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

August 16–September 12, 1931

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

Poliomyelitis.—A total of 8,922 cases of poliomyelitis has been reported since January 1, 1931, as compared to 1,403 during the same period of 1929 and 3,473 for 1930. Nearly 5,000 of the 8,922 cases since the first part of the year were reported during the present 4-week period ended September 12. More than 1,000 cases has been reported during each of the past six weeks.

The peak of the epidemic, however, seems to have been passed. For the week ended September 12, 1,160 cases were reported, as compared with 1,370 during the preceding week, which represented the maximum weekly number of cases reported up to that date. Table 1 shows for six geographic areas the number of reported cases during each week since the first of June, with comparative data for the corresponding weeks of the two preceding years.

[1] From the Office of Statistical Investigations, U. S. Public Health Service. The number of States included for the various diseases are as follows: Typhoid fever, 47; poliomyelitis, 48; meningococcus meningitis, 48; smallpox, 48; measles, 45; diphtheria, 47; scarlet fever, 47; influenza, 39 States and New York City. The District of Columbia is counted as a State in these reports.

TABLE 1.—*Number of poliomyelitis cases reported in different geographic areas in 1931, with comparative data in 1930 and 1929*

Geographic division and year	Total, Jan. 1–Sept. 12	Week ended—														
		September			August				July				June			
		12	5	29	22	15	8	1	25	18	11	4	27	20	13	6
All regions:																
1931	8,922	1,160	1,370	1,321	1,135	1,040	1,029	598	307	116	90	45	40	37	38	26
1930	3,473	420	344	325	303	256	224	221	196	213	173	120	105	70	52	41
1929	1,403	145	124	103	114	109	65	64	76	51	34	25	22	30	29	18
N. E. and Mid. Atl.:																
1931	6,672	798	1,031	1,028	916	890	919	525	253	82	56	16	15	10	8	7
1930	643	84	69	118	90	61	32	30	22	17	5	8	7	6	3	2
1929	447	55	47	45	51	40	19	19	20	14	5	7	7	9	7	4
E. N. Central:																
1931	1,211	263	228	196	135	95	48	40	28	17	5	13	6	4	6	1
1930	411	96	61	32	44	26	21	9	13	10	20	9	0	6	3	1
1929	223	37	17	13	15	13	11	6	3	2	5	2	2	2	5	4
W. N. Central:																
1931	409	63	69	53	45	31	24	13	7	3	4	3	2	3	6	3
1930	553	128	108	67	55	52	25	26	19	18	11	2	2	4	0	2
1929	77	4	5	2	5	2	3	4	4	1	2	1	3	5	3	2
S. Atlantic:																
1931	204	12	15	26	18	15	12	8	6	3	10	3	7	6	4	3
1930	179	19	8	6	6	11	10	7	9	8	8	7	7	3	7	7
1929	339	31	38	19	19	37	20	25	30	19	12	6	2	5	8	2
S. Central:																
1931	168	12	10	6	9	3	9	6	6	7	8	4	5	7	5	1
1930	564	24	40	33	45	47	61	54	29	50	37	16	34	15	5	11
1929	150	12	6	13	15	11	7	4	13	6	5	6	3	4	1	1
Mount. and Pac.:																
1931	258	12	17	12	12	6	17	6	7	4	7	6	5	7	9	11
1930	1,123	69	58	69	62	57	75	95	104	110	92	78	54	36	34	18
1929	167	6	11	11	9	6	5	6	6	9	5	3	5	5	5	5

In the New England and Middle Atlantic States, where the great majority of the cases have occurred, the number of cases reported reached a maximum in the week ended September 5, the number for the week ended September 12 being considerably below each of the five preceding weeks. The West North Central States likewise showed a slight drop in the week ended September 12 from the preceding week, indicating that here also the peak may have been passed. In the East North Central States, however, the maximum week thus far is the last week for which data are available. So few cases have been reported so far in the Southern, the Mountain, and the Pacific States that it can not be definitely said whether or not the peak has been reached.

Table 2 shows by weeks the number of cases of poliomyelitis reported in each State and in New York City. In New York City the maximum number of cases was reported during the first week of August, but in the remainder of New York State and in Massachusetts and Connecticut the peak came about a month later, during the first week in September. In several of the New England and Middle Atlantic States the last week for which reports are available has the maximum number of cases. In the majority of the East North Central States also the number of cases reported for the last available

week was higher than during any preceding week. In Minnesota, the only State in the other regions with any considerable number of reported cases, 48 cases were reported during the week ended September 12 and 50 during the preceding week.

TABLE 2.—*Number of poliomyelitis cases reported in recent weeks in each State*

State	Week ended—													
	Sept. 12	Sept. 5	Aug. 29	Aug. 22	Aug. 15	Aug. 8	Aug. 1	July 25	July 18	July 11	July 4	June 27	June 20	June 13	June 6
N. E. and Mid. Alt.:															
Maine	2	5	6	7	2	7	4	1	0	0	2	0	0	0	0
New Hampshire	6	2	4	7	3	0	1	0	1	0	0	0	0	0	0
Vermont	12	6	5	7	5	0	0	0	1	0	1	0	0	0	0
Massachusetts	127	184	135	115	90	67	25	16	16	6	5	5	2	2	3
Rhode Island	21	14	20	22	18	16	8	0	0	1	0	0	0	0	0
Connecticut	92	162	134	115	67	97	37	11	5	7	2	2	0	0	1
New York City	254	347	432	422	512	591	404	195	53	31	5	6	4	4	1
New York State, except New York City	176	207	180	133	88	85	29	9	4	5	0	1	2	1	0
New Jersey	94	84	103	78	97	55	16	14	1	3	0	1	0	0	1
Pennsylvania	14	20	9	10	8	1	1	7	1	3	1	0	2	1	1
East North Central:															
Ohio	23	6	18	2	9	5	1	1	1	0	5	2	0	1	0
Indiana	4	4	3	3	3	1	0	0	0	0	0	1	1	0	0
Illinois	39	42	38	36	26	15	15	12	3	2	4	2	0	1	0
Michigan	114	107	76	68	33	17	13	9	7	0	2	1	3	3	1
Wisconsin	83	69	61	26	24	10	11	6	6	3	2	0	0	1	0
West North Central:															
Minnesota	48	50	39	31	29	13	10	3	1	1	0	1	1	2	0
Iowa	5	6	8	8	1	3	1	1	0	0	0	0	0	0	1
Missouri	2	3	4	3	0	7	2	0	0	0	1	0	1	1	1
North Dakota	5	2	0	2	0	1	0	0	0	0	0	1	1	2	0
South Dakota	1	2	0	0	1	0	0	0	1	2	0	0	0	1	0
Nebraska	1	5	1	0	0	0	0	0	0	1	0	0	0	0	0
Kansas	1	1	1	1	0	0	0	3	1	0	2	0	0	0	1
South Atlantic:															
Delaware	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Maryland	1	5	1	2	1	1	0	1	0	0	0	0	0	0	0
District of Columbia	0	0	0	2	1	1	1	0	0	0	0	0	0	0	0
Virginia	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0
West Virginia	5	3	10	5	2	1	1	1	0	0	0	2	0	0	1
North Carolina	3	5	4	8	10	5	1	2	1	4	2	2	1	0	0
South Carolina	0	1	2	1	0	0	3	2	2	4	0	1	5	3	1
Georgia	1	0	7	0	1	3	1	0	0	1	1	1	0	1	1
Florida	0	0	0	0	0	0	1	0	0	1	0	1	0	0	0
E. and W. S. Cen.:															
Kentucky	1	1	1	4	0	2	0	0	0	0	0	1	0	0	0
Tennessee	5	0	1	1	0	2	1	1	1	0	0	0	0	1	0
Alabama	4	4	0	4	0	0	0	1	1	4	0	1	1	1	1
Mississippi	1	1	2	0	1	0	1	0	2	4	0	0	3	0	0
Arkansas	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0
Louisiana	0	2	0	0	0	0	1	1	0	0	1	2	0	1	0
Oklahoma	0	0	0	0	1	1	1	2	1	0	0	1	2	1	0
Texas	1	1	1	0	1	4	2	1	2	0	2	0	1	0	0
Mount. and Pac.:															
Montana	3	2	3	3	1	2	1	1	0	0	0	1	1	1	0
Idaho	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Wyoming	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0
Colorado	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0
New Mexico	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0
Arizona	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
Utah	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Washington	1	4	0	3	3	4	0	2	1	1	0	0	0	1	0
Oregon	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
California	7	8	6	3	2	9	3	4	3	6	5	4	6	5	9

Scarlet fever.—All geographic areas showed an increase in reported cases of scarlet fever during the 4-week period ended September 12. The increase amounted to 15 per cent over the preceding 4-week period. The number of cases (3,887) was also about 36 per cent in excess of the number recorded for the corresponding period in 1930 and 12 per cent above the figure for 1929. The increases in the various areas ranged from 6 per cent in the South Atlantic States to 61 per cent in the South Central groups.

Diphtheria.—For the first time during the current year the number of cases of diphtheria reported for any 4-week period exceeded the number reported for the corresponding period in 1930. For the 4-week period ended September 12, the number of cases totaled 3,130, which represented a 23 per cent increase over last year's figure. The South Central States seemed to be mostly responsible for this situation. More than three and one-half times the number of cases of diphtheria was reported from those States for the current period than occurred during the preceding period, and the number reported (1,056) was more than three times the number reported for the same period in 1930. Practically all other regions continued to show decreases from last year. For this period in 1929 the number of cases totaled 3,727—approximately 600 more than occurred this year and 1,200 more than were reported for the same period in 1930.

Smallpox.—The incidence of smallpox continued to be the lowest in recent years. Reported cases numbered 405, as compared with 660 cases during the same period last year and 753 cases in 1929. This favorable situation applies to all regions except the New England and Middle Atlantic groups, where there were 18 cases reported for the current period as against 2 for the same time in 1930. Fourteen of the 18 cases occurred in Vermont. In the other groups the decreases ranged from 4 per cent in the Far West groups to 54 per cent in the South Atlantic States.

Meningococcus meningitis.—The incidence of meningococcus meningitis continued at a lower level than in the two preceding years. The number of cases reported was 259, as compared with 354 for the corresponding period in 1930 and 385 in 1929. All regions shared in this decline except the South Atlantic, where an increase of 47 per cent over last year's figure occurred. The number of cases (22), however, was not large and they were widely distributed over the whole area.

Measles.—For measles, also, the comparison with recent years was favorable. The number of cases reported (1,908) for the current 4-week period was approximately 87 per cent of the number reported for the same period in each of the two preceding years. The South Atlantic States alone reported an increase (35 per cent) in the number of cases over last year. Other groups either approximated last year's figures or showed decreases ranging from 21 to 36 per cent.

Influenza.—For the current 4-week period there were 1,011 cases of influenza reported, as compared with 875 for the corresponding period in 1930 and 1,128 cases in 1929.

Typhoid fever.—Reports indicate that typhoid fever was slightly less prevalent than at the same time last year. In most regions the incidence very closely approximated that of last year, but in the West North Central a decrease of about 30 per cent was recorded. For all reporting States the cases totaled 3,914, as compared with 4,030 last year. In 1929 the number of cases reported for this period was 3,418.

Mortality, all causes.—The mortality from all causes in large cities, as reported by the Bureau of the Census for the current 4-week period was the same as last year, viz, 9.9 per thousand population (annual basis). For the same period in 1929 and 1928 the rate was 10.6.

PRESENT DAY PROBLEMS OF YELLOW FEVER[1]

By Hugh S. Cumming, *Surgeon General, United States Public Health Service, Director, Pan American Sanitary Bureau*

Except in reminiscence, the average physician rarely gives a thought to yellow fever. No doubt some believe that the disease has been almost eradicated and that it will soon disappear from the entire world; but it is by no means near extinction. There is a vast reservoir of yellow fever in west Africa; the disease still persists in certain parts of Brazil; and in 1929 it reappeared in Colombia. It is not only possible but extremely probable that, on account of increased and more rapid means of intercommunication, particularly increase in travel by airplane, yellow fever will reappear in many former endemic centers and even spread to countries never before infected, unless the strictest vigilance is maintained to prevent it.

The virus of yellow fever remains undiscovered. This unknown but living entity, when first it gains access to the blood of human beings, produces yellow fever in most adults, often resulting in death. In children, and also in many adults, the virus of yellow fever may be present and complete its life cycle in the body without producing recognizable manifestations of its presence. This fact gives rise to large numbers of "missed" or unrecognized cases of the disease.

Until recently it was believed that a single mosquito (*Aëdes aegypti*) was alone responsible for the transmission of yellow fever and that in the absence of this species, which does not breed in ground water, the disease could not be propagated. Then, too, it was frequently believed that this insect would not fly more than about 200 meters. We are now told that there are 13 species of mosquitoes

[1] Read before the Third Pan American Medical Congress, Mexico City, D. F., July 27, 1931.

that can convey yellow fever, and that *Aëdes aegypti* will travel from 400 to 1,000 meters; that, under laboratory conditions, the virus of yellow fever may be passed from one mosquito to another; and that some of the newly discovered vectors breed in ground water.

Certain species of monkeys develop yellow fever when bitten by infected mosquitoes, and laboratory cases have occurred in human beings in which infection by mosquitoes could, apparently, be entirely excluded, suggesting infection by contact.

A very successful biological test has recently been devised whereby we can be sure that a given individual has or has not, at some time, suffered from yellow fever, and this test holds good in positive cases after a lapse of many years since the attack.

Efforts are still being made to immunize against yellow fever with, as yet, varying and unsatisfactory results.

It is hardly possible at this time to evaluate our newer knowledge of yellow fever or to express it in terms of prophylaxis and control. However, it is not believed that yellow fever is ordinarily contagious; and it is doubtful whether the transmission of the disease from mosquito to mosquito is an important factor in rapidly propagating the disease, though it may be in maintaining its existence. It is still a question whether vectors which breed in ground water are a serious epidemiological factor on this continent; but we can not ignore them. I venture to say that the susceptible human (or animal) host is a necessary link in the continued existence of yellow fever in spite of the apparent demonstration of the infection of one mosquito by another.

To sum up the effect which this newer knowledge of yellow fever may have in combating the disease, it may be said that, while these new discoveries enable us to combat yellow fever more effectively, they reveal to us the fact that our goal of complete extermination is, apparently, a far more formidable task than we were led to believe a few years ago.

The prevention of the spread of yellow fever and its eradication can no longer be regarded as the individual affair of the nation in whose territory the disease exists; it is a matter of interest to the entire world. The presence of yellow fever in one country is the immediate concern of all countries within striking distance of the disease and, for humanitarian reasons, the collective concern of all civilized nations. There must be no retrogression nor relaxation of effort in the struggle to control, and eventually to exterminate, this dangerous disease. On the contrary, there should be a forward, a continuous, a persistent attack on every lurking focus until yellow fever is annihilated, even though it should require decades, yes, centuries, of effort to accomplish this result.

Inasmuch as an attack of yellow fever confers lasting immunity, it seems possible that we may some day be able to immunize against this disease, and it is to be hoped that research workers will continue their efforts in this field as well as in other directions.

The most important problem of yellow fever with which we, as sanitarians, have to deal at the present time is two-fold in character; namely, first, to keep yellow fever out of territory that is not now infected and, second, to exterminate the disease wherever it exists. In order to secure the means of accomplishing these results, the world must not be allowed to forget the havoc that yellow fever has caused in times past, nor must it be allowed to forget the fact that this disease still remains for us a very potential danger, capable of destroying life and of paralyzing commerce, if not kept within bounds.

In order successfully to combat yellow fever, we must first know where it is. It is, therefore, the solemn duty of all nations to investigate faithfully every outbreak of disease, however small, that in any way resembles yellow fever. It is a nation's duty, too, when the disease is found, immediately to report the fact to other nations, an obligation which has frequently been assumed by international treaty, an obligation as binding now as in former years, and one which involves the integrity of the nation.

