cases, though neither has shown appreciable diminution in acid-fast organisms in lesions.

Special treatments.—It has been gratifying to note considerable improvement in contraction deformities of the hands and feet of those cases attending the clinic regularly for physiotherapy treatment. Ulcers have responded almost invariably with beneficial results from ultra-violet ray treatment. In many cases bone necroses have been arrested. Nerve pains have been relieved with the ultra-violet ray treatment and diathermy.

It has been interesting to note that nerve pains have responded more quickly to the ultra-violet radiations as secured from the carbon arc burner than to those from the quartz mercury burner. This may be due to the greater amount of heat given off by the carbon arc burner. Space in the physiotherapy and orthopedic department has become congested, due to the increase in number of patients applying for treatment and the additional necessary apparatus. Some of the patients have been relieved of their deformities, and sensation in many nerve cases has returned. Operations have resulted satisfactorily in all cases submitting to or applying for orthopedic operations. A total of 38,953 physiotherapy treatments were given during the year.

Neuropsychiatric service.—During the fiscal year 41 new patients and 56 old patients were examined in the neuropsychiatric section. Mental manifestations were noticed in 21 cases. All cases examined were of the mixed type of leprosy, but 24 showed marked neurological manifestations. Of the cases examined neurologically before being discharged on parole, none was found with active nervous symptoms.

One patient passed through the episode of manic depressive psychosis which ran its course in about five months. To all appearances this patient is now normal. One patient showing hallucinations of sensation has markedly improved. One case presenting terminal dementia (praecox) died.

A paper on the mental aspects of leprosy was presented before the neurologic section of the American Medical Association at its annual session in Washington, D. C.

Ophthalmologic service.—The ophthalmologic problem for the past year has been the treatment of iridocyclitis; because its ultimate results if untreated, and often if treated, are lenticular and vitreous opacities and occlusion of the pupil. It is believed that mercury cyanide injected subconjunctivally has done some good.

Routine prophylaxis and treatment have been rendered to the group of patients who suffer considerably from both the acute and chronic ocular disorders.

Dental service.—Dental treatment has continued, directed largely toward the removal or prevention of pyorrhea, with routine treatment of leprous oral ulcers, diseased root canals, crown and bridge work, fillings, denture constructions, and prophylaxis.

Clinical laboratory.—The observation of certain clinical phenomena coincident with the vaccination of lepers with smallpox virus followed by more or less improvement in the patient (noted by Hopkins and Denney)[1] prompted the revaccination of lepers to determine the possibility of continuing this clinical improvement, presumably stimulated by vaccinia.

A single patient was first periodically vaccinated by subcutaneous and intramuscular injections of increasing doses of smallpox vaccine. The results were sufficiently encouraging to justify additional experimentation. At present 25 lepers with different clinical manifestations are receiving periodic subcutaneous or intramuscular injections of smallpox virus. A detailed report will be submitted at the appropriate time.

The knowledge that carbon-dioxide snow and some forms of cautery are useful in removing certain lesions of leprosy prompted one of the members of the staff to experiment with metallic applicators, heated to various temperatures by a current of water passing through the interior of the applicator. After experimentation a satisfactory de-

[1] Pub. Health Reports, vol. 37. No. 51 (Dec. 22, 1922), pp. 3141-3149. Reprint No. 805.

Administration building at the National Leper Home

Quarters of officers and personnel

View of campus, showing some of the patients' cottages

Tennis court

vice was obtained whereby the surface of an applicator is maintained at a controllable temperature, and gratifying results have been obtained in removing superficial leprous lesions. (Detailed report to be submitted.)

Experiments have continued in the isolation of acid-fast bacilli from lepers with the hope that some additional light might be shed upon the life history of the organism, which as yet does not appear to have been cultivated by routine methods.

A total of 7,868 routine examinations and cultures have been made in the laboratory by one full-time physician assisted by two patients who have been trained as technicians.

Clinical photography as a record of progress of individual patients has continued as a routine procedure. The majority of the photographs are in black and white, but a large number of records have been made by photographing leprous lesions in natural colors. The collection of photographic records is already very valuable and will become increasingly so.

Leprosy does not respect race, creed, or social status. A leprosarium hospitalizing patients from a large country cares for a cosmopolitan group seldom encountered in a general hospital. The manifold manifestations of leprosy, with the diversity of symptoms and the variety of psychologic responses coupled with the conscious or unconscious pessimism of the average human being suffering from a chronic progressive disease, confronts the administrative officers with the difficult problem of maintaining a proper morale.

Recognizing the great importance of occupation to prevent morbid introspection, vocational training has been introduced among the patients, in order that those physically and mentally able might be employed, to the profit of both the patient and the hospital.

In the current year, on the average, 81 lepers have been employed under the general designation "attendants." Many of this number gave daily and satisfactory service in their assigned work. The work performed by these employees is of a necessary nature requiring some skill and concentration, and ranges in variety from the more simple duties of housekeeping and bedside care of fellow patients to the more exacting work as assistants in the general laboratory, physiotherapy department, dental laboratory, and operating rooms. The compensation paid to the patients ranges from $15 to $45 a month per attendant. The work performed in many instances is equal in character to that to be expected from nonleprous employees, and the salary paid is probably half that which would be necessary to obtain nonleprous employees. Vocational training, therefore, furnishes daily routine occupation to one-third of the total population of the hospital and to almost all of those physically fit for such an undertaking.

The patients' library has continued its function of serving as a connecting link between the patients and the public. Yearly an increasing number of patients avail themselves of the books, magazines, and newspapers which are loaned under conditions similar to those existing in cities.

The technical library of the medical officer in charge is of great value to the hospital staff for direct study and for reference. The total number of volumes to date is 634. All the more important medical journals are subscribed for annually and bound.

A small golf course has been started on the patients' campus and a surprisingly large number of enthusiastic players has developed. A concrete tennis court was also constructed for the patients.

Routine maintenance and repairs of buildings and equipment have continued under the carpenters, plumbers, electricians, and painters. A repainting of all buildings on the reservation was begun in the latter part of the year, to continue until completion of the project.

Farming on a large scale was not so profitable as in previous years, due largely to flooding of crops by excessive rainfall and imperfect drainage, the rains being reinforced by excessive seepage from the Mississippi River during its flood season—a combination of conditions probably not to be encountered again for several years. The project, however, represents a credit balance of approximately $1,200.

The completion of the dairy barn has enabled the station to maintain a model dairy consisting of 74 milk cows. In addition, 68 beef cattle have been received from the United States Marine Hospital at Fort Stanton, N. Mex., and fattened preparatory to slaughtering. The dairy herd, consisting of 20 Jerseys and 54 Holsteins of good stock, produced 47,277 gallons of excellent milk having a total market value of $19,856.34. The entire herd has been repeatedly registered as nontuberculous.

With materials furnished by the supervising architect and with station labor, a reinforced concrete three-room isolation building has been constructed for the segregation of dangerously insane or other patients whose liberty might endanger themselves or their fellow patients.

A fire-resisting garage has also been constructed by station labor, of size sufficient to house 15 trucks and 3 cars. A large workshop with galvanized-iron walls and doors is a part of the building.

The administration building is being enlarged by adding an additional kitchen and dining-room facilities on the first floor, for the personnel, and an additional dormitory and infirmary space on the second floor.

An artesian well was drilled immediately adjoining the power house in order to obtain cool water for the ammonia condensers of the ice plant. A flowing well was obtained, delivering water without

pressure. The amount was increased by the installation of an air lift. The water delivered to the condensers is at a temperature of 68° F., as compared with the summer reservoir temperature of from 80° to 96° F. The water contains a large amount of iron and sulphur and therefore is not suitable for general use upon the station.

During the year changes were made in the method of water clarification and purification by the discontinuance of alum precipitation and the substitution of iron and lime. The chemicals are let into the water intake by mechanical feeders and mixed by passing rapidly by baffles before sedimentation. A crystal-clear water, bacteriologically satisfactory, is obtained after final filtration through three sand-gravel filters.

In the spring of 1927 a gradual rise of the Mississippi River, upon which this hospital faces, forboded considerable damage to the surrounding country, and it was necessary, for a period of approximately six weeks, for the hospital to assume its share of the neighborhood's work in maintaining the levees in a safe condition. The hospital, by agreement, was assigned the responsibility of maintaining nearly 3 miles of levee, and the day laborers, carpenters, painters, and even members of the technical staff, cheerfully cooperated with the levee officials.

Routine work on the station was, of necessity, almost abandoned beyond the necessary care of patients and sanitation, with coincident setback to the general maintenance of the reservation. As the river subsided, routine work was resumed and the grounds are rapidly being returned to their normally neat and orderly appearance.

KEY-CATALOGUE OF INSECTS OF IMPORTANCE IN PUBLIC HEALTH

The United States Public Health Service has just issued Hygienic Laboratory Bulletin No. 150, entitled "Key-Catalogue of Insects of Importance in Public Health." This represents the fourth catalogue in this series of key-catalogues on medical zoology issued by the Public Health Service.

The work has been prepared by Prof. C. W. Stiles of the United States Public Health Service, and Dr. Albert Hassall of the United States Bureau of Animal Industry, on the basis of their personal observations combined with thousands of references to the literature indexed in the Government card catalogue.

Ordinarily, insects in their relation to health and disease are viewed chiefly from the standpoint of being either external parasites, such as lice and fleas, or transmitters of disease, such as mosquitoes in the case of malaria and fleas in the case of bubonic plague. The present

publication carries the subject much more into detail. In the body of the bulletin numerous insects are arranged systematically according to their more or less generally adopted classification, with notation as to their public health importance and their geographic distribution. In the introduction, the different genera of insects are cross referenced to the following subjects:

A, biting insects; *B*, on cadavers or in graves; *C*, control of public-health pests; *D*, dermatology (lesions, dermatitis, eruptions, exanthema, parasites, urticaria); *E*, edible (food, drink); *F*, excreta; *G*, food and drink; *H*, jurisprudence; *I*, laity (fear, superstition); *J*, parasites and pseudoparasites (abdomen, ear, external, eye , head, intestine, miscellaneous, mouth, nose, stomach, subcutaneous, throat, urinary system); *K*, pests (books, clothes, drugs, records, miscellaneous); *L*, pinching insects; *M*, poisons (arrows, defensive, food, spines, miscellaneous); *N*, pollution (air, water); *O*, stinging insects; *P*, therapeutics (lay, professional); *Q*, vectors (aspergillus, bacteria, filth, Protozoa, Trematoda, Cestoda, Nematoda, Acanthocephala, Insecta).

The publication is of special interest to public health officers, physicians, zoologists, lawyers, and students of medicine and zoology, and forms a condensed summary of the entire field of public health entomology.

For instance, if a public health officer wishes to know what particular insects are known to transmit or are suspected of transmitting a given infectious disease, he refers to the name of this disease in the introduction and then follows the subject as cross referenced to the body of the work. If a dermatologist wishes to locate the various caterpillars which cause the condition known as urticaria, he looks up the word "urticaria" in the introduction under Dermatology, and finds cross references to 40 different genera of moths and butterfles, the larval stages of which cause urticaria in man. If a lawyer desires to find a list of the insects of importance in zoological jurisprudence, as, for instance, in connection with the Law of Nuisances, or in connection with the French theory of determining how long a human body has been dead, he looks for the word "jurisprudence" in the introduction and finds the subject cross referenced to the body of the work. In connection with the application of entomology to legal cases involving possible homicide, the authors of this bulletin take a very conservative position toward the French theory; in fact, they state that it is of very limited, if any, practical application.

Copies of this bulletin may be obtained upon request from the Surgeon General, United States Public Health Service, Washington, D. C.

UNDULANT FEVER IN NEW YORK STATE

The following item relative to the occurrence of undulant (Malta) fever and the prevalence of contagious abortion in cattle in New York State was taken from the Health News for March 26, 1928, published by the New York State Department of Health:

From January 1, 1926, to date there have come to the attention of this department 24 cases of undulant fever. Four additional reported cases are considered somewhat doubtful because of inadequate history or absence of laboratory confirmation.

Of the 24 cases one was an infection by *B.* [*Br.*] *melitensis* acquired in the State laboratory and without doubt was a true case of Malta fever. The others were probably all caused by *B.* [*Br.*] *abortus*, as agglutination of that organism occurred with a higher dilution of the patient's serum than *B.* [*Br.*] *melitensis*.

There was one definite outbreak of undulant fever in Newark, Wayne County, although only three persons were affected. The patients were of different families but all were using grade A raw milk from the same farm on which five cows had aborted. It was found at the State Agricultural College at Cornell that the blood serum from these cows agglutinated *B.* [*Br.*] *abortus* in high dilution.

In addition to this small outbreak there have been two cases reported from each of the following cities: Jamestown, Ithaca, Hudson, and Utica, with an additional case from just outside the last-named community. These were all solitary cases, as were the remainder of the reported cases which were widely spread over the State.

With the exception of the Newark, N. Y., outbreak the epidemiological evidence is not very conclusive of the relationship of milk to the means of transmission. On the other hand, it is stated that contagious abortion is very prevalent in New York State, 30 per cent of the herds being estimated as affected.

DEATHS FROM AUTOMOBILE ACCIDENTS IN LARGE CITIES, FEBRUARY 28, 1926, TO FEBRUARY 25, 1928

The Department of Commerce announces that during the four weeks ended February 25, 1928, automobile accidents were responsible for 510 deaths in 77 large cities of the United States, as compared with 441 deaths during the four weeks ended February 26, 1927. Most of these deaths were the result of accidents which occurred within the corporate limits of the city, although some accidents occurred outside of the city limits.

For comparison, the number of deaths due to automobile accidents within city limits is desirable. Such figures are available for 75 cities for the four-week period ended February 25, 1928, and for the corresponding four-week period of 1927, the figure for 1928 being 448, as contrasted with 384 for the corresponding four weeks in 1927.

The numbers of automobile fatalities by four-week periods since May, 1925, for 77 cities, regardless of place of accident, are given below. The lowest total (346) appears for the four-week period

ended March 27, 1926, and the highest (686) for the four-week period ended November 5, 1927. The numbers in the 37 periods of four weeks were as follows:

Four weeks ended—

February 25, 1928	510	February 26, 1927	441	February 27, 1926	374
January 28, 1928	528	January 29, 1927	470	January 30, 1926	428
December 31, 1927	623	January 1, 1927	522	January 2, 1926	550
December 3, 1927	618	December 4, 1926	632	December 5, 1925	623
November 5, 1927	686	November 6, 1926	676	November 7, 1925	612
October 8, 1927	662	October 9, 1926	650	October 10, 1925	527
September 10, 1927	526	September 11, 1926	558	September 12, 1925	521
August 13, 1927	506	August 14, 1926	499	August 15, 1925	467
July 16, 1927	573	July 17, 1926	482	July 18, 1925	493
June 18, 1927	504	June 10, 1926	547	June 20, 1925	492
May 21, 1927	529	May 22, 1926	493	May 23, 1925	421
April 23, 1927	491	April 24, 1926	423		
March 26, 1927	439	March 27, 1926	346		

For the 52-week periods ended February 25, 1928, and February 26, 1927, the totals for the 77 cities were, respectively, 7,196 and 6,740, which indicate a rate for the latest period of 22.4 per 100,000 population, as against an earlier rate of 21.3, or an increase of 5 per cent in the rate in a single year.

