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AN UNUSUALLY MILD RECURRING EPIDEMIC SIMULATING FOOD INFECTION

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In various localities of the northwest mountainous section of the United States a mild dysentery-like epidemic has occurred from year to year. The infection has been strictly seasonal, practically all of the cases occurring during the hottest and driest months of the year, July and August. For the past few years it has been more noticeable in certain of the national parks where large numbers of tourists are assembled during the summer months, but the condition has never been limited to these areas. On the other hand, the condition herein described has not affected, so far as known, the large centers of population in the East.

In 1929 an unusually large number of cases occurred in Yellowstone Park, and affected both tourists and employees at every hotel and camp. First-hand information was not obtained during the summer of 1929, but the following chronological history of the epidemic as it occurred at the Lake Hotel was obtained from the hotel manager, who had kept a written record:

August 4, 1929: In the early morning six employees of the hotel (total number of employees, 155) complained of being sick during the preceding night. The symptoms were practically identical in each case. About 1 a. m. they were taken with nausea, vomiting, sharp pain in the abdomen, and diarrhea. After a few hours they went back to sleep with no further symptoms.

The manager learned on this date that four days earlier two national-park rangers of the Lake ranger station near by had complained of a similar affection.

In the early afternoon of the same day one maid at the hotel became sick, and at 5 p. m. two porters became ill, and from then on one employee after another was taken sick in rapid succession until about 80 had become ill with the same symptoms of nausea, vomiting, and diarrhea. Those taken ill in the afternoon felt much better by midnight, took some broth, and were able to work the next morning, although they were quite weak.

August 5, 1929: At 1 a. m. many guests became ill at about the same time. The hotel manager and two national-park nurses took care of about 20 guests with symptoms of nausea, vomiting, and diarrhea. These guests had requested medical assistance. There were at least 20 or 30 more who reported their illness about 8 a. m., but had not called anyone earlier. The same morning all guests, with one exception, were well enough to make their departure. This one patient had had "stomach trouble" since leaving Los Angeles. At 8 a. m. Dr. G A.

Windsor, the park physician, arrived from the hospital at Mammoth and visited all the sick employees and guests. All employees except three or four were able to return to work the same day, though they were quite weak. A few showed a slight elevation of temperature; many were subnormal.

During the day and evening several more employees became ill and were cared for by the nurse. On this date all the kitchen utensils—dishes, knives, and forks—were thoroughly scoured and subjected to flowing steam. No guests complained of illness during the day.

August 6, 1929: In the morning several guests reported that they had been ill during the night but then felt all right, except for weakness.

During the day many more employees were taken sick. The actual number was not ascertained, but the hotel manager stated that by this time not more than 15 employees out of 155 had been entirely free from symptoms. There were no calls from guests during the night.

August 7, 1929: In the morning several guests reported that they had been ill during the night. They were able, however, to leave the hotel.

There were no further cases reported until 5 p. m., when several guests reported their illness. These cases seemed more violent than the previous ones. Several persons from the busses arriving at the Lake Hotel from Old Faithful Hotel at 5 p. m. complained of the same symptoms and were immediately put to bed.

Five employees, who were ill on August 4 and had apparently recovered, became ill again with the same symptoms of nausea, vomiting, and diarrhea. At 8 p. m. many guests became ill; two women were taken so suddenly that they vomited before they could leave the dining-room table. It was estimated that during the night over 200 out of 335 guests were sick. Many guests became hysterical from fright.

August 8, 1929: About 80 people were unable to leave until 2 o'clock in the afternoon, and about 45 remained over until the next day. It is very rare for tourists to spend more than one night at each of the four large hotels in the park. During the day three hotel employees were taken sick a second time after apparent recovery from the first attack. On this day all water for the dining-room service was boiled. Ice cream was taken off the menu. Samples of milk and ice cream used at the Lake Hotel on the night of August 7 were sent to Helena, Mont., for bacteriological examination. At a later date these samples were reported as satisfactory. Several persons volunteered to eat two helpings of ice cream taken from the same container from which the guests were served on the night of August 7. No ill effects followed. Ripe olives were not on the menu.

Four more cases were removed from the busses arriving from the Old Faithful Hotel at 5 p. m. At 10.30 p. m. calls began to come in, and by 2 a. m. the nurse and doctor had attended about 20 new cases. These cases seemed less severe than those of August 7. There were many more patients who made no calls for assistance, but reported their illness the next day.

August 9, 1929: Eleven guests remained until 1 p. m. and two remained overnight. No new cases occurred during the day. Two cases developed, as on previous days, in people arriving from Old Faithful.

August 10, 1929: No cases occurred during the day and no guests complained during the night, but one reported his illness the next morning.

It was the opinion among the guests, and even the opinion of a physician among the guests, that the cases were due, undoubtedly, to food poisoning. Many said that the ice cream had made them sick; some thought it was the salad, others the meat, and so on,

until nearly every item of food had been mentioned as the cause. The manager and the park physician, Doctor Windsor, had attempted to find what item of food had been eaten by all the sick persons, but this inquiry disclosed no common item. Many sick people had not eaten ice cream, others had not eaten salad, while others had not eaten meat.

EPIDEMIC AT OTHER PARK RESORTS AND OTHER LOCALITIES

While the Lake Hotel had the severest outbreak, the other three park hotels also had many cases among guests and employees during the same period, August 4–10. It was not difficult to elicit this information when inquiries were made of the nurses, the hotel managers, and the employees at each hotel. As far as could be ascertained, at least half of the employees throughout the park had the disease, regardless of their duties and of the company by which they were employed or the source of their food and water. At the Mammoth Lodge it was learned from the nurse that one night (about August 8 or 9) over one-half of the employees out of a total of 100 had nausea and vomiting, and so many of them were off duty the following morning that the tourists complained about the lack of service. Many of the guests were also taken sick, but no record was kept of the number of guests or of employees who were ill. Cases continued to occur for days, but the number gradually diminished. Cases occurred also among the employees of the Hamilton Stores Co. and the Whittaker Stores Co., and among the forest rangers of the National Park Service. According to reports made to the forest rangers and by personal inquiries made by the writer, cases were also numerous among the automobile tourists who have their own equipment, sleep in tents, and frequently bring their own food. Upon further inquiry it was learned that at least three persons had been taken ill the first day upon entering the park and before either food or water had been taken from park sources.

For some years Sanitary Engineer H. B. Hommon, of the United States Public Health Service, has conducted sanitary inspections of the large national parks in the West. He states that the malady in Yellowstone Park this year was similar to what has occurred in all the parks of the Northwest and sections adjacent thereto for several years, and that these disturbances are more or less common throughout the Western States. Mr. Hommon predicted another outbreak and recommended in April of 1929 that some medical officer be detailed to one of the parks early in the season in order to be present when an outbreak occurred.

It was also of interest to learn that old residents at Yellowstone, as well as at Crater Lake National Park, stated that the illness had been observed for many years.

The State health officer of Montana, Doctor Cogswell, also states that in the early pioneer days a similar malady was not uncommon among mining and logging camps.

There was reported to the Surgeon General of the United States Public Health Service the occurrence of 33 cases at Old Faithful Inn during the last week in July and the first week in August, 1925. The symptoms of cramps, nausea, vomiting, and diarrhea, lasting only 24 or 48 hours, undoubtedly identify the condition with that which has occurred during the season under report.

It was further learned through physicians at Livingston, Butte, Missoula, and Hamilton, Mont., that a similar affection had been prevalent among the people of these cities during July and August of 1929. Many families had three and four members coming down one after the other, usually within a period of two or three days.

At Butte, Mont., Dr. H. W. Gregg informed the writer that blood and stool cultures had yielded nothing definite, and the condition was associated with a high leucocytosis in the few cases in which blood counts were made. He felt that the disease had attacked a large proportion of the people and that children seemed to run a higher fever than adults.

CASES OCCURRING IN 1930

During the summer of 1930 the writer had the opportunity to see 38 of these cases and to obtain records of the occurrence and the symptoms of 57 others. These latter records were kept by the nurses at the various hotels and lodges in the park. Undoubtedly many additional cases occurred in the cabins and camps where there were no nurses to keep records, and it is fairly certain that in many others the symptoms were so trivial and the duration of the indisposition so brief that they were not reported at all.

The 95 cases were distributed throughout the park as follows:

Mammoth station	31
Norris Junction	4
Canyon station	23
Old Faithful station	27
Lake station	10
Total	95

These stations are some miles apart. The distance from Mammoth to Old Faithful is the greatest, being 50 miles.

The records of the 95 cases were obtained during the last few days in June and throughout the month of July. Table 1 gives the occurrence of cases by days. There was no instance during this season of an explosive outbreak such as occurred the preceding year at the Lake Hotel. It is seen that the cases as a whole were evenly dis-

tributed throughout the month of July; and, had they been tabulated by separate stations, the same even distribution would have been apparent. Cases occurred both before and after those here recorded, but after August 1 there were only a very few.

TABLE 1.—*Occurrence of cases, by days, June 29–August 3, 1930*

	June		July																									August			Total
Date	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	
Cases	1	1	0	2	1	0	4	3	7	3	0	0	3	4	3	6	0	4	7	3	4	8	5	3	6	1	4	2	9	0	1	0	0	0	0	0	95

In addition to the above-mentioned cases, it was learned that among a group of 30 employees of the Canyon Cafeteria (18 men and 12 women), all of whom ate in the same dining room, 17 cases occurred within a period of 12 days, July 10 to 22. Not more than two or three were taken sick during any one day.

A similar sequence of occurrence is shown by the cases in the officers' dining room of the Mammoth Hotel. Seven cases (included in our series) occurred out of a group of 20—two cases on July 8, one case on the 16th, one on the 17th, two cases on the 19th, and one case on the 20th. There were no more cases in this group up to August 5.

The chief ranger of the Teton National Forest, stationed at Moran, Wyo., about 25 miles south of Yellowstone Park, informed the writer that probably 50 persons out of a total of about 100 employees had suffered from the same malady during July. The condition, however, was not new to them, having occurred in previous seasons as well.

Symptoms.—The cardinal symptoms of this disease are nausea, vomiting, and diarrhea, and the most striking characteristics were the mildness and short duration of symptoms.

In one case only did diarrhea last for six days; in no other case did it last longer than three days. The average duration of symptoms was about 24 hours.

Many patients did not take to their beds at all. Thirteen cases had nausea and vomiting only; 19 had diarrhea only; and 35 had nausea, vomiting, and diarrhea. Twenty-four had no vomiting, but had nausea and diarrhea. There were many persons (not recorded) who complained of a slight nausea and abdominal discomfort lasting only a few hours. Twenty cases out of the total of 95 reported had a similar attack during the past season, and 2 had had it each year for several years past. Frontal headache was a rather common complaint. There were no nose bleeds or sore throats among any of them. In none of these cases did the physical signs or examination reveal anything characteristic. Many of them showed nothing at all

unusual; others had a definitely greenish pallor and complained of extreme weakness after vomiting. In nearly all cases the diarrhea was accompanied by griping pains in the abdomen.

In the majority of cases the temperature was normal or subnormal. A few had a slight elevation, the highest being 100.6° F.

The blood picture was fairly uniform, in that the great majority gave a definite leucocytosis. Differential counts on 23 cases revealed nothing of importance.

The white cell counts of the same 23 cases are given in Table 2. It can be seen that the leucocytosis was generally higher in those cases in which the test was done within 24 hours after onset than in those tested later.

TABLE 2.—*White cell counts and temperature in 23 cases*

Case No.	6 to 24 hours after onset	24 to 48 hours after onset	3 days or longer	Temperature at time blood was taken	Case No.	6 to 24 hours after onset	24 to 48 hours after onset	3 days or longer	Temperature at time blood was taken
				°F.					°F.
1		8,120			19	11,280			100.6
4	14,040			98.0	20	21,800			
5		11,660		98.0	22		15,480		
9	19,240			96.7	24	17,320			97.0
10	18,600			100.6	27		12,500		
11		15,360			29		12,280		99.0
12	15,760			97.0	30	12,980			98.0
13		10,280			31	22,400			99.8
14	17,360			99.2	35	11,400			98.6
15			12,320	97.0	36	12,280			97.0
17	17,160			98.4	38			8,960	
18			10,820	97.0					

The blood of eight cases, using from 5 to 10 c. c., was planted in flasks containing about 150 c. c. of glucose broth. Six remained sterile after 14 days' incubation at 37° C. The organisms from the two flasks which gave growth and which were thought to be contaminations were nevertheless injected intravenously into rabbits. They proved to be in no way pathogenic and did not resemble the dysentery group of organisms.

Throat cultures also were taken from 38 cases without yielding any organisms which could be suspected of being the cause of the malady.

Cultures of the stools were difficult to obtain under field conditions and were considered impractical, since the results would not be dependable. As previously mentioned, Dr. H. W. Gregg, of Butte, Mont., has reported that both blood and stool cultures from his cases were entirely negative.

The sera from six cases were tested against *B. enteritidis* and against *B. dysenteriae* (Shiga and Flexner) and *B. paratyphosus* B. They were all negative against *B. enteritidis*, *B. paratyphosus* B., and *B. dysenteriae* (Flexner). However, two agglutinated *B. dysenteriae* (Shiga)—one in a dilution of 1:160 and the other in a dilution of 1:320.

PARK ORGANIZATION

In order to understand the circumstances under which these epidemics have occurred, it is necessary to give a brief account of the park organization and the general sanitary conditions.

Yellowstone Park is controlled by the National Park Service under the Interior Department. Concessions are granted to the following organizations:

1. The Yellowstone Park Hotels Co. operates the four large hotels. One is located at Mammoth Hot Springs, 5 miles from Gardiner, Mont., the northern entrance to the park; one is at Old Faithful; one is at Yellowstone Lake; and one is located at the Canyon of the Yellowstone River. None of these hotels is within 20 miles of any of the others. They accommodate a total of about 3,000 people.

2. The Yellowstone Park Transportation Co. operates the busses for tourists to and from the hotels and lodges.

3. The Yellowstone Park Lodge & Camp Co. operates the lodges and surrounding cabins at each of the four large stations. They are located within 1 or 2 miles of the hotels.

4. Concessions are also granted to the Hamilton Stores Co., the Whittaker Stores Co., and the Haynes Stores Co. Each of these organizations operates stores at various points in the park.

GENERAL SANITATION

Water.—The water supplies of the park are derived either from mountain springs (which are protected from wild-animal depredations by concrete coverings or wire fences), or from the Yellowstone River or the lake. Inspections are made of all sources at least once every two weeks by a sanitary officer, and in the season of 1928 bacteriological examinations were made every two weeks. The water was found free at all times from bacteria of the colon group. Tests were again made during the present epidemic, and the samples were again found to be free from any organisms suggesting human or animal contamination. Chlorination of the water supplies has never been considered necessary. Each of the four large tourist stations—Mammoth, Old Faithful, the Lake, and the Canyon—has entirely different sources of water supply, and at some of the stations the source of the water for the hotel is not the same as that for the lodge and the automobile camps.

Sewage.—The sewage from the hotels and lodges at the Canyon and at the Lake stations is disposed of in septic tanks. The effluent is treated with an excess of chlorine. At Old Faithful the raw sewage is discharged into a boiling geyser hole, and at Mammoth it is discharged into the river below all sources of water supply. In some of the automobile camps sewage is discharged into underground cesspools which are well protected. There are no open privies of any kind.

Sanitary control.—An annual sanitary survey of the entire park, including a careful inspection of kitchens, refrigeration plants, dining rooms, garbage incinerators, water, and sewage, is made by Sanitary Engineer H. B. Hommon, of the United States Public Health Service. A similar inspection was made by the writer. Refrigeration of perishable foods and the preparation of foods in general were satisfactory. There seemed little opportunity for food spoilage. Flies were noticeably absent.

FOOD SUPPLY OF PARK

The food supply obtained by the various organizations for employees and guests comes from many sources. Each company, as well as the National Park Service, has an independent commissary department. At all the hotels and at all the lodges separate dining rooms for guests and employees are maintained, although the food is prepared in the same kitchens.

The milk supplies of all organizations are derived largely from dairies at Livingston, Mont. Pasteurization is carried out by these dairies. A few families at Mammoth use raw milk. Some canned milk is also used.

Meat and other perishable foods are transported to the park in refrigerator motor trucks.

DISCUSSION OF DIFFERENTIAL DIAGNOSIS

The New York State Department of Health has reported cases of diarrhea, cramps, vomiting, and marked prostration occurring at widely separated hotels in New York State and in New Jersey. A certain manufactured polish for removing tarnish from the silver was found to be used by all the hotels affected. Analysis showed that the polish contained 20.54 per cent sodium cyanide. Following the discarding of this type of silver polish, there was a prompt cessation of cases among guests. The Yellowstone hotels and lodges do not use a manufactured silver polish of any kind, and obviously one can exclude this as a possible cause of the illness.