In connection with the reporting of yellow fever it may be said that not infrequently it has happened that the presence of this disease has been overlooked. It may be accepted as an axiom, I think, that if only occasionally a case of yellow fever is reported, it must be true that there are many cases that are not recognized. Perhaps the most of these are in children, but we know now that the disease may be overlooked in adults as well. A resort to the biological test by means of blood surveys, as devised recently by workers of the Rockefeller Foundation and others, should be made whenever circumstances seem to indicate the existence of hidden foci.

When a nation is honestly reporting its cases of yellow fever and striving to control the disease, the health authorities of other nations must not allow themselves to be stampeded into enforcing unreasonable quarantine measures; they should discourage undue and exaggerated publicity in the daily press and, while taking reasonable precautions to protect their own people, they should limit such precautions to such measures as may be necessary to keep out the disease; commercial relations should be interfered with as little as may be consistent with safety.

So long, however, as yellow fever remains in the territory of any country, other nations with infectible territory must necessarily exercise the right to quarantine against those places where the disease exists. Quarantine measures which afford full protection to-day may be found to be wholly inadequate to-morrow, depending on the appear-

ance of new foci and the development of new and more rapid facilities for intercommunication. The necessity for quarantine measures against yellow fever increases with proximity to the focus of infection, with the extent of the infection, and with rapidity of travel. Ports and places in many parts of the world that were formerly weeks apart by ordinary means of communication are now within a few days of each other by airplane.

Time does not permit me to go into detail in discussing quarantine measures against yellow fever. These will depend in general on whether persons may pass from infected areas immediately, on foot, by animal transportation, by automobile, by rail, by ship, or by aircraft.

In order to prevent the introduction of yellow fever from one country into another, infected persons must be prevented from passing into infectible territory, whether they be in the incubation stage of the disease or in the period of concealed or unrecognizable attack, or they must be held in quarantine until their blood is no longer infective for vectors; also, common carriers, such as vessels and aircraft, must be free from infected vectors on departure, or they must be freed from such immediately on arrival.

In actual practice, the foregoing requirements assume the detention of exposed persons under perfect protection at the port of departure (a difficult procedure and one that is useless when not properly performed) or the completion of the infective period under mosquito-free conditions en route, or its completion at the place of destination.

Vessels must lie at safe anchorages or must be freed from vectors at the port of departure, or this must be done at the port of arrival. If there may have been infected vectors on board en route, the personnel must be detained.

Aircraft must remain in vector-free aerodromes at the place of departure or they must be similarly freed from vectors at the place of arrival and the personnel held.

These measures are the substance of protection and seem to constitute substantially the framework of quarantine procedures. It will be left to your imagination to work out the details and complete the structure. I may add that quarantine measures should not be so rigid as to paralyze international commerce, and we should bear in mind that our object is a maximum of protection with a minimum of restrictive measures. The work of extinguishing yellow fever from endemic centers is our greatest task, and it is, at the same time, our final goal.

In spite of the possibility of the direct passage of the virus of yellow fever from mosquito to mosquito, I think we may still assume, as a

working basis, that, in order for endemicity in yellow fever to exist, the following factors must be constantly present, namely—

(1) The causative agent of the disease—that is, the virus of yellow fever;

(2) Functionally active vectors (*Aëdes aegypti* mosquitoes); and

(3) Human beings (or closely allied animal species) susceptible to the disease.

This being true, in order to eradicate yellow fever from endemic foci it is necessary to eradicate yellow-fever-bearing mosquitoes, or at least to reduce their number to a degree incompatible with the spread of the disease. An *Aëdes aegypti* index of 5 per cent is usually taken as the upper limit of safety in pronounced endemic centers—that is, in areas where there are very few nonimmunes other than newborn or very young children.[2] In more populous epidemic centers or places where there are relatively long intervals between outbreaks, and consequently a much larger number of persons who have never had yellow fever, the consensus of opinion of experienced sanitarians is that an index of 1 per cent may be regarded as the maximum of safety if the disease is to be controlled promptly. In fact, in such areas, the nearer the index approaches zero, the more satisfactory the results will be. Experience has shown that it is not usually practicable to control the human carrier or victim of the disease even for the few days during which he is infectious. Experience has also shown that it is not feasible to exterminate any species of insect by attacking only the adult members. For these reasons it seems logical to resort to two principal and three auxiliary measures for the eradication of yellow fever. These are as follows:

Principal measures.—(1) Careful clinical and biological (laboratory) surveys to determine the existence of yellow fever infection; (2) effective work in the prevention of the breeding of yellow-fever-bearing mosquitoes, particularly *Aëdes aegypti.*

Auxiliary measures.—(1) The screening of dwellings in general and especially prompt and early screening of the house occupied by actual or suspected victims of the disease; (2) the destruction of presumably infective adult mosquitoes; (3) the screening of all buildings in which human beings sleep.

No attempt will be made here to describe the method of making blood examinations in surveying communities to determine the presence of yellow fever. It is sufficient to say that the blood of persons who have had yellow fever, even when years have elapsed since the attack, will protect susceptible monkeys against inoculation with the virus of the disease. There is also a difference in the reaction of white mice inoculated with yellow-fever virus and given serum from a per-

[2] In quasi-epidemic rural areas having a sparse population, an index of 2 per cent may be regarded as the maximum for the satisfactory control of the spread of the disease.

son or animal that has had the disease, and other white mice which have been inoculated with the virus but which have not received the protective inoculation of immune serum.

An adequate continuously running water supply is of the greatest value in enabling departments of health to abolish the artificial containers in which *Aëdes aegypti* breed. In the absence of such a supply, resort must be had to thorough, continuous, and effective screening of such containers as are indispensable and the abolition of those that are not.

There are some workers who would dispense with two of the auxiliary measures mentioned; namely, the screening of yellow-fever patients and the destruction of adult infected mosquitoes. They object to attempting to screen patients on account of the difficulty of discovering all cases, particularly when in the infective stage. Objection is also made to the inconvenience of attempting to destroy infected adult mosquitoes in homes.

While universal screening is by no means indispensable to success in combating yellow fever, there can be no doubt, I think, of the desirability of general screening on as large a scale as possible, whenever this can be effectively done. Persons have been known to live in yellow-fever endemic areas for years without contracting the disease when occupying sleeping quarters adequately screened against mosquitoes.

In conclusion, may I again appeal to the entire medical profession, to the layman, and particularly to the business man, whose commercial interest are threatened, not to allow interest in the subject of permanent eradication of yellow fever to be lost. Universal cooperation is vital to success in this great undertaking.

THE USE OF THE WHITE MOUSE IN RESEARCH ON YELLOW FEVER

EXPERIMENTS CARRIED ON AT THE LABORATORY OF TROPICAL HYGIENE OF THE COLONIAL INSTITUTE OF AMSTERDAM [1]

The results of the researches of Dinger, complementing those of Max Theiler, on the action of the yellow fever virus on the white mouse, open in perspective the utilization of this rodent to delimit the regions where yellow fever persists under a clinically unrecognizable form.

Max Theiler sought, for the study of yellow fever, a more easily handled animal, and particularly one less expensive, than the *Macacus rhesus*. It is generally known that, among the usual laboratory ani-

[1] Communication presented to the Permanent Committee of the International Office of Public Hygiene in the session of May, 1931, by Dr. W. De Vogel, former Inspector-in-Chief of the Civil Medical Service in the Netherlands Indies, Delegate from the Netherlands Indies. Translation from the Bulletin Mensuel, Office International d'Hygiene publique, July, 1931, pp. 1210-1215.

mals, rabbits, guinea pigs, rats, and mice are refractory to yellow-fever infection introduced by the hypodermic or blood route, as well as to the bites of the *Aëdes aegypti* capable of transmitting yellow fever to man and to the *rhesus*. However, Max Theiler, guided by the observations of Lasnet and Laigret relative to the nervous troubles which manifest themselves at the onset of yellow fever, and also by the recommendation of Laigret to search for the yellow-fever virus in the nervous tissues, tried to inoculate the white mouse by the cerebral route, until then considered as insusceptible to yellow fever.

A drop, two at the most, of blood or of a brain emulsion of a *rhesus* infected with yellow fever during the virulent period, injected into a cerebral lobe of a white mouse, is sufficient to infect it.[2] The infection may be transmitted by the cerebral route from mouse to mouse. From November 8, 1928, to January, 1930, Theiler had already made 75 passages.

It is striking that, in the white mouse, the virus is found to be uniquely neurotrophic. The spinal cord of a mouse which has succumbed to the cerebral infection, as well as its sciatic nerve and its suprarenal gland, when made into an emulsion and introduced into the brain of a normal mouse, causes a specific encephalitis, while the blood and an emulsion of the other organs fail to produce this effect. (I recall that comparative anatomy teaches us that the origin of the medullary part of the suprarenal gland is associated with that of the ganglions of the sympathetic nerves.)

Theiler has also observed the neurotrophic character of the infection in young mice, aged from two weeks up, that develop a fatal infection from the intraperitoneal injection of the virus.

Indubitable proof that it is indeed the yellow fever virus that provokes these symptoms in the mouse may be furnished in two ways:

(1) By ascertaining that the virus of the mouse, inoculated in a healthy *rhesus*, itself produces yellow fever.

(2) By proving that the serum taken from a monkey or a man cured of yellow fever neutralizes the virus of the mouse.

It is on these two points that the investigations of Dinger have complemented those of Max Theiler.

(1) The latter succeeded in giving fatal yellow fever to a *rhesus* by injecting into the peritoneal cavity an emulsion of the whole brain of a mouse, the virus of which had had three passages from mouse to mouse. But he was not able to prove that he similarly transmitted yellow fever to two *rhesus* injected, respectively, with virus of the 29th and 42d passage. Consequently he did not consider the appearance of yellow fever in the first *rhesus* irrefutable proof of the culture

[2] The injection is made under aseptic precautions, using a fine needle of a Pravaz syringe, which is pushed through the skin and the skull beside the median line. Regular check is then made to eliminate encephalitis of bacterial origin; a particle of encephalitic brain, introduced into the usual nutritive media, must show no trace of growth.

of the virus in the mouse; as he made the passages by injecting the emulsion of the entire brain, including the inoculation site, there always remained the possibility after three passages that particles of virulent cellular tissue of the *rhesus*, from which the strain came, had directly induced the infection.

In a series of experiments reported in the accompanying table, Dinger showed that, independently of the number of passages the virus has been subjected to, virulence varied according to the time elapsed since the inoculation into the brain of the mouse. It attains the maximum from three to five days; but after the seventh day it seems to become incapable of provoking morbid symptoms.

Rhesus No.	Number of passages of the virus	Number of days since the mouse was inoculated	Reaction of the rhesus in which an emulsion of the brain of the mouse was injected
468	18	1	Dead after 8 days with all the signs of yellow fever.
466	12	3	Dead after 3 days with all signs of yellow fever.
465	4	4	Dead after 6 days with all signs of yellow fever.
461	8	5	Dead after 4 days with all signs of yellow fever.
464	3	5	Elevation of temperature from 3rd to 6th day, 40° C. Recovered.
453	4	6	Elevation of temperature on 6th day, 41° C. After cure, immunity.
462	2	7	Showed no morbid symptoms.

In all cases control mice succumbed after inoculation, exhibiting typical symptoms of encephalitis.

Dinger did not take advantage of the opportunity to study immunity in *rhesus* No. 464 and No. 462. About a month after recovering from the injection both animals died from intercurrent disease, without presenting any anatomical trace of yellow fever.

The transmission of yellow fever to the *rhesus* was also made by means of *Aëdes aegypti* that had fed on an emulsion of virulent mouse brains. These mosquitoes had been fed on sugared water since hatching. After they had fasted for 3 days, Dinger gave them for 3 days an emulsion of mouse brains containing virus of the 10th to 12th passage. Balls of cotton were saturated with this emulsion, in suspension in a solution of 0.1 per cent peptone and 10 per cent rabbit serum, and were placed within reach of the mosquitoes. After feeding from the balls of cotton, these *Aëdes aegypti* were again placed on sugared water. Twenty-six days later 9 mosquitoes had their first blood feeding on a healthy *rhesus*. The *rhesus* died 6 days later, presenting all the symptoms of yellow fever.

This experiment shows that the yellow fever virus multiplies in the *Aëdes aegypti*, even in the absence of blood. An emulsion of 4 of these mosquitoes ground up was injected into another healthy *rhesus*. The only reaction was an elevation of temperature to 40.3° C. A month later a trial inoculation showed that it had been rendered

immune to yellow fever. Some of its blood, taken during the febrile stage, 4 days after injection, was inoculated into the brain of two mice, which died with typical symptoms of encephalitis.

He thus proved in different ways that the virus grown in the brain of the mouse and the virus of yellow fever are truly identical.

(2) In order to investigate the action, on the virus infecting the mouse, of the serum of a *rhesus* or of a man recovered from an attack of yellow fever, Theiler prepared, in general, a suspension of the crushed brain of a mouse which had died with typical encephalitis, in 5 c. c. of saline physiological solution. In order to obtain a liquid free from particles of cellular tissue, he either let the suspension settle for an hour, or subjected it to slow centrifugation for 10 to 20 minutes. The upper clear layer was separated and then mixed with an equal volume of serum from a *rhesus* or man cured of yellow fever. After the anti-yellow-fever serum had remained in contact with the virus of the mouse from 20 minutes to 2 hours, 1 or 2 drops of the mixture were injected into the brain of a mouse.

Out of 39 mice so treated, 22 were inoculated without presenting any disorders and without acquiring immunity, while 17 died, having a typical encephalitis.

A mixture of the virus and the normal serum killed all 27 of the control mice; the neutralizing action of the anti-yellow-fever serum on the virus of the mouse is thus very evident. But one might still ask whether the absence of ascertained protection in 44 per cent of the cases does not render doubtful the value of the mouse as a test animal for delimiting the regions where yellow fever persists in a clinically unrecognizable form.

Dinger, who, from the beginning, like Theiler, centrifugated the emulsion to free it from particles of cerebral tissue, could only confirm these unsatisfactory results.

Theiler explains these failures by observing that the upper layer of the emulsion subjected to centrifugation, although clear to the sight, still contains particles of cerebral tissue that shield the virus which they contain from the action of the immunizing serum. To eliminate these particles entirely, Dinger tried to pass the clear layer of the crushed brain emulsion, in suspension in a solution of 0.8 per cent sodium chloride, through a Seitz filter. But the filtrate was ineffective, all the mice which received an intracerebral injection remaining alive, while that portion which remained as residue, adhering to the outside of the filter, inoculated into two mice killed them after 7 and 9 days, with the typical symptoms of encephalitis.

This result was analogous to that which from the beginning caused the virus contained in the *Aëdes aegypti* to be considered nonfiltrable. Bauer and Mahaffy have shown the cause of this by proving that a pure 0.8 per cent solution of sodium chloride, which destroys the fil-

trable extracellular virus, has no effect on the virus contained in the cellular tissue of the mosquitoes. Likewise, the immunizing serum in the presence of a virulent brain emulsion only neutralizes the free virus, and is without action on the virus enclosed in the particles of cerebral tissue floating in the clear layer of the centrifuged emulsion. This virus, once introduced into the brain of the mice subjected to experiment, is still in condition to induce a fatal infection, thus causing the failures experienced.

Dinger was thus led to replace the sodium chloride solution in the emulsion by a 10 per cent solution of rabbit serum, without evidently at all lessening the virulence of the free virus. Thus prepared the emulsion gave a filtrate which, leaving sterile the usual nutritive media, gave clear results in the inoculation experiments.

The mixture of filtered emulsion and 25 per cent of serum from a normal *rhesus*, after half an hour in the vapour bath, injected into the brain of 5 mice killed them all. Four of them succumbed after 7 days and 1 after 10 days, presenting all the symptoms of typical encephalitis. Proceeding in the same way, but replacing the normal serum with the serum of an immunized *rhesus*, injection into the brain of 5 other mice did not kill them.