Ten cities reported no deaths from automobile accidents for the last four weeks, while eleven cities reported no deaths from automobile accidents for the corresponding period of 1927.

For the last four-week period reports as to whether deaths occurred from automobile accidents within city limits or outside were received from all of the 77 cities reporting. In these cities, the total number of deaths from automobile accidents in this four-week period was 510, but only 450 of these were due to accidents within city limits.

COURT DECISION RELATING TO PUBLIC HEALTH

Ordinance requiring milk sold for consumption on premises to be in original container held valid.—(Wisconsin Supreme Court; City of Milwaukee *v.* Childs Co., 217 N. W. 703; decided February 7, 1928.) An ordinance of the city of Milwaukee provided:

> It shall be unlawful, for any person, within the limits of the city of Milwaukee, to sell milk in any way whatsoever for consumption on the premises where sold, excepting in original containers well capped or sealed, served intact in such container or opened in the presence of the person served, and containing only the quantity of milk intended for use of the person served, and all milk so served shall, in every instance, be bottled either at a dairy or milk plant.

The defendant was convicted of serving milk to a patron of its restaurant in violation of the terms of the ordinance. On appeal the power of the city to adopt the ordinance was challenged and the ordinance itself was attacked as being invalid, but the supreme court affirmed the conviction. The following are portions of the appellate court's opinion:

The ordinance, if reasonable, is well within the power of the city to enact. Properly construed, the ordinance is a reasonable regulation. The language of the ordinance would authorize a very sweeping construction—a construction which would make it impossible to serve any article of food of which milk was the dominant element, such as milk toast, an oyster stew, or milk to be used in tea or coffee, or upon pudding or fruits or breakfast foods. To give the ordinance such a construction would make the reasonableness thereof very doubtful, and we are disposed to construe it as prohibiting merely the sale of milk for beverage purposes except as therein prescribed. As so construed, the regulation is not unreasonable.

It is a matter of common knowledge that milk is a prolific source of disease and that it is easily contaminated. Every regulation relating to the handling of milk which minimizes the opportunity for contamination is promotive of the health of the community. The regulation provided by the ordinance in question certainly has that effect. * * *

The contention that the ordinance denies due process of law and deprives defendant of property without compensation is not of sufficient substance to require discussion. The police power of the State with reference to such matters is too well settled to justify extended treatment here. [Cases cited.]

Neither is there any room for the claim that the ordinance was not violated as a matter of fact. The evidence shows that the milk served was dipped from a larger container in the kitchen and carried to the patron. It may be that the defendant handled the milk served in its restaurant in a highly sanitary manner, but that constitutes no defense. Because milk is customarily handled in a manner which affords opportunity for contamination, the municipality is justified in prescribing regulations for the handling of milk in a manner which shall avoid opportunity for such contamination. Such regulations when so prescribed must be observed by those dealing in milk. The dealer can not justify noncompliance with such regulations by asserting that his method of handling milk was just as sanitary as the regulations prescribed by the municipality. It is possible that, if all dealers handled milk as defendant did, there would be no necessity for the ordinance. But the fact that many dealers do not observe sanitary methods in handling milk makes such regulations necessary or proper. When such regulations are prescribed, they must be observed by all, by the considerate as well as by the inconsiderate dealer.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Bacteriological and Parasitological Study of the Night Soil Disposal in Japan. R. Takano, *Journal Public Health Association of Japan*, vol. 3, No. 12, December, 1927, pp. 1–10. (Abstract by N. R. Stoll.)

This is evidently a continuation of studies earlier published in the same journal in February and March, 1927. Both typhoid bacilli and parasite eggs were examined for longevity under storage conditions in typical night soil jars and a newly devised privy. Using the jars which are typical in the privies of Japanese houses, having a depth of 1.5 feet, a diameter of 1.8 feet, and a capacity of 60 to 100 liters, they were filled with night soil taken from the privy of a representative house. Then a culture of the typhoid bacillus was mixed at the ratio of 1½ mg. per 100 c. c. of night soil, and materials for culture test were then removed on later days from the upper, middle, and lower layers of the contents of the jars. There was a marked correlation with temperature as to the longest intervals during which viable typhoid bacilli were recovered. (Data as to differences at different levels of the night soil are not given.) Thus in fall and winter at Tokyo,

when the maximum temperature in the receptacles was 14° to 19° C., typhoid bacilli were recovered up to 183 days (in 18 experiments a mean of 121 days); in spring, at maximum receptacle temperatures from 19.5° to 24° C., up to 47 days (in 10 experiments a mean of 29 days); in summer, at maximum receptacle temperatures from 25° to 27° C., up to 11 days (in 9 experiments a mean of 8 days).

Experiments in similar receptacles were carried on with *Ascaris* and hookworm eggs. The *Ascaris* perished most speedily in summer, although it takes three months at the shortest. Hookworm eggs do not grow, and they perish by degrees in summer in about one month. These tests were made on the basis of the last occasion when a viable egg could be demonstrated.

The author then tested out the newly devised privy (a modified septic tank arrangement) with five compartments. While typhoid bacilli could always be demonstrated in the first chamber, they decreased markedly in the successive chambers, the fifth chamber being negative except for a very few organisms during the winter. With *Ascaris* and hookworm eggs, the third, fourth and fifth chambers were always negative for viable eggs. The author believes his laboratory tests, together with actual use of the privy, demonstrates the feasibility of the recommended privy for use by farmers who wish to use the night soil from the fifth chamber for fertilizing fields. Chemical tests showed no loss of nitrogen in the fifth chamber contents.

Studies on the Infectivity of Plasmodia of Birds for Mosquitoes, with Special Reference to the Problem of Immunity in the Mosquito. Clay G. Huff. *American Journal of Hygiene*, vol. 7, No. 6, November, 1927, pp. 706–734. (Abstract by A. L. Dopmeyer.)

The contents of this article are as follows: I. Introduction. II. Infectivity and transmission experiments with culicine mosquitoes: (*a*) Historical; (*b*) materials; (*c*) methods; (*d*) results of dissection; (*e*) transmission experiments; (*f*) discussion. III. A study of immunity in the mosquito. IV. Observations upon the biology of mosquitoes: (*a*) Biting habits; (*b*) breeding habits; (*c*) survival under laboratory conditions. V. Observations upon the parasites: (*a*) Prepatent periods; (*b*) sizes of oocysts; (*c*) location of oocysts; (*d*) course of infection with respect to gametocytes; (*e*) figures. VI. Summary. VII. Literature cited.

The summary is as follows: (1) Two species of mosquitoes (*Culex territans* and *salinarius*) are reported for the first time as susceptible to infection with three species of *Plasmodium* of birds (*cathemerium*, *praecox*, and *iconstans*); (2) *Culex pipiens*, previously known as a vector of at least one species of *Plasmodium*, was found to be a vector of two of the three species and susceptible to infection with the other; (3) *Culex quinquefasciatus* and *Aëdes aegypti*, previously known as vectors of one species, were found to be susceptible to two of these species of *Plasmodium*. Although no infections of these two species of mosquitoes were obtained with the third species of parasite, it does not seem advisable to conclude that they are nonsusceptible to it until a larger number of feedings have been made; (4) negative results were obtained from infectivity experiments with six species of *Aëdes* and one of *Anopheles* against two of the parasites; and with one species of *Psorophora* against one of the species of parasite; (5) complete transmission of one of the species of parasite was effected with *Culex salinarius;* (6) the length of life of the asexual stages of the parasite in the stomachs of both *Culex pipiens* and *Aëdes sollicitans* was between five and six hours; (7) the digestion of red cells in the stomachs of *C. pipiens* and *A. sollicitans* required about the same amount of time; (8) the asexual stages entirely disappeared from the stomach of *C. pipiens* in six hours, but could be found, though altered in appearance, in *A. sollicitans* in the twentieth hour. Ookinetes first appeared in each species at the end of the twelfth

hour and remained at least 20 hours in *A. sollicitans* and 39 hours in *C. pipiens;* (9) the hypothesis that differences in digestion in *Culex pipiens* and *Aëdes sollicitans* play an important rôle in immunity and susceptibility of mosquitoes is abandoned; (10) evidence indicating an individual immunity within a susceptible species is presented; (11) decided differences in the biting habits of the mosquitoes used were found. In view of preferences shown by *Culex pipiens,* it is believed that this species is the principal vector in nature. Seven species of mosquitoes (representing seven genera) consistently refused to feed from canaries. Marked differences in the reactions of the birds to the bites of the various species were noted; (12) three generations of *Culex pipiens* were reared in captivity; (13) significant differences were found in the length of the prepatent periods of all three species of the parasites; (14) in two typical primary infections in birds the percentage of gametocytes was found to rise continuously from the time of their appearance. The maximum number of gametocytes occurred one or two days after the maximum of total parasites. The percentage of gametocytes in relapse is much lower than in the primary infection. The appearance of symptoms approximately upon the day when the number of gametocytes is at its maximum, is thought to be a factor in the epidemiology of transmission; (15) a study of the distribution of the number of gametocytes over a 24-hour period shows no periodicity similar to that found in the asexual forms.

Studies on Brazilian Mosquitoes. III Genus Culex. Francis Metcalf Root. *American Journal of Hygiene,* vol. 7, No. 5, September, 1927, pp. 574–598. (Abstract by A. L. Dopmeyer.)

This article is the third of a series presenting results obtained during a trip to Brazil in 1925, and consists of a description of various species of *Culex* mosquitoes found, together with a number of plates illustrating the characteristics of these mosquitoes.

The description includes nine species under the subgenus *Culex;* one under the subgenus *Melanoconion;* one under the subgenus *Aëdinus;* seven under the subgenus *Microculex;* twelve under the subgenus *Choeroporpa;* and two under the subgenus *Mochlostyrax.*

Studies on Brazilian Mosquitoes. IV. Notes on Some Brazilian Species of Anopheles. Francis Metcalf Root. *American Journal of Hygiene,* vol. 7, No. 5, September, 1927, pp. 599–605. (Abstract by A. L. Dopmeyer.)

This article is the fourth of a series presenting results obtained during a trip to Brazil in 1925, and consists of descriptions of various species of *Anopheles* mosquitoes found, as follows: (I) The *Myzorhynchella* group; (II) *Anopheles mediopunctatus* Theo; (III) *Anopheles eiseni* Coquillet; (IV) *Anopheles fluminensis* new species.

Several plates are shown illustrating the physical characteristics of the mosquitoes described.

A Comparative Study of the Early Larval Stages of Some Common Flies. Shan Ming Tao. *American Journal of Hygiene,* vol. 7, No. 6, November, 1927, pp. 735–761. (Abstract by A. L. Dopmeyer.)

This article is a report on a detailed study of the early stages of some flies which are common visitors to dwelling places, with keys to some common genera of the families Calliphoridae, Muscidae, Anthomyidae, and Sarcophagidae. Brief descriptions of each species studied are given for the two larval stages.

In his conclusion the author states that he wishes to emphasize the fact that there are distinct generic differences and possibly specific differences between the common carrion and filth flies in their early larval stages.

There is also a bibliography and a number of plates for illustration.

Mosquito-proof Gutterings. F. G. Cawston. *Journal Royal Army Medical Corps*, vol. 49, No. 6, December, 1927, p. 441. (Abstract by Harriet S. Ryan.)

All roof-guttering has been excluded from houses in the Panama Canal Zone and other tropical places after attempts to secure a roof-guttering which will not encourage the breeding of mosquitoes. Cast-iron gutterings could be used to advantage if they were made in molds 5 inches in diameter with a depth of the gutter increasing toward the outlet for the water. The section area should increase as the catchment area and volume of water increase toward the down-pipe. By fixing the upper edge of the guttering on a horizontal plane the required slope is attained; and where a down-pipe is fixed to allow a drop from each end of the roof, a fall of even 2 inches from each end of a 48-foot wall is not too great. Sheet-iron guttering cut out with converging borders, 2 inches wider at one end than at the other end of a 6-foot piece, when bent so that its edges are parallel, gives a slope of 1 inch in every 6 feet. A slope of only 1 inch in 24 feet is considered sufficient for larger buildings.

Sterilization of Milk by Impact of Steam. G. E. Grindrod. (Creamery and Milk Plant Mo., 16 (1927), No. 9, pp. 38, 40, 42, 44, 46.) *Experiment Station Record*, U. S. Department of Agriculture, vol. 58, No. 2, February, 1928, pp. 169–170.

"A general discussion of the steam impact principle of sterilization, including the theory of the process, the method of application, and its effect on various products and the results obtained by it on various milk products. Under proper conditions this new method renders a mass of milk or cream completely sterile by exposure for one minute at 230° F."

The Accuracy of Bacterial Counts from Milk. Robert S. Breed. *American Journal of Public Health*, vol. 17, No. 6, June, 1927, pp. 604–606. (Abstract by F. R. Shaw.)

The author points out that the word "count" in this connection is a misnomer and that the results of ordinary laboratory procedure are not infrequently used in a manner to suggest greater accuracy than is warranted, and that sometimes injustices in the grading of milk result from too fine a distinction. The "count" is, in reality, an "estimate," and its value is dependent upon the relative accuracy of the work. Emphasis is placed upon the importance of checking the accuracy of the estimates by one method of counting bacteria, by making duplicate estimates by one or more different methods.

It is pointed out that the cause of the greatest inaccuracies in agar plate counts is due to the existence of clumps of bacteria in milk—these clumps containing 2, 4, 6, 8, or even 25 to 30 individual bacteria. In view of this, the former practice of determining accuracy by agar plate counts on a series of samples or by different analysts is not considered of great value. There has occurred during recent months the unfortunate resurrection and broadcasting of past literature which cites unjustified conclusions regarding the accuracy of plate counts.

The author cites the studies of the New York Experimental Station in having "prepared samples of milk" examined by six analysts in two laboratories by the methods of group count, agar plate count, and individual bacteria count. The samples of milk containing the *B. coli* were prepared in such a way that the final counts were expected to be in the ratio of 1 : 2 : 4. The laboratory findings were remarkably close to these in each method of counting that was used. A point of particular interest is that the agar plate counts were intermediate between the group and individual bacteria microscopic counts.

Avoiding Pollution by Coke Oven Wastes. Hugh E. Jones. *Water Works Engineering*, vol. 81, No. 3, February 1, 1928, pp. 141–142 and 178. (Abstract by Chester Cohen.)

Phenol, or carbolic acid, is a product of destructive distillation of coal, and is present to the extent of less than one-half of 1 per cent in the ammonia liquor which condenses out of raw coke-oven gas. In the process of lime treatment of this ammonia liquor, the phenol combines to form calcium phenolate which passes into the sewers as still waste. Subsequent action of acids and carbon-dioxide in the water reduce the calcium phenolate to phenol which, in the event of subsequent chlorine sterilization of the water, produces the pronounced and disagreeable chlorophenol taste.