Many people attributed the sickness to the pine pollen. During the dry season the forest rangers state that the pine pollen is sometimes so thick that large clouds of it resemble the smoke from a forest fire. Frequently acres of the surface of Yellowstone Lake are covered with this pollen, which is often taken for sulphur. Dr. H. M. Kelley, ranger naturalist, at the Lake station, assured the writer that the amount of pollen in the air reached a maximum about July 20 in 1929. Since the height of the epidemic came after August 1, it is unlikely that the pollen was the cause of the affection. Furthermore, some of the pollen was obtained and a small quantity ingested by several persons who had not suffered from the condition, and no ill effects followed.

TABLE 3.—*A comparison of the characteristics noted in this unknown condition with those found in botulism, bacillary dysentery, and food infections due to the paratyphoid enteritidis group of organisms*

	Botulism	Bacillary dysentery	Food infections	Unknown condition
Cause	Botulinus toxin	B. dysenteriae Flexner B. dysenteriae Shiga B. dysenteriae Hiss	Paratyphoid-enteritidis group	
Seasonal occurrence	Mainly in winter	Mainly in summer	Mainly in summer	Only in summer.
Associated with	Preserved foods usually home prepared.	Not associated with any special food	Fresh foods; usually meat or meat salads.	Not associated with any particular food.
Mode of transmission	Ingestion of spoiled preserved food	Food, water, flies, and insanitary conditions.	Contaminated and spoiled foods	Probably person to person or person to food to person.
Incubation period	Variable; usually after 24 hours	24 to 48 hours	Short; usually before 24 hours	Probably less than 24 hours.
Onset	Usually gradual	Sudden	Sudden	Sudden.
Abdominal pain	Absent	Present	Present	Present.
Condition of bowels	Constipation, rarely diarrhea	Diarrhea—mucous and bloody stool	Diarrhea offensive; watery; frequently bloody.	Diarrhea—offensive, watery.
Visual disturbances	Double vision, ptosis of lids	None	None	None.
Prostration	Marked	Bedridden for several weeks	Variable; sometimes marked	Prostration rare; not severe enough to confine to bed.
Throat	Difficulty in swallowing	Normal	Normal	Normal.
Duration of illness	Variable	4 to 8 days in light cases; 3 to 6 weeks in severe cases.	24 to 48 hours	24 to 48 hours or less.
Immunity	No data	No data	No data	Second attacks frequent.
Mortality	60 to 70 per cent	10 to 60 per cent	1 to 2 per cent	None.
Fever	Not characteristic; usually subnormal.	101° F. to 103° F. for 1 or 2 weeks	Characteristic acute, short duration	Usually subnormal; short duration when present.
Leucocytosis	None	12,000 to 16,000	Moderate leucocytosis	Average 10 to 15,000.
Occurrence	Can usually be traced to one item of food. All cases occur within a short period.	Epidemic and sporadic cases extending over a considerable period of time.	Can be traced to one item of food. All cases occur within a very short period.	Epidemic and sporadic cases extending over a considerable period.

Table 3 gives a comparison of the characteristics of this condition with those of botulism, bacillary dysentery, and food infections due to the paratyphoid enteritidis group of organisms. It may be seen at a glance that the mortality rate, the absence of association with any single item of food, the sequence of occurrence of cases, and the absence of neurotoxic symptoms immediately differentiate the condition from botulism.

From bacillary dysentery it seems also to be differentiated by the mortality rate, the duration of symptoms, and the height and duration of fever. It resembles bacillary dysentery, however, in that cases occur over a considerable period of time and are not associated with any special items of food or food spoilage.

This unknown condition, therefore, more closely resembles, at least symptomatically, the food infections caused by the the paratyphoid-enteritidis group of organisms; yet food infections can nearly always be traced to food spoilage or some one item of food (usually meats or meat salads) which has been ingested by all patients. The onsets of all such cases, therefore, occur within 12 to 24 hours of one another. This is not the case in the epidemics under discussion. For similar reasons it seems that epidemics of food poisoning due to the toxins of various staphylococcus strains [1] and traceable to a single item of food do not fit in with our cases.

In the United States naval medical bulletins from 1923 to 1929 a large number of mild epidemics of nausea, vomiting, and diarrhea of short duration have been reported. In order to contrast these outbreaks with our own cases, we give here a brief account of two of them.

An outbreak of food poisoning of mild type occurred on board the U. S. S. *Colorado* on the morning of June 28, 1927, following breakfast at which beef hash on French toast had been served. About 150 persons, or approximately 10 per cent of the crew, were affected, *all of whom ate in the general mess and gave a history of having eaten beef hash for breakfast.*[2] The same food had been served to the entire crew, but no others developed symptoms of food poisoning. *Symptoms in all patients occurred about three and one-half hours after breakfast.*[2] (U. S. Naval Med. Bull., 1928, vol. 26, p. 768.)

A similar outbreak occurred at the United States naval station, Olongapo, P. I., on May 27, 1927. Symptoms of nausea, vomiting, and diarrhea occurred from 2 to 12 hours after the noon meal. *All who became ill had eaten Vienna sausage at the noon meal.*[2] A gram negative, motile bacillus, that did not ferment lactose was isolated from the sample of sausage and identified as *Bacillus enteritidis*. (U. S. Naval Med. Bul., 1928, vol. 26, p. 770.)

The widespread distribution and the occurrence of the cases here reported over a considerable period of time prove that the mode of transmission is not identical with the cases recorded by the Navy. Furthermore, in some of the Navy epidemics there were a few fatal

[1] Jordan, E. O.: Jour. Amer. Med. Assoc., vol. 94, p. 1648, May 24, 1930. Barber, M. A.: Philippine Jour. of Sc. (Trop. Med.), vol. 9, p. 515 (1914).

[2] Italics not in original.

cases, while in the epidemics of the Northwest no severe illnesses occur and not a single fatal case has been reported.

The widespread distribution, the mode of transmission, the positive agglutination of the Shiga organism in two sera, and the general epidemiological features resemble bacillary dysentery more nearly than any other condition. On the other hand, the normal temperature, or very slight elevation of temperature, the short duration, and the mildness of attack in no way resemble dysentery, and more nearly resemble food infections; but on account of the simultaneous distribution of cases among widely separated groups of people and the continuation of cases over a considerable period of time, food spoilage as a common factor can be practically ruled out.

The above considerations, especially the definite agglutination of *B. dysenteriae* (Shiga), suggests the possibility that these epidemics are either mild outbreaks of bacillary dysentery, caused probably by an attenuated strain of the Shiga type of organism, or else an unknown organism belonging to the same group.

Why the condition does not spread to the large centers of population in the East remains unexplained.

SUMMARY

1. A mild dysentery-like epidemic with no deaths, occurring during the summer months in the northwestern United States, is described.

2. The mode of spread and distribution of cases closely resemble those epidemiological features of bacillary dysentery, but the symptoms and duration of the illness simulate conditions of food infections.

3. Second attacks were reported in 20 out of 95 cases recorded.

4. The sera of two out of six samples collected agglutinated *B. dysenteriae* (Shiga), but none of them agglutinated *B. dysenteriae* (Flexner), *B. paratyphosus* B., and *B. enteritidis*.

CURRENT PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES [1]

October 5–November 1, 1930

The prevalence of certain important communicable diseases, as indicated by weekly telegraphic reports from State health departments to the Public Health Service, is summarized below. The underlying statistical data are published weekly in the Public Health Reports under the section entitled "Prevalence of disease."

Poliomyelitis.—The number of cases of poliomyelitis reported during this period (1,641) is slightly lower than that for the preceding 4-week

[1] From the Office of Statistical Investigations, U. S. Public Health Service. The numbers of States included for the various diseases are as follows: Typhoid fever, 41; poliomyelitis, 35; meningococcus meningitis, 42; smallpox, 42; measles, 38; diphtheria, 42; scarlet fever, 41; influenza, 31.

period (1,837). This decline is, however, relatively slower than the decline last year at this season. The current incidence is 5.6 times as high as that for the corresponding period of last year, as compared with a similar ratio of 5.1 and 3.8 for the two 4-week periods immediately preceding the present one. The relative conditions during these periods for the two years are indicated by geographical sections, in the following table, which also shows that the South Central, West North Central, and the Western groups of States have, during the recent past, shown the sharpest increases over the 1929 incidence.

Poliomyelitis, by geographical sections

Region	Number of cases reported in 1929, 4 weeks ended—			Number of cases reported in 1930, 4 weeks ended—			Ratio of current incidence to incidence of corresponding 4 weeks of last year; period ended—		
	Sept. 7	Oct. 5	Nov. 2	Sept. 6	Oct. 4	Nov. 1	Sept. 6	Oct. 4	Nov. 1
North Atlantic [1]	155	190	129	320	449	382	2.1	2.4	3.0
South Atlantic	32	38	25	35	38	37	1.1	1.0	1.2
East North Central	53	61	65	118	284	262	1.2	4.7	4.0
West North Central	16	30	39	358	659	571	22.4	22.0	14.6
South Central [2]	20	10	9	97	83	63	4.9	8.3	14.9
Mountain and Pacific	33	29	25	254	324	326	7.6	11.2	13.4
All regions	309	358	292	1,182	1,837	1,641	3.8	5.1	5.6

[1] Includes the New England and Middle Atlantic group. The States included are shown in the tabular section of the Public Health Reports.
[2] Includes the East and West South Central groups.

Meningococcus meningitis.—The reported meningitis incidence has risen in successive 4-week periods from 256 cases to 291. This behavior is somewhat unexpected, for at this season meningitis usually undergoes a decline. The most abrupt increase occurred in Kansas, where the reported incidence jumped from an average of less than two cases per week to 23 cases during the week ended November 1. This type of rise is unusual. The only other section showing any marked increase is the South Central group of States, where the reported number of cases increased from 16 to 41 during the successive 4-week periods.

The incidence of 291 cases during the current period is less, however, than that of the corresponding period of 1929, when 363 cases were reported. The current incidence is exactly equal to that for the same period of 1928, but is above that of 1926 and 1927.

Scarlet fever.—The incidence of scarlet fever during the current 4-week period continues to be the lowest for this season during the last five years. The reported cases numbered 8,212, as compared with 9,271 during the corresponding period of last year and with 8,875 for 1928. There are, however, some indications that this favorable condition may be on the wane. During the four weeks ended August 9 the incidence was about 72 per cent of that for the corresponding period

of the preceding year. During the next two 4-week periods the ratio rose to 85 per cent and it now stands at 89 per cent.

Smallpox.—The number of cases of smallpox rose from 437 during the preceding period to 746 during the current period. The 1929 reports for corresponding periods showed a rise from 723 to 1,420 cases, so that the current incidence compares favorably with that of last year—in fact, it is probably as low as has been recorded at this time of the year.

Typhoid fever.—The incidence of typhoid fever declined to 2,724 cases during the period under report; during the preceding 4-week period 3,156 cases were reported. This decline is, however, slower than is usual at this season, and the incidence for the current period is about 42 per cent higher than that of the corresponding period of last year, whereas during the preceding period the 1930 excess was only about 24 per cent.

Measles.—The number of reported cases of measles, 3,670, is almost exactly twice the incidence of the preceding period, but such an increase is moderate for measles at this time of the year. Last year, for example, the figures for the corresponding periods were 4,882 and 2,188. The current situation is more favorable, in the light of the expectancy, than it has been in five years.

Influenza.—The influenza situation is also gratifying. The reported cases numbered 993, which is about two-thirds of last year's figure, and is the lowest level recorded for this period during recent years. Two years ago, the 1928–29 epidemic was in the making.

Diphtheria.—The diphtheria situation continues to be the most favorable on record. The reported cases numbered 5,851, as against 7,765 for the corresponding period last year.

Mortality, all causes.—The general death rate for this period, as reported by the Bureau of the Census, averaged 11.2 per thousand population (annual basis). This is a favorable rate. Last year at this time the rate was nearly 12.0, and in 1928 it was 11.7.

GUAYAQUIL, ECUADOR, DECLARED FREE FROM PLAGUE

In accordance with the provisions of Articles XI and XXXI of the Pan American Sanitary Code, which set forth the requirements to be fulfilled in order that a port may be designated "a clean port, class A," and provide for registering such place with the Pan American Sanitary Bureau, Guayaquil, Ecuador, has recently been officially declared "a clean port, class A," free from plague, by the Minister of Public Health and Social Welfare, Dr. Francisco J. Bolona. This declaration is based on a report by Dr. Luis M. Cueva, seaboard director of health, and Dr. John D. Long, traveling representative

of the Pan American Sanitary Bureau, indicating the success of the antiplague campaign in eliminating plague from Guayaquil and greatly reducing the incidence of the disease in the remainder of the country.

The following article is an extract of Doctor Long's report to the Pan American Sanitary Bureau regarding the antiplague campaign in Guayaquil and vicinity.

ANTIPLAGUE CAMPAIGN IN GUAYAQUIL AND VICINITY

Extracts from a report by Dr. JOHN D. LONG, *Representative of the Pan American Sanitary Bureau*

In June, 1929, the directing council of the Pan American Sanitary Bureau authorized, by resolution, the undertaking of epidemiological studies of bubonic plague in South America, with the proviso that such studies should begin in Ecuador on account of the fact that preliminary studies had indicated that, probably, some interesting discoveries might be made in the epidemiology of the disease.

In accordance with the terms of the resolution above referred to, and with the consent of the national health service of Ecuador, Dr. John D. Long, accompanied by Surg. C. R. Eskey, of the United States Public Health Service, who had been appointed epidemiologist, arrived in Guayaquil on August 25, 1929. Preliminary arrangements were made and active work was begun on September 18, 1929.

Bubonic plague gained entrance into the city of Guayaquil in 1908. Since that time it has been carried to the towns along the Guayaquil & Quito Railroad, and to the towns along some of the rivers. It has also been present at times in some of the coast cities. The coast cities are, however, now free, and have not had plague for several years. From the infected towns along the line of the railroad the disease spread to the Indian villages (caserios) and has existed in them in semisporadic form for some years. The Province of Loja, in the southern part of the country, was probably infected from Peru, as communication with other sections of Ecuador is very difficult, while there is constant communication with the border towns of Peru, and the disease is present on both sides of the border. On account of the difficulties which attend the transportation of personnel and supplies to Loja, nothing has been done in that Province as yet. Arrangements have been made, however, to begin active work there at the same time that work is being done in Peru. Danger of the reinfection of the cleaned up parts of Ecuador from Loja is believed to be very remote, on account of the transportation difficulties mentioned and the separation of Loja from the remainder of the country by a lofty chain of mountains.

As Guayaquil, in the 22 years that plague has been present there, has had over 7,200 cases of the disease, and as the type of construction in common use favors the breeding and harboring of rats, it seemed to be the most important point of first attack. Efforts were therefore devoted to that city from the beginning of the campaign in September until December. In December a trip of study and inspection was made into the interior of the country along the line of the railroad and to some of the near-by Indian villages.

PLAN OF THE CAMPAIGN IN GUAYAQUIL

Trapping of rats.—Trapping was resorted to for the double purpose of destroying as many rats as possible and obtaining rats for laboratory examination in order to have constant information as to the percentage of plague infection among them and to know when the plague had disappeared. For the purpose of reducing the rat population to as low a figure as possible, it was decided to resort to the use of poison on a large scale. The method of using the poison and the results obtained will be described later.

In round numbers 43,000 rats (excluding mice) have been trapped, approximately 60 per cent of which were examined. In November of 1929, 1 rat to each 150 examined was infected with plague. At the present time about 6,500 rats have been examined without finding any infection among them. The last plague rat was found March 26, 1930. It was 1 in 3,500 examined. In the beginning, with 1,400 traps, about 12 rats per 100 traps per day were caught. Later, with approximately 6,000 traps in daily use, about 3 rats per 100 traps per day were being caught—an apparent reduction in the rat population of 75 per cent. In the beginning the flea index per rat was as high as 12. This has dropped to 3—also an apparent reduction of 75 per cent. Approximately the same number of *rattus* and *alexandrinus*, as of Norway rats, are being caught, actually a few more *rattus* and *alexandrinus*. Experience here as well as in other cities shows that when the catch of Norway rats is reduced to the same number as that of *rattus* and *alexandrinus*, both human and rodent plague disappear. This balance between the various species of rats was reached about the 1st of April, 1930. The last human and the last rat cases were discovered on March 26, 1930.

Trapping was also carried on in the village of Duran (Eloy Alfaro), across the Guayas River from Guayaquil, the terminus of the Guayaquil & Quito Railroad. Results were not very satisfactory and no infected rats were found. Trapping was soon abandoned there, and poison has been continuously employed since.

Some trapping was done in some of the interior towns, such as Milagro, Ambato, and Huigra. As the results were not very satisfactory and but few rats were caught, the practice was soon abandoned

and poisoning substituted. Human cases of plague soon disappeared. Some trapping still continues in Ambato for the purpose of sending slides and specimens to the Quito laboratory in order to determine whether rat plague still exists.

It was decided that trapping is a useful measure for the purpose of obtaining rats for laboratory examination to determine the plague index among them, but that as an antiplague measure in the extermination of rats, its value is not great.

Poisoning of rats.—From the beginning of the campaign poison was used on a large scale, not only in the city of Guayaquil but in a number of small towns and cities as well, with very good results.