These experiments were repeated once, following the same method, with less decisive results, especially the injection of virus kept in the presence of *normal* serum for a half hour in the vapor bath. The death of all the mice subjected to the experiment after inoculation with this mixture had been expected. It was otherwise in two series of experiments in which normal serum was taken from—

1. A healthy *rhesus*, never having had yellow fever;

2. A man considered for the same reason as nonimmune to yellow fever infection.

Of five mice treated by the filtrate in the presence of the normal serum of the *rhesus*, one was resistant to intracerebral injection. It is probable that it was spontaneously refractory, an immunity found in 5 per cent of white mice.

Of 5 mice treated with the filtrate mixed with the normal serum of the man, only 2 died with a typical encephalitis, while 3 recovered. It is less probable that these also enjoyed a natural immunity.

It is necessary that these results be further studied in the light of different experiences. They raise the question of whether, in general, normal human serum when added in the proportion of 25 per cent to the filtrate, may develop a nonspecific neutralizing action in contact with the contained virus. If this is the case, it is necessary to—

1. Determine the limit of the proportion in which this nonspecific neutralization is no longer produced.

2. Verify whether there are not, perhaps, individual differences in human sera. It may be questioned, for example, whether the serum

used in the above experiments that was taken from a person who had collaborated extensively in yellow-fever experimentation might not, for this reason, have acquired some protective property.

All these problems still demand solution.

On the other hand, the mixture of serum of an immunized *rhesus* and of the filtrate, injected after half an hour of contact into the brain of 9 mice, caused the death from encephalitis of only one of them; 8 survived the cerebral inoculation.

The serum of Doctor Dinger, who had recovered from an attack of yellow fever contracted during his experiments in the laboratory, maintained in the presence of the virulent filtrate for half an hour and injected into 10 mice, protected them all against encephalitis; 7 survived, 1 died from an accident, and 2 died from unknown causes, showing no trace of encephalitis.

In brief, the filtrate of virulent mouse brains, emulsified in a peptone solution containing 10 per cent of rabbit serum, mixed with the serum of individuals immunized against yellow fever, and then inoculated into 24 mice, killed only one with typical encephalitis; the other 23 were protected by the serum; that is to say, the experiment succeeded in 96 per cent of cases, which indeed indicates the possibility that the white mouse can be used for experimental purposes to determine the regions where yellow fever persists in a clinically unrecognizable form.

RAT POPULATION ON DIESEL MOTOR BOATS

NOTE COMMUNICATED TO THE PERMANENT COMMITTEE OF THE OFFICE INTERNATIONAL D'HYGIENE PUBLIQUE, SESSION OF OCTOBER, 1930, BY SIR GEORGE S. BUCHANAN, C. B., SENIOR MEDICAL OFFICER, MINISTRY OF HEALTH, DELEGATE FROM GREAT BRITAIN[1]

It is generally admitted that oil tankers do not shelter rats; and, if this fact is frequently attributed to the dislike of rats for the odor of petroleum, other reasons can without doubt be noted, among which the most important are the following:

1. It is a rule that oil tankers are relatively new ships, and, because of the nature of the merchandise which they transport, they are of practically rat-proof construction.

2. The nature of the cargo, petroleum, neither furnishes food for rats nor offers them any place for nesting.

3. The majority of the special docks where petroleum is either taken or carried furnishes rats neither with nourishment nor shelter, and even in some cases the petrol pipe comes aboard without the ship lying at dock.

[1] Translation. From the Monthly Bulletin, Office International d'Hygiene publique, June, 1931 pages 1082-1083.

Because of the frequent mention of this relative absence of rats on tankers, it is perhaps instructive to take cognizance of the observations made in some English ports.

At Liverpool, from January 1 to August 12, 1930, 29 Diesel motor ships were visited by the sanitary authorities of the port, and their observations established that these ships were not always free from rats. Moreover, according to the opinion of trappers and rat exterminators, it is not certain that rats dislike petroleum. These agents think that the principal causes for the presence of rats are the existence of food and temporary shelter. Of the 29 ships examined, however, 22 were without rats and without nests, and certificates of exemption from deratization were granted them. The 7 remaining ships were fumigated (6 with HCN and 1 with SO_2), and 37 dead rats were found, an average of 5.3 rats per ship fumigated. But this figure is deceptive; 32 rats were found on a single boat. This boat was in regular service between Liverpool and West Africa, and among the merchandise carried were great quantities of piassaba in bales and bags of cottonseed, which are two excellent means for the introduction of rats on board.

Within the same period 42 oil-burning ships were also examined, among which 21 showed neither rats nor rat shelters and received certificates of exemption from deratization. The remaining 21 were fumigated (10 with HCN and 11 with SO_2), and 140 rats were found on 20 of these ships. A ship which had been fumigated on request of the owners was not visited after the fumigation, but it had been concluded at the time of the examination that no rats would be found on board. The number of rats per ship fumigated was thus 6.7.

At London the inspectors are convinced that the odor of petroleum was of no consequence on Diesel motor boats, oil-burning ships, or tankers, but report that one finds only a few rats on Diesel motor boats. They give the following reasons for this:

1. These ships are of modern construction and offer no shelter for rats.

2. The holds are not subdivided and the engine rooms are well lighted.

3. They have no steam pipes which on other ships run from the engine to very nearly all parts of the ship along which rats pass from one compartment of the ship to another and which by reason of the arrangement of their coverings and isolation furnish an ideal shelter for rats.

4. These ships have no vast depths of hold, and mazout [the combustible residue from the distillation of crude petroleum] is regularly stored in reservoirs in the double bottoms.

At Swansea experience confirms the above opinion that on Diesel motor boats rat proofing is more important than the Diesel motor itself in reducing the rat population.

The general conclusions resulting from these inquiries are as follows:

1. That motor boats are of recent construction and offer limited or no shelter for rats when they are empty.

2. That the rats also enter these ships with cargo, if it offers them shelter and nourishment.

3. That it is not certain that rats have an aversion for petrol and that the small number found on these ships is actually due to the construction of the ships and to the measures taken to limit the number of the rat population.

PROVISIONAL BIRTH, DEATH, AND INFANT MORTALITY FIGURES, BIRTH REGISTRATION AREA, 1930

The Department of Commerce, through the Bureau of the Census, Division of Vital Statistics, announces that in 1930 in the birth registration area (exclusive of Utah) there were reported 2,190,047 live births, an increase in number of 32,507, or 1½ per cent over the number reported in the same area in 1929. The birth rate for 1930 was 18.9, the same as the rate for 1929. In 26 States birth rates were higher in 1930 than in 1929; in 12 States the rates were lower; and in 7 they remained the same. The highest birth rate (28.5) was for New Mexico. This State also attained the highest birth rate in 1929. The greatest increases in rates over 1929 were 1.9, 1.4, and 1.3 for Arkansas, New Mexico, and Arizona, respectively. The lowest birth rate (14.1) was for Oregon, which State also had the lowest rate in 1929.

The birth registration area (exclusive of Utah) had a death rate in 1930 of 11.3. This is 0.6 lower than the corresponding rate for 1929. When compared with 1929, 37 States had lower rates in the later year, 6 had higher rates, while the rates for 2 States did not change. The highest death rate (15.5) was for New Mexico and the lowest (7.9) was for North Dakota.

The infant mortality rate of 64.2 for 1930 was the lowest rate since the establishment of the birth registration area in 1915. Thirty-seven States had lower infant mortality rates in 1930 than in 1929. The greatest decreases were 17.1 and 10.2 for Arizona and Rhode Island, respectively. The highest rates were 144.9 for New Mexico and 116.2 for Arizona. The lowest rates were 48.4 for Washington, 49.2 for Nebraska, and 50 for Oregon.

Infant mortality rates are also shown in the accompanying table for 86 cities having 100,000 or more inhabitants in 1930. For only 21

of these cities were the rates higher in 1930 than in 1929. The highest rates were 108.8 for Chattanooga, 102.9 for Nashville, and 101.2 for Memphis. The lowest were 37.1 for Seattle and 39.8 for San Francisco.

The birth registration area in 1930 included all of the United States except South Dakota and Texas and included 94.7 per cent of the total population of the United States. Figures for Utah have been omitted from this summary because transcripts for 1930 have not yet been received from that State.

Area	Number, 1930			Rate per 1,000 estimated population				Infant mortality (deaths under 1 year per 1,000 births)	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1930	1929	1930	1929	1930	1929
Birth registration area *	2,190,047	1,316,447	140,518	18.9	18.8	11.3	11.9	64.2	67.6
STATES									
Alabama	63,757	30,420	4,597	24.0	24.0	11.5	12.4	72.1	73.6
Arizona	10,376	6,678	1,206	23.7	22.4	15.2	15.9	116.2	133.3
Arkansas	41,093	18,959	2,115	22.1	20.2	10.2	10.5	51.5	58.1
California	84,204	66,257	4,927	14.7	14.8	11.6	11.9	58.5	63.2
Colorado	18,814	13,205	1,773	18.1	17.4	12.7	12.5	94.2	91.4
Connecticut	27,582	17,290	1,542	17.1	17.1	10.7	11.5	55.9	64.4
Delaware	4,474	3,256	351	18.7	18.1	13.6	13.2	78.5	81.2
Florida	26,993	18,261	1,734	18.2	18.8	12.3	12.7	64.2	65.5
Georgia	60,689	35,188	4,697	20.9	20.1	12.1	12.2	77.4	76.3
Idaho	9,177	4,179	525	20.6	19.8	9.4	9.2	57.2	55.3
Illinois	128,121	83,593	7,079	16.7	17.0	10.9	11.6	55.3	61.4
Indiana	59,278	39,196	3,413	18.3	18.3	12.1	12.7	57.6	63.6
Iowa	42,733	26,231	2,299	17.3	17.1	10.6	10.4	53.8	52.6
Kansas	33,707	19,503	1,754	17.9	17.4	10.4	10.4	52.0	57.6
Kentucky	59,261	29,544	3,870	22.6	21.7	11.3	12.0	65.3	70.9
Louisiana	42,890	24,724	3,363	20.3	20.3	11.7	11.9	78.4	74.0
Maine	16,199	11,082	1,225	20.3	20.0	13.9	14.3	75.6	77.4
Maryland	30,251	21,567	2,277	18.5	18.5	13.2	13.5	75.3	79.9
Massachusetts	73,551	49,340	4,296	17.3	17.5	11.6	12.3	58.4	61.8
Michigan	99,326	51,638	6,215	20.4	20.8	10.6	11.8	62.6	66.4
Minnesota	47,418	25,711	2,478	18.5	18.3	10.0	10.1	52.3	51.2
Mississippi	48,163	24,125	3,256	23.9	22.9	12.0	13.0	67.6	72.1
Missouri	62,165	43,080	3,647	17.1	16.9	11.9	12.3	58.7	62.1
Montana	9,971	5,441	582	18.5	18.7	10.1	10.7	58.4	64.0
Nebraska	27,004	13,289	1,328	19.6	19.4	9.6	9.8	49.2	51.7
Nevada	1,332	1,161	87	14.6	14.2	12.8	13.3	65.3	67.2
New Hampshire	8,340	6,322	508	17.9	17.6	13.6	14.1	60.9	68.2
New Jersey	68,321	43,598	3,858	16.8	17.2	10.7	11.6	56.5	60.1
New Mexico	12,116	6,576	1,756	28.5	27.1	15.5	15.4	144.9	145.5
New York	216,046	147,436	12,572	17.1	17.5	11.7	12.4	58.2	60.8
North Carolina	76,772	35,783	6,033	24.1	24.7	11.2	11.8	78.6	79.1
North Dakota	14,783	5,367	897	21.7	21.6	7.9	8.0	60.7	67.2
Ohio	117,526	76,232	7,173	17.6	17.7	11.4	12.4	61.0	68.8
Oklahoma	42,504	19,679	2,577	17.7	16.8	8.2	9.0	60.6	70.2
Oregon	13,468	10,545	674	14.1	14.1	11.0	11.3	50.0	47.9
Pennyslvania	189,458	111,616	12,243	19.6	19.8	11.6	12.3	64.6	70.5
Rhode Island	12,191	8,007	753	17.7	18.0	11.6	13.1	61.8	72.0
South Carolina	40,460	22,434	3,588	23.3	22.7	12.9	13.3	88.7	91.0
Tennessee	52,652	29,993	3,985	20.1	19.5	11.4	12.2	75.7	77.1
Vermont	6,934	4,687	448	19.3	18.7	13.0	14.7	64.6	65.8
Virginia	54,702	30,317	4,218	22.6	22.4	12.5	13.0	77.1	78.8
Washington	22,999	16,678	1,113	14.7	14.6	10.6	10.6	48.4	49.0
West Virginia	41,614	18,222	3,361	24.0	23.8	10.5	10.6	80.8	77.6
Wisconsin	56,788	30,558	3,153	19.3	19.0	10.4	10.7	55.5	59.6
Wyoming	4,471	2,080	309	19.8	19.8	9.2	9.0	69.1	70.3

* Exclusive of Utah; the 1930 data for this State are incomplete.