Investigations in late years have attempted to remove the phenols prior to the lime treatment. Two successful methods were evolved; namely, the benzol extraction method and the patented Tiddy-Hoffner, or distillation, method. Description of the first method is given, together with sketch of process and accompanying formula and reactions. Through operation of this benzol extraction method, the extraction efficiency has been raised over 96 per cent. More than 25,000 gallons of pure phenol are recovered yearly from the 36,000 gallons of ammonia liquor treated daily. The plant is financially self-supporting.

Creamery Waste Treatment. Elton D. Walker. Proceedings of the First Conference of Sewage Works Operators, Pennsylvania State College, July 13–14, 1926, Tech. Bulletin No. 1, pp. 49–53. (Abstract by J. B. Harrington.)

The writer of this article describes the trouble experienced in treating creamery wastes at the Pennsylvania State College sewage disposal plant, consisting of a screen chamber, in Imhoff tank, a trickling filter, chlorine disinfection, two settling basins, and two sludge beds. The creamery wastes when turned into the disposal plant caused an acid condition to exist. Proper digestion was not taking place, and the sludge was yellow, with a foul odor. When the acid condition was neutralized by lime, digestion again became active. More difficulty was experienced in checking the growth of *Oospora lactis* and *Leptomitus* on the inside of the sewer pipe. During the summer, strips of an inch or more in thickness and up to 30 feet in length would break loose clogging the screen, pipes, and nozzles at the plant. Tests were then made to determine the food of *Oospora lactis*. From these tests it was concluded that this organism grows most rapidly when lactic acid is present in amounts varying from 200 to 600 p. p. m. The next step was to determine the potential lactic acid in the creamery wastes and the amount of hydrated lime necessary to neutralize it. Treatment apparatus consisted of an oil barrel with two jets nearly tangential to a conical bottom. When necessary to clean the sewer, heavy doses of bleach were used.

Contact Beds. C. A. Emerson, jr. Proceedings of First Conference of Sewage Works Operators, Pennsylvania State College, July 13–14, 1926, Tech. Bulletin No. 1, pp. 37–38. (Abstract by J. B. Harrington.)

The construction and action of contact beds are explained, and the history of the development of this type of sewage treatment are briefly summarized. The physical appearance of the effluent is noted, as is the relative efficiency of fine grained and coarse grained beds. Contact beds require more head and produce less odor than trickling filters, and have their greatest usefulness in the field of small communities and institutions. It appears unlikely that they will be used for large cities, clogging and high construction costs being their chief disadvantages.

Sewage Treatment Works at Holland, Michigan. Paul Hansen and K. V. Hill. *The American City*, vol. 38, No. 1, January, 1928, pp. 168, 170. (Abstract by C. R. Cox.)

The sewage from Holland was formerly discharged without treatment into Black Lake, and, as a result, the lake was seriously polluted. This detracted from the value of the lake for recreational purposes, so the city authorities decided

to install a treatment plant to improve conditions. Tannery wastes also add to pollution, but a separate treatment plant is advocated for these wastes.

The disposal works consist of grit chamber, bar screens, pumping station, Imhoff tanks, chlorination apparatus and chlorine contact tank, and sludge beds. Provisions are made to add trickling filters at a future date if this is found desirable. Detention in Imhoff tanks is about three hours, with estimated future flow of 100 gallons per capita for a population of 22,500. Sludge digestion capacity is 2.6 cubic feet per capita. Sludge beds have area of 0.72 square feet per capita. Beds were to be inclosed in glass, but lack of funds prevented this.

Trickling Filters. Robert Hall Craig. Proceedings of the First Conference of Sewage Works Operators, Pennsylvania State College, July 13–14, 1926, Tech. Bulletin No. 1, pp. 39–41. (Abstract by J. B. Harrington.)

The trickling filter is a later development in sewage treatment than the contact bed, as the result of the demand for plants with a greater capacity per unit area. The advantages and disadvantages of trickling filters as compared with contact beds are briefly compared as follows: (1) Greater capacity per unit area; (2) a more complete nitrifying action in the trickling filters and a more stable effluent; (3) the chief disadvantage of trickling filters is the increased head (4 to 6 feet) necessary for operation.

Six rules of operation pertaining to the siphon dosing chamber, nozzles, ponding or pooling, testing of effluent, underdrains, and sprinkling pipe system are described briefly. Odors may be reduced by increasing the size of the spray and by the careful use of bleach.

Water Pollution in Louisiana. Percy Viosca, jr. Trans. Am. Fisheries Soc. 56, 101–7 (1926). Abstract by Edward Bartow in *Chemical Abstracts*, vol. 22, No. 4, February 20, 1928, p. 651.

"Oil pollution of streams in Louisiana, including H_2SO_4 from the refineries and salt from wells, has been lessened by oil traps and by the reuse of the acid. Pollution by paper-mills wastes is decreased by removal of pulp and oxidation in shallow ponds. Pollution by sugar-mill wastes is lessened by settling basins, where sedimentation and biological action take place. Pollution by gravel-washing plants can be prevented by keeping the clay and sand out of the rivers. Pollution by city sewage may be taken care of by extending the sewers to deep water."

Cannery Waste Disposal. A. Elliott Kimberley. *The Canner* 66, Serial No. 1717, 18–21 (1927). Abstract by Carl R. Fellers in *Chemical Abstracts*, vol. 22, No. 4, February 20, 1928, p. 656.

"Studies are reported on peas, green beans, lima beans, corn, succotash, and tomatoes. The attempt has been made so to modify cannery waste by oxidation that its powers of pollution are most substantially reduced. Data are presented on the units of pollution in terms of stream demand per day by screened wastes from representative packs and corresponding minimum stream flows required to prevent nuisance and to conserve fish life."

DEATHS DURING WEEK ENDED MARCH 24, 1928

Summary of information received by telegraph from industrial insurance companies for the week ended March 24, 1928, and corresponding week of 1927. (From the Weekly Health Index, March 28, 1928, issued by the Bureau of the Census, Department of Commerce)

	Week ended March 24, 1928	Corresponding week 1927
Policies in force	70, 702, 349	67, 112, 016
Number of death claims	14, 519	13, 742
Death claims per 1,000 policies in force, annual rate	10. 7	10. 7

Deaths from all causes in certain large cities of the United States during the week ended March 24, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, March 28, 1928, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Mar. 24, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Mar. 24, 1928 [2]
	Total deaths	Death rate [1]		Week ended Mar. 24, 1928	Corresponding week 1927	
Total (68 cities)	8,557	14.8	13.3	900	763	74
Akron	47			5	5	54
Albany [3]	38	16.5	15.3	4	4	82
Atlanta	76	15.6	16.5	8	10	
White	44		11.3	5	4	
Colored	32	(4)	28.9	3	6	
Baltimore [3]	275	17.3	15.7	25	19	79
White	213		14.7	15	14	60
Colored	62	(4)	21.2	10	5	157
Birmingham	67	15.8	16.8	7	9	60
White	33		13.0	5	5	69
Colored	34	(4)	22.8	2	4	45
Boston	227	14.9	14.5	38	22	105
Bridgeport	45			6	2	110
Buffalo	153	14.4	12.1	19	16	82
Cambridge	25	10.4	13.5	2	2	36
Camden	38	14.7	12.9	7	5	112
Canton	26	11.6	10.1	2	3	48
Chicago [3]	897	14.9	12.6	76	76	65
Cincinnati	181	22.9	16.8	17	8	103
Cleveland	234	12.1	10.2	19	22	52
Columbus	67	11.8	16.6	6	10	56
Dallas	51	12.3	10.3	6	5	
White	37		8.5	5	4	
Colored	14	(4)	22.8	1	1	
Denver	99	17.6	14.6	6	3	
Des Moines	36	12.4	15.8	3	3	50
Detroit	345	13.1	12.1	72	55	111
Duluth	18	8.1	10.5	1	2	23
El Paso	49	21.7	9.2	9	3	
Erie	30			4	2	82
Fall River [3]	33	12.8	14.9	0	9	0
Flint	31	10.9	9.5	6	4	77
Fort Worth	38	11.8	11.5	3	2	
White	28		10.5	1	2	
Colored	10	(4)	18.6	2	0	
Grand Rapids	33	10.5	9.3	4	5	60
Houston	52			6	3	
White	43			4	2	
Colored	9	(4)		2	1	
Indianapolis	110	15.1	11.1	4	8	30
White	88		10.6	4	5	35
Colored	22	(4)	15.1	0	3	0
Jersey City	82	13.2	12.0	10	4	75
Kansas City, Kans	43	19.0	14.2	8	2	169
White	27		11.4	4	2	99
Colored	16	(4)	27.1	4	0	581
Kansas City, Mo	124	16.6	12.2	9	2	64
Knoxville	25	12.4	18.4	0	1	0
White	19		14.5	0	1	0
Colored	6	(4)	47.0	0	0	0
Los Angeles	256			25	15	72
Lowell	37	17.5	11.3	2	4	42
Lynn	36	17.8	10.9	1	4	25
Memphis	76	20.9	22.7	6	10	70
White	34		15.3	2	5	37
Colored	42	(4)	36.2	4	5	125
Milwaukee	115	11.1	11.6	22	19	98
Minneapolis	98	11.2	10.8	6	6	36
Nashville	54	20.4	20.4	9	3	142
White	36		21.1	5	2	107
Colored	18	(4)	18.8	4	1	240
New Bedford	28	12.2	10.5	3	5	65

[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] Deaths for week ended Friday, Mar. 23, 1928.
[4] 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; 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 March 24, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, March 28, 1928, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Mar. 24, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Mar. 24, 1928
	Total deaths	Death rate		Week ended Mar. 24, 1928	Corresponding week 1927	
New Haven	46	12.8	11.6	4	4	56
New Orleans	158	19.2	20.4	10	16	48
White	92		16.6	2	10	15
Colored	66	(4)	31.2	8	6	116
New York	1,751	15.2	12.9	195	150	79
Bronx Borough	233	12.8	11.0	20	18	60
Brooklyn Borough	592	13.4	10.9	68	61	68
Manhattan Borough	719	21.5	18.5	81	57	96
Queens Borough	163	10.0	8.5	21	13	85
Richmond Borough	44	15.3	12.4	5	1	90
Newark, N. J	116	12.8	13.0	11	10	57
Oakland	66	12.6	12.5	4	5	43
Oklahoma City	31			3	3	
Omaha	69	16.2	13.8	3	7	35
Paterson	42	15.2	14.1	4	1	69
Philadelphia	568	14.4	14.3	66	49	89
Pittsburgh	199	15.5	12.9	30	17	98
Portland, Oreg	80			2	0	21
Providence	86	15.7	12.1	7	8	61
Richmond	60	16.1	17.9	9	7	118
White	36		13.8	3	2	61
Colored	24	(4)	28.1	6	5	220
Rochester	103	16.4	12.4	8	8	65
St. Louis	307	18.9	13.6	19	14	64
St. Paul	67	13.9	15.4	7	12	67
Salt Lake City [3]	32	12.1	12.3	7	4	114
San Antonio	85	20.4	14.6	16	7	
San Diego	49	21.4	19.9	6	3	114
San Francisco	169	15.1	14.3	7	6	44
Schenectady	14	7.8	10.6	2	2	63
Seattle	70	9.6	10.6	5	5	51
Somerville	25	12.7	9.8	2	4	69
Spokane	31	14.9	15.8	3	0	77
Springfield, Mass	35	12.2	9.9	2	5	32
Syracuse	44	11.5	13.5	5	8	61
Tacoma	18	8.5	13.1	0	3	0
Toledo	69	11.5	12.8	6	8	58
Trenton	42	15.8	13.0	9	3	153
Utica	33	16.6	22.2	2	1	45
Washington, D. C	177	16.8	12.7	14	8	80
White	108		10.1	6	3	50
Colored	69	(4)	20.7	8	5	148
Waterbury	20			2	3	58
Wilmington, Del	24	9.8	9.5	4	0	105
Worcester	67	17.7	16.8	6	14	73
Yonkers	25	10.8	14.0	2	6	46
Youngstown	45	13.5	12.0	5	3	67

[4] 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; 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 Weeks Ended April 2, 1927, and March 31, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 2, 1927, and March 31, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928
New England States:								
Maine	4	2	18	13	211	73	0	0
New Hampshire				11		31		0
Vermont	2	1			144	88	0	0
Massachusetts	94	88	17	11	324	1,930	0	3
Rhode Island	10	14		10	2	204	0	0
Connecticut	20	39	11	11	102	317	0	1
Middle Atlantic States:								
New York	490	315	[1] 51	[1] 67	729	2,711	7	13
New Jersey	115	128	21	39	45	1,442	1	2
Pennsylvania	196	199			962	1,469	5	9
East North Central States:								
Ohio		174		88		966		8
Indiana	40	22	58	31	275	204	0	0
Illinois	123	143	33	387	2,031	180	3	12
Michigan	105	63		8	220	1,376	0	7
Wisconsin	29	33	50	105	743	149	12	6
West North Central States:								
Minnesota	35	19			281	111	6	2
Iowa [2]	13	16			584	55	0	0
Missouri	68	36	4	53	216		4	12
North Dakota	3				253	2	3	2
South Dakota	3		11	30	285	39	0	0
Nebraska	6	10		84	327	37	0	0
Kansas	12	8	11	31	1,230	115	1	6
South Atlantic States:								
Delaware	1		3		5	19	0	0
Maryland [2]	56	33	136	48	58	1,020	0	2
District of Columbia	13		1		4		0	
Virginia								
West Virginia	21	19	99	43	194	88	1	1
North Carolina	16	38			782	2,913	0	0
South Carolina	23	16	1,978	905	258	765	0	0
Georgia	7	13	299	140	333	259	0	1
Florida	20	6	8		228	66	0	0
East South Central States:								
Kentucky				31		399		0
Tennessee	15	14	229	126	96	273	2	2
Alabama	19	10	230	311	253	580	1	1
Mississippi	9	14						2

[1] New York City only.