At first the poison used was composed of corn-meal flour, to which 35 per cent of barium chloride had been added, together with a very small quantity of ground cinnamon. While this gave good results, it was decided to experiment and determine whether a better poison could not be developed. After considerable experimenting it was found that there were two forms of poison that seemed to be best. The first consists of corn-meal flour to which had been added 18 per cent of white arsenic and 10 per cent of boneless codfish that had been run through a meat grinder. This mixture was wrapped in small paper packages by a group of small boys, the paper packages were placed in a barrel and sprayed, by means of a hand atomizer, with oil of anise, in sufficient quantity to produce a barely perceptible odor, and then mixed and thoroughly agitated to distribute evenly the oil of anise. If the oil of anise is too strong, the rats do not take the poison well. The second type of poison is the same as the first except that grated Parmesan cheese is substituted for the ground codfish, in the proportion of 5 per cent. When the rats apparently tire of one class of poison and do not seem to take it well, the other is substituted for a time, and in this way the efficiency is maintained. The cheese used is that which has been in the market for some time and is old, yellow, hard, and moldy, and can be bought very cheaply. It is grated by hand on an ordinary grater, producing a coarse sort of powder that can be handled very readily and that mixes well with the corn-meal flour base.

For the purpose of rat extermination chief dependence was placed upon the poison, and this later appeared justified. In the beginning the two inspectors who followed along behind the poisoners to observe the efficiency of the poison reported finding 1 poisoned rat for each 1.75 houses visited. This proportion steadily decreased until the inspectors reported 1 dead rat for each 12 houses visited—an apparent reduction of over 80 per cent as compared with 75 per cent shown by trapping statistics.

Poison operations in interior towns.—As human plague had appeared in the interior towns of Duran, Milagro, Huigra, Daule,

Nobol, and Colimes, in the coast zone, and in Ambato and some of the Indian villages of the mountain districts, it was decided to use poison on a large scale in these places and not attempt to do extensive trapping, for the reason that trapping is more expensive than poisoning, and besides there were no laboratory facilities at hand for rat examination.

The results were prompt and fulfilled expectations. Human plague ceased, as a rule, after the first poisoning, and the mortality among the rats was very high. Instructions were then given that all these places should be thoroughly poisoned once a month. As the towns are small, it requires only from two days to one week to place the poison throughout them, depending upon the size. At the time of this report human plague had not reappeared in any of the towns above mentioned.

It is not known how much poison has been placed in the towns and villages, as no strict record has been kept. It is of interest to state, however, that in the city of Guayaquil alone, in the course of about seven months, over 5 tons of the poison mixture previously described have been placed, and no serious accidents have occurred. It has been stated that a few pigs, chickens, and cats have been poisoned, but there is definite proof that this is unlikely. One small child was said to have been made sick by having eaten some barium chloride, but a talk with the father failed to elicit any information that would tend to confirm this. One woman was said to have eaten one of the packages of poison with suicidal intent, but her life was saved. There has been some resistance on the part of the public to the placing of the poison, but it has been overcome in every instance.

Not only from present experience but from previous experience it may be stated that the use of poison on a large scale, substantially in the manner described, is the most efficient way of destroying rats in cities, towns, and villages. Its use is not attended with serious danger, either to persons or animals, and its application is cheaper than trapping, for the reason that the work can be done with one-half the number of laborers, and expensive equipment, such as traps, bait, carts or trucks, bags, and tags, need not be purchased.

Estimate as to the number of rats destroyed in Guayaquil.—Guayaquil is said to have a population of 100,000. It is usually estimated that the average city has one rat for each inhabitant. Guayaquil must have had many more than this number, for the reason that most of the houses are constructed of light materials, such as bamboo side walls covered with mud or plaster stucco, wooden framing, and sides with double walls and partitions, and many of the houses rent out the ground floors as stores, many of which are food stores, groceries, food warehouses, etc.; and as in very few instances these articles are pro-

tected from rat depredations, it is believed that Guayaquil had a much larger rat population than most cities of its size.

The inspectors whose duty it was to report upon the efficiency of the poison usually reported about as many dead rats as were caught by the traps, and they frequently stated that they were convinced that, on the average, two rats died from the poison for each one found dead. They based this statement on the number of complaints that came from householders relative to bad odors resulting from dead rats between walls and partitions and under floors. (In the beginning of the campaign it was necessary to employ a young man whose sole duty consisted in answering telephone calls and in routing the disinfection gang that dug out these dead rats and disinfected or deodorized the place where they were found.) Also many householders told them of dead rats that had been found and buried, burned, or thrown into the garbage can. Taking all these factors into consideration, it is conservatively estimated that approximately three rats were destroyed by the poison for each one caught in the traps. If this estimate can be considered as fairly exact, it would appear that about 172,000 rats have been destroyed in the city of Guayaquil in a little over seven months.

Laboratory examination of rats.—The existing laboratory was utilized and with the addition of some more materials and equipment was found to be fairly adequate.

All rats delivered by the rat catchers to the laboratory that were in fit condition for autopsy, or were not used for flea studies, were examined. The method consisted in opening the rat completely after tacking it on a board, then making macroscopical examination and inoculating all suspicious rats into guinea pigs. All rats that were not considered suspicious had small pieces cut from their spleens and placed in a mortar, a small amount of salt solution was then added, and the mixture was at once inoculated into a separate guinea pig. This method was used in order to make sure that no plague among rats escaped observation. It was somewhat surprising soon to note that more infected rats were being found by means of the emulsion, or mass inoculation, than were found by inspection. An effort was made to correct this but it met with small success. The conclusion was finally forced that, in all probability, possibly due to acquired immunity from having been exposed to plague for 22 years,[1] the rats of Guayaquil had a form of plague that was apparently transmissible, though unrecognizable by macroscopic examination.

There was a small laboratory at Ambato where rats were autopsied, but as no facilities for microscopical examination existed all material was sent to Quito for examination in the laboratory there.

[1] Possibly due in some cases to the fact that the rats were trapped at a stage when the organisms were too few in number to be recognized in stained preparations or to produce gross lesions of the disease. — *Ed.*

Epidemiological observations made.—As Surgeon Eskey is making a complete epidemiological report,[2] a mere mention of some of the more important observations will be made here.

In Guayaquil the continued presence of plague has been due to a continuous epizootic among the rats. Three types of rats were found, viz, *Rattus norvegicus*, *Rattus rattus*, and *Rattus alexandrinus*. The prevalent flea (over 95 per cent) was the *L.* or *X. cheopis*.

In the cities of the coast zone the types of rats and fleas found were similar to those found in Guayaquil. In the mountain districts the problem was somewhat different. In these districts the disease existed principally in the Indian villages, with cases occasionally occurring in the towns; some of these either were infected in a village to take sick later in the town or were infected from the original case.

The disease was undoubtedly originally introduced into the mountain districts from the coast towns and cities through rats carried on the cars of the Guayaquil & Quito Railroad. On several occasions rats have been caught on these cars, and railroad employees state that they frequently see them, especially in cars loaded with rice, grain, and sugar, or other foodstuffs.

The disease is apparently transmitted from one Indian village to another through the agency of the Indians themselves, for the following reasons: It has been the custom among the Indians for many years, to hold wakes over their dead. The wake is usually held in the hut of the deceased and may last for several days. The attendants at the wake drink large quantities of "chicha," become intoxicated, and sleep on the floor of the hut. As there are infected fleas in the hut, the Indians either become infected or carry infected fleas with them in their clothing to their own villages to start a focus of the disease there. Seeming proof of this is found in the fact that many of the cases are preceded by an epizootic among the guinea pigs that are commonly kept (for food purposes) running around loose in the huts. It is a fairly common occurrence for all the guinea pigs in a hut to die soon after the Indian has returned from a wake, and soon after the guinea-pig mortality human cases occur.

Another possible factor in the transmission of the disease in the mountain districts is the occurrence of two unusual forms of the disease, both highly contagious and infectious. The one is known locally as "viruela pestosa" and is a manifestation of the septicemic form of the disease. It is characterized by a chicken-pox-like eruption composed of vesicles, filled with a straw-colored liquid, that rupture easily when touched. The liquid of these vesicles contains numerous plague bacilli, so that any one touching or handling a patient or a person dead with this form of the disease is extremely likely to become

[2] See PUBLIC HEALTH REPORTS, Sept. 5, 1930, p. 2077.—*Ed.*

infected. It is a common practice at wakes for the Indians to handle, caress, and wash the body of the deceased.

The other form of the disease is locally known as "angina pestosa" and is characterized by a violent form of tonsillitis and pharyngitis, with involvement of the cervical lymphatic glands. It is believed to be due to the custom, existing among the Indians, of killing with their teeth fleas that they find on their persons and clothing. It can readily be seen how infection could find lodgment in the crypts of the tonsils if one of the fleas so killed should be infected. This form of the disease is highly contagious and infectious, just as is the pneumonic type, through coughing and through the discharges from the mouth and nose.

So far as these investigations were concerned little was found to indicate that the rats play any great part in the spread of the disease in the mountain districts, except possibly as the agent which introduces and reintroduces infection from the coast cities and towns via the railroad.

Migrations of rats are known to occur in large numbers at certain seasons of the year. These migrations are coincident with the crop seasons. When the grain is ripening and about ready for the harvest, the rats leave the towns and villages and go to the fields. When the grain is harvested and stored in the houses and huts, the rats leave the fields and return to the villages. It has not been possible so far, however, to establish connection between these migrations and plague outbreaks. Data are hard to obtain from the Indians, and further study of this phenomenon is needed.

The measures recommended and being carried out in the Indian villages consist of periodical posioning to keep the rat population as low as possible, the early detection and isolation of cases, fumigation of huts for flea destruction, the prohibition of wakes in huts (especially huts for the holding of wakes, to be known as "casas de velorios," are being constructed) and better storing of grain and foodstuffs so as to protect them from rat depredations, and frequent visits of sanitary inspectors to all Indian villages.

To prevent reinfection of the mountain districts from the coast, and vice versa, a fumigation station has been established at Bucay, where all freight-carrying trains pass the night, and all loaded cars will be fumigated with Zyklon B for the purpose of rat and flea destruction. These cars no doubt carry fleas, as persons have been bitten during a ride of several hours in a freight car while sitting on top of the cargo.

SUMMARY

It is believed that, for all practical purposes, bubonic plague has been eliminated from Guayaquil and from the towns and villages

situated along the Guayas River and the line of the Guayaquil & Quito Railroad as far as Huigra, situated in the mountain district. It is realized, however, that in order to make sure that plague will not reappear, antiplague measures must be actively continued for one or two years more. This work is being done.

Plague still exists in sporadic form in the central mountain districts and in the Province of Loja. With the prevention of reinfection from the coast, and vice versa, through the systematic fumigation of railroad cars at Bucay, and with the constant application of the measures recommended, it is believed that the disease can be eliminated from the central mountain districts in a relatively short time at a reasonable cost. As the disease has never existed in this district except in sporadic form, its control should be fairly easy, especially in view of the epidemiological knowledge now available that was formerly not available. There is good reason to believe that the prevention of reinfection from the coast zone will in itself contribute greatly to the disappearance of the disease.

CONCLUSIONS

The port of Guayaquil is no longer a menace to other countries through international commerce. If by October 1, 1930, no further cases of human or rat plague shall have occurred, the port of Guayaquil may be reported to the Pan American Sanitary Bureau, in accordance with the terms of the Pan American Sanitary Code, as a "clean port" of class A, as when the regulation period of six months without plague shall have passed it will possess all the requisites that the treaty specifies.

The existence of plague in the interior Provinces, except in the case of the Province of Loja, which is in constant communication with Peru, has no international significance.

Complete and unselfish cooperation was extended by the officials and health authorities of Ecuador, who manifested great interest in this work, and valuable aid was given by their subordinates and employees.

MATERNAL MORTALITY IN THE BIRTH REGISTRATION AREA, 1929

The Department of Commerce announces that for the birth registration area the mortality rate for puerperal causes (7 per 1,000 live births) in 1929 was 0.5 higher than the rate (6.5) for 1927, the last year for which the summary was published. Puerperal septicemia increased less, the rate for 1927 having been 2.5, as compared with 2.6

in 1929, and the rate for "other puerperal causes" was lowered to 0.3 in 1929. These maternal rates are based on the number of deaths among women 15 to 45 years of age per 1,000 live births.

Confining the discussion to only three groups, namely, "all puerperal causes," "puerperal septicemia," and "other puerperal causes," it will be noted that of the 46 States for which data are available for 1929, South Carolina had the highest maternal mortality rate (11.4), with Alabama and Louisiana next in order (each 9.9), Florida (9.5), and Georgia (9.3). It must be borne in mind, however, that all the States with excessively high rates have large proportions of colored populations. The States with high rates from "puerperal septicemia" however, are Montana (4.2), Colorado (4), New Mexico (3.9), and Arizona (3.8), all with vast rural areas sparsely settled, where hospital facilities and skilled medical care are difficult to procure.

The rate for "accidents of pregnancy" was only 0.7 for the entire registration area, for "puerperal hemorrhage and other accidents of labor," 1.6, and for "puerperal albuminuria and convulsions," 1.8, while the rates in the States for the three causes, respectively, were highest for Vermont (1.3), Delaware (3), and South Carolina (4.7). Heretofore the total deaths from these three causes have been listed under "other puerperal causes."

Of the cities of 100,000 population in 1920, the highest rate for puerperal causes was for Memphis (16), followed by Nashville (14.7) and Birmingham (14.4). These three cities have large colored populations. For "accidents of pregnancy" and "puerperal hemorrhage and other accidents of labor," Memphis again takes the lead, with respective rates of 2.3 and 4.3 per 1,000 live births, while for "puerperal albuminuria and convulsions," New Orleans has the highest rate (4.4). The city with the highest rate for "puerperal septicemia" is Nashville (9), followed by Memphis (6.1) and Akron and Birmingham (each 5.7).

Certain cities which reached 100,000 population in the census of 1930 are included in the table, and for these the highest rate (14.1) for all puerperal causes is for Jacksonville, Fla., followed by Peoria (12.5), Chattanooga (11.9), Evansville (11.8), Knoxville (11.7), Fort Wayne (11), and Tulsa (10.8). Taking in order the last five causes on the table, the highest rate is for Jacksonville, Fla. (2.7), Chattanooga (3.3), Peoria (8.9), Knoxville (4), and Somerville (1.2).

Deaths from puerperal causes, with rates per 1,000 live births, in the birth registration area, 1929

Area	Deaths from puerperal causes, 1929											
	Number						Rate per 1,000 live births					
	The puerperal state	Accidents of pregnancy	Puerperal hemorrhage and other accidents of labor	Puerperal septicemia	Puerperal albuminuria and convulsions	Other puerperal causes	The puerperal state	Accidents of pregnancy	Puerperal hemorrhage and other accidents of labor	Puerperal septicemia	Puerperal albuminuria and convulsions	Other puerperal causes
The birth registration area in continental United States	15,084	1,530	3,368	5,718	3,821	647	7.0	0.7	1.6	2.6	1.8	0.3
STATE												
Alabama	620	52	126	208	216	18	9.9	.8	2.0	3.3	3.4	.3
Arizona	75	9	20	36	9	1	7.8	.9	2.1	3.8	.9	.1
Arkansas	341	29	71	127	111	3	9.1	.8	1.9	3.4	3.0	.1
California	461	54	108	195	86	18	5.7	.7	1.3	2.4	1.1	.2
Colorado	155	13	23	71	40	8	8.6	.7	1.3	4.0	2.2	.4
Connecticut	148	17	38	52	27	14	5.4	.6	1.4	1.9	1.0	.5
Delaware	27	2	13	6	5	1	6.3	.5	3.0	1.4	1.2	.2
Florida	255	23	56	84	84	8	9.5	.9	2.1	3.1	3.1	.3
Georgia	542	56	115	159	202	10	9.3	1.0	2.0	2.7	3.5	.2
Idaho	54	7	9	26	10	2	6.1	.8	1.0	3.0	1.1	.2
Illinois	874	119	188	343	187	37	6.8	.9	1.5	2.7	1.5	.3
Indiana	414	48	77	166	108	15	7.0	.8	1.3	2.8	1.8	.3
Iowa	235	29	41	87	60	18	5.6	.7	1.0	2.1	1.4	.4
Kansas	222	18	50	99	50	5	6.8	.6	1.5	3.0	1.5	.2
Kentucky	374	31	83	160	88	12	6.6	.5	1.5	2.8	1.6	.2
Louisiana	419	35	78	155	139	12	9.9	.8	1.9	3.7	3.3	.3
Maine	115	18	30	34	27	6	7.2	1.1	1.9	2.1	1.7	.4
Maryland	166	14	39	64	40	9	5.5	.5	1.3	2.1	1.3	.3
Massachusetts	499	55	140	179	90	35	6.7	.7	1.9	2.4	1.2	.5
Michigan	652	69	135	275	137	36	6.6	.7	1.4	2.8	1.4	.4
Minnesota	201	25	32	84	42	18	4.3	.5	.7	1.8	.9	.4
Mississippi	404	23	59	136	181	5	8.9	.5	1.3	3.0	4.0	.1
Missouri	445	45	93	214	83	10	7.3	.7	1.5	3.5	1.4	.2
Montana	84	6	17	42	18	1	8.4	.6	1.7	4.2	1.8	.1
Nebraska	163	12	29	89	22	11	6.1	.5	1.1	3.3	.8	.4
Nevada	8		3	5			6.3		2.3	3.9		
New Hampshire	61	10	10	13	21	7	7.5	1.2	1.2	1.6	2.6	.9
New Jersey	373	45	102	147	59	20	5.5	.7	1.5	2.2	.9	.3
New Mexico	99	9	28	44	14	4	8.7	.8	2.5	3.9	1.2	.4
New York	1,216	142	349	427	228	70	5.6	.7	1.6	2.0	1.0	.3
North Carolina	651	44	154	149	281	23	8.4	.6	2.0	1.9	3.6	.3
North Dakota	80	4	19	32	22	3	5.5	.3	1.3	2.2	1.5	.2
Ohio	781	78	166	353	150	34	6.7	.7	1.4	3.0	1.3	.3
Oklahoma	327	31	74	124	87	11	8.2	.8	1.9	3.1	2.2	.3
Oregon	78	11	15	29	18	5	5.9	.8	1.1	2.2	1.4	.4
Pennsylvania	1,232	141	287	508	240	56	6.5	.7	1.5	2.7	1.3	.3
Rhode Island	97	11	17	43	18	8	7.9	.9	1.4	3.5	1.5	.7
South Carolina	450	25	111	121	185	8	11.4	.6	2.8	3.1	4.7	.2
Tennessee	440	51	103	169	103	14	8.7	1.0	2.0	3.3	2.0	.3
Utah	61	13	17	16	12	3	4.9	1.1	1.4	1.3	1.0	.2
Vermont	52	9	8	17	14	4	7.7	1.3	1.2	2.5	2.1	.6
Virginia	381	38	86	127	113	17	7.1	.7	1.6	2.4	2.1	.3
Washington	140	10	34	63	31	2	6.2	.4	1.5	2.8	1.4	.1
West Virginia	237	17	54	94	59	13	5.8	.4	1.3	2.3	1.5	.3
Wisconsin	285	19	44	114	79	29	5.1	.3	.8	2.1	1.4	.5
Wyoming	28	4	5	10	6	3	6.3	.9	1.1	2.3	1.4	.7