Area	Number, 1930			Rate per 1,000 estimated population				Infant mortality (deaths under 1 year per 1,000 births)	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1930	1929	1930	1929	1930	1929
CITIES HAVING 100,000 INHABITANTS OR MORE IN 1930									
Akron	5,248	2,002	260	20.5	22.3	7.8	9.4	55.3	64.0
Albany	2,624	1,893	157	20.5	20.0	14.8	16.1	59.8	70.3
Atlanta	5,301	4,199	493	19.5	19.2	15.5	15.7	93.0	93.5
Baltimore	14,994	11,238	981	18.6	18.7	13.9	14.5	65.4	72.6
Birmingham	5,204	3,548	404	19.9	21.4	13.6	15.3	77.6	88.3
Boston	18,060	11,018	1,252	23.1	23.1	14.1	15.0	69.3	68.9
Bridgeport	3,102	1,599	144	21.1	20.8	10.9	11.9	46.4	70.9
Buffalo	11,560	7,393	772	20.1	20.6	12.9	13.9	66.8	66.2
Cambridge	2,523	1,347	119	22.2	22.9	11.8	12.6	47.2	57.4
Camden	3,013	1,590	207	25.4	25.1	13.4	14.1	68.7	71.2
Canton	2,087	1,020	133	19.8	18.9	9.7	11.1	63.7	66.4
Chattanooga	2,335	1,883	254	19.4	26.7	15.7	20.9	108.8	83.0
Chicago	58,083	35,316	3,112	17.1	17.7	10.4	11.2	53.6	60.2
Cincinnati	8,702	7,004	566	19.2	19.8	15.5	16.8	65.0	76.8
Cleveland	17,842	1,906	974	19.8	19.6	11.0	12.2	54.6	61.2
Columbus	5,357	4,469	380	18.4	18.4	15.3	14.5	70.9	71.5
Dayton	3,638	2,227	200	18.0	17.7	11.0	11.4	55.0	66.5
Denver	5,184	4,340	480	18.0	16.7	15.0	14.6	92.6	83.9
Des Moines	2,748	1,718	141	19.2	20.0	12.0	11.9	51.3	52.8
Detroit	32,967	14,738	2,127	20.8	22.3	9.3	10.9	64.5	69.1
Duluth	1,927	1,185	119	19.0	19.0	11.7	11.8	61.8	45.8
Elizabeth	2,616	1,325	117	22.7	22.6	11.5	12.4	44.7	63.3
Erie	2,524	1,308	125	21.7	20.7	11.2	12.1	49.5	56.8
Evansville	1,770	1,295	109	17.2	16.8	12.6	12.6	61.6	74.3
Fall River	2,202	1,322	142	19.1	19.5	11.5	13.2	64.5	66.0
Flint	4,169	1,399	284	26.4	29.0	8.9	10.6	68.1	72.3
Fort Wayne	2,270	1,274	124	19.6	18.6	11.0	11.7	54.6	60.5
Gary	2,301	975	166	22.7	22.1	9.6	10.2	72.1	72.3
Grand Rapids	3,421	1,697	165	20.2	20.8	10.0	10.3	48.2	53.4
Hartford	4,298	2,148	267	26.1	25.5	13.0	13.8	62.1	67.6
Indianapolis	6,806	5,196	431	18.6	19.2	14.2	14.7	63.3	67.7
Jacksonville	2,448	1,976	160	18.8	20.4	15.2	16.6	65.4	73.4
Jersey City	5,881	3,578	422	18.5	19.1	11.3	12.4	71.8	67.1
Kansas City, Kans	2,362	1,677	152	19.3	18.4	13.7	13.4	64.4	72.5
Kansas City, Mo	6,501	5,304	441	16.2	15.8	13.2	13.7	67.8	74.4
Knoxville	2,407	1,500	193	22.6	21.5	14.1	13.5	80.2	80.4
Long Beach	2,096	1,490	90	14.6	15.1	10.4	10.8	42.9	38.7
Los Angeles	17,921	14,028	1,095	14.3	14.5	11.2	11.4	61.1	64.5
Louisville	5,730	4,387	385	18.6	19.8	14.3	15.1	67.2	71.5
Lowell	1,998	1,323	155	19.8	19.4	13.1	13.6	77.6	69.1
Lynn	1,813	1,058	100	17.7	18.3	10.3	11.3	55.2	56.3
Memphis	4,903	4,398	496	19.3	21.6	17.3	18.9	101.2	95.3
Miami	2,022	1,232	117	18.2	16.5	11.1	9.5	57.9	47.8
Milwaukee	11,606	5,568	672	20.0	20.9	9.6	10.7	57.9	74.5
Minneapolis	8,116	5,056	454	17.4	17.3	10.8	10.8	55.9	49.2
Nashville	3,460	2,511	356	22.4	21.7	16.3	17.8	102.9	98.1
Newark, N. J	9,821	5,263	500	22.2	22.6	11.9	12.8	50.9	57.7
New Bedford	1,988	1,243	107	17.7	18.0	11.0	11.9	53.8	65.9
New Haven	3,428	2,117	161	21.1	20.8	13.0	13.4	47.0	47.0
New Orleans	9,337	8,032	820	20.3	20.7	17.4	17.7	87.8	79.7
New York City	122,247	74,907	6,958	17.6	18.1	10.8	11.3	56.9	58.9
Norfolk	2,254	1,763	160	17.4	17.5	13.6	15.0	71.0	87.2
Oakland	4,165	3,178	189	14.6	15.0	11.1	11.3	45.4	46.7
Oklahoma City	3,735	2,110	310	19.9	16.2	11.2	10.5	83.0	66.5
Omaha	4,524	2,819	225	21.1	20.2	13.1	13.4	49.7	58.5
Paterson	3,051	1,669	158	22.0	21.6	12.0	13.4	51.8	55.5
Peoria	1,980	1,301	125	18.7	18.6	12.3	13.2	63.1	58.4
Philadelphia	35,818	24,517	2,115	18.3	18.1	12.5	13.0	59.0	61.7
Pittsburgh	14,994	9,311	1,029	22.3	22.1	13.9	14.5	68.6	73.5
Portland, Oreg	4,249	3,675	174	14.0	14.1	12.1	12.6	41.0	42.5
Providence	5,709	3,258	299	22.5	22.3	12.9	14.4	52.4	65.9
Reading	1,699	1,236	111	15.3	15.9	11.1	11.8	65.3	76.7
Richmond	3,580	2,738	263	19.5	19.7	14.9	16.1	73.5	81.0
Rochester	5,660	3,786	289	17.2	18.0	11.5	12.2	51.1	63.0
St. Louis	14,496	11,475	785	17.6	18.3	13.9	14.5	54.2	59.1

Area	Number, 1930			Rate per 1,000 estimated population				Infant mortality (deaths under 1 year per 1,000 births)	
	Births	Deaths		Births		Deaths			
		All ages	Under 1 year	1930	1929	1930	1929	1930	1929
CITIES HAVING 100,000 INHABITANTS OR MORE IN 1930—continued									
St. Paul	5,085	2,880	218	18.7	19.2	10.6	10.9	42.9	46.1
San Diego	2,528	2,164	124	16.9	17.4	14.5	15.0	49.1	48.9
San Francisco	7,822	8,311	311	12.3	12.3	13.0	13.0	39.8	49.7
Scranton	2,814	1,842	193	19.6	19.2	12.8	14.2	68.6	82.6
Seattle	5,280	4,008	196	14.4	14.3	10.9	11.1	37.1	45.9
South Bend	2,013	954	96	19.2	20.1	9.1	10.2	47.7	62.4
Spokane	2,011	1,447	95	17.4	17.4	12.5	12.9	47.2	55.9
Springfield, Mass	3,105	1,771	164	20.6	20.5	11.8	12.7	52.8	58.9
Syracuse	4,255	2,461	241	20.3	20.4	11.7	12.7	56.6	55.6
Tacoma	1,876	1,371	83	17.5	18.0	12.8	12.2	44.2	32.4
Tampa	1,830	1,175	106	18.0	19.1	11.5	11.6	57.9	61.4
Toledo	5,535	3,681	311	19.0	19.7	12.6	13.7	56.2	69.6
Trenton	2,854	1,893	224	23.1	22.1	15.3	15.5	78.5	71.8
Tulsa	2,366	1,410	182	16.7	16.2	9.9	9.7	76.9	65.0
Utica	1,870	1,510	126	18.4	18.5	14.8	16.6	67.4	74.0
Washington, D. C	9,373	7,399	663	19.2	18.4	15.2	15.4	70.7	70.7
Wichita	2,280	1,334	130	20.4	20.3	11.9	12.4	57.0	59.6
Wilmington, Del	2,305	1,556	163	21.6	20.2	14.6	13.4	70.7	74.9
Worcester	3,638	2,498	228	18.6	19.4	12.8	12.8	62.7	59.3
Yonkers	2,155	1,131	101	15.9	16.6	8.3	9.4	46.9	64.4
Youngstown	3,777	1,783	218	22.1	23.7	10.5	12.3	57.7	71.7

COURT DECISION RELATING TO PUBLIC HEALTH

Ordinance classifying milk industry held valid.—(Oklahoma Supreme Court; Stephens et al. *v.* Oklahoma City et al., 1 P. (2d) 367; decided July 7, 1931.) An ordinance of Oklahoma City classified the milk industry into three classes, namely, inspected dairies, farm dairies, and pasteurizing plants. Inspected dairies were those which sold raw milk to consumers, while farm dairies did not sell such milk to consumers but delivered it to pasteurizing plants for treatment prior to sale for consumption. The license fees charged inspected dairies were higher than those charged farm dairies and pasteurizing plants, the fees for the former ranging from $10 to $30 per year, according to the number of cows in the herd, while the annual fee for farm dairies was $1. The plaintiffs brought suit to enjoin the defendants from enforcing the said ordinance. The contention of the plaintiffs was that the ordinance was invalid because there was an unreasonable, arbitrary, and unjust discrimination between the amount of fees provided to be charged operators of inspected dairies and the amount of fees provided to be charged operators of pasteurizing plants and farm dairies. The trial court rendered judgment in favor of the defendants, and on appeal this judgment was affirmed by the supreme court.

The appellate court stated that it was agreed that the ordinance was a regulatory one and not for the purpose of raising revenue, and that the license fees charged could not exceed the expense of issuing the license and regulating the business. After setting forth at length

the greater amount of labor involved in the inspection and regulation of inspected dairies than that involved in the inspection of farm dairies and pasteurizing plants, the court said that the record showed that the cost of such inspection and regulation of inspected dairies was considerably in excess of the amounts charged, and held that no constitutional or statutory right of the plaintiffs would be infringed by the enforcement of the ordinance.

DEATHS DURING WEEK ENDED SEPTEMBER 12, 1931

Summary of information received by telegraph from industrial insurance companies for the week ended September 12, 1931, and corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

	Week ended September 12, 1931	Corresponding week, 1930
Policies in force	74, 937, 114	75, 601, 457
Number of death claims	9, 817	12, 793
Death claims per 1,000 policies in force, annual rate	6. 8	8. 8
Death claims per 1,000 policies, first 37 weeks of year, annual rate	9. 9	9. 8

Deaths [1] from all causes in certain large cities of the United States during the week ended September 12, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930. (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]

City	Week ended Sept. 12, 1931				Corresponding week, 1930		Death rate [2] for the first 37 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1931	1930
Total (81 cities)	7,023	10. 3	732	[4] 57	9. 7	682	12. 2	12. 1
Akron	37	7. 5	3	30	5. 5	7	7. 9	7. 9
Albany [5]	33	13. 3	0	0	9. 4	1	13. 9	15. 1
Atlanta	63	11. 8	6	61	12. 9	7	15. 4	15. 9
White	25		3	48		4		
Colored	38	(6)	3	86	(6)	3	(6)	(6)
Baltimore [5]	192	12. 3	29	98	10. 0	15	14. 7	14. 1
White	127		16	69		9		
Colored	65	(6)	13	203	(6)	6	(6)	(6)
Birmingham	58	11. 2	5	50	7. 4	3	13. 9	13. 9
White	31		4	69		3		
Colored	27	(6)	1	24	(6)	0	(6)	(6)
Boston	198	13. 1	23	66	11. 1	20	14. 4	14. 3
Bridgeport	19	6. 7	4	66	8. 5	2	11. 3	11. 3
Buffalo	143	12. 8	18	74	11. 4	14	13. 4	13. 2
Cambridge	23	10. 5	2	40	7. 8	1	12. 4	11. 8
Camden	25	11. 0	3	52	9. 7	4	14. 6	13. 8
Canton	19	9. 3	0	0	7. 9	1	10. 4	10. 2
Chicago [5]	566	8. 5	60	53	8. 7	55	10. 9	10. 5
Cincinnati	123	14. 0	11	66	14. 2	14	16. 2	15. 7
Cleveland	176	10. 1	21	61	9. 0	12	11. 4	11. 3
Columbus	68	12. 0	8	78	10. 2	5	13. 9	15. 9
Dallas	61	11. 7	7		8. 3	4	11. 5	11. 8
White	46		6			3		
Colored	15	(6)	1		(6)	1	(6)	(6)
Dayton	37	9. 3	12	168	11. 6	5	11. 9	10. 5
Denver	74	13. 2	10	97	14. 6	19	14. 2	15. 0

Footnotes at end of table.

Deaths [1] from all causes in certain large cities of the United States during the week ended September 12, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930. (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]

City	Week ended Sept. 12, 1931				Corresponding week, 1930		Death rate [2] for the first 37 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1931	1930
Des Moines	24	8.7	3	53	11.3	5	11.2	12.0
Detroit	224	7.1	29	46	7.7	28	8.4	9.5
Duluth	29	14.9	4	98	10.8	2	11.2	11.2
El Paso	33	16.4	6		13.7	5	16.3	17.9
Erie	18	8.0	1	19	7.6	3	10.8	11.3
Fall River [5] [7]	16	7.2	2	45	9.5	2	11.5	12.1
Flint	18	5.7	3	38	7.6	5	7.1	9.3
Fort Worth	34	10.6	5		10.8	2	11.0	11.1
White	28		5			2		
Colored	6	(6)	0		(6)	0	(6)	(6)
Grand Rapids	27	8.2	3	44	7.4	2	9.2	10.4
Houston	54	9.1	8		10.9	9	11.2	12.2
White	32		5			9		
Colored	22	(6)	3		(6)	0	(6)	(6)
Indianapolis	96	13.5	8	66	10.4	12	14.1	14.9
White	81		5	47		9		
Colored	15	(6)	3	201	(6)	3	(6)	(6)
Jersey City	56	9.2	4	36	7.2	6	11.7	11.4
Kansas City, Kans	19	8.1	0	0	11.5	3	12.7	11.6
White	12		0	0		3		
Colored	7	(6)	0	0	(6)	0	(6)	(6)
Kansas City, Mo	76	9.7	6	46	13.6	11	13.3	13.4
Long Beach	21	7.2	0	0	9.1	0	9.9	10.0
Los Angeles	294	11.6	31	90	9.7	21	10.8	11.1
Louisville	74	12.5	7	60	11.3	13	14.6	13.9
White	55		4	39		9		
Colored	19	(6)	3	199	(6)	4	(6)	(6)
Lowell [7]	31	16.0	6	153	9.3	0	12.8	13.7
Lynn	19	9.6	1	26	8.7	2	9.8	10.7
Memphis	79	15.9	10	106	18.3	12	16.7	17.7
White	41		5	83		9		
Colored	38	(6)	5	145	(6)	3	(6)	(6)
Miami	24	11.1	2	51	10.8	2	11.9	11.4
White	18		0	0		1		
Colored	6	(6)	2	177	(6)	1	(6)	(6)
Milwaukee	86	7.6	9	39	7.8	9	9.5	9.7
Minneapolis	85	9.4	11	71	10.1	7	11.5	10.7
Nashville	61	20.5	9	134	14.2	4	17.1	16.9
White	40		5	100		3		
Colored	21	(6)	4	233	(6)	1	(6)	(6)
New Bedford [7]	13	6.0	0	0	8.3	0	12.3	11.0
New Haven	53	17.0	3	57	10.6	0	12.6	13.1
New Orleans	147	16.4	16	88	14.2	5	17.2	17.6
White	75		5	41		4		
Colored	72	(6)	11	179	(6)	1	(6)	(6)
New York	1,239	9.1	116	48	8.5	104	11.5	11.0
Bronx Borough	179	7.0	13	29	6.9	10	8.4	8.1
Brooklyn Borough	413	8.2	50	53	7.7	44	10.5	10.1
Manhattan Borough	459	13.2	38	65	11.9	40	17.4	16.4
Queens Borough	143	6.5	10	27	5.9	8	7.4	7.2
Richmond Borough	45	14.4	5	90	13.1	2	14.0	14.7
Newark, N. J	84	9.8	5	26	8.7	6	11.8	12.2
Oakland	44	7.8	7	89	10.9	9	10.5	11.1
Oklahoma City	28	7.4	4	55	12.0	8	11.1	10.7
Omaha	71	17.1	9	101	7.8	2	14.1	13.8
Paterson	26	9.8	4	69	6.4	4	13.6	12.4
Peoria	22	10.6	6	158	8.9	4	12.3	12.6
Philadelphia	371	9.8	44	64	10.5	53	13.4	12.8
Pittsburgh	157	12.1	20	69	11.1	19	14.8	14.0
Portland, Oreg	64	10.9	3	36	8.8	1	11.7	12.3
Providence	40	8.2	2	18	10.5	4	13.0	13.2
Richmond	36	10.2	3	44	10.0	6	15.9	15.1
White	21		1	22		2		
Colored	15	(6)	2	87	(6)	4	(6)	(6)
Rochester	58	9.1	6	55	6.8	8	12.1	11.6
St. Louis	201	12.7	21	71	10.6	10	15.6	14.5

Footnotes at end of table.