[2] Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 2, 1927, and March 31, 1928—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928
West South Central States:		9	87	583	230	556	0	0
Arkansas	9	18	19	77	90	250	0	1
Louisiana	27	18	120	416	230	443	0	4
Oklahoma [3]	11	34	38	48	241	121	0	0
Texas	23							
Mountain States:		9			49	2	1	0
Montana	4	1			91		0	3
Idaho	2		1		81	39	0	2
Wyoming	1	27		13	426	44	1	18
Colorado	6	8		6	63	160	0	0
New Mexico	4	5	1		15	33	0	2
Arizona	1	5	7	4	67	5	0	2
Utah	6							
Pacific States:		5		2	401	193	3	2
Washington	13	9	93	31	238	69	2	3
Oregon	12	89	107	30	3,010	184	9	4
California	147							

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928
New England States:								
Maine	0	1	22	51	0	0	0	3
New Hampshire		0		14		0		0
Vermont	0	0	12	11	0	0	1	1
Massachusetts	0	0	505	309	0	0	13	4
Rhode Island	0	0	24	60	0	0	0	1
Connecticut	1	0	94	222	0	0	0	1
Middle Atlantic States:								
New York	2	5	1,304	911	10	2	20	17
New Jersey	0	0	365	328	0	16	3	4
Pennsylvania	1	0	702	587	1	1	23	10
East North Central States:								
Ohio		4		255		30		5
Indiana	0	0	250	115	213	123	6	2
Illinois	0	0	331	381	32	[4] 56	4	6
Michigan	0	0	318	264	34	23	5	4
Wisconsin	2	1	198	187	9	9	5	3
West North Central States:								
Minnesota	0	1	305	175	4	2	1	6
Iowa	0	0	72	96	20	81	0	3
Missouri	0	2	146	114	19	53	1	1
North Dakota	0	0	78	73	9	3	2	1
South Dakota	0	1	110	46	15	12	1	0
Nebraska	0	0	71	106	12	47	0	0
Kansas	0	2	194	153	47	90	2	1
South Atlantic States:								
Delaware	0	0	19	1	0	0	0	0
Maryland [2]	0	0	71	71	0	2	8	7
District of Columbia	0		31		0		2	
Virginia	0				2			
West Virginia	0	0	34	35	32	62	4	7
North Carolina	0	0	29	31	74	115	2	2
South Carolina	3	1	3	2	21	6	10	1
Georgia	0	0	13	20	84	0	8	9
Florida	0	0	8	7	84	12	12	9
East South Central States:								
Kentucky		0		66		18		2
Tennessee	0	2	20	13	8	13	12	4
Alabama	0	0	19	8	85	10	14	13
Mississippi	0	1	13	7	3	2	19	9

[2] Week ended Friday.
[3] Figures for 1927 are exclusive of Oklahoma City and Tulsa and for 1928 are exclusive of Tulsa.
[4] For the week ended Mar. 24, 1928, 58 cases of smallpox were reported in Illinois instead of 88, as published in Public Health Reports for Mar. 30, 1928, p. 775.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 2, 1927, and March 31, 1928—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928	Week ended Apr. 2, 1927	Week ended Mar. 31, 1928
West South Central States:								
Arkansas	0	0	6	9	3	7	3	11
Louisiana	0	0	6	11	4	25	19	3
Oklahoma [3]	0	0	0	60	37	203	9	4
Texas	0	0	19	53	62	37	1	0
Mountain States:								
Montana	0	0	66	6	21	9	1	0
Idaho	0	1	26	6	5	8	0	0
Wyoming	1	1	24	17	1	4	0	1
Colorado	0	0	208	81	10	2	2	0
New Mexico	0	0	23	33	2	1	0	0
Arizona	0	1	9	4	0	30	0	4
Utah	0	0	29	3	0	18	0	0
Pacific States:								
Washington	1	1	106	48	60	51	7	7
Oregon	0	3	45	18	18	75	6	2
California	3	3	220	154	25	14	10	8

[3] Figures for 1927 are exclusive of Oklahoma City and Tulsa and for 1928 are exclusive of Tulsa.

Report for Week Ended March 24, 1928

NEW MEXICO	Cases	NEW MEXICO—continued	Cases
Diphtheria	1	Poliomyelitis	1
Influenza	7	Scarlet fever	35
Measles	165	Smallpox	5

Report for Week Ended March 17, 1928

SOUTH DAKOTA	Cases	SOUTH DAKOTA—continued	Cases
Diphtheria	7	Poliomyelitis	3
Influenza	45	Scarlet fever	29
Measles	29	Smallpox	10

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
February, 1928										
Arkansas	1	45	1,436	96	2,396	63	0	147	31	22
California	31	641	288	16	864	----	53	1,111	191	50
Idaho	12	5	1	----	----	----	2	52	36	1
Illinois	26	706	154	2	489	----	6	1,459	206	45
Kansas	6	77	178	----	181	1	1	813	302	3
Maine	2	20	15	----	169	----	0	122	0	8
Michigan	0	301	2	----	2,586	----	4	1,297	139	31
Mississippi	2	75	11,356	2,387	6,382	349	4	95	134	47
Missouri	10	228	118	6	565	----	2	468	190	11
Montana	23	46	----	----	9	----	0	97	78	0
New York	49	1,714	----	----	6,824	----	12	3,330	42	68
North Carolina	2	183	----	----	17,433	----	2	177	498	12
Oklahoma [1]	5	114	1,046	57	721	14	5	260	589	43
Oregon	7	46	145	----	267	----	7	114	184	11
Rhode Island	1	67	43	----	176	----	0	264	0	5
West Virginia	2	86	189	----	423	----	1	226	251	44
Wisconsin	14	142	274	----	329	----	8	803	109	11

[1] Exclusive of Oklahoma City and Tulsa.

February, 1928	Cases
Actinomycosis:	
California	1
Anthrax:	
California	1
New York	4
Oklahoma [1]	1
Chicken pox:	
Arkansas	171
California	2,876
Idaho	58
Illinois	1,745
Kansas	702
Maine	119
Michigan	719
Mississippi	885
Missouri	293
Montana	72
New York	2,372
North Carolina	693
Oklahoma [1]	174
Oregon	258
Rhode Island	44
West Virginia	186
Wisconsin	920
Coccidiosis:	
California	4
Conjunctivitis:	
Idaho	8
Dengue:	
Mississippi	8
Dysentery:	
California—	
(amebic)	6
(bacillary)	9
Illinois	19
Kansas (bacillary)	8
Mississippi—	
(amebic)	29
(bacillary)	267
Oklahoma [1]	8
German measles:	
California	1,809
Illinois	31
Kansas	30
Maine	2
Montana	4
New York	538
North Carolina	15
Wisconsin	42
Hookworm disease:	
Arkansas	1[2]
Mississippi	233
Impetigo contagiosa:	
Oregon	12
Jaundice:	
California	2
Lead poisoning:	
Illinois	8
Leprosy:	
California	1
Lethargic encephalitis:	
California	3
Illinois	6
Michigan	5
Montana	1
New York	32
Oregon	1
Wisconsin	5

Mumps:	Cases
Arkansas	232
California	1,329
Idaho	151
Illinois	1,380
Kansas	420
Maine	141
Michigan	1,775
Mississippi	1,322
Missouri	820
Montana	8
New York	3,004
Oklahoma [1]	73
Oregon	88
Rhode Island	143
Wisconsin	914
Ophthalmia neonatorum:	
Arkansas	4
California	2
Illinois	22
Mississippi	6
Missouri	2
New York	6
Oklahoma [1]	2
Rhode Island	1
Paratyphoid fever:	
California	1
Idaho	1
Illinois	2
New York	1
Kansas	4
Plague:	
California	1
Puerperal septicemia:	
Illinois	7
Mississippi	42
New York	15
Rabies in animals:	
California	93
Idaho	1
Mississippi	6
Missouri	2
New York	12
Oregon	2
Rhode Island	8
Rabies in man:	
Illinois	1
Rocky Mountain spotted or tick fever:	
Montana	1
Scabies:	
Oregon	14
Septic sore throat:	
Idaho	1
Illinois	10
Kansas	1
Michigan	30
Missouri	21
Montana	1
New York	14
North Carolina	14
Oklahoma [1]	6
Oregon	9
Rhode Island	5
Tetanus:	
California	3
Illinois	2
Missouri	4
New York	1
Oklahoma	1

[1] Exclusive of Oklahoma City and Tulsa.

Trachoma:	Cases
Arkansas	146
California	24
Illinois	8
Kansas	4
Mississippi	22
Missouri	3
New York	1
Oklahoma [1]	6
Wisconsin	8
Trichinosis:	
California	3
Tularaemia:	
Arkansas	1
Typhus fever:	
California	1
Undulant (Malta) fever:	
California	2
Vincent's angina:	
Illinois	1
Kansas	1
Maine	15
New York	69
Whooping cough:	
Arkansas	101
California	738
Idaho	10
Illinois	1,239
Kansas	365
Maine	132
Michigan	666
Mississippi	1,563
Missouri	268
Montana	12
New York	2,019
North Carolina	679
Oklahoma [1]	42
Oregon	21
Rhode Island	28
West Virginia	74
Wisconsin	386

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

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	142	335	425	123	132	18	321	73	67
Arizona	29	41	18	22	11	2	93	10	6
Arkansas	99	81	92	93	51	13	[2] 23	25	26
California	1,116	613	183	321	728	68	667	39	369
Colorado	352	79	68	69	285	30	104	11	53
Connecticut	428	196	193	146	302	0	108	6	470
Delaware	20	17	29	30	15	0	9	5	5
District of Columbia	107	63	11	-------	135	0	90	2	29
Florida	55	74	24	12	46	3	51	14	4
Georgia	115	107	224	41	97	24	21	52	33
Idaho	86	20	6	43	72	28	[2] 2	1	1
Illinois	1,477	844	124	686	1,229	100	1,245	69	820
Indiana	322	216	178	68	421	357	152	24	77
Iowa	206	78	51	98	309	261	32	12	32
Kansas	902	138	92	118	559	260	164	23	253
Kentucky [3]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Louisiana	19	148	168	-------	56	27	[2] 151	34	30
Maine	227	41	221	126	207	0	23	28	103
Maryland	507	168	404	57	133	0	213	49	110
Massachusetts	1,045	590	2,552	590	1,217	1	395	25	755
Michigan	786	457	1,216	658	1,011	144	426	57	446
Minnesota	560	171	17	-------	564	7	233	18	25
Mississippi	656	185	2,260	555	128	16	264	64	1,170
Missouri	500	332	105	371	508	190	227	41	138
Montana	75	16	4	4	90	84	54	3	11
Nebraska	502	121	37	133	252	95	20	8	22
Nevada [4]	-------	-------	-------	-------	-------	-------	-------	-------	-------
New Hampshire	-------	6	-------	-------	49	0	-------	0	-------
New Jersey	755	714	343	-------	594	12	361	18	667
New Mexico [3]	-------	-------	-------	-------	-------	-------	-------	-------	-------
New York	2,250	1,637	1,786	1,437	1,911	33	1,761	98	1,790
North Carolina	598	346	5,727	-------	317	208	-------	12	364
North Dakota	217	18	24	18	215	10	7	2	24
Ohio	1,722	900	695	720	1,185	86	653	117	404
Oklahoma [1]	95	309	318	16	205	328	66	116	27
Oregon	249	63	82	62	134	180	31	22	18
Pennsylvania	3,301	1,303	3,129	1,903	2,073	3	779	108	873
Rhode Island	38	106	34	69	164	0	28	2	7
South Carolina	211	379	2,210	-------	100	17	264	83	399
South Dakota	58	7	104	35	205	52	5	7	16
Tennessee	130	167	1,167	117	192	63	171	90	65
Texas [3]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Utah [3]	-------	-------	-------	-------	-------	-------	-------	-------	-------
Vermont	325	9	18	76	46	0	12	0	-------
Virginia	583	279	743	-------	287	3	[2] 37	34	401
Washington	315	74	676	200	222	186	171	23	33
West Virginia	217	117	244	-------	298	127	37	126	81
Wisconsin	1,424	240	397	495	740	178	135	14	393
Wyoming	56	2	20	10	87	14	2	7	28

[1] Exclusive of Oklahoma City and Tulsa.
[2] Pulmonary.
[3] Reports received weekly.
[4] Reports received annually.

Case Rates per 1,000 Population (annual basis) for the Month of December, 1927

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	0.66	1.55	1.96	0.57	0.61	0.08	1.48	0.34	0.31
Arizona	.74	1.05	.46	.56	.28	.05	2.39	.26	.15
Arkansas	.61	.50	.56	.57	.31	.08	[1] 1.14	.15	.16
California	2.96	1.63	.49	.85	1.93	.18	1.77	.10	.98
Colorado	3.86	.87	.75	.76	3.12	.33	1.14	.12	.58
Connecticut	3.08	1.41	1.39	1.05	2.17	.00	.78	.04	3.38
Delaware	.97	.82	1.41	1.45	.73	.00	.44	.24	.24
District of Columbia	2.33	1.37	.24	-------	2.94	.00	1.96	.04	.63
Florida	.48	.54	.21	.10	.40	.03	.44	.12	.03
Georgia	.43	.40	.83	.15	.36	.09	.08	.19	.12
Idaho	1.90	.44	.13	.95	1.59	.62	[1] 1.04	.02	.02
Illinois	2.38	1.36	.20	1.11	1.98	.16	2.01	.11	1.32
Indiana	1.20	.81	.67	.25	1.57	1.33	.57	.09	.29
Iowa	1.00	.38	.25	.48	1.50	1.27	.16	.06	.16
Kansas	5.81	.89	.59	.76	3.60	1.67	1.06	.15	1.63
Kentucky [2]									
Louisiana	.12	.90	1.02	-------	.34	.16	[1] .92	.21	.18
Maine	3.37	.61	3.28	1.87	3.07	.00	.34	.42	1.53
Maryland	3.74	1.24	2.98	.42	.98	.00	1.57	.36	.81
Massachusetts	2.90	1.64	7.08	1.64	3.38	.00	1.10	.07	2.10
Michigan	2.06	1.20	3.19	1.73	2.65	.38	1.12	.15	1.17
Minnesota	2.46	.75	.07	-------	2.47	.03	1.02	.08	.11
Mississippi	4.31	1.22	14.86	3.65	.84	.11	1.74	.42	7.69
Missouri	1.68	1.11	.35	1.24	1.70	.64	.76	.14	.46
Montana	1.24	.26	.07	.07	1.48	1.39	.89	.05	.18
Nebraska	4.23	1.02	.31	1.12	2.13	.80	.17	.07	.19
Nevada [3]									
New Hampshire	-------	.16	-------	-------	1.27	.00	-------	.00	-------
New Jersey	2.37	2.24	1.08	-------	1.87	.04	1.13	.06	2.10
New Mexico [3]									
New York	2.32	1.69	1.84	1.48	1.97	.03	1.82	.10	1.85
North Carolina	2.43	1.41	23.27	-------	1.29	.82	-------	.05	1.48
North Dakota	3.98	.33	.44	.33	3.95	.18	.13	.04	.44
Ohio	3.02	1.58	1.22	1.26	2.08	.15	1.15	.21	.71
Oklahoma [4]	.53	1.71	1.76	.09	1.14	1.82	.37	.64	.15
Oregon	3.29	.83	1.08	.82	1.77	2.38	.41	.29	.24
Pennsylvania	3.99	1.58	3.79	2.30	2.51	.00	.94	.13	1.06
Rhode Island	.64	1.77	.57	1.15	2.74	.00	.47	.03	.12
South Carolina	1.35	2.42	14.10	-------	.64	.11	1.68	.53	2.55
South Dakota	.98	.12	1.76	.59	3.47	.88	.08	.12	.27
Tennessee	.62	.79	5.53	.55	.91	.30	.81	.43	.31
Texas [3]									
Utah [3]									
Vermont	10.86	.30	.60	2.54	1.54	.00	.40	.00	-------
Virginia	2.70	1.29	3.44	-------	1.33	.01	[1] .17	.16	1.85
Washington	2.37	.56	5.10	1.51	1.67	1.40	1.29	.17	.25
West Virginia	1.51	.81	1.69	-------	2.07	.88	.26	.87	.56
Wisconsin	5.75	.97	1.60	2.00	2.99	.72	.54	.06	1.59
Wyoming	2.74	.10	.98	.49	4.25	.68	.10	.34	1.37

[1] Pulmonary.
[2] Reports received weekly.
[3] Reports received annually.
[4] Exclusive of Oklahoma City and Tulsa.