Deaths from puerperal causes, with rates per 1,000 live births, in cities of 100,000 or more population in the birth registration area, 1929

Area	Deaths from puerperal causes, 1929											
	Number						Rate per 1,000 live births					
	The puerperal state	Accidents of pregnancy	Puerperal hemorrhage and other accidents of labor	Puerperal septicemia	Puerperal albuminuria and convulsions	Other puerperal causes	The puerperal state	Accidents of pregnancy	Puerperal hemorrhage and other accidents of labor	Puerperal septicemia	Puerperal albuminuria and convulsions	Other puerperal causes
Cities of 100,000 population or more in 1930:[1]	4,621	495	1,080	1,984	873	189	7.0	0.8	1.6	3.0	1.3	0.3
CITY												
Akron	51	3	9	32	5	2	9.0	.5	1.6	5.7	.9	.4
Albany	12	2	5	4	1	-----	4.7	.8	2.0	1.6	.4	-----
Atlanta	49	5	11	17	14	2	9.6	1.0	2.2	3.3	2.7	.4
Baltimore	87	11	19	33	19	5	5.8	.7	1.3	2.2	1.3	.3
Birmingham	78	7	22	31	17	1	14.4	1.3	4.1	5.7	3.1	.2
Boston	128	14	46	50	9	9	7.1	.8	2.6	2.8	.5	.5
Bridgeport	19	2	5	6	3	3	6.2	.7	1.6	2.0	1.0	1.0
Buffalo	92	12	29	33	11	7	7.9	1.0	2.5	2.8	.9	.6
Cambridge	16	1	5	6	3	1	6.2	.4	1.9	2.3	1.2	.4
Camden	21	3	4	10	4	-----	7.1	1.0	1.3	3.4	1.3	-----
Canton	14	1	3	7	3	-----	7.2	.5	1.5	3.6	1.5	-----
Chattanooga	25	3	7	7	8	-----	11.9	1.4	3.3	3.3	3.8	-----
Chicago	382	49	97	158	68	10	6.5	.8	1.6	2.7	1.2	.2
Cincinnati	74	2	15	39	17	1	8.4	.2	1.7	4.4	1.9	.1
Cleveland	117	11	26	49	20	11	6.7	.6	1.5	2.8	1.1	.6
Columbus	42	3	12	16	9	2	7.9	.6	2.3	3.0	1.7	.4
Dayton	39	1	8	19	11	-----	11.2	.3	2.3	5.4	3.2	-----
Denver	46	4	8	22	10	2	9.6	.8	1.7	4.6	2.1	.4
Des Moines	20	2	4	11	3	-----	7.1	.7	1.4	3.9	1.1	-----
Detroit	240	27	45	120	38	10	7.1	.8	1.3	3.5	1.1	.3
Duluth	7	-----	-----	6	1	-----	3.6	-----	-----	3.1	.5	-----
Elizabeth	17	4	3	7	2	1	6.6	1.6	1.2	2.7	.8	.4
Erie	15	1	3	7	3	1	6.3	.4	1.3	2.9	1.3	.4
Evansville	20	4	4	8	4	-----	11.8	2.4	2.4	4.7	2.4	-----
Fall River	19	2	4	8	3	2	8.4	.9	1.8	3.5	1.3	.9
Flint	42	4	12	18	6	2	9.5	.9	2.7	4.1	1.4	.5
Fort Wayne	23	4	2	11	5	1	11.0	1.9	1.0	5.2	2.4	.5
Gary	19	1	3	10	5	-----	8.9	.5	1.4	4.7	2.3	-----
Grand Rapids	20	2	2	9	6	1	5.8	.6	.6	2.6	1.7	.3
Hartford	19	1	4	9	3	2	4.6	.2	1.0	2.2	.7	.5
Indianapolis	64	8	11	23	21	1	9.2	1.2	1.6	3.3	3.0	.1
Jacksonville, Fla	37	7	5	15	8	2	14.1	2.7	1.9	5.7	3.1	.8
Jersey City	27	3	7	14	3	-----	4.5	.5	1.2	2.3	.5	-----
Kansas City, Kans	13	-----	5	5	3	-----	5.8	-----	2.2	2.2	1.3	-----
Kansas City, Mo	53	1	6	33	10	3	8.5	.2	1.0	5.3	1.6	.5
Knoxville	26	2	4	11	9	-----	11.7	.9	1.8	4.9	4.0	-----
Long Beach	13	3	3	6	-----	1	6.3	1.5	1.5	2.9	-----	.5
Los Angeles	110	10	24	57	18	1	6.4	.6	1.4	3.3	1.0	.1
Louisville	39	1	8	21	7	2	6.4	.2	1.3	3.5	1.2	.3
Lowell	19	2	6	6	5	-----	9.7	1.0	3.0	3.0	2.5	-----
Lynn	16	4	6	3	2	1	8.6	2.1	3.2	1.6	1.1	.5
Memphis	71	10	19	27	13	2	16.0	2.3	4.3	6.1	2.9	.5
Miami	16	2	3	6	4	1	8.4	1.0	1.6	3.1	2.1	.5
Milwaukee	62	8	11	27	9	7	5.2	.7	.9	2.3	.8	.6
Minneapolis	38	6	7	16	6	3	4.8	.8	.9	2.0	.8	.4
Nashville	49	5	4	30	7	3	14.7	1.5	1.2	9.0	2.1	.9
Newark, N. J	64	10	19	27	6	2	6.4	1.0	1.9	2.7	.6	.2
New Bedford	14	1	5	6	2	-----	6.9	.5	2.5	3.0	1.0	-----
New Haven	26	2	8	9	6	1	7.7	.6	2.4	2.7	1.8	.3
New Orleans	109	6	9	52	41	1	11.6	.6	1.0	5.5	4.4	.1
New York	645	78	192	226	108	41	5.2	.6	1.5	1.8	.9	.3
Norfolk	17	4	1	11	1	-----	7.4	1.7	.4	4.8	.4	-----
Oakland	13	1	2	9	1	-----	3.1	.2	.5	2.1	.2	-----
Oklahoma City	28	6	4	9	8	1	9.7	2.1	1.4	3.1	2.8	.3
Omaha	34	4	5	18	5	2	7.9	.9	1.2	4.2	1.2	.5
Paterson	22	5	4	7	6	-----	7.4	1.7	1.3	2.3	2.0	-----
Peoria	24	-----	2	17	5	-----	12.5	-----	1.0	8.9	2.6	-----

[1] The population of these cities in 1929 formed 30.3 per cent of the estimated population of the birth registration area.

Deaths from puerperal causes, with rates per 1,000 live births, in cities of 100,000 or more population in the birth registration area, 1929—Continued

Area	Deaths from puerperal causes, 1929											
	Number						Rate per 1,000 live births					
	The puerperal state	Accidents of pregnancy	Puerperal hemorrhage and other accidents of labor	Puerperal septicemia	Puerperal albuminuria and convulsions	Other puerperal causes	The puerperal state	Accidents of pregnancy	Puerperal hemorrhage and other accidents of labor	Puerperal septicemia	Puerperal albuminuria and convulsions	Other puerperal causes
CITY—Continued												
Philadelphia	258	31	63	97	57	10	7.4	0.9	1.8	2.8	1.6	0.3
Pittsburgh	125	15	28	55	24	3	8.5	1.0	1.9	3.7	1.6	.2
Portland, Oreg	24	1	5	9	7	2	5.7	.2	1.2	2.1	1.7	.5
Providence	57	7	8	29	10	3	10.1	1.2	1.4	5.2	1.8	.5
Reading	16	------	2	9	5	------	9.1	------	1.1	5.1	2.8	------
Richmond	35	3	9	14	7	2	9.7	.8	2.5	3.9	1.9	.6
Rochester	31	------	10	11	10	------	5.3	------	1.7	1.9	1.7	------
St. Louis	93	9	17	55	11	1	6.2	.6	1.1	3.7	.7	.1
St. Paul	26	5	4	12	2	3	5.0	1.0	.8	2.3	.4	.6
Salt Lake City	20	3	6	6	5	------	6.1	.9	1.8	1.8	1.5	------
San Diego	10	1	2	5	1	1	4.0	.4	.8	2.0	.4	.4
San Francisco	50	7	15	18	9	1	6.5	.9	2.0	2.3	1.2	.1
Scranton	27	------	6	13	7	1	9.8	------	2.2	4.7	2.5	.4
Seattle	25	1	6	10	8	------	4.8	.2	1.2	1.9	1.5	------
Somerville	15	1	4	8	------	2	9.1	.6	2.4	4.9	------	1.2
South Bend	15	1	3	4	7	------	7.3	.5	1.5	1.9	3.4	------
Spokane	14	1	2	7	3	1	7.0	.5	1.0	3.5	1.5	.5
Springfield, Mass	21	------	5	13	2	1	6.9	------	1.6	4.3	.7	.3
Syracuse	28	5	9	11	2	1	6.6	1.2	2.1	2.6	.5	.2
Tacoma	11	1	1	7	2	------	5.8	.5	.5	3.7	1.0	------
Tampa	8	------	3	3	2	------	4.2	------	1.6	1.6	1.1	------
Toledo	54	1	13	29	10	1	9.5	.2	2.3	5.1	1.8	.2
Trenton	24	3	7	10	4	------	8.8	1.1	2.6	3.7	1.5	------
Tulsa	24	4	2	14	4	------	10.8	1.8	.9	6.3	1.8	------
Utica	11	1	2	5	1	2	5.9	.5	1.1	2.7	.5	1.1
Washington, D. C	62	9	12	22	19	------	7.0	1.0	1.3	2.5	2.1	------
Waterbury	18	1	5	7	4	1	8.4	.5	2.3	3.3	1.9	.5
Wichita	21	2	6	10	2	1	9.6	.9	2.7	4.6	.9	.5
Wilmington, Del	18	1	9	5	3	------	8.3	.5	4.2	2.3	1.4	------
Worcester	33	3	7	13	10	------	8.8	.8	1.9	3.5	2.7	------
Yonkers	13	1	3	6	3	------	5.9	.5	1.4	2.7	1.4	------
Youngstown	32	2	9	13	7	1	8.8	.5	2.5	3.6	1.9	.3

DEATHS DURING WEEK ENDED NOVEMBER 1, 1930

Summary of information received by telegraph from industrial insurance companies for the week ended November 1, 1930, and corresponding week of 1929. (From the Weekly Health Index issued by the Bureau of the Census, Department of Commerce)

	Week ended Nov. 1, 1930	Corresponding week, 1929
Policies in force	75, 382, 865	75, 003, 699
Number of death claims	13, 628	13, 901
Death claims per 1,000 policies in force, annual rate	9. 4	9. 7

Deaths [1] from all causes in certain large cities of the United States during the week ended November 1, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index issued by the Bureau of the Census, Department of Commerce)

[The rates published in this summary are based upon mid-year population estimates derived from the 1930 census. The rates are not exactly comparable with similar rates published in the Public Health Reports earlier than the issue of August 22, 1930, which were based upon estimates made before the 1930 census was taken]

City	Week ended Nov. 1, 1930				Corresponding week 1929		Death rate [2] for first 44 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1930	1929
Total (78 cities)	7,749	11.7	711	[4] 57	12.0	640	11.9	12.7
Akron	39	8.0	5	46	10.8	8	8.0	9.4
Albany [5]	40	16.3	2	41	14.0	2	14.7	16.4
Atlanta	69	13.4	7	72	15.9	4	15.9	16.1
White	37		3	48		2		
Colored	32	(6)	4	115	(6)	2	(6)	(6)
Baltimore [5]	242	15.7	32	111	13.2	18	14.0	14.7
White	177		22	98		10		
Colored	65	(6)	10	160	(6)	8	(6)	(6)
Birmingham	70	14.1	8	77	13.0	5	13.7	16.1
White	36		5	79		2		
Colored	34	(6)	3	73	(6)	3	(6)	(6)
Boston	194	12.9	21	61	15.5	17	14.1	15.1
Bridgeport	23	8.1	1	17	7.1	1	10.9	12.1
Buffalo	152	13.8	17	76	14.8	7	13.0	14.1
Cambridge	21	9.6	2	40	8.3	1	11.9	12.5
Camden	39	17.4	5	88	13.8	1	13.6	14.6
Canton	17	8.4	1	27	9.0	2	10.0	11.3
Chicago [5]	671	10.3	51	45	11.0	56	10.4	11.3
Cincinnati	134	15.5	11	65	16.0	9	15.6	17.2
Cleveland	183	10.6	17	51	11.0	21	11.1	12.5
Columbus	83	14.9	6	59	16.2	7	15.6	14.9
Dallas	69	13.7	8		9.0	2	11.4	11.5
White	61		7			1		
Colored	8	(6)	1		(6)	1	(6)	(6)
Dayton	37	9.6	1	15	11.1	2	10.7	11.6
Denver	86	15.5	2	22	15.0	10	14.8	14.9
Des Moines	32	11.7	4	74	9.2	2	11.7	11.6
Detroit	260	8.6	38	58	9.2	36	9.3	11.2
Duluth	32	16.5	2	54	7.2	0	11.5	11.5
El Paso	31	15.8	5		10.4	3	17.3	19.6
Erie	24	10.8	3	66	6.8	1	11.2	12.2
Fall River [5] [7]	22	10.0	0	0	10.9	3	11.8	13.7
Flint	29	9.6	4	47	12.3	5	9.2	10.8
Fort Worth	24	7.7	0		8.9	1	11.0	12.2
White	20		0			0		
Colored	4	(6)	0		(6)	1	(6)	(6)
Grand Rapids	30	9.3	1	15	10.3	2	10.2	10.2
Houston	66	11.8	11		12.4	5	12.2	12.7
White	43		8			5		
Colored	23	(6)	3		(6)	0	(6)	(6)
Indianapolis	103	14.7	9	68	15.5	13	14.6	14.8
White	83		6	52		11		
Colored	20	(6)	3	175	(6)	2	(6)	(6)
Jersey City	63	10.4	5	43	10.6	5	11.3	12.5
Kansas City, Kans	23	9.8	1	23	9.0	1	11.7	13.0
White	16		1	28		1		
Colored	7	(6)	0	0	(6)	0	(6)	(6)
Kansas City, Mo	107	14.1	7	59	13.6	9	13.5	14.0
Knoxville	17	8.3	3	70	13.6	1	13.5	14.0
White	13		3	78		1		
Colored	4	(6)	0	0	(6)	0	(6)	(6)
Los Angeles	269	11.3	17	51	9.7	16	11.0	11.3
Louisville	66	11.2	6	51	29.8	8	13.6	15.3
White	56		6	59		6		
Colored	10	(6)	0	0	(6)	2	(6)	(6)
Lowell [7]	21	10.9	1	26	10.8	3	13.4	14.1
Lynn	18	9.2	2	56	8.7	3	10.4	11.3
Memphis	83	17.1	11	129	17.6	8	17.1	19.1
White	40		4	72		1		
Colored	43	(6)	7	235	(6)	7	(6)	(6)
Milwaukee	95	8.7	8	35	11.7	19	9.8	11.1
Minneapolis	107	12.0	17	112	9.9	6	10.7	10.8

See footnotes at end of table.