Deaths [1] from all causes in certain large cities of the United States during the week ended September 12, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)—Continued

[The rates published in this summary are based upon mid-year population estimates derived from the 1930 census]

City	Week ended Sept. 12, 1931				Corresponding week, 1930		Death rate [2] for the first 37 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1931	1930
St. Paul	49	9.3	1	10	10.7	5	11.0	10.2
Salt Lake City [4]	28	10.2	4	60	6.3	2	12.3	12.5
San Antonio	59	12.8	8	----	12.1	7	14.9	17.2
San Diego	32	10.7	2	41	14.3	2	13.7	14.6
San Francisco	165	13.2	7	46	13.4	10	13.2	13.1
Schenectady	17	9.2	2	59	5.4	1	10.7	11.3
Seattle	61	8.6	0	0	10.7	2	11.5	11.0
Somerville	17	8.4	1	37	7.5	1	9.2	9.9
South Bend	17	8.2	3	75	8.9	1	8.1	9.0
Spokane	43	19.3	1	26	14.0	5	12.5	12.5
Springfield, Mass	32	11.0	4	61	8.7	1	12.0	12.3
Syracuse	48	11.7	8	95	7.7	6	11.8	11.7
Tacoma	26	12.6	2	51	10.2	1	12.1	12.7
Toledo	47	8.3	3	28	10.0	8	12.1	12.7
Trenton	43	18.1	1	17	12.7	8	16.9	16.9
Utica	25	12.7	1	26	14.8	1	14.2	15.1
Washington, D. C	135	14.3	12	66	10.3	11	16.1	15.3
White	87	----	5	41	----	4	----	----
Colored	48	(6)	7	120	(6)	7	(6)	(6)
Waterbury	18	9.3	2	60	8.3	2	9.8	10.0
Wilmington, Del. [7]	25	12.2	4	86	8.8	1	14.2	14.5
Worcester	30	7.9	3	41	6.7	1	12.3	13.0
Yonkers	15	5.6	1	26	5.0	2	8.8	8.2
Youngstown	24	7.2	3	42	9.2	7	10.4	10.2

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

[2] These rates represent annual rates per 1,000 population, as estimated for 1931 and 1930 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 76 cities.

[5] Deaths for week ended Friday.

[6] For the cities for which deaths are shown by color, the percentage of colored population in 1920 was as follows: 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; Miami, 31; 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 September 19, 1931, and September 20, 1930

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended September 19, 1931, and September 20, 1930

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930
New England States:								
Maine	3	4	1	----	3	90	0	0
New Hampshire	----	7	----	----	----	1	0	0
Vermont	----	----	----	----	1	1	0	0
Massachusetts	30	38	4	----	16	17	1	3
Rhode Island	5	5	----	----	8	3	0	0
Connecticut	3	3	1	3	3	3	0	0
Middle Atlantic States:								
New York	45	54	[1] 8	[1] 5	59	42	15	8
New Jersey	11	38	----	1	19	14	2	4
Pennsylvania	60	80	----	----	61	45	9	5
East North Central States:								
Ohio	25	19	7	7	21	12	1	0
Indiana	11	23	19	----	6	4	1	5
Illinois	45	101	147	8	33	9	3	4
Michigan	20	36	3	1	20	19	9	12
Wisconsin	12	4	12	15	14	18	4	0
West North Central States:								
Minnesota	9	10	----	2	11	2	1	0
Iowa	8	6	----	----	3	6	1	1
Missouri	32	15	1	1	3	10	3	2
North Dakota	1	4	----	----	2	----	1	0
South Dakota	1	6	----	2	3	----	0	0
Nebraska	6	6	----	2	3	15	3	3
Kansas	19	6	1	2	10	4	0	2
South Atlantic States:								
Delaware	----	----	----	----	----	1	0	0
Maryland [2]	21	7	3	2	6	3	2	0
District of Columbia	13	8	1	----	----	7	0	0
Virginia [3]	----	----	----	----	----	----	----	----
West Virginia	23	25	15	1	7	10	1	0
North Carolina	105	81	----	8	12	1	1	2
South Carolina	19	41	142	186	4	----	0	0
Georgia [3]	39	18	6	11	4	26	2	1
Florida [3]	4	5	----	----	1	2	0	0

[1] New York City only.
[2] Week ended Friday.
[3] Typhus fever, 1931, 10 cases: 1 case in Virginia; 4 cases in Georgia; 3 cases in Florida; 1 case in Alabama; and 1 case in Texas.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended September 19, 1931, and September 20, 1930—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930
East South Central States:								
Kentucky	125				37		0	0
Tennessee	79	22	5	2	6	7	1	2
Alabama [3]	77	26	10	4		5	2	1
Mississippi	111	15					0	0
West South Central States:								
Arkansas	38	3		2	5		0	1
Louisiana	23	18	8	1	2	1	0	0
Oklahoma [4]	50	22	13	8	1	1	0	0
Texas [3]	20	11	1	3		2	0	0
Mountain States:								
Montana					12	1	0	0
Idaho					1	2	1	0
Wyoming		1					0	0
Colorado	3	6			2	2	0	1
New Mexico	7	4			1	3	0	1
Arizona	3	8	4	1	1	4	0	2
Utah [2]	2		6	8			1	3
Pacific States:								
Washington	4	4			6	6	0	1
Oregon	3	1	12	7	10	23	0	0
California	34	16	27	11	73	41	3	3

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930
New England States:								
Maine	5	18	3	9	0	0	6	6
New Hampshire	5	3	0	1	0	0	0	2
Vermont	7	0	3	1	1	0	0	0
Massachusetts	139	26	72	59	0	0	11	12
Rhode Island	12	6	10	4	0	0	3	3
Connecticut	101	8	7	17	0	0	8	0
Middle Atlantic States:								
New York	430	61	125	69	0	0	50	31
New Jersey	98	2	32	37	0	0	6	6
Pennsylvania	25	12	91	101	0	0	77	84
East North Central States:								
Ohio	5	42	93	62	1	15	55	44
Indiana	1	13	26	44	4	16	12	15
Illinois	51	27	87	92	0	18	57	46
Michigan	170	13	67	70	1	7	16	47
Wisconsin	74	8	13	32	0	5	8	11
West North Central States:								
Minnesota	76	18	26	26	2	1	12	4
Iowa	7	18	13	13	1	4	3	5
Missouri	1	14	28	14	13	1	28	28
North Dakota	2	3	3	3	0	0	1	7
South Dakota	2	3	7	3	7	2	1	4
Nebraska	5	22	10	12	0	13	2	1
Kansas	0	65	22	32	0	3	12	9
South Atlantic States:								
Delaware	0	1	2	4	0	0	2	3
Maryland [2]	4	1	32	11	0	0	26	50
District of Columbia	0	0	4	3	0	0	2	4
Virginia [3]	4							
West Virginia	4	1	21	21	0	6	89	51
North Carolina	7	1	74	65	0	1	46	33
South Carolina	0	2	15	18	0	0	39	49
Georgia [3]	3	3	15	11	0	0	50	32
Florida [3]	0	0	5	2	0	0	7	4

[2] Week ended Friday.
[3] Typhus fever, 1931, 10 cases: 1 case in Virginia; 4 cases in Georgia; 3 cases in Florida; 1 case in Alabama; and 1 case in Texas.
[4] Figures for 1931 are exclusive of Oklahoma City and Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended September 19, 1931, and September 20, 1930—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930	Week ended Sept. 19, 1931	Week ended Sept. 20, 1930
East South Central States:								
Kentucky	0	0	37	25	0	2	76	37
Tennessee	6	1	35	23	7	1	52	37
Alabama [3]	1	1	49	27	2	9	23	49
Mississippi	2	2	17	8	2	2	26	28
West South Central States:								
Arkansas	0	1	10	7	0	4	50	28
Louisiana	3	8	11	13	6	2	53	34
Oklahoma [4]	1	7	21	15	2	5	61	46
Texas [3]	0	5	22	6	4	2	27	20
Mountain States:								
Montana	6	1	4	7	1	0	5	7
Idaho	0	1	4	2	1	0	0	1
Wyoming	0	12	4	2	0	0	1	1
Colorado	0	7	10	7	0	1	5	10
New Mexico	0	0	4	2	0	0	12	21
Arizona	0	1	1	4	0	0	6	11
Utah [3]	0	0	4	2	0	0	2	0
Pacific States:								
Washington	5	0	28	29	9	6	6	1
Oregon	2	0	6	8	1	0	2	4
California	8	66	53	34	4	3	31	20

[3] Week ended Friday.
[3] Typhus fever, 1931, 10 cases: 1 case in Virginia; 4 cases in Georgia; 3 cases in Florida; 1 case in Alabama; and 1 case in Texas.
[4] Figures for 1931 are exclusive of Oklahoma City and Tulsa.

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
July, 1931										
Hawaii Territory	4	10	----	----	94	----	4	3	0	7
Kansas	2	30	7	----	60	1	4	54	68	37
August, 1931										
Maine	1	8	2	----	15	----	25	34	1	11
Maryland	1	45	5	2	37	----	6	41	0	118
Michigan	14	66	----	2	92	----	216	260	21	45
Minnesota	7	33	5	1	19	----	132	74	8	27
New Mexico	----	7	----	21	1	2	3	14	1	16
North Carolina	5	132	5	----	76	146	28	132	2	212
Rhode Island	2	8	----	----	96	----	79	26	0	16
Vermont	----	8	----	----	18	----	0	48	19	0
West Virginia	4	37	29	----	160	----	23	58	3	178

July, 1931

Actinomycosis:	Cases
Hawaii Territory	1
Chicken pox:	
Hawaii Territory	12
Kansas	33
Conjunctivitis (follicular):	
Hawaii Territory	4
German measles:	
Kansas	5
Hookworm disease:	
Hawaii Territory	11
Impetigo contagiosa:	
Kansas	4
Leprosy:	
Hawaii Territory	4
Mumps:	
Hawaii Territory	15
Kansas	149

Paratyphoid fever:	Cases
Kansas	5
Septic sore throat:	
Kansas	6
Tetanus:	
Hawaii Territory	3
Kansas	3
Undulant fever:	
Kansas	8
Vincent's angina:	
Kansas	8
Whooping cough:	
Hawaii Territory	2
Kansas	146

August, 1931

Anthrax:	
North Carolina	1
Chicken pox:	
Maine	13
Maryland	16
Michigan	101
Minnesota	47
New Mexico	3
North Carolina	5
Rhode Island	3
Vermont	21
West Virginia	24
Diarrhea:	
Maryland	86
Dysentery:	
Maryland	63
Minnesota (amebic)	1
New Mexico	2
German measles:	
Maryland	3
New Mexico	1
North Carolina	15
Rhode Island	2
Impetigo contagiosa:	
Maryland	7
Lead poisoning:	
Maine	1
Lethargic encephalitis:	
Maine	3
Maryland	2
Michigan	4
Minnesota	1
Mumps:	
Maine	33
Maryland	22
Michigan	127
Mumps—Continued.	Cases
New Mexico	3
Rhode Island	11
Vermont	29
Ophthalmia neonatorum:	
North Carolina	2
Rhode Island	1
Paratyphoid fever:	
New Mexico	1
North Carolina	10
West Virginia	1
Rabies in animals:	
Maryland	5
Rhode Island	1
Rocky Mountain spotted or tick fever:	
Maryland	9
Septic sore throat:	
Maine	3
Maryland	4
Michigan	3
New Mexico	1
North Carolina	8
Tetanus:	
Maine	1
Maryland	5
Trachoma:	
Minnesota	1
Tularaemia:	
Minnesota	1
New Mexico	1
Typhus fever:	
Maryland	6
North Carolina	5
Undulant fever:	
Maryland	9
Michigan	1
Minnesota	6
Vermont	2
Vincent's angina:	
Maine	19
Maryland	7
Whooping cough:	
Maine	73
Maryland	462
Michigan	1,005
Minnesota	90
New Mexico	28
North Carolina	388
Rhode Island	21
Vermont	69
West Virginia	211

TYPHOID FEVER OUTBREAK AT CLEVELAND, OHIO

Reports received weekly from Cleveland, Ohio, show 3 cases of typhoid fever with one death in Cleveland for the week ended September 12, 1931, while for the week ended September 19, 1931, there were 130 cases with 7 deaths. According to press reports this outbreak occurred at the Cleveland State Hospital, and is believed to have been traced to a "carrier."

TYPHUS FEVER PATIENT REMOVED FROM VESSEL AT NEW ORLEANS

According to information received under date of September 23, 1931, a case of typhus fever occurred on the American S. S. *Atenas.* and the patient was removed from the vessel at New Orleans (La.) Quarantine Station. It was stated that the case originated at Heredia, Costa Rico, but no information was given as to the port at which the patient had boarded the vessel. The vessel arrived at Habana on the 18th and sailed from that port on the 19th.

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of July, 1931, by departments of health of certain States to other State health departments

Disease	California	Connecticut	Illinois	Kansas	Maine	Massachusetts	Minnesota	New York
Diptheria		1						
Gonorrhea							1	
Measles								1
Mumps								1
Poliomyelitis		2			1			
Scarlet fever							1	
Smallpox	1							1
Syphilis				7			1	
Tuberculosis	2	2	16				26	2
Tulaaremia	1							
Typhoid fever	2					1		
Whooping cough								2

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 98 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 33,480,000. The estimated population of the 91 cities reporting deaths is more than 31,935,000. The esitmated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended September 12, 1931, and September 13, 1930

	1931	1930	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	1,044	878	
98 cities	224	280	422
Measles:			
45 States	394	392	
98 cities	92	99	
Meningococcus meningitis:			
46 States	49	75	
98 cities	26	35	
Poliomyelitis:			
46 States	1,158	491	
Scarlet fever:			
46 States	1,129	994	
98 cities	313	314	313
Smallpox:			
46 States	85	141	
98 cities	8	21	8
Typhoid fever:			
46 States	1,050	978	
98 cities	146	166	157
Deaths reported			
Influenza and pneumonia:			
91 cities	363	342	
Smallpox:			
91 cities	0	0	

City reports for week ended September 12, 1931

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 1922 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	0	0	0	----------	0	0	0	0
New Hampshire:								
Concord	0	0	0	----------	0	0	0	0
Nashua	0	0	0	----------	0	0	0	0
Vermont:								
Barre	0	0	0	----------	0	1	0	0
Burlington	0	1	1	----------	0	0	0	0
Massachusetts:								
Boston	1	14	19	5	0	4	2	12
Fall River	0	1	0	----------	1	0	0	0
Springfield	0	1	0	----------	0	0	1	0
Worcester	2	3	2	----------	0	0	10	2
Rhode Island:								
Pawtucket	0	0	0	----------	0	0	0	0
Providence	0	3	0	1	0	6	8	3
Connecticut:								
Bridgeport	2	2	2	----------	0	0	0	1
Hartford	1	1	1	----------	0	0	0	4
New Haven	0	1	0	----------	0	1	1	2
MIDDLE ATLANTIC								
New York:								
Buffalo	1	7	0	----------	0	1	1	8
New York	12	71	45	4	6	4	11	105
Rochester	1	2	0	----------	0	6	0	1
Syracuse	1	1	0	----------	0	0	0	2
New Jersey:								
Camden	0	1	1	----------	0	0	0	0
Newark	1	7	4	1	0	2	3	0
Trenton	0	1	0	----------	0	0	1	1
Pennsylvania:								
Philadelphia	3	25	2	2	2	1	6	20
Pittsburgh	0	10	6	----------	2	4	4	7
Reading	1	1	1	----------	0	0	0	1
EAST NORTH CENTRAL								
Ohio:								
Cincinnati	0	4	1	----------	0	0	0	6
Cleveland	4	19	2	4	0	3	5	6
Columbus	1	2	11	----------	0	0	3	1
Toledo	0	3	6	1	0	11	0	0
Indiana:								
Fort Wayne	0	1	1	----------	0	0	0	1
Indianapolis	0	2	1	----------	0	0	4	5
South Bend	0	0	0	----------	0	0	0	2
Terre Haute	0	0	0	----------	0	0	0	0
Illinois:								
Chicago	20	50	23	5	2	12	3	21
Springfield	0	1	0	----------	0	0	0	1
Michigan:								
Detroit	2	26	12	----------	3	1	7	8
Flint	1	1	0	----------	0	0	3	2
Grand Rapids	0	1	0	----------	0	2	1	1
Wisconsin:								
Kenosha	0	0	0	----------	0	0	7	1
Madison	0	0	1	----------	----------	1	3	----------
Milwaukee	6	6	1	----------	0	3	3	4
Racine	0	1	1	----------	0	1	7	0
Superior	0	0	0	----------	0	0	0	1