PLAGUE-PREVENTION WORK IN THE UNITED STATES

Seattle, Wash.—The report of rat-trapping operations of the United States quarantine station at Seattle for the month of February, 1928, shows a total of 927 rodents taken and 288 examined during the month. None was reported plague-infected.

Los Angeles, Calif.—The rodent division of the Los Angeles Board of Health reports 5,924 rodents collected, and 3,536 examined during the six weeks from February 5 to March 17, 1928. None was found plague-infected.

California.—The weekly reports of plague-suppressive measures in California during the nine weeks from January 8 to March 10, 1928, show a total of 6,417 rodents received and 5,362 examined during the period. Six ground squirrels were reported as plague-infected February 25 to 28, 1928, in Santa Cruz, Calif. The last case of human plague was reported as occurring on February 9, 1928, at Santa Cruz.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 98 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of nearly 31,500,000. The estimated population of the 93 cities reporting deaths is more than 30,875,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended March 17, 1928, and March 19, 1927

	1928	1927	Estimated expectancy		1928	1927	Estimated expectancy
Cases reported				*Cases reported*—Contd.			
Diphtheria:				Typhoid fever:			
42 States	1,640	1,737	----	42 States	148	233	----
98 cities	955	1,045	921	98 cities	27	40	37
Measles:							
41 States	18,641	15,567	----	*Deaths reported*			
98 cities	8,152	5,455	----				
Poliomyelitis:				Influenza and pneumonia:			
42 States	24	16	----	92 cities	1,449	1,251	----
Scarlet fever:				Smallpox:			
42 States	4,563	6,150	----	93 cities	1	1	----
98 cities	1,813	2,556	1,430	Sacramento	1	0	----
Smallpox:				Atlanta	0	1	----
42 States	1,335	1,097	----				
98 cities	126	182	132				

City reports for week ended March 17, 1928

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 1919 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, 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			
NEW ENGLAND									
Maine:									
Portland	76,400	10	1	0	0	0	1	23	0
New Hampshire:									
Concord	[1] 22,546	0	0	0	0	0	0	0	1
Manchester	84,000	0	2	0	0	2	2	0	6
Vermont:									
Barre	[1] 10,008	----	0	----	----	----	----	----	----
Burlington	[1] 24,089	0	0	0	0	0	0	0	0
Massachusetts:									
Boston	787,000	59	46	21	4	0	649	10	53
Fall River	131,000	4	3	1	2	0	0	0	2
Springfield	145,000	14	4	11	1	1	3	85	1
Worcester	193,000	24	4	7	2	1	35	68	7

[1] Estimated, July 1, 1925.

City reports for week ended March 17, 1928—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			
NEW ENGLAND—con.									
Rhode Island:									
Pawtucket	71,000	2	1	0	0	0	4	23	4
Providence	275,000	3	8	9	0	0	57	17	15
Connecticut:									
Bridgeport	(2)	4	7	8	0	0	1	0	4
Hartford	164,000	4	8	2	0	0	23	1	2
New Haven	182,000	4	2	0	0	1	213	96	14
MIDDLE ATLANTIC									
New York:									
Buffalo	544,000	14	11	13	----	0	400	48	26
New York	5,924,000	251	226	293	60	26	1,071	38	312
Rochester	321,000	15	11	6	----	0	43	25	10
Syracuse	185,000	48	5	1	----	0	117	16	4
New Jersey:									
Camden	131,000	5	5	5	0	0	12	0	10
Newark	459,000	34	13	34	8	0	383	17	18
Trenton	134,000	2	3	2	0	1	9	1	4
Pennsylvania:									
Philadelphia	2,008,000	80	73	53	0	20	307	80	106
Pittsburgh	637,000	40	20	23	0	4	148	116	31
Reading	114,000	7	3	5	0	2	0	1	9
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	411,000	5	8	19	0	0	162	0	0
Cleveland	960,000	71	28	50	16	2	58	212	35
Columbus	285,000	4	4	1	0	0	17	3	4
Toledo	295,000	51	5	3	2	1	455	13	2
Indiana:									
Fort Wayne	99,900	5	2	4	0	0	1	0	0
Indianapolis	367,000	28	7	4	0	2	71	125	19
South Bend	81,700	1	1	0	0	0	0	0	2
Terre Haute	71,900	2	0	2	0	0	0	0	2
Illinois:									
Chicago	3,048,000	122	79	85	28	6	55	61	150
Springfield	64,700	13	1	1	3	3	0	10	5
Michigan:									
Detroit	1,290,000	81	56	31	10	4	1,165	62	57
Flint	136,000	10	4	2	0	1	76	223	5
Grand Rapids	156,000	3	2	2	0	0	17	15	2
Wisconsin:									
Kenosha	52,700	32	2	0	0	0	0	0	0
Milwaukee	517,000	79	17	6	0	0	1	46	15
Racine	69,400	4	2	0	0	0	1	4	0
Superior	[1] 39,671	3	1	0	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth	113,000	3	0	0	0	0	3	3	5
Minneapolis	434,000	71	15	16	0	3	96	205	11
St. Paul	248,000	19	12	0	0	2	0	50	12
Iowa:									
Davenport	[1] 52,469	10	1	0	0	----	0	0	----
Des Moines	146,000	0	2	1	0	----	0	0	----
Sioux City	78,000	----	1	----	----	----	----	----	----
Waterloo	36,900	4	0	0	0	----	0	11	----
Missouri:									
Kansas City	375,000	54	6	5	1	3	35	172	19
St. Joseph	78,400	0	1	0	0	0	1	3	3
St. Louis	830,000	16	40	34	2	0	150	18	----
North Dakota:									
Fargo	[1] 26,403	3	1	0	0	0	0	3	0
Grand Forks	[1] 14,811	0	0	0	0	----	0	0	----
South Dakota:									
Aberdeen	[1] 15,036	4	0	0	0	----	0	0	----
Sioux Falls	[1] 30,127	0	1	0	0	0	0	0	0
Nebraska:									
Omaha	216,000	12	3	2	0	0	3	1	9
Kansas:									
Topeka	56,500	32	1	1	1	0	1	6	1
Wichita	92,500	7	2	1	0	0	1	0	8

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended March 17, 1928—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			
SOUTH ATLANTIC									
Delaware:									
Wilmington	124,000	4	2	8	0	0	5	3	3
Maryland:									
Baltimore	808,000	115	28	22	29	4	944	21	48
Cumberland	[1] 33,741	5	1	0	0	0	0	0	1
Frederick	[1] 12,035	1	1	2	0	0	3	0	0
District of Columbia:									
Washington	528,000	28	12	25	0	0	198	0	23
Virginia:									
Lynchburg	30,500	2	0	2	0	0	13	1	2
Norfolk	174,000	25	1	0	0	0	69	3	9
Richmond	189,000	10	2	4	0	1	165	2	5
Roanoke	61,900	4	1	2	0	0	11	4	3
West Virginia:									
Charleston	50,700	6	0	0	0	0	1	0	0
Wheeling	[1] 56,208	9	1	0	0	0	3	0	2
North Carolina:									
Raleigh	[1] 30,371	0	0	2	0	0	89	0	0
Wilmington	37,700	0	0	0	0	1	9	0	4
Winston-Salem	71,800	4	1	1	0	0	97	8	5
South Carolina:									
Charleston	74,100	1	1	2	34	0	0	0	3
Columbia	41,800	15	0	3	0	1	21	23	8
Greenville	[1] 27,311	1	0	0	0	0	3	4	0
Georgia:									
Atlanta	[2]	23	2	5	42	3	21	8	0
Brunswick	[1] 16,809	0	0	0	0	1	37	3	1
Savannah	94,900	2	1	1	8	0	6	3	3
Florida:									
Miami	[1] 69,754	11	2	3	2	0	2	7	2
St. Petersburg	[1] 26,847	0	0	0	0	0	0	0	3
Tampa	102,000	9	2	0	0	0	0	4	2
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,500	0	0	0	0	0	15	0	5
Louisville	311,000	3	4	4	11	0	112	3	29
Tennessee:									
Memphis	177,000	14	4	13	0	5	75	24	3
Nashville	137,000	8	1	2	0	3	30	6	13
Alabama:									
Birmingham	211,000	16	2	2	35	5	122	7	9
Mobile	66,800		0						
Montgomery	47,000	12	0	0	0		17	0	
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	[1] 31,643	3	0	0	0		4	1	
Little Rock	75,900	3	1	1	7	2	36	1	0
Louisiana:									
New Orleans	419,000	20	9	13	9	8	1	0	25
Shreveport	59,500	16	0	1	0	1	186	1	3
Oklahoma:									
Oklahoma City	[2]	4	1	0	17	0	31	4	4
Texas:									
Dallas	203,000	48	5	3	13	4	4	1	6
Fort Worth	159,000	27	3	1	0	3	13	3	4
Galveston	49,100	6	0	5	0	0	21	5	3
Houston	[1] 164,954	8	3	7	0	2	49	8	5
San Antonio	204,000	2	2	4	0	11	31	0	22
MOUNTAIN									
Montana:									
Billings	[1] 17,971	0	0	1	0	0	0	0	0
Great Falls	[1] 29,883	12	1	0	0	1	0	0	0
Helena	[1] 12,037	2	0	2	0	0	0	0	1
Missoula	[1] 12,668	1	0	0	0	0	0	0	0

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended March 17, 1928—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			
MOUNTAIN—contd.									
Idaho:									
Boise	[1] 23,042	1	0	0	0	0	0	1	0
Colorado:									
Denver	285,000	60	9	8	----	5	38	100	16
Pueblo	43,900	5	1	0	0	0	0	0	1
Utah:									
Salt Lake City	133,000	22	3	1	0	3	1	0	5
Nevada:									
Reno	[1] 12,665	0	0	0	0	0	0	0	
PACIFIC									
Washington:									
Seattle	(2)	16	6		0	----	224	20	----
Spokane	109,000	6	2	0	0	----	0	0	----
Tacoma	106,000	24	1	2	0	0	5	29	6
Oregon:									
Portland	[1] 282,383	17	8	5	2	0	11	2	4
California:									
Los Angeles	(2)	162	41	35	23	2	34	116	23
Sacramento	73,400	23	1	3	0	0	15	3	2
San Francisco	567,000	120	2	8	2	1	47	65	6

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	4	5	0	0	0	1	0	1	0	2	19
New Hampshire:											
Concord	0	0	0	0	0	2	0	0	0	0	13
Manchester	2	6	0	0	0	1	0	0	0	0	27
Vermont:											
Barre	0	----	0	----	----	----	0	----	----	----	----
Burlington	1	0	0	0	0	1	0	0	0	0	6
Massachusetts:											
Boston	83	89	0	0	0	18	1	2	0	85	271
Fall River	4	12	0	0	0	0	0	0	0	0	20
Springfield	6	23	0	0	0	3	0	0	0	3	34
Worcester	10	2	0	0	0	3	0	0	0	17	57
Rhode Island:											
Pawtucket	1	2	0	0	0	1	0	0	0	0	24
Providence	10	32	0	0	0	3	0	0	0	3	82
Connecticut:											
Bridgeport	13	7	0	0	0	2	0	0	0	1	46
Hartford	7	2	0	0	0	1	0	0	0	8	31
New Haven	11	1	0	0	0	5	0	0	0	26	61
MIDDLE ATLANTIC											
New York:											
Buffalo	24	57	0	0	0	12	0	1	0	23	155
New York	301	430	0	0	0	124	8	2	1	171	1,723
Rochester	16	13	0	0	0	4	0	1	0	8	89
Syracuse	13	12	0	0	0	4	0	0	0	28	50
New Jersey:											
Camden	6	2	0	0	0	1	0	0	0	1	42
Newark	34	41	0	0	0	8	0	0	0	23	135
Trenton	5	5	0	0	0	6	0	0	0	4	38
Pennsylvania:											
Philadelphia	86	100	0	0	0	43	3	0	1	75	627
Pittsburgh	31	23	0	0	0	8	0	1	0	21	188
Reading	4	40	0	0	0	0	1	0	0	2	42

[1] Estimated, July 1, 1925.

[2] No estimate made.