Deaths [1] from all causes in certain large cities of the United States during the week ended November 1, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index issued by the Bureau of the Census, Department of Commerce)—Continued.

City	Week ended Nov. 1, 1930				Corresponding week 1929		Death rate [2] for first 44 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1930	1929
Nashville	46	16.3	7	110	12.4	2	17.3	18.7
White	30		4	84		1		
Colored	16	(6)	3	186	(6)	1	(6)	(6)
New Bedford [7]	28	12.9	1	26	13.8	0	10.9	12.2
New Haven	47	15.1	1	15	12.8	1	12.7	13.5
New Orleans	152	17.3	19	106	17.9	8	17.5	17.7
White	87		12	102		5		
Colored	65	(6)	7	113	(6)	3	(6)	(6)
New York	1,426	10.6	121	51	10.7	109	10.7	11.4
Bronx Borough	212	8.6	17	49	8.6	16	7.9	8.3
Brooklyn Borough	460	9.2	46	48	9.7	44	9.7	10.3
Manhattan Borough	591	16.7	47	60	14.6	34	16.1	16.5
Queens Borough	131	6.2	10	40	7.7	13	7.0	7.6
Richmond Borough	32	10.5	1	19	15.2	2	14.3	16.0
Newark, N. J.	92	10.8	5	26	12.7	10	11.9	12.8
Oakland	69	12.6	7	87	9.0	3	11.0	11.3
Oklahoma City	26	7.3	2	36	9.2	2	10.8	10.8
Omaha	53	12.9	5	61	9.1	2	13.5	13.6
Paterson	38	14.3	3	52	15.5	3	12.3	13.4
Philadelphia	482	12.8	52	77	11.6	34	12.5	13.2
Pittsburgh	180	14.0	18	64	14.5	28	13.8	14.8
Portland, Oreg.	65	11.3	0	0	12.7	3	12.2	12.7
Providence	51	10.6	4	37	15.2	6	12.9	14.6
Richmond	60	17.1	10	145	16.3	2	14.8	16.3
White	28		2	44		1		
Colored	32	(6)	8	342	(6)	1	(6)	(6)
Rochester	70	11.2	2	18	11.8	6	11.6	12.4
St. Louis	214	13.6	13	45	14.0	15	14.1	14.7
St. Paul	46	8.8	2	20	7.6	1	10.1	10.5
Salt Lake City [4]	41	15.2	7	111	12.4	4	12.4	13.0
San Antonio	47	9.5	6		15.8	7	14.7	14.5
San Diego	35	12.2	2	42	13.1	0	14.4	15.1
San Francisco	111	9.2	2	14	13.7	10	13.0	13.1
Schenectady	21	11.4	2	62	15.3	3	11.2	12.3
Seattle	84	12.0	9	91	13.0	6	10.9	11.2
Somerville	13	6.5	1	32	7.1	0	9.7	9.2
Spokane	34	15.3	3	78	9.5	2	12.5	12.8
Springfield, Mass.	32	11.1	6	103	7.7	1	12.1	12.8
Syracuse	31	7.8	5	62	9.7	2	11.7	13.1
Tacoma	32	15.6	2	55	8.8	2	12.5	11.8
Toledo	69	12.3	10	92	14.8	9	12.7	13.7
Trenton	30	12.7	3	58	14.1	4	16.7	17.1
Utica	32	16.2	1	28	10.7	3	14.7	15.6
Washington, D. C.	154	16.5	17	100	15.9	7	15.1	15.4
White	101		10	87		3		
Colored	53	(6)	7	125	(6)	4	(6)	(6)
Waterbury	13	6.7	2	49	9.3	2	9.4	9.5
Wilmington, Del. [7]	26	12.9	5	121	11.4	1	14.6	13.9
Worcester	45	11.9	1	14	13.6	7	12.6	12.7
Yonkers	26	10.0	0	0	9.8	4	8.1	9.3
Youngstown	37	11.3	3	43	15.3	8	10.3	12.4

[1] Deaths of nonresidents are included. Stillbirths are excluded.

[2] These rates represent annual rates per 1,000 population, as estimated for 1930 and 1929 by the arithmetical method.

[3] Deaths under 1 year of age per 1,000 live births. Cities left blank are not in the registration area for births.

[4] Data for 73 cities.

[5] Deaths for week ended Friday.

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

[7] Population Apr. 1, 1930; decreased 1920 to 1930; no estimate made.

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 November 8, 1930, and November 9, 1929

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended November 8, 1930, and November 9, 1929

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929
New England States:								
Maine	1	9	-------	6	66	43	1	0
New Hampshire	1	1	-------	-------	-------	2	0	0
Vermont	5	2	-------	-------	3	1	0	0
Massachusetts	67	123	2	5	78	105	3	2
Rhode Island	10	15	1	4	-------	-------	0	0
Connecticut	6	19	7	1	55	3	3	3
Middle Atlantic States:								
New York	74	151	[1] 11	[1] 10	71	181	12	10
New Jersey	62	143	16	8	71	16	2	5
Pennsylvania	132	175	-------	-------	109	219	4	5
East North Central States:								
Ohio	65	41	1	8	25	159	3	3
Indiana	55	53	2	-------	28	20	3	0
Illinois	180	220	6	12	46	138	3	6
Michigan	85	80	3	-------	40	157	4	11
Wisconsin	13	27	26	25	41	194	2	3
West North Central States:								
Minnesota	14	34	-------	1	6	69	1	0
Iowa	16	6	-------	-------	2	37	1	1
Missouri	47	76	2	-------	137	31	3	5
North Dakota	11	5	-------	-------	7	9	6	0
South Dakota	8	11	-------	-------	-------	5	0	0
Nebraska	13	11	-------	8	5	21	1	0
Kansas	10	41	-------	5	3	40	1	2
South Atlantic States:								
Delaware	5	3	-------	-------	-------	-------	0	0
Maryland [2]	31	28	17	6	6	7	1	1
District of Columbia	9	11	1	-------	3	1	1	2
West Virginia	36	45	11	8	26	14	0	1
North Carolina	154	228	8	5	9	2	2	2
South Carolina	63	71	498	591	-------	-------	0	0
Georgia	26	24	67	49	3	4	0	0
Florida	22	14	-------	1	6	-------	0	0
East South Central States:								
Kentucky	-------	39	-------	-------	-------	-------	5	2
Tennessee	57	37	35	56	3	34	2	1
Alabama	34	60	27	50	28	13	3	0
Mississippi	92	68	-------	-------	-------	-------	2	0

[1] New York City only.
[2] Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended November 8, 1930, and November 9, 1929—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929
West South Central States:								
Arkansas	21	26	12	23	4	1	0	5
Louisiana	45	41	23	14	1		1	0
Oklahoma [2]	48	105	24	48	10	32	1	3
Texas	94	85	69	43	8	107	0	0
Mountain States:								
Montana	1					146	1	1
Idaho	1				3	12	2	0
Wyoming	2						0	0
Colorado	14	7			215	3	0	1
New Mexico	6	8			7	1	1	0
Arizona	13	25	2	16	39	1	1	8
Utah [2]	3	2	10	4	3	1	0	4
Pacific States:								
Washington	22	16		3	5	44	3	2
Oregon	3	21	10	15	40	9	0	1
California	85	77	29	56	109	65	3	2

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929
New England States:								
Maine	5	0	18	32	0	0	7	9
New Hampshire	1	0	8	14	0	0	1	3
Vermont	0	0	6	22	3	2	0	0
Massachusetts	13	2	153	235	0	0	5	13
Rhode Island	0	0	15	16	0	0	2	0
Connecticut	2	1	32	57	0	0	9	3
Middle Atlantic States:								
New York	20	10	281	199	0	18	26	23
New Jersey	2	2	119	124	0	0	80	9
Pennsylvania	5	3	345	183	0	1	50	44
East North Central States:								
Ohio	43	2	288	131	15	84	41	21
Indiana	4	2	146	126	41	91	12	7
Illinois	19	2	339	456	25	88	15	20
Michigan	10	1	171	227	15	60	19	10
Wisconsin	7	1	86	77	6	28	5	11
West North Central States:								
Minnesota	26	1	53	95	10	5	3	4
Iowa	4	4	53	32	5	48	8	11
Missouri	8	0	99	93	11	22	34	6
North Dakota	3	0	20	20	19	21	4	2
South Dakota	5	0	6	12	13	21	3	0
Nebraska	12	0	20	19	15	12	0	0
Kansas	13	0	41	116	11	7	9	8
South Atlantic States:								
Delaware	0	0	10	4	0	0	1	2
Maryland [2]	2	2	43	73	0	0	21	18
District of Columbia	0	0	29	12	0	0	3	1
West Virginia	4	0	50	78	0	5	40	23
North Carolina	3	1	178	139	0	1	11	11
South Carolina	0	1	25	28	3	0	26	26
Georgia	0	1	38	34	0	0	23	5
Florida	0	0	7	6	0	0	1	1
East South Central States:								
Kentucky	2	1	114	85	0	7	34	17
Tennessee	0	0	62	53	1	0	17	14
Alabama	3	1	63	66	2	1	8	9
Mississippi	1	0	34	38	0	0	37	20
West South Central States:								
Arkansas	0	0	15	31	4	1	26	8
Louisiana	1	0	21	24	0	0	9	13
Oklahoma [2]	1	1	28	68	1	16	29	25
Texas	12	0	40	53	6	8	30	8

[1] Week ended Friday.

[2] Figures for 1930 are exclusive of Oklahoma City and Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended November 8, 1930, and November 9, 1929—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929	Week ended Nov. 8, 1930	Week ended Nov. 9, 1929
Mountain States:								
Montana	2	0	11	49	2	10	1	7
Idaho	0	0	10	8	0	7	3	0
Wyoming	0	0	4	2	0	3	0	1
Colorado	4	0	26	26	2	43	3	6
New Mexico	3	0	7	10	0	1	10	4
Arizona	0	0	5	11	0	1	3	9
Utah [2]	0	0	15	12	1	0	0	0
Pacific States:								
Washington	1	2	48	43	10	35	10	9
Oregon	1	2	17	40	6	10	2	3
California	49	3	107	179	9	18	18	12

[2] Week ended Friday.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States 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
September, 1930										
Kansas	7	45	2	-------	20	-------	275	131	10	46
Texas	2	76	43	1,051	-------	-------	19	38	-------	55
October, 1930										
Arizona	7	46	10	-------	84	-------	6	29	8	25
Connecticut	1	43	14	-------	73	-------	33	65	0	31
Indiana	16	201	30	-------	40	-------	55	336	76	62
Iowa	3	44	-------	1	8	-------	75	170	44	15
Nebraska	3	52	6	-------	42	-------	136	107	30	15
Wyoming	-------	2	6	-------	-------	-------	18	22	1	3

September, 1930	Cases
Chicken pox:	
Kansas	30
German measles:	
Kansas	2
Impetigo contagiosa:	
Kansas	2
Lethargic encephalitis:	
Kansas	1
Mumps:	
Kansas	27
Paratyphoid fever:	
Kansas	3
Texas	3
Scabies:	
Kansas	16
Septic sore throat:	
Kansas	1
Tetanus:	
Kansas	8
Undulant fever:	
Kansas	6
Vincent's angina:	
Kansas	2
Whooping cough:	
Kansas	107
October, 1930	
Anthrax:	
Connecticut	1
Chicken pox:	
Arizona	5
Connecticut	82
Indiana	135
Iowa	103
Nebraska	71
Wyoming	63
Conjunctivitis, infectious:	
Connecticut	2

	Cases
Dysentery:	
Arizona	2
Connecticut (amebic)	1
Connecticut (bacillary)	3
Iowa	3
German measles:	
Iowa	3
Impetigo contagiosa:	
Iowa	1
Lead poisoning:	
Connecticut	2
Lethargic encephalitis:	
Connecticut	1
Nebraska	1
Mumps:	
Arizona	16
Connecticut	32
Indiana	5
Iowa	28
Nebraska	18
Wyoming	9
Paratyphoid fever:	
Connecticut	2
Rabies in animals:	
Connecticut	5
Septic sore throat:	
Connecticut	7
Wyoming	3
Tetanus:	
Connecticut	1
Trachoma:	
Arizona	113
Indiana	1
Undulant fever:	
Arizona	1
Connecticut	1
Iowa	8
Vincent's angina:	
Iowa	2
Whooping cough:	
Arizona	23
Connecticut	155
Indiana	57
Iowa	23
Nebraska	45
Wyoming	18

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 96 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,575,000. The estimated population of the 89 cities reporting deaths is more than 29,980,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended November 1, 1930, and November 2, 1929

	1930	1929	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	1,799	2,428	----
96 cities	563	846	1,073
Measles:			
45 States	1,499	1,676	----
96 cities	370	226	----
Meningococcus meningitis:			
46 States	92	99	----
96 cities	32	40	----
Poliomyelitis:			
46 States	504	79	----
Scarlet fever:			
46 States	2,988	3,224	----
96 cities	1,002	912	858
Smallpox:			
46 States	252	628	----
96 cities	20	81	11
Typhoid fever:			
46 States	697	502	----
96 cities	87	66	73
Deaths reported			
Influenza and pneumonia:			
89 cities	629	647	----
Smallpox:			
89 cities	0	0	----

City reports for week ended November 1, 1930

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 weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded, and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible but no year earlier than 1921 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation 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	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	4	1	0		0	0	0	1
New Hampshire:								
Concord		0						
Nashua	1	0	1		0	0	0	0
Vermont:								
Barre	0	0	0		0	0	0	0
Burlington	0	1	0		0	0	0	0
Massachusetts:								
Boston	48	30	19		0	25	3	23
Fall River	4	3	1		0	0	1	1
Springfield	13	5	8		0	0	4	2
Worcester	11	6	6		0	2	1	2
Rhode Island:								
Pawtucket	3	1	1		0	0	0	0
Providence	6	9	2		0	0	0	5
Connecticut:								
Bridgeport	1	5	0	1	1	0	0	3
Hartford	3	5	1		0	27	0	2
New Haven	1	1	0		0	2	8	4
MIDDLE ATLANTIC								
New York:								
Buffalo		15						
New York	48	145	43	7	6	38	12	143
Rochester	4	4	5		0	1	0	5
Syracuse	17	4	0		0	1	0	0
New Jersey:								
Camden	0	9	2	1	1	8	4	6
Newark	4	14	9	5	0	0	4	7
Trenton	2	2	4		0	0	0	4
Pennsylvania:								
Philadelphia	37	61	16	10	6	7	14	28
Pittsburgh	25	26	15		6	2	5	27
Reading	0	3	1		0	0	3	2
EAST NORTH CENTRAL								
Ohio:								
Cincinnati	2	12	4		1	1	2	11
Cleveland	57	55	16	5	0	3	23	17
Columbus	15	6	2	2	1	0	0	4
Toledo	29	10	9		0	2	2	6
Indiana:								
Fort Wayne	3	5	0		2	1	0	1
Indianapolis	11	13	3		1	3	3	16
South Bend	7	2	7		0	1	0	4
Terre Haute	0	2	0		0	0	0	3
Illinois:								
Chicago	53	129	113	9	2	8	39	51
Springfield	0	1	6		0	1	0	3
Michigan:								
Detroit	66	68	55	3	3	3	7	23
Flint	14	6	0		0	4	1	3
Grand Rapids	0	3	0		0	0	0	0

City reports for week ended November 1, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued								
Wisconsin:								
Kenosha	19	2	0		0	1	3	0
Madison	3	2	0			1	7	
Milwaukee	54	19	3		0	3	14	2
Racine	17	2	0		0	0	0	1
Superior	2	1	0		0	0	0	2
WEST NORTH CENTRAL								
Minnesota:								
Duluth	25	0	2		0	0	0	2
Minneapolis	20	34	2		2	1	3	10
St. Paul	31	12	4		1	0	0	4
Iowa:								
Davenport	2	1	6			0	0	
Des Moines	2	4	1			0	0	
Sioux City	8	3	2			0	3	
Waterloo	4	1	0			0	2	
Missouri:								
Kansas City	14	10	12		0	0	0	5
St. Joseph	1	2	0		0	0	0	2
St. Louis	14	45	13			149	7	
North Dakota:								
Fargo	11	0	0		0	0	0	0
Grand Forks	1	0	0			0	1	
South Dakota:								
Sioux Falls	0	0	0			0	0	
Nebraska:								
Omaha	8	14	11		0	1	0	2
Kansas:								
Topeka	0	2	1		0	1	0	3
Wichita	1	4	1		0	0	0	4
SOUTH ATLANTIC								
Delaware:								
Wilmington	1	3	0		0	0	0	2
Maryland:								
Baltimore	25	27	8	8	3	2	4	24
Cumberland	0	1	0		0	0	0	0
Frederick	0	1	2		0	0	0	0
District of Columbia:								
Washington	2	19	3	3	3	3	0	8
Virginia:								
Lynchburg	3	5	2		0	0	0	0
Norfolk	1	3	1		0	0	2	0
Richmond	0	21	8		2	1	0	6
Roanoke	1	6	5		0	0	2	0
West Virginia:								
Charleston	1	3	3		0	0	4	2
Wheeling	9	1	0		0	0	0	4
North Carolina:								
Raleigh	0	4	2		0	0	0	2
Wilmington	0	1	2		1	0	0	2
Winston-Salem	5	6	5		0	0	0	2
South Carolina:								
Charleston	0	1	2	5	0	0	0	1
Columbia	1	2	2		0	0	2	4
Greenville	0	2	0		0	0	0	0
Georgia:								
Atlanta	2	10	9	30	0	1	0	7
Brunswick	0	0	0		0	0	0	0
Savannah	0	3	3	4	0	0	0	3
Florida:								
Miami	0	2	4	2	0	2	0	1
St. Petersburg		0			0			0
Tampa	0	2	2		0	3	0	0