City reports for week ended September 12, 1931—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			
WEST NORTH CENTRAL								
Minnesota:								
Duluth	3	0	0	----	0	0	0	0
Minneapolis	2	11	2	----	0	4	7	4
St. Paul	4	5	3	----	0	1	0	1
Iowa:								
Davenport	0	1	0	----	----	0	0	----
Des Moines	0	0	0	----	----	0	0	----
Sioux City	1	0	1	----	----	0	1	----
Waterloo	1	1	0	----	----	0	3	----
Missouri:								
Kansas City	0	1	2	----	1	1	1	1
St. Joseph	0	0	0	----	0	0	0	3
St. Louis	3	15	6	----	----	0	0	3
North Dakota:								
Fargo	0	0	0	----	0	0	0	0
Grand Forks	0	0	0	----	----	0	0	----
South Dakota:								
Aberdeen	0	0	0	----	----	3	1	----
Nebraska:								
Omaha	1	4	4	----	0	0	2	2
Kansas:								
Topeka	0	0	0	2	2	0	2	0
Wichita	0	1	0	----	0	0	0	1
SOUTH ATLANTIC								
Delaware:								
Wilmington	0	0	0	----	0	0	2	1
Maryland:								
Baltimore	4	13	5	1	1	2	0	14
Cumberland	0	0	0	----	0	0	0	0
Frederick	0	0	0	----	0	0	0	0
District of Columbia:								
Washington	0	8	2	----	0	1	0	5
Virginia:								
Lynchburg	0	1	2	----	0	0	0	0
Richmond	0	10	2	----	0	0	0	1
Roanoke	0	3	0	----	0	0	0	0
West Virginia:								
Charleston	0	1	1	----	0	0	0	0
Wheeling	0	0	0	----	0	0	0	0
North Carolina:								
Raleigh	0	2	1	----	0	0	0	1
Wilmington	0	1	1	----	0	0	0	1
Winston-Salem	0	2	2	----	0	0	6	0
South Carolina:								
Charleston	0	0	0	1	0	0	0	1
Columbia	0	1	1	----	0	0	1	1
Greenville	0	1	0	----	0	0	0	0
Georgia:								
Atlanta	0	5	4	----	0	0	1	3
Brunswick	0	0	0	----	0	0	0	0
Savannah	0	1	0	1	0	0	0	3
Florida								
Miami	0	2	0	----	0	2	0	0
Tampa	0	1	2	1	0	0	0	1
EAST SOUTH CENTRAL								
Kentucky:								
Covington	0	0	0	----	0	0	0	0
Tennessee:								
Memphis	0	2	9	----	0	0	0	5
Nashville	0	2	6	----	0	0	0	5
Alabama:								
Birmingham	0	3	2	1	0	0	0	3
Mobile	0	1	0	----	0	0	0	0
Montgomery	0	2	0	----	----	1	0	----

City reports for week ended September 12, 1931—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			
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith	0	0	1			1	0	
Little Rock	0	0	1		1	0	1	0
Louisiana:								
New Orleans	0	7	0	2	2	0	0	9
Shreveport	0	1	1		0	2	0	0
Oklahoma:								
Muskogee	0	0	1		0	1	0	0
Oklahoma City	0	1	1		0	1	0	0
Tulsa	0	0	1			1	1	
Texas:								
Dallas	0	5	4	1	1	0	0	5
Fort Worth	1	1	3		0	0	0	0
Galveston	0	0	0		0	0	0	2
Houston	0	4	3		0	0	1	5
San Antonio	1	2	2		1	0	0	0
MOUNTAIN								
Montana:								
Billings	0	0	0		0	1	0	0
Great Falls	1	0	0		0	0	0	0
Helena	0	0	0		0	2	0	0
Missoula	0	0	0		0	0	0	1
Idaho:								
Boise	0	0	0		0	0	0	0
Colorado:								
Denver	0	8	3		0	0	5	7
Pueblo	0	0	0		0	0	0	0
New Mexico:								
Albuquerque	0	0	0		0	0	0	0
Arizona:								
Phoenix	0	0	0		0	0	0	0
Utah:								
Salt Lake City	5	2	0		0	1	1	0
Nevada:								
Reno	0	0	0		0	0	0	0
PACIFIC								
Washington:								
Seattle	2	2	1			0	1	
Spokane	0	1	0			0	0	
Tacoma	3	1	1		0	0	0	1
Oregon:								
Portland	1	4	0		0	1	2	3
Salem	0	1	0	3	0	1	0	0
California:								
Los Angeles	1	18	7	12	1	6	2	8
Sacramento	1	1	4		0	2	1	3
San Francisco	4	7	2		0	15	2	7

City reports for week ended September 12, 1931—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	1	0	0	0	0	0	2	0	0	2	28
New Hampshire:											
Concord	0	0	0	0	0	0	0	0	0	0	8
Nashua	0	0	0	0	0	0	0	0	0	0	----
Vermont:											
Barre	0	0	0	1	0	1	0	0	0	0	2
Burlington	0	0	0	1	0	0	0	0	0	4	17
Massachusetts:											
Boston	15	21	0	0	0	8	4	0	0	28	198
Fall River	1	3	0	0	0	0	0	0	0	0	16
Springfield	1	3	0	0	0	1	1	0	0	0	38
Worcester	3	8	0	0	0	2	0	1	0	16	30
Rhode Island:											
Pawtucket	0	0	0	0	0	1	0	1	0	0	13
Providence	2	9	0	0	0	1	0	0	0	1	40
Connecticut:											
Bridgeport	1	0	0	0	0	1	0	0	0	0	19
Hartford	1	0	0	0	0	2	0	1	0	3	45
New Haven	0	0	0	0	0	1	1	0	0	2	53
MIDDLE ATLANTIC											
New York:											
Buffalo	6	8	0	0	0	9	1	0	0	14	139
New York	22	14	0	0	0	82	39	24	1	186	1,239
Rochester	2	9	0	0	0	1	0	1	0	5	57
Syracuse	1	2	0	0	0	0	0	1	0	32	48
New Jersey:											
Camden	0	0	0	0	0	1	0	0	0	6	25
Newark	3	5	0	0	0	10	1	1	0	69	89
Trenton	1	1	0	0	0	3	0	0	1	1	43
Pennsylvania:											
Philadelphia	16	23	0	0	0	23	10	2	0	88	371
Pittsburgh	9	5	0	0	0	3	3	0	0	18	157
Reading	0	0	0	0	0	1	0	0	0	2	26
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	4	12	0	0	0	11	2	2	0	17	123
Cleveland	11	14	0	0	0	18	4	3	1	70	176
Columbus	2	4	0	0	0	4	2	0	0	1	68
Toledo	3	5	0	0	0	5	2	1	0	28	47
Indiana:											
Fort Wayne	0	0	0	0	0	1	1	0	0	0	15
Indianapolis	2	7	0	3	0	7	1	1	0	28	96
South Bend	1	0	0	0	0	2	0	0	0	0	17
Terre Haute	1	0	0	0	0	0	0	0	0	0	11
Illinois:											
Chicago	29	44	0	0	0	47	6	4	0	140	566
Springfield	0	3	0	0	0	0	0	0	0	0	19
Michigan:											
Detroit	23	16	0	0	0	24	4	6	0	107	224
Flint	5	0	0	0	0	1	1	0	0	0	18
Grand Rapids	4	1	0	0	0	1	0	0	0	2	27
Wisconsin:											
Kenosha	0	0	1	0	0	0	0	0	0	1	4
Madison	1	0	0	----	----	----	0	1	----	0	----
Milwaukee	7	4	0	0	0	7	0	0	0	58	86
Racine	2	0	0	0	0	0	1	0	0	3	13
Superior	1	0	0	0	0	0	0	0	0	0	11

City reports for week ended September 12, 1931—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											
Minnesota:											
Duluth	4	5	0	0	0	3	0	0	0	1	29
Minneapolis	12	8	0	0	0	2	1	3	0	10	85
St. Paul	6	0	0	0	0	5	1	2	0	8	52
Iowa:											
Davenport	0	0	0	0			0	0		0	
Des Moines	2	0	0	0			0	0		0	24
Sioux City	0	1	0	0			1	0		8	
Waterloo	0	0	0	0			0	0		2	
Missouri:											
Kansas City	3	2	0	0	0	4	2	0	0	5	76
St. Joseph	1	0	0	0	0	0	0	0	0	0	23
St. Louis	10	3	0	0	0	14	7	2	1	38	201
North Dakota:											
Fargo	0	0	0	0	0	0	1	0	0	6	
Grand Forks	0	0	0	0			0	0		0	
South Dakota:											
Aberdeen	0	4	0	0			0	0		1	
Nebraska:											
Omaha	1	0	1	3	0	2	0	0	0	1	71
Kansas:											
Topeka	1	0	0	0	0	0	0	0	0	0	24
Wichita	1	0	0	0	0	2	1	0	0	0	17
SOUTH ATLANTIC											
Delaware:											
Wilmington	0	1	0	0	0	0	0	1	0	3	25
Maryland:											
Baltimore	5	4	0	0	0	0	8	3	1	93	192
Cumberland	0	0	0	0	0	0	0	1	0	0	14
Frederick	0	1	0	0	0	0	0	0	0	0	2
Dist. of Columbia:											
Washington	5	5	0	0	0	15	3	5	0	32	135
Virginia:											
Lynchburg	0	0	0	0	0	1	1	2	0	1	12
Richmond	3	6	0	0	0	2	2	2	0	1	38
Roanoke	1	1	0	0	0	2	0	1	0	0	9
West Virginia:											
Charleston	1	0	0	0	0	1	2	3	1	1	8
Wheeling	0	0	0	0	0	1	1	1	0	2	18
North Carolina:											
Raleigh	1	1	0	0	0	0	0	0	0	0	12
Wilmington	0	1	0	0	0	0	0	0	0	4	10
Winston-Salem	2	3	0	0	0	0	1	1	0	15	15
South Carolina:											
Charleston	0	1	0	0	0	3	3	1	1	0	39
Columbia	0	0	0	0	0	3	1	1	0	0	29
Greenville	0	0	0	0	0	0	0	0	0	0	
Georgia:											
Atlanta	5	4	0	0	0	2	3	18	0	1	63
Brunswick	0	0	0	0	0	0	0	0	0	0	4
Savannah	0	0	0	0	0	4	1	0	0	1	33
Florida:											
Miami	0	0	0	0	0	0	0	0	0	0	24
Tampa	0	0	0	0	0	0	0	0	0	0	25
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	0	0	0	0	1	0	0	1	0	14
Tennessee:											
Memphis	1	3	0	1	0	4	7	0	1	8	79
Nashville	1	0	0	0	0	3	6	2	0	1	61
Alabama:											
Birmingham	4	6	1	0	0	4	3	0	0	0	58
Mobile	0	1	0	0	0	1	0	1	0	0	14
Montgomery	1	1	0	0			1	3		0	

City reports for week ended September 12, 1931—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	0	0	0	0	----	----	0	0	----	0	----
Little Rock	1	1	0	0	0	1	1	1	0	0	4
Louisiana:											
New Orleans	2	5	0	0	0	9	4	14	2	4	147
Shreveport	1	1	0	0	0	2	0	3	0	7	28
Oklahoma:											
Muskogee	0	0	0	0	0	0	0	0	0	0	----
Oklahoma City	2	1	0	0	0	1	3	3	0	0	28
Tulsa	2	2	0	0	----	----	1	1	----	0	1
Texas:											
Dallas	2	5	0	0	0	4	2	5	1	4	61
Fort Worth	1	6	1	0	0	1	1	2	0	0	24
Galveston	0	0	0	0	0	0	0	0	0	0	7
Houston	1	0	0	0	0	1	1	4	2	0	54
San Antonio	1	0	0	0	0	3	0	0	0	0	59
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	0	0	0	0	2
Great Falls	0	0	0	0	0	0	0	0	0	3	8
Helena	0	0	0	0	0	0	0	1	0	0	8
Missoula	0	0	0	0	0	0	1	1	0	0	11
Idaho:											
Boise	0	0	0	0	0	0	0	1	0	0	9
Colorado:											
Denver	3	6	0	0	0	6	1	0	0	8	79
Pueblo	0	0	0	0	0	0	0	1	0	0	6
New Mexico:											
Albuquerque	0	1	0	0	0	1	1	0	0	3	7
Arizona:											
Phoenix	1	0	0	0	0	3	0	0	0	0	----
Utah:											
Salt Lake City	0	1	1	0	0	3	1	0	0	0	28
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	1
PACIFIC											
Washington:											
Seattle	4	6	0	0	----	----	1	4	----	9	----
Spokane	2	0	1	0	----	----	0	3	----	3	----
Tacoma	0	1	1	0	0	0	1	0	0	1	26
Oregon:											
Portland	3	1	3	3	0	3	0	1	0	2	64
Salem	0	0	1	0	0	0	0	0	0	2	----
California:											
Los Angeles	8	11	1	0	0	24	2	3	0	9	294
Sacramento	0	0	0	0	0	0	0	1	0	1	28
San Francisco	5	2	1	0	0	5	1	3	0	2	161

City reports for week ended September 12, 1931—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	1	1	0
New Hampshire:									
Nashua	0	0	0	0	0	0	0	2	0
Massachusetts:									
Boston	0	0	0	0	0	0	4	53	2
Fall River	0	0	0	0	0	0	1	1	0
Springfield	0	0	0	0	0	0	1	7	0
Worcester	1	0	0	0	0	0	0	9	0
Rhode Island:									
Pawtucket	0	0	0	0	0	0	0	2	1
Providence	0	0	0	0	0	0	0	8	2
Connecticut:									
Bridgeport	0	0	0	0	0	0	1	7	0
Hartford	0	0	1	1	0	0	1	16	3
New Haven	0	0	0	0	0	0	0	13	3
MIDDLE ATLANTIC									
New York:									
New York	7	2	1	1	0	0	13	254	34
Rochester	0	0	0	0	0	0	0	2	0
Syracuse	0	0	0	0	0	0	3	2	1
New Jersey:									
Camden	0	0	0	0	0	0	0	1	0
Newark	0	0	0	0	0	0	1	9	1
Trenton	0	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	0	0	0	0	0	0	1	4	0
Pittsburgh	0	1	2	2	0	0	1	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	0	1	0	0	0	0	1	1	0
Cleveland	0	0	0	0	0	1	2	4	1
Toledo	0	0	1	0	0	0	1	0	0
Indiana:									
Fort Wayne	0	0	0	0	0	0	0	2	1
Indianapolis	0	1	0	0	0	0	0	0	0
Illinois:									
Chicago	2	1	1	0	0	0	4	9	1
Springfield [1]	1	1	0	0	0	0	0	0	0
Michigan:									
Detroit	3	0	1	1	0	0	2	31	2
Flint	0	0	0	0	0	0	0	2	0
Grand Rapids	0	0	0	0	0	0	1	5	1
Wisconsin:									
Madison	0	0	0	0	0	0	0	11	0
Milwaukee	0	0	0	0	0	0	1	4	0
Racine	0	0	0	0	0	0	0	2	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	0	0	0	0	0	0	0	6	0
Minneapolis	1	1	0	0	0	0	0	5	2
St. Paul	0	0	0	0	0	0	0	24	4
Iowa:									
Des Moines	0	0	0	0	0	0	1	1	0
Missouri:									
St. Louis	4	1	0	0	0	0	0	0	0
North Dakota:									
Fargo	0	0	0	0	0	0	0	1	0
Nebraska:									
Omaha	0	0	0	0	0	0	0	1	0
Kansas:									
Topeka	0	0	0	0	0	0	0	1	0

[1] Typhus fever, 7 cases: 4 cases at Springfield, Ill., and 3 cases at Savannah, Ga.