City reports for week ended March 17, 1928—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	19	36	1	1	0	6	1	0	0	11	----
Cleveland	48	27	0	0	0	20	1	0	0	76	211
Columbus	12	8	2	0	0	3	0	0	0	0	68
Toledo	15	2	2	0	0	9	0	3	0	10	87
Indiana:											
Fort Wayne	6	4	2	0	0	3	1	1	0	0	20
Indianapolis	10	14	11	6	0	9	0	0	0	6	112
South Bend	3	2	1	0	0	0	0	0	0	7	12
Terre Haute	3	1	1	17	0	1	0	0	0	0	28
Illinois:											
Chicago	133	134	3	11	0	66	2	3	0	112	880
Springfield	2	17	0	1	0	1	0	0	0	1	29
Michigan:											
Detroit	99	118	2	1	0	20	1	0	0	60	355
Flint	7	19	1	2	0	2	0	0	0	4	28
Grand Rapids	11	3	0	0	0	0	0	0	0	0	33
Wisconsin:											
Kenosha	3	4	1	1	0	0	0	0	0	4	11
Milwaukee	29	64	3	0	0	7	0	0	0	14	121
Racine	4	7	0	0	0	0	0	0	0	7	10
Superior	4	5	1	0	0	0	0	0	0	0	7
WEST NORTH CENTRAL											
Minnesota:											
Duluth	9	7	1	0	0	0	0	0	0	8	25
Minneapolis	57	23	5	1	0	1	0	0	0	13	101
St. Paul	34	10	6	0	0	5	0	0	0	40	84
Iowa:											
Davenport	1	6	4	0	----	----	0	0	----	0	----
Des Moines	6	12	1	15	----	----	0	0	----	0	33
Sioux City	2	----	2	----	----	----	0	----	----	----	----
Waterloo	2	6	0	0	----	----	0	0	----	4	----
Missouri:											
Kansas City	12	38	4	5	0	6	0	1	1	26	116
St. Joseph	3	1	1	7	0	1	0	0	0	1	----
St. Louis	38	35	5	1	0	13	1	0	0	29	308
North Dakota:											
Fargo	2	2	0	0	0	1	0	0	0	3	8
Grand Forks	0	0	0	0	----	----	0	0	----	0	----
South Dakota:											
Aberdeen	4	0	0	0	----	----	0	0	----	0	----
Sioux Falls	2	2	0	0	0	0	0	0	0	0	0
Nebraska:											
Omaha	3	11	8	2	0	2	0	0	0	1	61
Kansas:											
Topeka	1	2	0	0	0	0	0	1	0	3	15
Wichita	1	4	1	15	0	0	0	0	0	0	29
SOUTH ATLANTIC											
Delaware:											
Wilmington	5		0	0	0	2	0	0	0	0	35
Maryland:											
Baltimore	39	30	0	0	0	21	2	1	0	48	275
Cumberland	1	3	0	0	0	1	1	0	0	1	14
Frederick	1	0	0	0	0	0	0	0	0	0	2
District of Columbia:											
Washington	25	45	2	9	0	13	1	0	0	5	174
Virginia:											
Lynchburg	0	0	0	0	0	1	0	0	0	8	15
Norfolk	1	13	0	0	0	3	0	0	0	1	----
Richmond	3	5	1	0	0	1	0	2	0	0	57
Roanoke	1	4	1	0	0	1	0	0	0	0	17
West Virginia:											
Charleston	0	3	1	0	0	3	0	0	1	2	24
Wheeling	2	0	0	0	0	1	1	0	0	0	18

City reports for week ended March 17, 1928—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											
North Carolina:											
Raleigh	0	0	0	4	0	0	0	0	0	0	9
Wilmington	0	0	0	0	0	1	0	0	0	0	15
Winston-Salem	0	0	5	0	0	0	0	0	0	0	17
South Carolina:											
Charleston	1	0	0	2	0	3	0	0	0	0	23
Columbia	1	0	0	0	0	0	0	0	0	1	29
Greenville	0	1	0	0	0	0	0	0	0	0	3
Georgia:											
Atlanta	4	17	5	1	0	4	0	1	1	5	83
Brunswick	0	0	0	0	0	1	0	0	0	0	7
Savannah	1	1	0	3	0	1	0	1	1	0	32
Florida:											
Miami	2	1	0	0	0	2	1	0	0	0	31
St. Petersburg	2		0		0	2	0		0		11
Tampa	0	1	0	0	0	2	1	1	1	0	33
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	2	1	0	0	3	0	0	0	0	
Louisville	6	23	1	1	0	7	1	0	0	1	104
Tennessee:											
Memphis	4	2	3	3	0	4	1	1	0	1	62
Nashville	3	1	1	0	0	4	0	1	0	0	53
Alabama:											
Birmingham	4	3	8	0	0	5	1	0	0	4	62
Mobile	0		1				0				
Montgomery	0	0	1	0			0	0		0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	1	1	0			0	0		1	
Little Rock	1	6	1	0	0	5	0	0	0	0	
Louisiana:											
New Orleans	7	13	1	5	0	6	2	2	1	1	168
Shreveport	1	2	1	2	0	1	0	0	1	3	31
Oklahoma:											
Oklahoma City	2	2	3	10	0	1	1	0	0	0	26
Texas:											
Dallas	2	24	5	4	0	4	1	1	1	8	56
Fort Worth	2	4	2	8	0	3	1	0	0	0	40
Galveston	0	1	0	0	0	0	0	0	0	0	10
Houston	1	1	2	0	0	8	0	0	0	0	63
San Antonio	1	4	0	0	0	10	1	0	0	0	107
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	4	3
Great Falls	2	2	1	2	0	1	0	0	0	0	9
Helena	0	2	0	0	0	0	0	0	0	0	6
Missoula	1	1	0	1	0	1	0	0	0	0	7
Idaho:											
Boise	1	1	1	0	0	0	0	0	0	1	9
Colorado:											
Denver	15	12	2	0	0	7	0	0	0	8	83
Pueblo	1	4	0	1	0	0	0	0	1	0	12
Utah:											
Salt Lake City	3	6	1	2	0	1	0	0	0	8	32
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle	11	3	5	2			1	0		2	
Spokane	8	5	5	6			0	0		0	
Tacoma	3	4	4	2	0	1	0	0	0	0	24
Oregon:											
Portland	6	6	9	23	0	2	0	2	1	0	67
California:											
Los Angeles	31	32	6	4	0	37	2	0	0	18	269
Sacramento	2	4	1	1	1	0	0	1	0	2	21
San Francisco	15	37	5	0	0	7	1	1	0	21	143

City reports for week ended March 17, 1928—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	0	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York	22	9	1	0	0	0	1	0	1
New Jersey:									
Camden	0	0	1	1	0	0	0	0	0
Newark	1	0	1	0	0	0	1	1	0
Pennsylvania:									
Philadelphia	2	0	1	1	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland	5	1	0	0	0	0	0	0	0
Toledo	0	0	1	0	0	0	0	0	0
Illinois:									
Chicago	14	5	0	0	0	0	0	0	0
Michigan:									
Detroit	2	0	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee	3	2	1	0	0	0	0	0	0
Racine	0	1	0	0	0	0	0	0	0
Superior	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	2	0	0	0	0	0	0	0	0
Missouri:									
Kansas City	4	0	0	1	0	0	0	0	0
St. Louis	6	3	0	0	0	0	0	0	0
North Dakota:									
Fargo	0	0	1	0	0	0	0	0	0
Kansas:									
Topeka	0	0	0	1	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	1	0	0	0	0	0	0	0	0
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	2	1	0	0	0
Georgia: [1]									
Atlanta	0	0	0	0	0	2	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	0	0	1	0
Louisiana:									
New Orleans	1	1	0	0	0	0	0	0	0
Texas:									
Dallas	0	0	0	0	1	1	0	0	0
Houston	2	1	0	0	0	0	0	0	0
San Antonio	0	0	0	0	0	1	0	0	0
MOUNTAIN									
Colorado:									
Denver	2	1	0	0	0	0	0	0	0
Pueblo	1	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	2	1	0	0	0	0	0	0	0
Nevada:									
Reno	0	1	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Tacoma	0	0	0	0	0	0	0	2	0
Oregon:									
Portland	0	0	0	1	0	0	0	0	0
California:									
Los Angeles	2	1	0	0	0	0	0	0	0
Sacramento	1	0	0	0	0	0	0	1	0

[1] Typhus fever: 1 case at Savannah, Ga.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended March 17, 1928, compared with those for a like period ended March 19, 1927. The population figures used in computing the rates are approximate estimates as of July 1, 1927 and 1928, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 31,050,000 in 1927 and 31,657,000 in 1928. The 95 cities reporting deaths had nearly 30,370,000 estimated population in 1927 and nearly 30,961,000 in 1928. 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, February 12 to March 17, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Feb. 19, 1927	Feb. 18, 1928	Feb. 26, 1927	Feb. 25, 1928	Mar. 5, 1927	Mar. 3, 1928	Mar. 12, 1927	Mar. 10, 1928	Mar. 19, 1927	Mar. 17, 1928
101 cities	203	175	179	174	182	172	183	[2] 172	176	[3] 158
New England	133	172	149	138	163	140	128	145	137	[4] 136
Middle Atlantic	277	234	199	224	223	233	230	214	240	212
East North Central	168	169	198	169	176	164	165	171	157	135
West North Central	164	125	109	125	115	113	133	[5] 135	127	[5] 118
South Atlantic	191	149	191	156	195	130	155	124	141	139
East South Central	86	55	117	35	81	90	112	85	30	[6] 112
West South Central	170	124	194	188	149	92	190	168	161	136
Mountain	161	186	72	71	233	186	197	[7] 101	126	106
Pacific	188	82	151	161	133	141	198	171	165	125

MEASLES CASE RATES

101 cities	810	892	862	998	880	1,126	952	[2] 1,134	929	[3] 1,350
New England	181	1,657	228	1,908	172	1,979	198	1,657	212	[4] 2,277
Middle Atlantic	68	700	74	877	67	1,000	80	970	93	1,213
East North Central	1,009	531	1,015	565	1,173	761	1,169	865	1,233	1,663
West North Central	564	240	960	255	952	341	1,241	[5] 492	1,560	[5] 582
South Atlantic	792	2,246	651	2,406	794	2,576	783	2,784	1,010	2,972
East South Central	467	1,347	461	1,202	538	1,541	314	1,307	441	[6] 1,980
West South Central	562	1,899	591	1,959	720	1,695	1,187	1,300	1,026	1,328
Mountain	9,665	97	10,624	168	8,132	142	9,091	[7] 295	5,397	345
Pacific	2,774	692	2,865	749	3,030	892	3,252	904	2,923	880

SCARLET FEVER CASE RATES

101 cities	438	291	424	295	418	295	446	[2] 303	431	[3] 300
New England	470	441	542	414	423	347	591	377	546	404
Middle Atlantic	581	330	531	335	532	345	583	358	572	352
East North Central	322	280	366	285	399	309	369	292	353	296
West North Central	540	265	445	275	443	261	471	[5] 297	426	[5] 279
South Atlantic	249	228	218	282	180	254	193	268	220	223
East South Central	243	190	183	185	218	214	279	259	208	[6] 165
West South Central	66	116	116	120	66	96	120	128	62	208
Mountain	1,246	345	1,192	203	1,076	257	1,112	[7] 203	1,336	248
Pacific	340	230	313	233	329	194	285	192	253	217

[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, 1927 and 1928, respectively.
[2] Sioux City, Iowa, and Boise, Idaho, not included.
[3] Barre, Vt., Sioux City, Iowa, and Mobile, Ala., not included.
[4] Barre, Vt., not included.
[5] Sioux City, Iowa, not included.
[6] Mobile, Ala., not included.
[7] Boise, Idaho, not included.

Summary of weekly reports from cities, February 12 to March 17, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927—Continued

SMALLPOX CASE RATES

	Week ended—									
	Feb. 19, 1927	Feb. 18, 1928	Feb. 26, 1927	Feb. 25, 1928	Mar. 5, 1927	Mar. 3, 1928	Mar. 12, 1927	Mar. 10, 1928	Mar. 19, 1927	Mar. 17, 1928
101 cities	33	20	25	24	21	17	30	[3] 23	31	[3] 21
New England	0	0	0	0	0	0	0	0	0	[4] 0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	28	12	15	13	21	18	34	14	33	26
West North Central	81	101	63	92	53	62	53	[5] 94	49	[5] 62
South Atlantic	60	26	45	26	52	19	54	25	51	32
East South Central	132	25	71	40	122	0	81	20	132	[6] 21
West South Central	62	20	50	8	50	20	70	36	45	44
Mountain	27	168	0	62	0	53	0	[7] 120	90	53
Pacific	94	18	104	125	13	49	94	69	84	38

TYPHOID FEVER CASE RATES

101 cities	9	5	8	5	9	10	8	[3] 4	7	[3] 4
New England	2	5	9	7	2	0	12	2	5	[4] 7
Middle Atlantic	10	3	1	5	5	8	8	3	6	2
East North Central	4	3	6	1	6	7	1	4	4	3
West North Central	10	4	8	4	10	6	4	[5] 2	0	[5] 4
South Atlantic	23	7	29	9	23	12	11	9	11	11
East South Central	30	15	25	20	41	50	30	5	20	[6] 11
West South Central	8	12	4	16	8	32	17	4	12	12
Mountain	0	0	18	0	9	9	0	[7] 0	9	0
Pacific	3	8	8	5	8	8	10	3	18	5

INFLUENZA DEATH RATES

95 cities	23	22	22	21	25	24	27	[7] 22	31	[8] 25
New England	9	11	12	7	9	7	12	21	19	[4] 7
Middle Atlantic	25	18	22	24	24	16	25	19	31	26
East North Central	19	12	17	14	23	17	16	16	18	12
West North Central	23	6	10	2	17	10	14	12	21	16
South Atlantic	31	35	41	28	47	32	70	25	79	19
East South Central	43	37	43	31	21	84	80	55	90	[6] 73
West South Central	38	90	25	74	38	103	47	74	21	115
Mountain	27	71	54	35	54	88	54	[7] 64	18	80
Pacific	17	27	17	20	17	24	7	20	14	10

PNEUMONIA DEATH RATES

95 cities	146	174	163	161	171	190	188	[7] 191	184	[8] 221
New England	102	170	184	147	202	193	188	205	172	[4] 238
Middle Atlantic	148	195	176	155	193	217	222	221	226	258
East North Central	121	137	145	156	132	148	157	156	142	194
West North Central	91	94	91	71	104	106	81	96	114	139
South Atlantic	234	216	253	228	229	217	272	214	262	214
East South Central	175	204	122	220	271	240	186	312	191	[6] 331
West South Central	204	279	161	271	183	263	161	254	195	263
Mountain	188	168	134	248	126	265	170	[7] 276	161	203
Pacific	176	172	131	115	121	155	148	122	93	125

[3] Sioux City, Iowa, and Boise, Idaho, not included.
[4] Barre, Vt., Sioux City, Iowa, and Mobile, Ala., not included.
[5] Barre, Vt., not included.
[6] Sioux City, Iowa, not included.
[7] Mobile, Ala., not included.
[8] Boise, Idaho, not included.
[9] Barre, Vt., and Mobile, Ala., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1927 and 1928, 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	
			1927	1928	1927	1928
Total	101	95	31,050,300	31,657,000	30,369,500	30,960,700
New England	12	12	2,242,700	2,274,400	2,242,700	2,274,400
Middle Atlantic	10	10	10,594,700	10,732,400	10,594,700	10,732,400
East North Central	16	16	7,820,700	7,991,400	7,820,700	7,991,400
West North Central	12	10	2,634,500	2,683,500	2,518,500	2,566,400
South Atlantic	21	21	2,890,700	2,981,900	2,890,700	2,981,900
East South Central	7	6	1,028,300	1,048,300	980,700	1,000,100
West South Central	8	7	1,260,700	1,307,600	1,227,800	1,274,100
Mountain	9	9	581,600	591,100	581,600	591,100
Pacific	6	4	1,996,400	2,046,400	1,512,100	1,548,900

FOREIGN AND INSULAR

THE FAR EAST

Report for the week ended March 3, 1928.—The following report for the week ended March 3, 1928, was transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

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

PLAGUE

Egypt.—Suez.
Aden Protectorate.—Aden.
India.—Bassein, Bombay, Rangoon.
Ceylon.—Colombo.

CHOLERA

India.—Bassein, Calcutta, Madras, Rangoon.
Siam.—Bangkok.
French Indo-China.—Saigon.

SMALLPOX

Aden Protectorate.—Perim.
Iraq.—Basrah.
Ceylon.—Colombo.
India.—Bombay, Calcutta, Madras, Negapatam, Rangoon.
French India.—Pondicherry.
Dutch East Indies.—Banjermasin, Belawan-Deli, Surabaya.
China.—Shanghai, Hong Kong.
Kwantung.—Dairen.
Manchuria.—Mukden.

Returns for the week ended March 3 were not received from Samarinda, Dutch East Indies, or Vladivostok, Union of Socialist Soviet Republics.