City reports for week ended November 1, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL								
Kentucky:								
Covington	0	3	1	----	0	0	0	0
Tennessee:								
Memphis	3	10	15	----	1	0	3	4
Nashville	0	3	0	----	0	1	0	2
Alabama:								
Birmingham	1	7	21	4	1	6	0	2
Mobile	0	2	3	----	0	0	0	2
Montgomery	0	3	9	----	----	0	0	----
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith	0	2	1	----	----	0	0	----
Little Rock	2	2	0	----	0	0	1	1
Louisiana:								
New Orleans	0	13	6	2	3	0	0	10
Shreveport	0	2	0	----	0	0	0	3
Oklahoma:								
Muskogee	1	6	3	----	0	0	0	0
Oklahoma City	0	5	5	4	0	0	0	3
Tulsa	1	6	4	----	----	0	0	----
Texas:								
Dallas	1	18	13	1	0	0	1	9
Fort Worth	1	7	3	----	0	0	0	6
Galveston	0	1	0	----	0	0	0	2
Houston	0	4	7	----	2	0	0	2
San Antonio	0	8	2	----	1	0	1	2
MOUNTAIN								
Montana:								
Billings	3	0	0	----	0	0	0	1
Great Falls	3	0	0	----	0	3	0	0
Helena	0	0	0	----	0	0	0	0
Missoula	0	0	0	----	0	0	0	0
Idaho:								
Boise	1	0	0	----	0	0	0	2
Colorado:								
Denver	42	13	4	----	1	1	1	12
Pueblo	1	1	0	----	0	43	0	0
New Mexico:								
Albuquerque	0	0	0	1	0	0	0	3
Arizona:								
Phoenix	1	0	0	----	0	0	0	0
Utah:								
Salt Lake City	11	4	0	----	1	0	1	4
Nevada:								
Reno	0	1	0	----	0	0	0	0
PACIFIC								
Washington:								
Seattle	20	5	10	----	----	2	16	----
Spokane	13	3	1	----	----	0	0	----
Tacoma	1	4	5	----	0	0	1	1
Oregon:								
Portland	14	12	1	2	1	1	7	4
Salem	1	0	0	----	0	0	1	0
California:								
Los Angeles	19	43	13	18	0	9	17	7
Sacramento	6	2	2	----	0	0	10	2
San Francisco	15	16	2	----	1	1	3	3

City reports for week ended November 1, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	2	2	0	0	0	0	1	0	0	13	23
New Hampshire:											
Concord	0		0				0				
Nashua	0	0	0	0	0	0	0	0	0	0	
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	2
Burlington	1	0	0	0	0	0	0	0	0	0	5
Massachusetts:											
Boston	47	47	0	0	0	16	2	1	0	7	194
Fall River	3	4	0	0	0	5	0	0	0	0	22
Springfield	5	2	0	0	0	1	0	0	0	2	30
Worcester	9	22	0	0	0	3	0	0	0	3	45
Rhode Island:											
Pawtucket	0	0	0	0	0	2	0	0	0	0	22
Providence	7	4	0	6	0	1	0	0	0	10	51
Connecticut:											
Bridgeport	7	5	0	0	0	0	0	1	0	0	23
Hartford	4	0	0	0	0	1	0	0	0	3	23
New Haven	4	1	0	0	0	2	0	0	0	0	47
MIDDLE ATLANTIC											
New York:											
Buffalo	19		0				0				
New York	79	64	0	0	0	80	18	11	2	124	1,426
Rochester	6	25	0	0	0	2	1	0	1	2	67
Syracuse	6	2	0	0	0	0	0	0	0	12	31
New Jersey:											
Camden	2	5	0	0	0	0	0	0	0	4	39
Newark	10	10	0	0	0	5	1	1	0	16	95
Trenton	0	7	0	0	0	1	1	2	0	2	30
Pennsylvania:											
Philadelphia	54	123	0	0	0	29	6	4	0	6	482
Pittsburgh	34	38	0	0	0	10	1	2	0	4	180
Reading	1	1	0	0	0	0	0	0	0	1	25
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	13	23	0	0	0	8	1	1	0	3	134
Cleveland	23	43	0	0	0	13	1	2	0	8	183
Columbus	9	11	0	1	0	8	0	0	0	1	83
Toledo	11	3	0	0	0	3	0	2	0	0	68
Indiana:											
Fort Wayne	2	0	0	0	0	2	1	0	0	0	19
Indianapolis	11	25	1	0	0	1	0	0	0	5	
South Bend	4	3	0	0	0	2	1	0	0	1	24
Terre Haute	3	1	0	0	0	0	0	0	0	0	21
Illinois:											
Chicago	81	155	0	0	0	42	4	7	1	46	671
Springfield	3	0	0	0	0	1	0	0	0	6	17
Michigan:											
Detroit	62	49	0	0	0	17	3	2	0	47	260
Flint	12	15	0	0	0	0	0	0	0	5	29
Grand Rapids	8	4	0	0	0	1	1	0	0	7	30
Wisconsin:											
Kenosha	2	6	1	0	0	0	0	0	0	0	9
Madison	1	3	0	0			0	0		2	
Milwaukee	18	8	1	0	0	9	0	0	0	24	95
Racine	3	8	0	0	0	1	0	0	0	2	29
Superior	3	0	0	0	0	0	0	0	0	2	13
WEST NORTH CENTRAL											
Minnesota:											
Duluth	8	1	0	0	0	2	1	1	0	13	32
Minneapolis	42	3	1	0	0	4	1	1	0	5	107
St. Paul	19	4	0	0	0	3	0	2	0	4	54

City reports for week ended November 1, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL—continued											
Iowa:											
Davenport	1	2	0	0	-------	-------	0	0	-------	0	-------
Des Moines	10	8	0	0	-------	-------	0	0	-------	0	32
Sioux City	2	3	1	0	-------	-------	0	0	-------	0	-------
Waterloo	2	1	0	0	-------	-------	0	0	-------	1	-------
Missouri:											
Kansas City	13	23	0	7	0	12	0	0	0	1	107
St. Joseph	3	0	0	0	0	0	3	0	0	0	17
St. Louis	33	28	0	1	0	11	1	3	0	2	214
North Dakota:											
Fargo	2	0	0	0	0	0	0	0	0	4	10
Grand Forks	1	1	0	0	-------	-------	0	0	-------	3	-------
South Dakota:											
Sioux Falls	2	0	0	3	-------	-------	0	0	-------	0	12
Nebraska:											
Omaha	5	15	0	1	0	1	0	0	0	3	53
Kansas:											
Topeka	4	1	0	1	0	1	0	0	1	0	24
Wichita	5	5	0	0	0	1	0	0	0	0	33
SOUTH ATLANTIC											
Delaware:											
Wilmington	3	0	0	0	0	0	0	0	0	1	26
Maryland:											
Baltimore	14	19	0	0	0	15	4	3	2	15	212
Cumberland	1	0	0	0	0	0	1	0	1	0	11
Frederick	0	1	0	0	0	0	0	0	0	0	3
District of Columbia:											
Washington	16	9	0	0	0	12	2	3	0	2	154
Virginia:											
Lynchburg	1	0	0	0	0	1	0	1	0	8	10
Norfolk	2	7	0	0	0	1	0	0	0	0	-------
Richmond	10	23	0	0	0	2	0	2	0	0	76
Roanoke	4	3	0	0	0	1	0	0	0	2	18
West Virginia:											
Charleston	3	1	0	0	0	0	0	0	0	2	15
Wheeling	2	3	0	0	0	1	0	0	0	0	21
North Carolina:											
Raleigh	2	3	0	0	0	1	0	0	0	2	18
Wilmington	1	1	0	0	0	0	0	0	0	1	10
Winston-Salem	5	2	0	0	0	0	0	1	0	0	12
South Carolina:											
Charleston	1	0	0	0	0	3	1	0	0	2	20
Columbia	0	3	0	0	0	1	0	0	0	0	37
Greenville	1	3	0	0	0	0	0	0	0	0	1
Georgia:											
Atlanta	7	14	0	0	0	4	1	2	2	3	69
Brunswick	0	0	0	0	0	0	0	0	0	0	5
Savannah	1	1	1	0	0	1	0	2	0	0	38
Florida:											
Miami	1	1	0	0	0	2	1	1	0	0	12
St. Petersburg	0	-------	0	-------	0	1	0	-------	0	-------	6
Tampa	0	0	0	0	0	2	0	2	0	0	14
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	11	0	0	0	1	0	2	0	0	16
Tennessee:											
Memphis	6	8	0	0	0	9	2	8	1	0	83
Nashville	3	0	0	0	0	2	2	3	3	10	46
Alabama:											
Birmingham	4	16	1	0	0	5	1	3	0	2	70
Mobile	1	2	0	0	0	2	0	0	0	0	29
Montgomery	1	4	0	0	-------	-------	0	1	-------	2	-------

City reports for week ended November 1, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0	----	----	0	0	----	0	----
Little Rock	2	0	0	0	0	5	0	0	0	0	----
Louisiana:											
New Orleans	6	8	0	0	0	10	3	1	1	2	152
Shreveport	1	0	0	0	0	2	0	0	0	0	30
Oklahoma:											
Muskogee	2	0	0	0	0	0	0	0	0	0	----
Oklahoma City	3	6	0	1	0	1	1	0	0	0	26
Tulsa	4	5	0	0	----	----	0	0	----	0	----
Texas:											
Dallas	6	7	0	0	0	6	0	2	0	0	69
Fort Worth	2	1	0	2	0	1	0	0	0	0	24
Galveston	0	0	0	0	0	0	0	0	0	0	14
Houston	3	4	0	1	0	6	0	1	1	0	66
San Antonio	0	0	0	0	0	7	0	0	0	0	47
MOUNTAIN											
Montana:											
Billings	1	0	0	1	0	0	0	0	0	1	8
Great Falls	2	6	0	0	0	0	0	0	0	4	12
Helena	0	0	0	0	0	0	0	0	0	0	6
Missoula	0	0	0	0	0	0	0	0	0	0	2
Idaho:											
Boise	1	1	1	0	0	0	0	0	0	0	5
Colorado:											
Denver	9	28	0	0	0	8	1	0	0	25	83
Pueblo	1	2	0	0	0	0	0	0	0	0	9
New Mexico:											
Albuquerque	1	0	0	0	0	3	0	1	0	1	13
Arizona:											
Phoenix	1	0	0	0	0	2	0	0	0	0	17
Utah:											
Salt Lake City	2	2	0	0	0	2	2	0	0	6	41
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	2
PACIFIC											
Washington:											
Seattle	8	10	1	0	----	----	1	9	----	14	----
Spokane	9	1	2	6	----	----	0	0	----	3	----
Tacoma	3	1	0	1	0	0	0	0	0	0	32
Oregon:											
Portland	7	6	3	0	0	1	1	1	0	1	65
Salem	1	0	0	0	0	0	0	0	0	0	----
California:											
Los Angeles	23	9	0	0	0	35	2	0	0	17	269
Sacramento	3	0	0	0	0	1	0	0	0	9	12
San Francisco	12	2	0	0	0	7	1	0	1	12	133

City reports for week ended November 1, 1930—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									
Maine:									
Portland	0	0	0	0	0	0	0	5	0
Massachusetts:									
Boston	1	0	0	0	0	0	2	19	2
Fall River	0	0	0	0	0	0	0	1	1
Worcester	0	0	0	0	0	0	0	1	0
Rhode Island:									
Providence	0	0	0	0	0	0	0	1	
Connecticut:									
Bridgeport	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
New York	9	2	2	0	0	0	9	3	1
Rochester	0	0	0	0	0	0	0	1	0
Syracuse	0	0	0	0	0	0	0	2	0
New Jersey:									
Newark	1	0		0	0	0	0	0	0
Pennsylvania:									
Philadelphia	0	0	0	0	0	0	0	2	0
Pittsburgh	0	0	0	1	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	0	0	0	0	0	0	2	0
Cleveland	0	1	0	0	0	0	0	15	2
Columbus	0	0	1	1	0	0	0	7	0
Indiana:									
Indianapolis	1	0	0	0	0	0	1	4	0
Illinois:									
Chicago	5	2	0	0	1	1	2	7	0
Michigan:									
Detroit	1	3	1	0	0	0	1	4	0
Flint	1	0	0	0	0	0	0	1	0
Grand Rapids	0	0	0	0	0	0	0	2	0
Wisconsin:									
Madison	0	0	0	0	0	0	0	1	0
Milwaukee	0	0	0	0	0	0	0	1	1
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis	1	0	0	0	0	0	0	5	0
St. Paul	0	0	1	1	0	0	0	1	0
Iowa:									
Sioux City	0	0	0	0	0	0	0	1	0
Missouri:									
Kansas City	0	1	0	0	0	0	0	1	0
St. Joseph	1	0	0	0	0	0	0	0	0
St. Louis	1	0	0	0	0	0	1	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore [1]	0	0	1	0	0	0	1	1	0
District of Columbia:									
Washington	2	0	0	0	0	0	0	0	0
Virginia:									
Richmond	0	0	0	0	0	0	0	1	0
West Virginia:									
Wheeling	0	0	0	0	0	0	0	1	0
North Carolina:									
Winston-Salem	0	0	0	0	2	2	0	0	0
South Carolina:									
Charleston [2]	0	0	0	0	1	0	0	0	0
Columbia	0	0	0	0	0	1	0	0	0
Greenville	0	0	0	0	0	0	0	0	1
Georgia:									
Savannah [1]	0	0	0	0	2	2	0	0	0

[1] Typhus fever, 3 cases: 1 case at Baltimore, Md., and 2 cases at Savannah, Ga.
[2] Dengue, 1 case at Charleston, S. C.

City reports for week ended November 1, 1930—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST SOUTH CENTRAL									
Kentucky:									
Covington	0	1	0	0	0	0	0	0	0
Tennessee:									1
Memphis	1	1	0	0	0	0	0	0	0
Alabama:									
Birmingham	2	0	0	0	2	1	0	3	1
Mobile	0	0	0	0	0	1	0	1	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	1	2	0	0	1	2	0	0	0
Shreveport	0	0	0	1	0	0	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	0	0	0	0	1	0
Texas:									
Fort Worth	0	0	0	0	0	0	0	1	0
Galveston	0	0	0	0	0	0	0	1	0
Houston	0	0	0	0	0	0	0	2	0
MOUNTAIN									
Colorado:									
Denver	2	0	0	0	0	0	0	0	0
Pueblo	0	0	0	0	0	0	0	2	0
Arizona:									
Phoenix	0	0	0	0	0	0	0	1	0
Utah:									
Salt Lake City	2	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	0	0	0	0	0	0	1	1	0
California:									
Los Angeles	0	0	0	0	0	0	0	12	0
Sacramento	0	0	0	0	0	0	0	1	0
San Francisco	0	1	0	0	0	0	1	9	1

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended November 1, 1930, compared with those for a like period ended November 2, 1929. The population figures used in computing the rates are approximate estimates, authoritative figures for many of the cities not being available. The 98 cities reporting cases have an estimated aggregate population of more than 32,000,000. The 91 cities reporting deaths have more than 30,500,000 estimated population.