City reports for week ended September 12, 1931—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
SOUTH ATLANTIC									
Maryland:									
Baltimore	0	0	0	0	0	0	1	1	0
District of Columbia:									
Washington	2	1	0	0	0	0	0	0	0
North Carolina:									
Raleigh	0	0	0	0	2	2	0	0	0
Winston-Salem	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	0	1	0	0	0
Columbia	0	0	0	0	0	2	0	0	0
Georgia:									
Savannah [1] [2]	0	0	0	0	0	0	0	1	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	0	0	0	0	1	0	0	2	0
Nashville	1	0	0	0	1	0	0	0	0
Alabama:									
Mobile	1	1	0	0	0	1	0	0	0
Montgomery	0	0	0	0	0	0	0	1	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans	1	0	0	0	1	1	0	0	0
Shreveport	0	0	0	0	0	2	0	0	0
Oklahoma:									
Oklahoma City	0	0	0	1	1	0	0	0	0
Texas:									
Dallas	0	0	0	0	2	1	0	0	0
Houston	1	0	0	0	0	0	0	0	0
San Antonio	0	0	0	0	0	0	0	1	1
MOUNTAIN									
Montana:									
Missoula	0	0	0	0	0	0	0	3	1
PACIFIC									
Washington:									
Seattle	1	0	0	0	0	0	1	0	0
Spokane	0	0	0	0	0	0	0	1	0
California:									
Los Angeles	0	0	0	0	0	0	2	4	0
San Francisco	0	0	0	0	0	1	1	0	0

[1] Typhus fever, 7 cases: 4 cases: at Springfield, Ill., and 3 cases at Savannah, Ga.
[2] Dengue: 2 cases at Savannah, Ga.

The following tables give the rates per 100,000 population for 98 cities for the 5-week period ended September 12, 1931, compared with those for a like period ended September 13, 1930. The population figures used in computing the rates are estimated mid-year populations for 1930 and 1931, respectively, derived from the 1930 census. The 98 cities reporting cases have an estimated aggregate population of more than 33,000,000. The 91 cities reporting deaths have more than 31,500,000 estimated population.

Summary of weekly reports from cities, August 9 to September 12, 1931.—Annual rates per 100,000 population compared with rates for the corresponding period of 1930 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Aug. 15, 1931	Aug. 16, 1930	Aug. 22, 1931	Aug. 23, 1930	Aug. 29, 1931	Aug. 30, 1930	Sept. 5, 1931	Sept. 6, 1930	Sept. 12, 1931	Sept. 13, 1930
98 cities	[2] 32	31	[2] 30	33	[2] 31	38	[3] 37	40	35	44
New England	41	44	67	44	41	53	55	39	58	60
Middle Atlantic	26	22	19	27	18	29	24	29	26	26
East North Central	[2] 30	36	[2] 28	40	[2] 33	45	38	48	32	63
West North Central	36	27	31	25	36	27	[4] 26	35	34	56
South Atlantic	43	38	24	40	63	64	34	66	45	68
East South Central	17	30	35	12	52	12	81	48	99	24
West South Central	47	49	68	63	34	66	[5] 107	56	41	45
Mountain	78	18	44	44	17	70	52	44	26	35
Pacific	31	30	35	22	24	16	27	32	29	22

MEASLES CASE RATES

98 cities	[2] 39	32	[2] 29	28	[2] 22	20	[3] 19	24	14	16
New England	79	65	63	65	63	22	58	36	29	41
Middle Atlantic	32	39	25	31	13	22	14	27	8	19
East North Central	[2] 61	19	[2] 37	21	[2] 23	7	11	12	13	9
West North Central	11	31	13	19	8	27	[4] 9	31	11	15
South Atlantic	10	24	20	20	4	32	8	28	6	6
East South Central	23	18	23	6	6	12	6	24	6	6
West South Central	0	7	7	0	24	10	[5] 0	0	10	3
Mountain	61	44	70	26	52	35	52	53	36	35
Pacific	49	43	22	40	53	30	67	34	45	16

SCARLET FEVER CASE RATES

98 cities	[2] 33	30	[2] 43	32	[2] 41	41	[3] 48	42	49	50
New England	53	56	99	51	46	56	87	60	106	56
Middle Atlantic	31	17	38	25	30	26	37	24	30	26
East North Central	[2] 48	39	[2] 57	35	[2] 43	47	56	47	64	84
West North Central	23	29	19	35	31	43	[4] 30	58	36	35
South Atlantic	22	28	36	30	30	72	51	72	55	56
East South Central	41	48	17	30	70	102	87	60	64	36
West South Central	17	31	27	35	64	14	[5] 55	63	41	24
Mountain	26	44	44	88	165	88	26	35	61	79
Pacific	10	32	31	28	39	26	43	28	39	63

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1931 and 1930, respectively.
[2] Terre Haute, Ind., not included.
[3] St. Paul, Minn., and Fort Smith, Ark., not included.
[4] St. Paul, Minn., not included.
[5] Fort Smith, Ark., not included.

Summary of weekly reports from cities, August 9 to September 12, 1931.—Annual rates per 100,000 population compared with rates for the corresponding period of 1930—Continued

SMALLPOX CASE RATES

	Week ended—									
	Aug. 15, 1931	Aug. 16, 1930	Aug. 22, 1931	Aug. 23, 1930	Aug. 29, 1931	Aug. 30, 1930	Sept. 5, 1931	Sept. 6, 1930	Sept. 12, 1931	Sept. 13, 1930
98 cities	[2] 1	3	[2] 1	2	[2] 1	2	[2] 1	3	1	3
New England	0	0	0	0	0	0	0	0	2	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	[2] 1	3	[2] 0	0	[2] 0	0	4	2	2	2
West North Central	8	6	6	8	4	8	[4] 4	14	6	27
South Atlantic	2	0	4	2	4	0	0	4	0	0
East South Central	0	6	0	0	0	0	0	0	6	0
West South Central	0	3	0	7	0	3	[5] 0	0	0	0
Mountain	9	0	0	0	0	0	0	0	0	0
Pacific	2	12	4	10	4	10	2	12	0	8

TYPHOID FEVER CASE RATES

98 cities	[2] 21	20	[2] 21	19	[2] 22	24	[2] 20	21	23	26
New England	26	5	5	17	22	12	7	12	7	22
Middle Atlantic	14	14	14	13	20	20	13	20	13	24
East North Central	[2] 7	10	[2] 11	9	[2] 10	10	16	12	10	17
West North Central	13	29	19	21	13	19	[4] 6	14	13	21
South Atlantic	77	44	55	60	38	88	49	58	79	70
East South Central	70	132	70	78	47	42	41	48	35	48
West South Central	45	42	91	24	98	66	[5] 76	45	91	52
Mountain	44	26	9	26	9	44	44	9	35	62
Pacific	12	12	8	6	12	8	10	8	27	4

INFLUENZA DEATH RATES

91 cities	[3] 3	1	[3] 2	3	[3] 2	4	[4] 2	3	4	3
New England	0	0	2	0	0	0	2	0	2	0
Middle Atlantic	3	2	2	3	2	3	1	3	4	4
East North Central	[3] 2	0	[3] 2	1	[3] 1	4	1	2	3	3
West North Central	3	3	3	0	3	3	[4] 3	6	9	0
South Atlantic	4	0	6	8	6	8	2	8	2	2
East South Central	6	0	0	0	13	6	6	0	0	19
West South Central	7	0	0	4	0	7	10	11	17	0
Mountain	17	0	0	9	0	0	0	9	0	0
Pacific	2	0	7	7	2	2	2	0	2	0

PNEUMONIA DEATH RATES

91 cities	[3] 45	53	[3] 48	45	[3] 48	52	[4] 50	53	55	54
New England	29	41	36	56	46	51	24	56	58	68
Middle Atlantic	56	68	56	53	60	57	62	65	65	63
East North Central	[3] 37	27	[3] 32	27	[3] 26	50	33	36	36	43
West North Central	44	27	44	36	50	39	[4] 73	51	44	45
South Atlantic	57	74	63	52	69	60	61	68	63	58
East South Central	50	52	57	65	57	45	38	91	82	26
West South Central	52	85	59	57	59	36	83	50	73	57
Mountain	44	123	44	53	61	53	96	53	70	123
Pacific	14	40	53	40	29	45	19	27	46	25

[2] Terre Haute, Ind., not included.
[3] St. Paul, Minn., and Fort Smith, Ark., not included.
[4] St. Paul, Minn., not included.
[5] Fort Smith, Ark., not included.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended September 5, 1931.—The Department of Pensions and National Health of Canada reports cases of certain communicable diseases for the week ended September 5, 1931, as follows:

Province	Cerebro-spinal fever	Dysentery	Poliomyelitis	Smallpox	Typhoid fever
Prince Edward Island [1]					
Nova Scotia					1
New Brunswick					3
Quebec			69		30
Ontario	2		13		20
Manitoba			1		4
Saskatchewan		5	1	3	1
Alberta					1
British Columbia			2	1	2
Total	2	5	86	4	62

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

Quebec Province—Communicable diseases—Week ended September 5, 1931.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended September 5, 1931, as follows:

Disease	Cases	Disease	Cases
Chicken pox	4	Poliomyelitis	82
Diphtheria	33	Scarlet fever	24
Erysipelas	4	Tuberculosis	40
Measles	4	Typhoid fever	25
Mumps	1	Whooping cough	20

Ontario—Communicable diseases—Comparative—Five weeks ended August 29, 1931.—The Department of Health of the Province of Ontario, Canada, reports certain communicable diseases for the five weeks ended August 29, 1931, as follows:

Disease	1930		1931	
	Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis	27	4	9	1
Chancroid	1			
Chicken pox	218		173	
Conjunctivitis	1			
Diphtheria	225	13	153	5
Dysentery	1			1
Erysipelas		1	2	
German measles	14		20	
Gonorrhea	204		224	
Influenza	9	2		
Lethargic encephalitis		1	3	1
Measles	201		675	
Mumps	28		103	
Paratyphoid fever	2		165	2
Pneumonia		74		65
Poliomyelitis	175	16	35	3
Puerperal septicemia	2	2		
Scarlet fever	182	3	150	
Septic sore throat	3		1	
Smallpox	22		10	
Syphilis	187	1	117	
Tetanus	1	1	1	1
Trachoma			1	
Trench mouth			1	
Tuberculosis	98	91	161	63
Tularaemia			2	
Typhoid fever	71		131	5
Undulant fever	10		28	
Whooping cough	367	3	514	7

DENMARK

Communicable diseases—June, 1931.—During the month of June, 1931, cases of certain communicable diseases were reported in Denmark, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	5	Paratyphoid fever	9
Chicken pox	27	Poliomyelitis	1
Diphtheria and croup	188	Puerperal fever	8
Erysipelas	216	Scabies	510
German measles	6	Scarlet fever	181
Gonorrhea	806	Syphilis	106
Influenza	2,930	Tetanus	3
Lethargic encephalitis	5	Undulant fever (bac. abort. Bang)	67
Measles	2,771	Whooping cough	1,443
Mumps	278		

GREAT BRITAIN

England and Wales—Vital statistics—April–June, 1931.—During the second quarter of the year 1931, 163,874 births and 114,700 deaths were registered in England and Wales, giving a birth rate on an annual basis of 16.5 per 1,000 population and a death rate of 11.5 per 1,000. The figures are provisional. The mortality of infants under 1 year of age was 58 per 1,000 live births.

During the 13 weeks ended July 4, 1931, deaths from certain communicable diseases were reported in 107 county boroughs and great towns, including Greater London, as follows:

Disease	Number of deaths	Death rate per 1,000 population	Disease	Number of deaths	Death rate per 1,000 population
Diarrhea and enteritis (under 2 years)	532	6.4	Scarlet fever	65	0.01
Diphtheria	297	.06	Smallpox	4	----
Influenza	753	.15	Typhoid fever	20	----
Measles	482	.10	Whooping cough	315	.06

Deaths from certain communicable diseases in 159 smaller towns for the quarter ended June 30, 1931, were as follows:

Disease	Deaths	Disease	Deaths
Diarrhea and enteritis (under 2 years)	72	Scarlet fever	19
Diphtheria	54	Smallpox	1
Influenza	267	Typhoid fever	6
Measles	141	Whooping cough	69

England and Wales—Communicable diseases—Thirteen weeks ended July 4, 1931.—During the 13 weeks ended July 4, 1931, cases of communicable diseases were reported in England and Wales as follows (civilians only):

Disease	Cases	Disease	Cases
Diphtheria	11,107	Puerperal pyrexia	1,385
Ophthalmia neonatorum	1,431	Scarlet fever	18,727
Pneumonia	11,369	Smallpox	1,649
Puerperal fever	638	Typhoid fever	464

JAMAICA

Communicable diseases—Four weeks ended August 15, 1931.—During the four weeks ended August 15, 1931, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island of Jamaica, outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Cerebrospinal meningitis	----	1	Puerperal fever	----	2
Chicken pox	1	4	Scarlet fever	----	8
Dysentery	----	2	Tuberculosis	34	91
Leprosy	----	2	Typhoid fever	17	99

PORTO RICO

San Juan—Communicable diseases—Four weeks ended August 15, 1931.—During the four weeks ended August 15, 1931, cases of certain communicable diseases were reported in San Juan, Porto Rico, as follows:

Disease	Cases	Disease	Cases
Diphtheria	5	Typhoid fever	1
Malaria	64	Whooping cough	7
Tetanus	2		

SAMOA

Influenza epidemic.—Information received from the Navy Department under date of September 29, 1931, reports the occurrence of an epidemic of influenza at Samoa, with 1016 cases reported on September 28. There had been reported 2020 cases to date, and it was said that the epidemic was spreading rapidly throughout the islands. It was estimated that there were 1,000 more cases in outlying districts. The type of disease was considered mild. There had been one death in a native.