ARABIA

Aden—Plague.—According to information dated February 29, 1928, 395 cases of plague with 244 deaths have been reported to that date at Aden, Arabia. The area of prevalence is stated to have extended beyond the point of original occurrence and to have reached a village 10 miles in the interior of the country. Isolated cases had been reported in the military and European residential areas, though no European had been attacked.

CANADA

Quebec Province—Communicable diseases—Week ended March 17, 1928.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended March 17, 1928, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	1	Scarlet fever	106
Chicken pox	64	Smallpox	22
Diphtheria	44	Tuberculosis	58
German measles	12	Typhoid fever	20
Influenza	4	Whooping cough	26
Measles	339		

Vital statistics—Quebec Province—January, 1928.—Births and deaths in the Province of Quebec for the month of January, 1928, were reported as follows:

Estimated population	2,650,000
Births	6,255
Birth rate per 1,000 population	28.3
Deaths	2,859
Death rate per 1,000 population	12.9
Deaths under 1 year	757
Infant mortality rate	121.0
Deaths from—	
Accidents	38
Cancer	145
Cerebrospinal meningitis	10
Diabetes	26
Diarrhea	109
Diphtheria	57
Deaths from—Continued.	
Heart disease	327
Influenza	68
Measles	12
Pneumonia	299
Poliomyelitis	1
Scarlet fever	15
Smallpox	0
Syphilis	7
Tuberculosis (pulmonary)	213
Tuberculosis (other forms)	37
Typhoid fever	30
Whooping cough	38

FINLAND

Communicable diseases—January, 1928.—During the month of January, 1928, communicable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Diphtheria	91	Paratyphoid fever	20
Dysentery	15	Poliomyelitis	1
Encephalitis lethargica	1	Scarlet fever	166
Influenza	2,923	Typhoid fever	31

Population: 3,558,220.

GREAT BRITAIN

Bristol, England—Vital statistics—1927.—During 1927, 5,023 deaths were reported at Bristol, England, the general death rate being 13.1 per thousand, as compared with a rate of 11.9 per thousand in 1926. The birth rate in 1927 was 17.0 per thousand. In 1926 it was 17.7. The infant mortality rate in 1927 was the lowest ever recorded in Bristol, 57 per thousand births.

UNION OF SOUTH AFRICA

Orange Free State—Suspect plague.—During the week ended February 11, 1928, three suspect fatal cases of plague were reported in natives in the Heilbron District, Orange Free State, Union of South Africa, on a farm.

Typhoid fever.—Under date of February 24, 1928, an outbreak of typhoid fever was reported in the native female section of the Mental Hospital, Pietermaritzburg, Natal, with 20 cases and 2 fatalities. The outbreak was attributed to a carrier among the patients.

At Vrede, Orange Free State, a mild outbreak of the disease was reported, with 36 cases in the town and native location occurring since December 24, 1927. The mild character of the epidemic was attributed to the extensive inoculation against the disease carried out two years ago on the occasion of an outbreak of typhoid fever in the same locality.

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

From medical officers of the Public Health Service, American consuls, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

[C indicates cases; D, deaths; P, present]

Place		July 3-30, 1927	July 31-Aug. 27, 1927	Aug. 28-Sept. 24, 1927	Sept. 25-Oct. 22, 1927	Oct. 23-Nov. 19, 1927	Nov. 20-Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				Mar. 3, 1928
								24	31	7	14	21	28	4	11	18	25	
China:																		
Amoy	C	2	28	72	16													
	D		7	3														
Canton	C	8	31	36	14	12	1											
	D	5	16	25	14	11	1											
Foochow	C	P	P	P	P													
Hong Kong	C	2	P	1	P													
	D	1																
Shanghai (settlement and concession)—																		
Foreigners only	C		1	6	3													
Including natives	D		20	74	7													
Swatow	C	72	42	P	P	P												
	D	1		P	P	P												
Tientsin	C	P	P	15	2	P	1											
Dutch East Indies: Java—Batavia	C					28	3											
	D					18	3											
India	C	46, 137	45, 163	31, 390	20, 160	23, 047	25, 139	4, 624	3, 960	3, 550	3, 243	3, 267	3, 097					
	D	24, 081	22, 051	15, 895	10, 371	12, 863	15, 026	2, 617	2, 353	2, 046	1, 847	1, 765	1, 739					
Bassein	D	16												1			1	1
Bombay	C	75	42	3		2							1					
	D	35	30	2		2												
Calcutta	C	95	87	76	101	199	428	69	42	43	22	39	36	70	58			
	D	48	40	39	64	138	281	48	34	27	16	18	24	38	32	35	42	36
Madras	C	424	547	59	14	13	1				1	1			1		3	
	D	204	278	48	8	7	2				1		3		1	2	2	7
Madras Presidency	C	11, 491	7, 600	3, 056	2, 050	3, 073	3, 702	503	382	482	497	1, 163	1, 301					
	D	4, 807	3, 513	1, 581	1, 055	1, 736	2, 104	241	209	254	280	623	813					
Negapatam	C											4						
	D											4			1	2	2	
Rangoon	C	2	1	2	6	2	8	1	2		1	4	1	1	1	10		
	D	2	1	2	5	5	6	1	1		1			1	1	8	4	2
Tuticorin	C				1		8											
	D				1	37	14											

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

CHOLERA—Continued

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				Mar. 3, 1928
								24	31	7	14	21	28	4	11	18	25	
India (French):																		
Chandernagor	C	1	1	1	.....	6	10	6	3	4	1	1	.....	5	.....	.....	.....	.....
	D	1	1	.....	.....	6	10	4	2	2	1	.....	.....	1	.....	.....	.....	.....
Karikal	C	56	18	1	.....	1	1	.....	.....	6	2	9	7	8	.....	.....	.....	.....
	D	45	12	1	.....	1	1	.....	.....	4	.....	5	4	5	.....	.....	.....	.....
Pondicherry	C	37	12	15	.....	1	25	4	1	2	4	2	3	2	.....	.....	.....	.....
	D	24	11	15	.....	1	21	6	1	2	3	2	3	2	.....	.....	.....	.....
Indo-China: Saigon	C	.....	.....	1	1	.....	.....	.....	.....	2	1	1	1	.....	2	1	5	.....
	D	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	1	1	1	.....
Iraq [1]		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Japan: Yokohama	C	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	D	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Philippine Islands: Manila	C	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Siam	C	81	77	40	18	110	88	24	24	13	49	50	33	48	69	.....	.....	.....
	D	59	53	24	11	76	64	18	21	5	36	34	21	42	42	.....	.....	.....
Bangkok	C	6	2	3	5	4	3	2	3	7	9	11	28	28	34	23	17	12
	D	1	1	1	3	2	2	2	1	3	5	7	16	26	17	12	11	7
Straits Settlements: Singapore	C	.....	.....	.....	.....	7	5	3	15	3	2	2	.....	.....	1	.....	.....	.....
	D	.....	.....	.....	.....	5	4	1	4	5	2	1	.....	.....	.....	.....	.....	.....
On vessel:																		
S. S. Adrastus: At Yokohama, Japan	C	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	D	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
S. S. Tabaristan: At Basra, Iraq	C	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Place		July, 1927	August, 1927	September, 1927	October, 1927	November, 1927			December, 1927			January, 1928			February, 1928		
						1–10	11–20	21–30	1–10	11–20	21–31	1–10	11–20	21–31	1–10	11–20	21–29
Indo-China (French):																	
Annam	C	911	1,628	640	226	13	75	38	16	2	.....	79	95	93	23	36	14
Cambodia	C	87	89	75	180	56	1	28	21	12	39	30	9	15	38	22	51
Cochin-China	C	257	68	144	178	21	27	52	17	38	58	46	119	130	178	113	153
Laos	C	20	190	36	67	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tonkin	C	1,093	180	24	1	.....	.....	1	.....	.....	2	1	.....	.....	.....	.....	.....
Kwangchow-wan	C	.....	1	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

PLAGUE

[C indicates cases; D, deaths; P, present]

Place		July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				March, 1928		
							24	31	7	14	21	28	4	11	18	25	3	10	17
Algeria: Oran	C	4	1		2														
	D	3	1																
Arabia: Aden	C									19	13	22	54	89	63	45	77	158	
	D									7	8	8	33	55	50	31	26	99	
Argentina:																			
Bahia Blanca district	C					3													
Buenos Aires	C													2					
Cordoba Province	C	2		P	P	10	1	1											
Entre Rios	C	5																	
Firmat	C					1													
Quilino	C					3													
Rosario	C					4	2	3				4			1				
Santiago Province	C														1				
Ucacha	C					1													
Azores: St. Michaels Island	C	2	2	3	3	3	1		1		3	1	2	2					
	D		1	1		1				1	1	1	1	1					
Brazil:																			
Bahia	C							1	2	1	2		2	1	4				
	D							1	1	2		1	2	1	2				
Porto Alegre																	2		
Rio de Janeiro	C										1		1	2	1	1			
	D													1	2				
British East Africa:																			
Tanganyiki	C	P		P	P	P	P						2						
Uganda	C	456	226	99	99	67													
	D	345	158	88	96	61													
Canary Islands:																			
Las Palmas	C			9		3			2	1	1				1				
	D					1				1	1				1				
Teneriffe	C										1	3	3	3					
	D										1		3						
Ceylon: Colombo	C	1	3	1		6	3	2	1	1	1	1	1		3	3	4	1	
	D		3			6	3	1	1	1	1	1			1	3	1	1	

[1] From July 19 to Dec. 26,1927, 1,479 cases of cholera were reported in Iraq, with 1,063 deaths, as follows: Amarah Liwa, 261 cases, 205 deaths; Baghdad Liwa, 80 cases, 60 deaths; Basra Liwa, 421 cases, 330 deaths; Diwaniah Liwa, 122 cases, 72 deaths; Diyalah Liwa, 1 case, 1 death; Dulaim Liwa, 100 cases, 69 deaths; Hillah Liwa, 105 cases, 71 deaths; Kerbalah Liwa, 79 cases, 60 deaths; Kut Liwa, 66 cases, 44 deaths; Muntafiq Liwa, 244 cases, 151 deaths.

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

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				March, 1928		
							24	31	7	14	21	28	4	11	18	25	3	10	17
China:																			
Tientsin	C	2																	
Tungliao	D			200															
Dutch East Indies:																			
Balik-Papan	C						1												
	D						1												
Celebes—Makassar	C				6	2	2	1		3	2	1	1	1		1			
	D				6	2	2	1		2	2	1	1	1		1			
Java	D		432	779	829	1,017	209	179	176	187									
Batavia and West Java	C	71	68	130	132	154	32	36	24	36	46	37	27						
	D	71	68	129	132	152	32	36	24	36	44	37	27						
Cheribon	C					1													
	D					1													
East Java and Madura	C	28	18	17	10	8	3	2	1	1	5	2					P		
	D	27	18	17	10	8	3	2	1	1	5	2							
Pasoeroean Residency	C					P													
Surabaya Residency	C					P													
Surakarta Residency	C				P	P													
Egypt:																			
Alexandria	C	2	1			12	3	2					1		1				
	D					7	1	1					1		1				
Suez	C		1							1	1		3		3	4		3	
	D									1	1		1		3	3	2	1	
Greece:																			
Athens and Piræus	C	1	3	1				2	1										
	D			1				1											
Mitylene	C	1	5	1	3	3													
Patras	C	2	2	1	1														
	D			1	1														
Hawaii Territory: Hawaii	D	1													1				
India	C	1,391	2,710	3,246	3,600	5,518	1,085	1,197	2,596	2,219	2,544	2,699							
	D	836	1,428	1,792	2,065	3,269	733	899	1,804	1,498	1,653	1,661							
Bassein	D	12	14	8	4	4	2	13	2		3	3		2	1	2	4	5	
Bombay	C	14	7	4				1		2	5	4	2	3	5				
	D	11	5	3				1		1	2	2	3	2	6	14	7	6	

Calcutta	C		18																
	D		10									1							
Madras Presidency	C	620	465	583	470	791	174	167	56	153	107	132	79						
	D	321	230	298	282	359	69	27	38	72	63	64	60						
Rangoon	C	15	6	11	11	15	2	4	4	7	8	9	7	11	15				
	D	14	6	11	11	15	2	3	4	7	7	7	6	10	12	15	6	10	
Indo-China: Saigon	C		2		1														
Iraq:																			
Baghdad	C										1	1		2		1			
	D										1			1		1	1		
Dulaim Liwa	C												1						
Nigeria: Lagos	C				17	13	2	1	1	6	2	3	3	2	2	3	2		
	D				17	13	1	1	1	5	3	3	3	2	2	3	2		
Senegal: [1]																			
Baol	C	23	72	95	P	P													
	D	13	33	40															
Cayor	C	227	463	176	48														
	D	166	233	88	28														
Dakar	C	46	20	1															
	D	32	12																
Louga	C		5	8															
	D		4																
Rufisque	C	44	16																
	D	38	12																
Thies	C		9	1	1														
	D		7																
Siam	C			13	1	3	1	7	4	4	5	3	6						
	D			9		2	1	1	5	4	1	1	5						
Bangkok	C			2				1				1	1		1				
	D				1			1				1	1		1				
Straits Settlements: Singapore	C				1								1	1	1		1		
	D				1								1	1	1				
Tunisia [2]																			
Turkey: Constantinople	C		1	1		2													
	D			1		1													
Union of South Africa:																			
Cape Province	C				2	2					1								
	D				2	1					1								
Orange Free State	C				1	8						2		3					
	D				1	6						1		3					
U. S. S. R.:																			
Chita district	C			1															
	D			1															
Northern Caucasus	C		14	1															
	D		10																
Venezuela: State of Miranda—Tacata and Cua	C																		P
On vessel:																			
At La Plata, from Rosario, Argentina	C							1											
S. S. Aghios Gerasimos at, Vigo Spain	C				3														

[1] During January, 1928, 5 cases of plague were reported in interior of Senegal
[2] Eight cases of plague with 6 deaths were reported in Bengardane region, Tunisia, Mar. 17 to 27, 1928.