Summary of weekly reports from cities, September 28 to November 1, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Oct. 4, 1930	Oct. 5, 1929	Oct. 11, 1930	Oct. 12, 1929	Oct. 18, 1930	Oct. 19, 1929	Oct. 25, 1930	Oct. 26, 1929	Nov. 1, 1930	Nov. 2, 1929
98 cities	[2] 62	97	72	112	71	135	[2] 79	134	[4] 93	143
New England	49	86	53	94	64	128	97	110	[5] 85	114
Middle Atlantic	43	62	42	75	35	88	36	86	[6] 48	99
East North Central	80	124	100	139	92	155	106	163	131	168
West North Central	[7] 62	108	66	123	74	167	65	137	91	160
South Atlantic	62	129	106	139	92	180	97	139	106	144
East South Central	115	157	108	232	162	171	202	185	331	205
West South Central	112	198	64	255	127	339	[8] 88	396	108	434
Mountain	[3] 9	26	43	0	17	70	60	26	34	17
Pacific	[9] 62	56	94	60	102	87	118	121	78	111

MEASLES CASE RATES

98 cities	[2] 19	16	22	22	36	30	[2] 37	30	[4] 61	38
New England	33	34	31	16	44	58	69	29	[5] 125	27
Middle Atlantic	12	12	16	12	23	17	30	21	[6] 29	33
East North Central	5	12	11	29	14	40	16	47	18	40
West North Central	[7] 73	10	76	23	140	31	140	21	288	52
South Atlantic	20	11	11	9	7	9	13	9	18	15
East South Central	0	0	20	14	7	0	27	21	47	0
West South Central	7	0	0	4	4	4	[8] 4	15	0	0
Mountain	[3] 73	35	112	61	189	52	137	26	403	244
Pacific	[9] 27	65	24	65	66	72	21	63	28	58

SCARLET FEVER CASE RATES

98 cities	[2] 74	102	97	114	123	138	[2] 123	138	[4] 165	155
New England	73	135	106	162	148	173	144	162	[5] 195	177
Middle Atlantic	49	48	54	48	90	69	52	75	[6] 139	89
East North Central	107	149	137	173	179	214	172	192	220	226
West North Central	[7] 73	119	91	140	114	173	114	173	159	160
South Atlantic	70	120	115	139	115	127	148	174	152	139
East South Central	74	82	182	123	148	232	169	109	277	205
West South Central	37	72	37	130	78	103	[8] 73	149	71	149
Mountain	[3] 118	131	283	148	232	157	163	235	335	226
Pacific	[9] 89	128	87	87	59	113	104	104	54	181

SMALLPOX CASE RATES

98 cities	[2] 1	7	2	7	2	12	[2] 2	10	[4] 3	13
New England	0	0	0	0	0	0	0	0	[5] 0	0
Middle Atlantic	0	0	0	1	0	0	0	0	[6] 0	0
East North Central	1	7	2	3	4	7	2	12	1	20
West North Central	[7] 0	2	6	13	0	21	0	31	19	42
South Atlantic	2	0	0	0	0	0	0	0	0	0
East South Central	0	48	0	0	0	0	0	0	0	14
West South Central	4	0	4	4	4	0	[8] 8	0	4	27
Mountain	[3] 0	52	0	96	26	122	0	52	9	61
Pacific	[9] 2	36	7	34	0	84	21	51	17	29

[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 estimates as of July 1, 1930, and 1929, respectively.
[2] Kansas City, Mo., Great Falls, Mont., and Spokane, Wash., not included.
[3] Fort Smith, Ark., not included.
[4] Concord, N. H., and Buffalo, N. Y., not included.
[5] Concord, N. H., not included.
[6] Buffalo, N. Y., not included.
[7] Kansas City, Mo., not included.
[8] Great Falls, Mont., not included.
[9] Spokane, Wash., not included.

Summary of weekly reports from cities, September 28 to November 1, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Oct. 4, 1930	Oct. 5, 1929	Oct. 11, 1930	Oct. 12, 1929	Oct. 18, 1930	Oct. 19, 1929	Oct. 25, 1930	Oct. 26, 1929	Nov. 1, 1930	Nov. 2, 1929
93 cities	[2] 20	16	21	26	17	17	[3] 18	15	[4] 14	11
New England	11	11	20	16	9	9	27	16	[5] 4	7
Middle Atlantic	15	14	14	10	11	8	13	8	[6] 10	8
East North Central	9	12	9	8	7	10	5	7	8	6
West North Central	[7] 13	15	9	8	15	25	8	6	13	17
South Atlantic	38	30	64	26	57	24	37	21	29	13
East South Central	67	21	47	27	47	68	94	48	115	34
West South Central	56	8	52	27	22	15	[8] 27	42	15	19
Mountain	[9] 118	113	43	749	34	192	77	200	0	78
Pacific	[9] 20	10	19	7	26	19	19	5	21	2

INFLUENZA DEATH RATES

91 cities	[10] 3	6	5	8	5	8	5	9	[4] 9	11
New England	0	4	4	0	7	2	2	0	[5] 2	2
Middle Atlantic	2	7	7	8	4	6	7	12	[6] 10	9
East North Central	1	5	3	8	4	9	3	10	6	9
West North Central	[7] 0	6	6	3	3	9	9	3	9	6
South Atlantic	2	7	2	11	5	9	4	4	16	19
East South Central	15	0	0	22	0	7	7	22	15	30
West South Central	11	16	11	16	8	16	8	20	23	27
Mountain	[9] 18	0	9	26	9	17	9	17	17	26
Pacific	3	9	0	6	9	6	9	3	3	3

PNEUMONIA DEATH RATES

91 cities	[10] 60	77	73	80	74	97	89	108	[4] 100	105
New England	40	36	64	74	80	97	91	63	[5] 96	74
Middle Atlantic	63	93	78	87	74	118	108	144	[6] 112	113
East North Central	54	61	55	65	51	81	53	91	88	101
West North Central	[7] 81	108	86	54	53	69	59	72	95	135
South Atlantic	48	81	79	103	88	81	125	112	123	116
East South Central	118	30	140	104	184	112	96	134	74	157
West South Central	77	113	119	113	96	90	134	86	111	105
Mountain	[9] 137	87	94	122	189	122	77	122	163	131
Pacific	49	47	49	57	80	82	74	44	40	31

[2] Kansas City, Mo., Great Falls, Mont., and Spokane, Wash., not included.
[3] Fort Smith, Ark., not included.
[4] Concord, N. H., and Buffalo, N. Y., not included.
[5] Concord, N. H., not included.
[6] Buffalo, N. Y., not included.
[7] Kansas City, Mo., not included.
[8] Great Falls, Mont., not included.
[9] Spokane, Wash., not included.
[10] Kansas City, Mo., and Great Falls, Mont., not included.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended November 1, 1930.—The Department of Pensions and National Health of Canada reports cases of certain communicable diseases for the week ended November 1, 1930, as follows:

Province	Cerebrospinal fever	Influenza	Lethargic encephalitis	Poliomyelitis	Smallpox	Typhoid fever
Prince Edward Island [1]						
Nova Scotia		10		2		
New Brunswick						6
Quebec	1					42
Ontario		4	1	32	20	1
Manitoba	1			2		5
Saskatchewan				1	2	1
Alberta				2		1
British Columbia			1	2	3	2
Total	2	14	2	41	25	58

[1] No case of any disease included in the table was reported during the week.

Quebec Province—Communicable diseases—Week ended November 1, 1930.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended November 1, 1930, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	2	Mumps	17
Chicken pox	83	Scarlet fever	112
Diphtheria	58	Tuberculosis	29
German measles	2	Typhoid fever	40
Measles	16	Whooping cough	63

CUBA

Habana—Communicable diseases—October, 1930.—During the month of October, 1930, certain communicable diseases were reported in the city of Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chicken pox	6		Rabies	1	
Diphtheria	16	1	Scarlet fever	7	1
Malaria [1]	27	2	Tuberculosis	39	9
Measles	7		Typhoid fever [1]	11	4

[1] Many of these cases are from the interior.

MEXICO

Tampico—Communicable diseases—October, 1930.—During the month of October, 1930, certain communicable diseases were reported in Tampico, Mexico, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Diphtheria	4	3	Tuberculosis	38	27
Enteritis (various)	----	33	Typhoid fever	4	1
Influenza	2	1	Whooping cough	10	----
Malaria	123	9			

TRINIDAD (BRITISH WEST INDIES)

Port of Spain—Vital statistics—August-September, 1929 and 1930.—The following statistics for the months of August and September, 1929 and 1930, are taken from a report issued by the Public Health Department of Port of Spain, Trinidad:

	August		September	
	1929	1930	1929	1930
Number of births	144	123	154	168
Birth rate per 1,000 population	25.5	21.5	28.2	30.4
Number of deaths	140	104	122	103
Death rate per 1,000 population	24.8	18.2	22.4	18.6
Deaths under 1 year	27	28	19	15
Infant mortality rate per 1,000 births	187.5	269.2	123.4	89.3

YUGOSLAVIA

Communicable diseases—September, 1930.—During the month of September, 1930, certain communicable diseases were reported in Yugoslavia, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	138	14	Puerperal fever	3	1
Cerebrospinal meningitis	11	7	Rabies	1	1
Diphtheria	890	108	Scarlet fever	965	91
Dysentery	306	46	Tetanus	33	14
Measles	164	1	Typhoid fever	779	72
Poliomyelitis	5	1			

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

From medical officers of the Public Health Service, American consuls, International Office of Public Hygiene, Pan American Sanitary Bureau, 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		May 4-31, 1930	June 1-28, 1930	June 29-July 26, 1930	July 27-Aug. 23, 1930	Week ended— Aug. 30, 1930	September, 1930 6	13	20	27	October, 1930 4	11	18	25	November, 1930 1	8
Afghanistan	C			[1] P	P											
China:																
Amoy	C							1	1							
	D							1	1							
Canton	C	3	2	2							1			1		
	D			1												
Shanghai	C					8	4		22	23	5	6	4	1		
	D						1	1	1	2			2			
Shensi Province	C								P							
Swatow	C	3	7		3	1	1									
Tientsin	C				2	1										
India	C	56,311	37,102	26,121	42,893	14,249	11,823	13,072	12,407							
	D	44,878	25,711	13,822	22,358	5,879	5,732	6,409	5,939							
Bassein	C	7					1									
	D	5														
Bombay	C				14			1		1	3	1	11	17		
	D				8			2		1	2		8	10		
Calcutta	C	609	327	220	63	8	10		9	4	4	7	9	7		
	D	372	179	128	30	3	3		6	3	4	4	4			
Negapatam	C		1													
	D		1													
Rangoon	C	9	6	1	1	1	1					1				
	D	3	4	1	1	1						1				
India (French):																
Chandernagor	C	6	3	1			1				1	2				
	D	6	2								1					
Karikal	C		3													
	D		3													
India (Portuguese)	C				1		1									
Indo-China (see also table below):																
Pnompenh	C	1	40	32	11					1		1		1		
	D	5	18	22	6											
Saigon and Cholon	C	160	48	10	5					1	1			1		
	D	101	23	3	1											

Philippine Islands:[3]																
Ports—																
Cebu	C		1	65	9	1	1									
	D			36	8	1	1									
Iloilo	C			29	64	3	4	1	2	1						
	D			22	56	4	5	2	3	2			2			
Manila	C	1			1	16	13	10	4	2	1	2				
	D					5	6	1			1					
Provinces—																
Antique	C				20	2	25	12	8	12		28				
	D				12	1	14	12	7	8		10				
Bohol	C				138	30	14	4	1							
	D				79	12	6	2								
Bulacán	C		3	4	1	1	2	1			2					
	D		1			1	1				1					
Capiz	C			3	2	1										
	D			2	2											
Cebu	C	1	355	712	85	1	16	8								
	D	1	170	303	50	1	6	4								
Iloilo	C		2	309	571	71	60	61	46	18	7	13	12	10	10	4
	D		1	193	376	45	45	35	26	15	6	7	12	7	7	8
La Union	C			1												
Leyte	C		47	11												
	D		19	11												
Masbate	C		10	92	34											
	D		3	35	14											
Misamis, Occidental	C			3												
	D			3												
Negros, Occidental	C	10	140	568	343	40	43	24	15	8	10	5	5	12	3	19
	D	7	88	368	237	32	30	20	9	6	5	6	3	12	3	12
Negros, Oriental	C			23	8											
	D			13	4											
Nueva Acija	C			1												
	D			1												
Pampanga	C		2	2		1										
Pangasinan	C			3	1											
	D			2	1											
Rizal	C		1	1												
	D		1	1												
Samar	C				18			3	1	4			3	6	3	4
	D				16			2		4			3	5	1	4
Sorsogon	C															5
	D															4
Surigao	C				28	1				(5)						
	D				17	2										
Tarlac	C				1											

[1] An outbreak of cholera was reported in June, 1930, in Afghanistan.
[3] Figures for cholera in the Philippine Islands are subject to correction.
[5] During the period from Aug. 24 to Sept. 26, 1930, 26 cases of cholera with 17 deaths were reported in Manitum, Surigao Province, Philippine Islands.

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

CHOLERA—Continued

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

Place		May 4–31, 1930	June 1–28, 1930	June 29–July 26, 1930	July 27–Aug. 23, 1930	Week ended— Aug. 30, 1930	September, 1930 6	13	20	27	October, 1930 4	11	18	25	November, 1930 1	8
Siam	C	33	27	20	3							1	3			
	D	21	19	9	2								1			
Bangkok	C	9	12	8	1							1	2	1	2	
	D	3	5	3	1							1	1	1	1	
Songkla	C			10												
	D			6												
On vessel:																
S. S. Malwa from Shanghai	D								1							
S. S. Sassari at Massoua, from Jeddah	C	1														
	D	1														
On small boat at Port Cebu, from Bantayan Island	C		1													
	D		1													

Place		April, 1930	May, 1930	June, 1930	July, 1930 1–10	11–20	21–31	August, 1930 1–10	11–20	21–31	September, 1930 1–10	11–20	21–30	October, 1930 1–10	11–20
Indo-China (French) (see also table above):															
Annam [1]	C	60	23	16			1		3						
Cambodia [1]	C	24	88	144			43	37	22		23	13	2	16	
Cochin-China [1]	C	48	671	273			46	22	5		9	6	18	14	6

[1] Reports incomplete.

PLAGUE

Place		May 4–31, 1930	June 1–28, 1930	June 29–July 26, 1930	Week ended— August, 1930					September, 1930				October, 1930				November, 1930	
					2	9	16	23	30	6	13	20	27	4	11	18	25	1	8
Algeria:																			
Algiers	C			3		1		6	1	2	6	2	1	1	2	2	5		
	D																3		
Constantine	C		1	1															
Oran	C			3	1	1	1	1	1	2	3	4		4	4	2	1		
Plague-infected rats				2						10			2						
Philippeville	C									1			1		1	1	1		
Belgian Congo	C			2	1		1		2	3									
	D			2	1		1			3									
British East Africa (see also table below): Uganda	C	227	406	228	52	67	62	55	44	40	57								
	D	195	328	213	50	64	62	53	37	39	55								
Canary Islands: Las Palmas	D				1														
Ceylon:																			
Colombo	C	6	1	3			1	1	2				1	1		1			
	D	5	1	3			1	1	3				1	1		1			
Plague-infected rats			1	1															
China:																			
Manchuria—Tungliau and Nungan	C							30			29	P	2						
Shensi	C											P					P		
Dutch East Indies:																			
Batavia and West Java	C	82	98	84	19	30	20	14	13	14	26	26	22						
	D	82	98	84	19	30	20	14	12	14	26	24	22						
Plague-infected rats		5	4			1				1	1	1							
Java and Madura	D	185	202	217	45	51	47	45	55	54	67	84	75	68					
Ecuador (see table below).																			
Egypt:																			
Alexandria	C	13	19	23	2	2	4	3	3	3	2	2	2	1	3	3	2	1	1
	D	3	9	10	2	1	3		5	1	2		3	1	1	1	3		2
Assiout	C	20	9	2															3
	D	5	3	2															1
Beni-Suef	C							1											
Dakahlieh	C	11	1																
	D	2																	
Gharbieh	C				3														
	D				1														
Girga	C			1					1										
Minieh	C	7	10	3															
	D	1	1																
Port Said	C	2	2	1	1												1		

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

PLAGUE—Continued

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

Place		May 4–31, 1930	June 1–28, 1930	June 29–July 26, 1930	Week ended— August, 1930					Week ended— September, 1930				Week ended— October, 1930				Week ended— November, 1930	
					2	9	16	23	30	6	13	20	27	4	11	18	25	1	8
France:																			
Marseille	C								2	2	1					4	2	1	
St. Ouen	C			1															
	D			1															
Gambia	C							4											
	D							4											
Greece (see also table below):																			
Patras	C		1	1															
Pyrgos	C													2					
Hawaii Territory, Hamakua, Hawaii: Plague-infected rats			1																
India	C	648	240	377	145	189	293	250	593	600	704	600							
	D	635	187	256	98	84	154	141	262	291	328	251							
Bassein	C								1		1							1	
	D								1		2								
Bombay	C	6	3	1						1			1			1	1		
	D	5	2	1						1				1		1			
Plague-infected rats		81	26	52	10	8	9	9	12	9	11	15	21	13	16	14	2		
Madras Presidency	C	38	39	47	35	21	7	18		47	41	39			7				
	D	11	22	31	13	9	1	11		23	13	21			9				
Rangoon	C	4	1	2	2	1			2	1	5	2	2					1	
	D	3	1	2	1	1			2	1	4	2	2					1	
Plague-infected rats		5	1	6	4		2	1	2		2	4		1			1		
India (Portuguese)	D	7					P												
Indo-China (see also table below):																			
Pnompenh	C	3	6	2		2		2	2	1			1	1					
	D	1	7	2									1	1	1		1		
Saigon and Cholon	C	1	2				1			1			1						
	D		1																
Iraq: Baghdad	C	37	28	18	4	3	2						1						
	D	18	15	7		2	1						1						
Kwang-Chow-Wan	C	34	31	4			1												
Madagascar (see also table below): Tamatave	C		1	1	2					1	P			1			3		
	D													1			3		
Morocco	C	71	3	1		8	7										4		
	D	34	4			1	1												

Nigeria: Lagos	C	2	5	1	2	1	3	1	1	1	3	1	------	3	------	2	------	------	------
	D	2	5	1	2	1	3	1	1	1	3	1	------	3	------	2	------	------	------
Plague-infected rats		17	11	18	------	------	4	4	------	4	2	4	------	------	------	------	------	------	------
Senegal (see table below).																			
Siam	C	5	------	------	2	3	------	2	3	------	------	------	------	------	------	------	3	1	------
	D	4	------	------	1	3	------	2	2	------	------	------	------	------	------	------	3	1	------
Bangkok	C	5	------	------	1	2	------	------	------	------	------	------	------	------	------	------	------	------	------
	D	4	------	------	------	2	------	------	------	------	------	------	------	------	------	------	------	------	------
Nagara Rajsima	C	------	------	------	1	------	------	1	------	1	------	------	------	------	------	------	------	------	------
	D	------	------	------	1	------	------	1	------	1	------	------	------	------	------	------	------	------	------
Syria: Beirut	C	------	12	9	------	1	------	1	3	2	------	------	------	------	------	------	1	------	3
Tripolitania	C	------	------	------	------	------	2	------	------	------	------	------	------	------	------	------	------	------	------
Tunisia:																			
Sfax district	C	21	9	6	------	1	------	------	------	------	------	------	------	------	------	------	------	------	------
Tunis	C	1	1	5	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
	D	------	1	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Union of Socialist Soviet Republics:																			
Saisk Region	C	------	2	5	4	------	3	------	------	------	------	------	------	------	------	------	------	------	------
	D	------	1	4	3	------	2	------	------	------	------	------	------	------	------	------	------	------	------
Stavropol Region	C	------	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
	D	------	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Union of South Africa:																			
Cape Province	C	P	1	1	------	------	------	1	------	------	------	1	------	------	------	------	------	------	------
	D	------	------	1	------	------	1	------	------	------	1	------	------	------	------	------	------	------	------
Orange Free State	C	------	------	------	------	------	------	------	1	------	1	------	------	------	------	------	------	------	------
	D	------	------	------	------	------	------	------	1	------	1	------	------	------	------	------	------	------	------

Place		May, 1930	June, 1930	July, 1930	Aug., 1930	Sept., 1930	Oct., 1930
British East Africa (see also table above):							
Kenya	C	171	107	97	87	38	------
Ecuador: Guayaquil	C	0	0	------	------	------	------
	D	0	0	------	------	------	------
Plague-infected rats		0	0	------	------	------	------
Greece (see also table above)	C	------	1	------	------	------	------
Indo-China (see also table above)	C	------	11	1	2	4	------
Madagascar (see also table above):							
Ambositra Province	C	1	------	------	------	------	------
	D	1	------	------	------	------	------
Antisirabe Province	C	19	3	24	------	------	------
	D	19	3	24	------	------	------
Miarinarivo Province	C	5	1	1	------	------	------
	D	5	1	1	------	------	------
Moramanga Province	C	1	3	------	2	------	------
	D	------	3	------	2	------	------

Place		May, 1930	June, 1930	July, 1930	Aug., 1930	Sept., 1930	Oct., 1930
Madagascar (see also table above)—Con.							
Tananarive Province	C	15	16	28	------	------	------
	D	14	16	28	------	------	------
Senegal:							
Baol [1]	C	13	2	62	79	48	53
	D	11	2	48	20	23	35
Dakar [1]	C	52	53	140	108	3	------
	D	42	117	122	90	8	------
Louga [1]	C	54	60	138	75	61	37
	D	27	21	103	33	30	21
Thies [1]	C	21	52	54	34	12	16
	D	8	35	30	20	4	10
Tivaouane [1]	C	135	43	119	110	20	43
	D	69	28	70	54	14	25

[1] Incomplete reports.

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

SMALLPOX

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

Place		May 4-31, 1930	June 1-28, 1930	June 29-July 26, 1930	Week ended— August, 1930					September, 1930				October, 1930				November, 1930	
					2	9	16	23	30	6	13	20	27	4	11	18	25	1	8
Algeria:																			
Algiers	C	8		1		1		2											
Constantine	C		1	1															1
Arabia: Aden	C			1															
Bolivia: La Paz.[1]																			
British East Africa (see also table below):																			
Tanganyika	C	409	1,610	168	26	51	44	121	198	288		36	27						
	D	70	301	42	4		3	30	4	55		1	1						
British South Africa:																			
Northern Rhodesia	C	59																	
	D	9																	
Southern Rhodesia	C	155	79	31				1	1										
	D	13																	
Canada:																			
Alberta	C			5	1							1		13	8	1			
British Columbia—Vancouver	C	4	2	6	1	1	2	2			1	1	1			1		3	
Manitoba	C	10	4						1										
Ontario	C	82	47	24	8	3	5	4	2	2	6		1		3	15		20	
North Bay	C	1																	
Ottawa	C	25	15	13	5	1	1		2	1	2						14		
Toronto	C	4	4	1							1								
Quebec	C		4	3		2	2	1											
Montreal	C				7														
Saskatchewan	C	39	22	5				8			1			3				2	
Regina	C	4																	
China:																			
Changking	C	P	1	P	P		P	P	P	P	P	P	P						
Foochow	C	P	P	P		P		P		P		P		P					
Hong Kong	C	12	4	2															
	D	9	3	1															
Manchuria—																			
Harbin	C	20	4	3			2												
Kwantung—Dairen	C	8	16	8															
	D	4	1																

Nanking	C	P	P	P	P	P	P	P	P	P	P	P	P	P	P				
Shanghai—																			
Foreigners only	C	2	5	4	3						18					1	1		
Including natives	DD	5	3								2								
Swatow	DC	6	4	1	1		2	1	1	1			1			3			
Tientsin	DC	1											1						
Chosen (see table below).																			
Colombia:																			
Barranquilla	C				2														
Buenaventura	CC	4	6	10		1	1												
Cali	CD													1		1			
Costa Rica:																			
Port Limon	C	2	2																
San Jose [2]	CC	2																	
Curacao (alastrim)	C	2	1	2			1												
Dutch East Indies:																			
Borneo	C	16	12	2															
	D	1	1																
Java—																			
Batavia and West Java	C	12	13	8	1	4	5	2	2	5	2	2	10		1				
	DC	7	3	5	1	1	1	2	2		1	1	1		1				
East Java and Madura	DC			1															
Sanggi Islands	C	26		11	36				14										
	DC	5		3	2				3										
Egypt: Port Said	C	1		3															
France (see table below).																			
Great Britain:																			
England and Wales	C	1,417	926	529	70	86	95	93	99	106	75	61	82	74	44	125	86		
Ashton under Lyne	CC	17	7	8															
Bradford	CC	2		1										1	1	1			
Cardiff	CC			2													1		
Leeds	CC			1													1		
London	CC	637	498	250	36	50	41	51	43	44	36	41	30	34	23	33	29		
London and Great Towns	CC	1,078	753	408	61	73	71	80	79	84	51	54	55	56	32	80	52		
Stoke-on-Trent	CC	62	32	9	1	1					1	1			1				
Scotland	CC		4	1						5									
	CD			1															
Honduras: Naco	C										5								
India	CC	22,835	12,962	7,630	11,313	1,282	1,236	1,046	830	940	610	751							
	CD	5,451	3,531	2,348	368	327	290	261	202	209	119	150							
Bombay	DC	218	113	50	6	2	2	2	2	1	1	2							
	DD	161	79	33	5	2	1	2	2	1	2								
Calcutta	DC	302	161	73	4		12	9	4	5	3	2	3	4	3	2	2		
	DD	258	146	56	4		8	9	3	4	1	1	3	4	3	1	2		
Cochin	DC	37	16	6	2	4	4	4	1	1		1			8	4	3		
	DD	8	4						1						1		1		
Karachi	DC	14	7	1	2		2				1	3							
	DD	4	3		2		1					2							
Madras	DC	72	35	49	19		9	10	9	11	6	8	4	4	8	3	2		
	DD	15	10	12	3		5	3	1	1	1	3	1	2	3	2			

[1] From Jan. 1, to May 31, 1930, 44 deaths from smallpox were reported in La Paz, Bolivia.
[2] 5 cases of smallpox were reported Apr. 14, 1930, in Costa Rica, outside of city of San Jose.

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

SMALLPOX—Continued

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

Place		May 4-31, 1930	June 1-28, 1930	June 29-July 26, 1930	Week ended— August, 1930 2	9	16	23	30	September, 1930 6	13	20	27	October, 1930 4	11	18	25	November, 1930 1	8
India—Continued.																			
Moulmein	C	89	21	18				2	1										
	D	21	7	1				1			1								
Negapatam	C	1	2	4	2		2		1	2		6	4	2	5	3	2		
Rangoon	C	6	9		1	1	1									2			
	D	1	2																
Tuticorin	C	5	1													1			
Vizagapatam	C	5	1												1				
India (French):																			
Chandernagor	C	24	19	4							1	2			3				
	D	7	3	3						1	1				1				
Karikal	C	12	11	2		8		1		5			1						
	D	3	8	2		8		1		2			1						
Pondicherry Province	C	40	23	26	7	8		7	11	7	7	10	11	10	6		1		
	D	36	23	25	7	8		7	11	7	7	8	11	8	6		1		
India (Portuguese)	C	47	28	1	1	6	1	1	1	2		1							
	D	8	10	1	1			1											
Indo-China (see also table below):																			
Pnompenh	C	3		1											2				
	D		1	1			1												
Saigon and Cholon	C	3	1			1			1										
	D	2			1	1	1		1										
Iraq:																			
Baghdad	C	1	1	3			1					1		2					
	D	1		1			1												
Mossoul Liwa	C	21	4	67									63		4	2			
	D	3	1	20									27						
Jamaica (alastrim)	C	2																	
Macao	D	1																	
Mexico (see also table below):																			
Jalisco (State) Guadalajara	D	7	15	4		1								2		1	1		
Juarez	C		6			2					1		1				1		
	D		1			1													

Mexico City and surrounding territory	C	80	77	37	2	3	3	2	7	2	1	2	1	3	5				
	D	32	17	8	1	3	2		1	1	1	2			1				
Progreso	C	1																	
	D	1	1																
Morocco (see table below).																			
Nigeria: Lagos	C		1																
Poland	C	3	2																
Portugal:																			
Lisbon	C	8	10	13		6	19	25	7	8		12	4	5		7			
Oporto	C							1											
Siam	C	2		6										1					
	D			3															
Somaliland, British: Boales	C													1					
	D													1					
Spain	C		12	5	2					4	1								
Straits Settlements	C	11	9	11	1	1	5	1	1	2	2	1	1	1	1	2	3		
	D	3	2	3		1	1	1		1					1				
Sudan (Anglo-Egyptian)	C	19	67	12				42	102	5	20	1	25	1	56		3		
	D	2	3	1				3	50	2			2		5				
Sudan (French) (see table below).																			
Switzerland: Berne Canton	C			1	1	1							1						
Syria (see table below).																			
Taiwan: Taihoku (see table below).																			
Tunisia: Tunis	C	2	2	1								2							
Turkey (see table below).																			
Union of South Africa:																			
Cape Province	C	P		P						P	P	P							
Orange Free State	C			P	P														
Transvaal	C					P	P	P	P	P	P	P	P						
Upper Volta	C	1	13																
On vessel:																			
S. S. Naldera, at Port Said	C	1																	
S. S. Manoa, from Honolulu to San Francisco	C			1															

Place		April, 1930	May, 1930	June, 1930	July, 1930			August, 1930			September, 1930			October, 1930	
					1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20
Indo-China (see also table above)	C	261	305	213			238	59	34		54	52	86	32	62
Sudan (French)	C	521	274	76		34				39		P			17
	D	36	32	18						3					2
Syria: Beirut	C	19	7	7			2	1							
Taiwan: Taihoku	C	12													

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

SMALLPOX—Continued

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

Place		April, 1930	May, 1930	June, 1930	July, 1930	Aug., 1930	Sept., 1930
British East Africa (see also table above):							
Kenya	C	174	171	142	186	------	------
Uganda	C	------	78	------	------	------	------
	D	------	69	------	------	------	------
Chosen	C	253	107	------	3	2	------
	D	53	35	------	------	------	------
Seishin	C	5	2	1	2	------	------
	D	1	1	------	------	------	------
France	C	58	51	------	------	------	------
Mexico: Durango (see also table above)	D	4	4	3	3	3	2
Morocco	C	10	18	5	3	8	1
Turkey	C	3	16	------	------	------	------

TYPHUS FEVER

Place		Apr. 6–May 3, 1930	May 4–31, 1930	June 1–28, 1930	June 29–July 26, 1930	Week ended— August, 1930					September, 1930				October, 1930			
						2	9	16	23	30	6	13	20	27	4	11	18	25
Algeria:																		
Algiers	C	8	15	3	6	------	------	------	2	------	3	------	------	------	------	------	------	------
Constantine Department	C	15	6	12	2	------	------	------	3	------	------	------	------	------	2	------	------	1
Oran	C	------	3	4	3	------	1	------	------	1	------	------	------	------	------	1	2	------
Bolivia: La Paz.[1]																		
Brazil: Porto Alegre	C	------	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Bulgaria	C	15	6	16	10	------	1	------	------	------	2	2	------	2	------	1	------	------
	D	1	2	1	1	------	------	------	------	------	------	------	------	------	------	------	------	------
China:																		
Manchuria—Harbin (see also table below)	C	52	13	8	2	2	------	------	------	2	------	------	------	------	------	------	------	------
Shanghai	C	------	------	------	------	------	1	------	------	------	------	------	------	------	------	------	------	------
Chosen (see table below).																		
Czechoslovakia (see table below).																		
Egypt:																		
Alexandria	C	1	------	1	1	------	------	1	------	------	1	1	1	1	------	------	------	------
Beheira Province	C	2	49	45	15	------	------	------	------	------	------	------	1	------	------	------	------	------
	D	------	13	4	2	------	------	------	------	------	------	------	------	------	------	------	------	------

Cairo	C					2			5			1						
Port Said	C								4		1				1			1
Great Britain: Scotland—																		
Dunfermline	C				1													
Glasgow	C		1															
	D		1															
Greece (see table below).																		
Ireland:																		
Irish Free State—																		
Galway County—Oughterard	C				2													
Kerry County—Dingle	C	5																
Leitrim County—Mohill	C			9	1													
Mayo County—																		
Ballina	C		2	1	1													
Castlebar	C								1									
Swinford	C		14															
Westport	C				2	1												
Roscommon County—																		
Roscommon	C				1													
Strokestown	C				1													
Wicklow County—Shillelagh	C			4	2													
Latvia (see table below).																		
Lithuania (see table below).																		
Mexico:																		
Durango	D												1	1		1		
Mexico City, including municipalities in Federal District	C	4	6	9	5	2	2	2	3	2	2	3				3		
	D	4	3	1		1	1				1	1				2		
Morocco	C	15	11	15	11				8		2							1
	D	3															1	
Palestine	C	1	2	2	6		1	1	1		1	1	1		1	1	1	
Poland	C	243	171	117	36	10	15	2	7	2	3	6	12	3	6	6	7	7
	D	15	5	11	4	1		1	1		1			1			1	
Portugal:																		
Lisbon	C	4																
Oporto	C	1						1							1	1	1	
Rumania	C	186	227	58	28	5		2	2	1		1	2	3				
	D	11	35	5	8	2												
Spain: Valencia	C			3	3							1					1	
	D				1							1					1	
Tunisia	C		6	18	24	2	5		3	1	1		4	1	1	1	9	
Turkey (see table below).																		
Union of South Africa:																		
Cape Province	C	P	P	P	P	P	P	P	P	P	P	P	P	P				
Natal	C	P	P	P	1	P	P	P				P						
Orange Free State	C		P	P	P	P	P	P	P	P	P	P	P					
Transvaal	C	P			P	P	P	P		P	P	P	P					
Yugoslavia (see table below).																		

[1] 12 deaths from typhus fever were reported in La Paz, Bolivia, from Jan. 1 to May 31, 1930.

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

TYPHUS FEVER—Continued

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

Place		Apr., 1930	May, 1930	June, 1930	July, 1930	Aug., 1930	Sept., 1930
China: Harbin (see also table above)	C	204	240	-------	14	5	--------
Chosen: Seoul	C	3	43	2	3	2	1
Czechoslovakia	C	29	12	1	-------	1	--------
Greece: Athens	C	1	3	3	6	6	--------
Latvia	C	-------	3	3	3	1	--------
Lithuania	C	73	27	16	18	7	3
	D	4	-------	-------	-------	1	-------
Turkey	C	3	16	2	-------	2	-------
Yugoslavia	C	22	16	6	-------	-------	-------
	D	4	1	-------	-------	-------	-------

YELLOW FEVER

Brazil:	Cases
Mage, on the Leopoldina Ry., between Rio de Janeiro and Nictheroy, Apr. 22, 1930	2
Campos, Rio de Janeiro Province, May 23, 1930	1
Para, June 23, 1930	2

Gold Coast:	Cases
July 10, 1930	1
Albosso, Aug. 5, 1930 (deaths)	1
Liberia, Monrovia, June 3, 1930	1
Nigeria, Lagos, July 12, 1930 (probably laboratory infection)	1