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

PLAGUE—Continued

[C indicates cases; D, deaths; P, present]

Place		July	August	September	October	November	December	January
Algeria: Algiers	C				2			
British East Africa: Kenya	C	13	61	21	18	28	16	26
Ecuador: Guayaquil	C	5	7	3	4	9	5	4
	D					3	2	4
Indo-China (French)	C			14	3	3	4	7
Madagascar	C	46	98	170	166	209	317	427
	D	43	89	154	155	189	261	388
Ambositra Province	C	6	1		6	1	18	105
	D	6	1		6	1	10	96
Antisirabe Province	C		34	5	19	18	72	117
	D		34	4	19	17	72	117
Itasy Province	C	14	11	21	16	26	62	33
	D	14	7	20	15	25	54	29
Moramanga Province	C	5	4	3	24	46	25	19
	D	5	4	3	20	41	22	19
Madagascar—Continued.								
Tananarive Province	C	21	48	142	99	170	139	155
	D	19	43	127	93	153	108	129
Mauritius	C			1				
Nigeria	C	9	8	15	27	16	20	16
	D	7	8	14	27	16	18	16
Peru	C	8	11	15	14	6	14	
	D	7	6	6	5	2	4	
Callao	D	3					3	
Lima	C						7	
	D				1	1	1	
Syria: Beirut	C						2	

SMALLPOX

[C, indicates cases; D, deaths; P, present]

Place		July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				March, 1928		
							24	31	7	14	21	28	4	11	18	25	3	10	17
Algeria	C	459	382	683	061	170	81	26	7	15	17	18	11						
Algiers	C					3	3	4		2	3	1	7	4	4				
Oran	C	9	16	11	20	39	8	15	2	4	2	2	4		1		2		
Arabia: Aden	C				1	3	1								1				
Brazil:																			
Para	C	1																	
Rio de Janeiro	C	6	10		1														
	D	4	9		1														

British East Africa: Tanganyiki	D	21	8	P	P	P			2	6	4								
British South Africa:																			
Northern Rhodesia	C	55	39	164	185	252	2	81	141	12	3		230						
	D	1	2	11	64	62		8	23				23						
Southern Rhodesia	C				3	2	1						P	3	2				
Canada:																			
Alberta	C	17	17	23	10	19		3	3	5	1	19	1	6		3		7	
Calgary	C	1																	
Edmonton	C			1	1	8			3	2	1			2	1		11	1	
British Columbia: Vancouver	C		2			4	1	3	3	1	11	3	1	11	2	1		1	1
Manitoba	C	13	9	7	19	7	2	2	2	5		1							
Winnipeg	C	5	4	2	2	2	1			1	1	1							
New Brunswick	C		2				1									1			
Nova Scotia	C		1	1															
Halifax	C			1															
Ontario	C	60	22	96	264	347		53	83	76	52	77	63	51	40	51	36	20	
Hamilton	C					2													
Kingston	C				1		1							1					
Ottawa	C	27	40	67	134	63	18	9	10	23	20	16	23	9	11	3	1	7	6
Toronto	C		2	10	34	30	7		11	10	8	5	1	6	4	4	2	4	2
Windsor	C			9															
Quebec	C	1		8	25	16	14	3	10	17	7		11	8	11	13		18	
Montreal	C				1		1		1	6	3	4	1		5	1	3		
Quebec	C					4		2		3		5				2	5		
Riviere du Loup	C				3														4
Saskatchewan	C	14	68	31	34	58	12	13	15	12	39	15	9	34	7	8		7	
Moose Jaw	C	10	16	3		1		1	2	1	4	2	3	2		2	6	5	2
Regina	C	8		5	1	1													
Saskatoon	C					2		4			13	1		1		2			
Ceylon: Colombo	C	1			1	2					1		1	2	2	1	3		
	D	1				1					1								
China:																			
Antung	C									1									
Canton	C		1																
	D		1																
Chefoo	C		1	P		P													
	D		1																
Foochow	C	P	P	P	P	P	P	P		P		P		P					
Hong Kong	C	1	2							1	1					3		3	
	D	1	2						1			1				1	1	2	
Manchuria—																			
Changchun	C					1						4							
Dairen	C			1	2	1			2	3					1				
	D			1															
Fushun	C		1		1														
Harbin	C					2		1				2							
Mukden	C			2	1							1		3	18		3		
Pensihu	C			1															
Shanghai—																			
Foreigners only	C										1	2		2	1				
Including natives	D										3	2	3	3	5	4	4	6	
Tientsin	C		4	13	8	9	2			6	20	10	10	8	5				
Curacao (alastrim)	C										2				3				

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

SMALLPOX—Continued

[C, indicates cases; D, deaths; P, present]

Place		July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				March, 1928		
							24	31	7	14	21	28	4	11	18	25	3	10	17
Dutch East Indies:																			
Borneo—																			
Samarinda District	C				P														
South and East Borneo Residency	C	P																	
Java—																			
Batavia and West Java	C	4		4	25								1						
	D				15														
East Java and Madura	C	4	22	8	9	9		3	1	1	2								
	D			1															
Sumatra: Medan	C					3		8		1	3	5	5	10					
	D					2		1		2	4	4		3					
Egypt	C		3			4		4											
	D		1	1		1													
Cairo	C					2													
Great Britain:																			
England and Wales	C	568	508	473	902	1,041	255	247	275	398	405	370	386	369	369	392	365	347	
Birmingham	C	1		1							14	17	11	2	1		2		
Bradford	C				11	19	2	2	4	24	6	9	7	2	7	1		4	
Bristol	C			6	4	8						2		1			1	3	
Cardiff	C				1				1										
Leeds	C	5	3	7	5	16	4	6	1		1			2	1	2	4	2	
Liverpool	C									1								1	
London	C										2		1	5	10	1	2	1	
Manchester	C			3	6	25		1	2	2	11	6	4	4	1	4	1	2	
Newcastle on Tyne	C	1	2	6	9	55	2	13	2	5	14	3	4	6	4	1	4	3	
Nottingham	C								7	6	4	8	6	9	6	1	3	1	
Sheffield	C	2	1	10	6	9	3		1	10	4		4		1	2	2	1	
Stoke on Trent	C	1							3	1			1		2	4	3	6	
Greece: Saloniki	D	2																	
India	C	5,911	4,398	3,153	4,052	6,731	2,225	2,502	2,664	3,285	4,129	3,631							
	D	1,668	1,120	715	927	1,650	515	578	551	785	964	803							
Bassein	C	1												1					
	D	1																	

Bombay	C	33	12	10	4	9		4	4	6	10	23	10	18	29	23	46	51	
	D	19	8	2	3	2					2	8	7	7	15	13	23	22	
Calcutta	C	27	22	5	5	25		17	9	14	14	11	23	10	9	18	14	30	
	D	25		6	2	11		17	4	6	10	7	10	7	5	11	10	24	
Madras	C	6	7	8	7	11	2		11	8	9	16	20	29	15	33	21	31	
	D		2		2	3	1		4	1	3	2	2	1	3	3	3	10	
Negapatam	C	3	1							5		4	2	2	1		1	1	
	D	2	1							3		2	1						
Rangoon	C	14	9	17	6	14	36	28	23	49	41	34	103	97	68	82	132	95	
	D	3	2	3	1	4	5	13	4	9	13	10	18	23	22	24	26	32	
Vizagapatam	C		3						3		2	1	5	2		1		1	
	D		2								6	1		1					
India (French):																			
Karikal	C	3	1	2	P														
	D	3	1	2															
Pondicherry	C	39	37	38	42	41	6	16	25	18	15	17	15				6	3	
	D	31	37	38	42	41	6	14	12	18	15	17	15				6	3	
Indo-China: Saigon	C	1	1			1		1	1	1								1	
Iraq:																			
Baghdad	C		1	7	5	25	9	9	3	2	7	6	5	3					
	D		1	4	4	14	7	3	2		3	3	2	1					
Basra	C	1	4	2	3	4		2			1						2	4	
	D	1	4	2	1	3		1											
Italy (Rome and vicinity)	C		1				2												
Jamaica (outside Kingston) (alastrim)	C	6	9	9	7	3		2				4	1		1	3			
Kingston	C		3	2															
Japan:																			
Nagasaki	C	2																	
	D	1																	
Tokyo	C										2	1		1					
	D											1							
Mexico:																			
Acapulco	C		2		1														
	D		2		1														
Chihuahua	D								1										
Guadalajara	D					2											1		
Manzanillo	C									1								1	
Mexico City and surrounding territory	C					4							1	1	2				
Monterey	C																		
	D																		
San Luis Potosi	C	1																	
Tampico	C															1			
Torreon	C	1		2															
Palestine: Jerusalem	C					1						1							
	D											1							
Poland	C	2				1	5	1			1	1	1						
	D	1																	
Porto Rico	C																		P
Portugal:																			
Lisbon	C		3	8	4	10	1	2	4	5	5	2	2	3	3	9			
	D					1													
Oporto	C		1																
Senegal: Dakar	C															8			

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

SMALLPOX—Continued

[C, indicates cases; D, deaths; P, present]

Place		July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— December, 1927		January, 1928				February, 1928				March, 1928		
							24	31	7	14	21	28	4	11	18	25	3	10	17
Siam	C	51	27	6	1	9	2	5	8	8	13	7	5	10					
	D	10	15			1			2		1	1	2						
Bangkok	C		3		1	1		1	2										
	D		1						1										
Spain:																			
Malaga	D				1	1													
Seville	C									1									
Valencia	C			1				1	1									1	
Straits Settlements: Singapore	C				1									1					
Switzerland	C						2												
Tunisia: Tunis	C							2	2			3			2	4			
Union of South Africa:																			
Cape Province	C	P		P							P								
Orange Free State	C	P			P	P	P				P								
Transvaal	C			P	7														
Venezuela: Maracaibo	D		2	1										1					

Place		July, 1927	August, 1927	September, 1927	October, 1927	November, 1927			December, 1927			January, 1928			February, 1928	
						1–10	11–20	21–30	1–10	11–20	21–31	1–10	11–20	21–31	1–10	11–20
Algeria	C	376	459	382	682											
Oran	C	14	10	16	11											
Indo-China	C	19	3	21	25	13	3	22	10	4	20		40	18	50	31
Syria:																
Aleppo	C										1		1			
Beirut	C								1		1			15	11	26
Damascus	C		3	5	22		13		4	6	2	11	2			

Place		July-Sept.	October	November	December	January	February
Angola	C	51	73	71			
	D		2				
Congo	C	5	77				
Cuanza-Norte	C	1					
Cuanza-Sul	C		2				
Loanda	C	1					
Zaire	C	3	4	1			
Brazil: Porto Alegre	C	11	4	1			
British East Africa: Zanzibar	C		2				
	D		1				
Chosen	C	21	2	2			
	D	6		1			
Ecuador: Guayaquil	C	4	1	1	4	2	9
France	C	37	7	4	14	11	
Gold Coast	C	7	4				
Greece	C	10	4		5	6	11
Latvia	C		2				
Mexico	D	221		157			
Morocco	C	180	81	140	401	55	
Nigeria	C	820	223	93			
	D	173	51	30			
Persia	D			2			
Spain: Madrid	D			1			
U. S. S. R.:							
Railways, etc	C	26	7	11			
Other territories in Europe	C	366	220				
Transcaucasus, Siberia, and Central Asia	C	80	40	21			
Ukraine	C	27	11	20			

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

TYPHUS FEVER

[C, indicates cases; D, deaths; P, present]

Place		July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Oct. 23–Nov. 19, 1927	Nov. 20–Dec. 17, 1927	Week ended— Dec., 1927		January, 1928				February, 1928				Mar., 1828	
							24	31	7	14	21	28	4	11	18	25	3	10
Algeria:																		
Algiers	C											1						
Oran	C						1	1	1	1		2			2		6	
Austria: Vienna	C												1					
Bulgaria: Sofia	C			17	6	1	1	4	1		1							
	D				1													
Chile:																		
Antofagasta	D			1														
Valparaiso	C		1		1	2				1								
	D	2	1		2													
China:																		
Manchuria—Harbin	C	2			1													
Tientsin	C		2															
Egypt	C	2		12	4	14	1		3	4	2			1				
	D	3		5		8			3	1								
Cairo	C					2												
	D					1												
Port Said	C			1		1												
Ireland (Irish Free State):																		
Cork County	C					3			1									
Donegal County, Letterkenny	C			4														
Mexico:																		
Guadalajara	D					1												
Mexico City, including municipalities in Federal District	C	17	19	18	28	17	4	4	4	3	2	1		2	1		4	3
	D				2	1	1	3	1								3	1
Morocco	C								107	235	257	214	370	210				
Palestine	C	11	1	5	3	9				8		2	2	1	1			
Poland	C	50	35	19	64	93	26	33	68	68	101	92	87	66	57			
	D	6	2	4	11	10	1	3	6	6	4	3	5	7	10			
Portugal: Oporto	C	1			1									1				
Rumania	C	36	16	17	22	35	32	17	19				15	24				
	D	1		2				2	1				2	7				
Syria: Aleppo	C		2						2									

Tunisia	C	14	1	3	1	1	1			5	4				1				
Union of South Africa:																			
Cape Province	C	P	P	P	P	P	P	1	P		P	P	1	P					
Natal	C	P	P	P	P	2	2	P	P	1		P		1					
Orange Free State	C			P		P							P	P					
Transvaal	C	1		5	P	P													

Place		1927				November, 1927			December, 1927			January, 1928	
		July	August	September	October	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20
Algeria	C	67	33	10	12								
	D	13			1								
Algiers	C	2	2	6	2								
Bulgaria	C	12	24	7	2						2	7	6
	D		1	2	1						1		1
Morocco	C	148	76	7	11	5	14	7	5	6	75		

Place		July-Sept.	October	November	December	January	February
Argentina	C			1			
	D				1		
China: Shanghai	D			1			
Chosen	C	90	16	26	38		
	D	8	1	2	3		
Chemulpo	C	3				1	
Gensan	C	2				1	
Seoul	C	5	2				
	D	1	1				
Czechoslovakia	C	12	1		6		
Greece: Athens	C	3			1	2	2
Japan	C	1		1			
Latvia	C	6					

Place		July-Sept.	October	November	December	January	February
Lithuania	C	69	9	18	27	86	
	D	14	1	1	1	10	
Mexico	D	64	36	29			
Peru:							
Arequipa	D	3	2		1	2	
Lima	D	8					
U. S. S. R.:							
Railways, etc	C	77	23	33			
Transcaucasus, Siberia, and Central Asia	C	208	61	49			
Ukraine	C	295	151	198			
Other territories in Europe	C	1,839	521				
Yugoslavia	C	20	1	1		7	
	D	5				3	

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

YELLOW FEVER

[C indicates cases; D, deaths; P, present]

Place		July 3–30, 1927	July 31–Aug. 27, 1927	Aug. 28–Sept. 24, 1927	Sept. 25–Oct. 22, 1927	Week ended— Oct. 29, 1927	Nov. 5	Nov. 12	Nov. 19	Nov. 26	Dec. 3	Dec. 10	Dec. 17	Dec. 24	Dec. 31	Jan. 7, 1928	Jan. 14	Jan. 21	Jan. 28	Feb. 4, 1927
Ashanti: Obuasi	C		1																	
	D		1																	
Belgian Congo:																				
Boma	C														3					
	D														2					
Matadi	C														6	12	11	1	5	8
	D														2	6	8	2	5	6
Dahomey:																				
Grand Popo	C									1										
	D									1										
Porto Novo	C	1																		
	D	1																		
Ivory Coast	C	1												1						
	D	1												1						
Liberia: Monrovia	C			1																
Nigeria	C			2																
	D			2																
Senegal	C	3	10	21	31	9	16	6	6	7										
	D	3	9	21	31	8	10	4	4	6										
Dakar	C	1			12	3	6		5	2	1	4			1	1				
	D				7	2	4		4	2	1	4			1	1				
Togoland	C		1																	
	D		1																	

Place		July	August	September	October
Gold Coast	C	15	2	6	1
	D	4	2	4	1

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