VIRGIN ISLANDS

Communicable diseases—August, 1931.—During the month of August, 1931, cases of certain communicable diseases were reported in the Virgin Islands as follows:

St. Thomas and St. John:	Cases	St. Croix:	Cases
Sprue	1	Gonorrhea	1
Syphilis	10	Syphilis	5
		Tuberculosis	1

YUGOSLAVIA

Communicable diseases—August, 1931.—During the month of August, 1931, certain communicable diseases were reported in Yugoslavia, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	195	21	Poliomyelitis	1	
Cerebrospinal meningitis	7	3	Scarlet fever	426	41
Diphtheria	669	84	Sepsis	3	2
Dysentery	581	66	Tetanus	56	31
Erysipelas	173	15	Typhoid fever	495	48
Measles	96	5	Typhus fever	3	
Paratyphoid fever	40	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		Mar. 8–Apr. 4, 1931	Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	Week ended— July, 1931 4	July, 1931 11	July, 1931 18	July, 1931 25	August, 1931 1	August, 1931 8	August, 1931 15	August, 1931 22	August, 1931 29	September, 1931 5	September, 1931 12	September, 1931 19
Ceylon: Colombo	C	1		1	1					1	1	1					
	D			1	1					1	1	1					
China:																	
Canton	C		1	2	1									1	1		
	D			1													
Shanghai	C						1				1	5	1	1	3		
Swatow	C				10	7											
Tientsin	C			1	10												
	D			1	1												
India	C	8,968	11,462	13,604	18,001	4,737	5,002	5,707	6,628								
	D	4,550	5,767	7,270	10,337	2,677	2,848	3,064	3,504								
Bombay	C		2				1	11	11	9	18	6	11	27	5		
	D		1					6	10	4	9	7	5	9	5		
Calcutta	C	436	310	265	292	72	62	55	48	42	27	20	21	10	3		
	D	256	176	149	168	35	34	58	28	10	7	7	6	4	2		
Karikal	C	12	19	12								1					
	D	12	14	7								1					
Madras	C	20	26	52	9	2	2			1		2	3	3	1		
	D	10	13	17	4												
Moulmein	C							1									
	D							1									
Negapatam	D													1			
Rangoon	C			2	4		1	2	1		1	1					
	D			1	2			1			1	1					
Vizagapatam	C				1												
India (French):																	
Chandernagor	C	7	6	4	3	1	1	1	2	1	4	2					
	D	6	5	4	3		1			1	4	2					
Pondicherry	C	100	24	17	3		1	1	1	1	1	1					
	D	18	4	7	3		1	1	1	1		1					
India (Portuguese)	C				1		2				1						
	D						1				1						

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

CHOLERA—Continued

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

Place		Mar. 8–Apr. 4, 1931	Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	Week ended— July, 1931 4	11	18	25	August, 1931 1	8	15	22	29	September, 1931 5	12	19
Indo-China (see also table below):																	
Cochin-China—Rachgia	C									P							
Pnompenh	C		2		1		1	4			1		1				
	D	1	1	2	1		1	1			1						
Saigon and Cholon	C	5	27	104	61	8	3	3									
	D	5	22	76	41	3	2	2									
Iraq:																	
Abulkhasib	C													6			
	D													5			
Amara	C												2	22	35	8	1
	D												1	21	30	7	1
Amara Province	C													6	11	106	73
	D													5	4	67	44
Basra	C									3	9	263	272	148		54	91
	D									2	8	140	137	76		30	48
Basra Province	C												5	14	6	10	23
	D												2	10	3	7	10
Muntafiq Province	C													10	21	66	123
	D													8	20	42	75
Nasiriyah	C														22	50	16
	D														15	40	20
Suqelshuyukh	C													2			
	D													2			
Persia: Rafsanjan [1]	C			36													
	D			14													
Philippine Islands: [2] Provinces—																	
Capiz	C	48	29	17	4										9	9	17
	D	41	24	15	4										5	6	5
Cebu	C										1	1	1				
	D										1	1	1				
Iloilo	C	7			26	24	3										
	D	4			21	22	3										
Masbate	C	21															
	D	9															

Negros, Occidental	C				2														
	D				1														
Pampanga	C			1															
Siam	C	10	16	14	4	1	1		1										
	D	2	4	5	2		1												
Ayudhaya District	C	1																	
Bangkok	C	3	3	3	1	1			2			1							
	D	2	2	1	1				2										
Bismulok Province	C	8																	
	D	2																	
On vessel:																			
S. S. Arankola at Rangoon from Calcutta	C			1															
S. S. City of Eastborne, at Calcutta from Cocanada	C				1														
S. S. Tairea, at Penang from Calcutta	C				1														
S. S. Bandar Shalpour, at Bushire, Persia, from Basra	C								1										
	D								1										
S. S. Kohistan, at Basra from Bushire, Persia	C								2										
S. S. Cathay at Kobe, Japan, from Shanghai	C													4					
	D													1					

[1] From May 3 to 25, 1931, 152 cases of cholera with 75 deaths were reported in Rafsanjan and vicinity, Karman district, Persia.
[2] Figures for cholera in the Philippine Islands are subject to correction.

Place		February, 1931	March, 1931	April, 1931	May, 1931			June, 1931			July, 1931			Aug. 1-10, 1931
					1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	
Indo-China (French) (see also table above):														
Cambodia [1]	C	125	79	58		44	40	83	96		72	82	87	12
Cochin-China [1]	C	29	105	62		52	75	71	69		66	30	47	39

[1] Reports incomplete.

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

PLAGUE

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

Place		Mar. 8–Apr. 4, 1931	Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	Week ended— July, 1931 4	11	18	25	August, 1931 1	8	15	22	29	September, 1931 5	12	19
Algeria:																	
Algiers	C	1								2							
	D	1															
Bone	C				1												
Philippeville	C							1				1	1				
	D							1				1					
Argentina: San Juan Province	C							P	P								
Belgian Congo	C	2			1												
	D	2			1												
British East Africa (see also table below):																	
Tanganyika	C	8	18	46	17			6				8					
	D	1	21	30	10			6				2					
Uganda	C	19	35	138	298	95	132	93	93								
	D	19	32	126	286	94	129	96	90								
Ceylon: Colombo	C	8	4	3	2				1	4	1	1			1		
	D	7	3	3	2				1	4	1	1			1		
Plague-infected rats		4	1	5						1	3	4					
China:																	
Amoy [1]	C			1													
	D			1													
Changchuanpu	C																18
Dutch East Indies:																	
Batavia and West Java	C	84	74	59	116	21	18	19	17	12							
	D	80	71	59	66	21	18	19	17	12							
East Java and Madura	C	4	1	1													
	D	4	1	1													
Java and Madura	D	277	243	176	192	59	55	52	66	38	53	67					
Egypt:																	
Alexandria	C	1			4	1	1	2	9	4	3	1	1		2		1
	D				4	1			4	1	2				1		
Assiout	C	13	32	18	11												
	D	6	17	7	1												
Beni-Suef	C		12	5													
	D		3	3													
Beheira	C									1		1			2		

Cairo	C	1															
Dakahlia	C							1			2						
Deirout	C		3	10	3												
	D		1	4	1												
Gharbieh	C				1												
	D				1												
Girga	C	86	44	7		1											
	D	24	22	2													
Kena	C	5	3	1													
	D	2	1	1													
Manfalut	C	17															
	D	3															
Minieh	C	3	1	6	3	10		2									
	D	2		3	1	2		1	1								
Port Said	C				3	1	1	2	1	2							
	D			1	2	1											
Tanta	C											2			1		1
Hawaii Territory:																	
Hawaii—Hamakua—Plague-infected rats				1								1					
Maui Island—																	
Haliimaile—Plague-infected rats																	1
Kula District	C										1						
	D										1						
India	C	9,139	0,142	752	88	30	29	78	84								
	D	7,037	5,199	692	51	15	13	42	68								
Bassein	C		1	1		1			3		1		1		1		
	D		1	1		1			2		1		1		1		
Bombay	C	4	11	8		1	1	11									
	D	3	11	6				6									
Plague-infected rats		70	137	94	37	11	16	9	12	8	13	17	9	23	17		
Burma	C							7	9								
	D							5	5								
Calcutta	C		2														
	D		2														
Madras Presidency	C	23	3	2	6	1	2	8	10					9	6		
	D	21	2	1	1		1	1	7					4	5		
Moulmein	C							1						P	5		
	D							1							4		
Rangoon	C	1	1	2	1			2		1							
	D	1	1	2	1			1		1							
Plague-infected rats		7	4	7	3	1	2	2	1	1		1	1	1			
Indo-China (see also table below): Pnompenh	C				2												
	D	6	4		2												
Iraq:																	
Baghdad	C	8	23	23	23	1	1	1				1			1	1	
	D	5	8	9	9	1		1									
Maudhan	C			2													
Madagascar (see also table below): Tamatave	C									1						2	
Nigeria: Lagos	C		5														
	D		5														
Plague-infected rats			6														

[1] On July 27, 1931, 1,250 cases of plague were reported in Chiobe and Changchow, China, since April.

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

PLAGUE—Continued

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

Place		Mar. 8–Apr. 4, 1931	Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	Week ended— July, 1931 4	11	18	25	August, 1931 1	8	15	22	29	September, 1931 5	12	19
Peru (see table below).																	
Senegal (see table below).																	
Siam	C	31	1	2	1												
	D	7	1	2	1												
Bangkok	C	29															
	D	6															
Nagara Rajsima	C	1															
Spain: Hospitalet—Barcelona Province	C												5	1			
	D												2				
Syria: Beirut	C						1		1			1				1	
Tripolitania	C	1															
Tunisia: Tunis	C	10	16	16	11												
	D	4	8	3	1												
Union of South Africa:																	
Cape Province	C		3														
Orange Free State	C	6	2	2													
	D	1	2	2													

Place		Mar., 1931	Apr., 1931	May, 1931	June, 1931	July, 1931	Aug., 1931
British East Africa (see also table above):							
Kenya	C	7	345	245	154	484	
Indo-China (see also table above)	C	4	11		2	1	
	D		2		2	1	
Madagascar (see also table above):							
Ambositra Province	C	70	30	19	15	1	
	D	86	29	18	15	1	
Antisirabe Province	C	83	48	7	12		
	D	74	47	7	12		
Miarinarivo Province	C	19	6	2		8	
	D	19	6	2		7	
Moramanga Province	C	1		2	1	1	
	D	1		2			
Tananarive Province	C	90	41	18	10	5	
	D	81	40	18	9	5	

Place		Mar., 1931	Apr., 1931	May, 1931	June, 1931	July, 1931	Aug., 1931
Peru	C	8	8	2	5	2	
	D	2	1		1		
Senegal:							
Baol [1]	C			4		27	101
	D			3		13	58
Dakar [1]	C		2	63	64	95	194
	D		1	49	56	73	106
Louga [1]	C	14	1	5	4	3	2
	D	6		2	2	1	1
Rufisque [1]	C			1	2	34	2
Thies [1]	C				12	16	26
	D				3	7	16
Tivaouane [1]	C		4	19	3	3	
	D			11	2	2	

[1] Reports incomplete.

SMALLPOX

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

Place		Mar. 8–Apr. 4, 1931	Apr. 5–May 2, 1931	May 3–30, 1931	Week ended— June, 1931 6	13	20	27	July, 1931 4	11	18	25	August, 1931 1	8	15	22	29	September, 1931 5	12
Algeria;																			
Algiers	C	2	2	1		7	1				1								
Constantine	C	1		1					1									1	
Belgian Congo	C			47	27	15													
Bolivia.[1]																			
Brazil: Porto Alegre (alastrim)	C	49	53	19	2	3			9	10	9	13	11						
	D	1			1					1			1						
British East Africa: Tanganyika	C	8		13			1	6	37	83		29	1						
	D	3							7	5		5							
British South Africa:																			
Northern Rhodesia	C									21									
Southern Rhodesia	C					1				2									
Canada:																			
Alberta	C										1				1				
British Columbia	C											2	2			3		1	1
Manitoba	C				4														
Winnipeg	C																		1
Nova Scotia	C		1																
Ontario	C		9	17	25		4	3	14	3	6	12	1		2	2	4		
Kingston	C	1	5															1	
Ottawa	C						1												1
Sault Ste. Marie	C		4	1															
Toronto	C	2	4	1			1												
Quebec	C								1										
Saskatchewan	C	58	46	48	7	16	18	13		13	10	19		10	6	10	8	8	3
Regina	C	2	2	2															
Canary Islands: Las Palmas	C	1																	
Chile:																			
Antofogasta	C								1										
Chanaral	C			1															

[1]An epidemic of smallpox was reported on May 18 with 716 cases and 314 deaths since the middle of April, 1931, in Mendez Province, Bolivia.

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

SMALLPOX—Continued

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

Place		Mar. 8–Apr. 4, 1931	Apr. 5–May 2, 1931	May 3–30, 1931	Week ended— June, 1931 6	13	20	27	July, 1931 4	11	18	25	August, 1931 1	8	15	22	29	September, 1931 5	12
China:																			
Amoy	C	1	2	6	1	2		1	1	1			1						
	D	1	1	3	1	1		1	1	1			1						
Canton	C	7	4	3			1		1			1					1		
Foochow	C	P	P	P		P						P		P					
Hankow	C	3	3	5	1	1	1	1	1										
Hong Kong	C	2	3	1															
	D	2	1	2															
Manchuria—																			
Harbin (see also table below)	C	2		3															
Kwantung—Dairen	C	2	2	2	1														
Nanking	C	P	P	P															
Shanghai—																			
Foreigners only	C	6	17	7	2	6	2	1	2	1									
Including natives	D	10	18	7	1	5	4	3	2	1	2	1				1	1		
Swatow	D	26	2																
Tientsin	C			2						2	1								
Chosen (see table below).																			
Colombia: Cali	D			1															
Dutch East Indies:																			
Batavia and West Java	C	1		2															
East Java and Madura	C			1															
Finland	C		1																
France (see table below).																			
Great Britain:																			
England and Wales	C	795	744	570	83	94	62	48	56	45	50	36	26	25	19	21	33		
Bradford	C	2	6	8			5												
Leeds	C	1	2	2															
London	C	147	227	183	25	50	31	16	21	9	12	12	6	12	4	4	8		
London and Great Towns	C	544	558	403	57	84	49	38	53	33	34	32	22	20	17	10	13		
	D		2		1				1										
Sheffield	C	10	7																
Greece (see table below).																			

Honduras:																			
Tegucigalpa	C		1																
Tela	C		1																
India	C	11,791	14,265	11,403	2,170	1,856	1,622	1,665	1,492	1,376	1,236	1,255							
	D	2,251	2,923	1,849	465	474	376	389	404	363	292	293							
Bassein	C			1															
Bombay	C	10	8	9		2	1	3		1	3	2	1		1			1	
	D	4	5	4		1	1	3		1	3	2	1					1	
Calcutta	C	382	287	89	14	19	14		11	6	2	2	4	4		5	2	1	
	D	203	224	75	12	18	11		9	4	3	2		4		5	2	1	
Cochin	C	46	39	3										1	1	1			
Karachi	C	4	6				2						1						
	D	2					1												
Madras	C	22	19	8			1	1		2			1					1	
	D	3	5	6				1											
Negapatam	C		3				2	1			1			2			3		
Rangoon	C	3	11	13		1	4	1	2		1		2		1	1	1		
	D	1	1	5		1		1	1				1			1			
Vizagapatam	C	2	10	6	2	1		3	2		2	1		3		2	3		
	D	1	2	1		1		1	1					3		1	3		
India (French):																			
Chandernagor	C	14	10	7			1		2		1								
	D	2	7	5					2										
Karikal	C	3	4	4	1	2		3	1	1	1	1	1	1	3				
	D		3	4	1	2		3	1	1	1	1	1	1	2				
Pondicherry Province	C	14	6	11	3	2	1	1	4	1		23	11			3	1	6	
	D	14	9	11	3	2	1	1	4	1		23	11			3	1	6	
India (Portuguese)	C	8	21	3															
	D	3	6	1															
Indo-China (see also table below):																			
Pnompenh	C	1		1	2														
	D			1															
Saigon and Cholon	C	8	1	2					1			2	1	1			1		
	D	8	1	1					1				1				1		
Iraq:																			
Baghdad	C		2	3		1													
	D			2															
Basra	C			2		1													1
Mosul Liwa	C																		
Ivory Coast (see table below).																			
Japan: Nagoya	C										1					1			
Mexico (see also table below):											1								
Jalisco (State)—Guadalajara	D	1	1	2		1			1	1		1			2				
Mexico City and surrounding territory	C	33	43	45	5	4	16		12	5	4	1	8	2			2		
	D	22	14	11	4	3	6		4	3	1		1	1					
Monterrey	C				1														
Torreon	C		1	1			1	2										1	
	D		2				1	1											
Vera Cruz	C	2	2	1															

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

SMALLPOX—Continued

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

Place		Mar. 8–Apr. 4, 1931	Apr. 5–May 2, 1931	May 3–30, 1931	Week ended— June, 1931 6	13	20	27	July, 1931 4	11	18	25	August, 1931 1	8	15	22	29	September, 1931 5	12
Morocco (see table below).																			
Nigeria: Lagos	C	2																	
Poland	C			3	1	1		1		17		1							
Portugal: Lisbon	C	52	56	67	5	17	12	14	15	12	18		17	12	8		10	21	
Rumania (see table below).																			
Siam	C		1	6			4	1		1									
	D			1				1			1								
Spain	C	P									7								
Straits Settlements	C	4	10	2										1					
	D	1	5	2															
Sudan (Anglo-Egyptian)	C	8	3	6		1												32	
	D	2		2														6	
Sudan (French) (see table below).																			
Syria (see table below).																			
Tunisia: Tunis	C	4																	
Turkey (see table below).																			
Union of Socialist Soviet Republics (see table below).																			
Union of South Africa:																			
Cape Province	C	P	P	P															
Orange Free State	C	P	P	P	P	P	P	P	P	P	P								
Transvaal	C	P					P		P	P	P								
Upper Volta	C	3	3	88	11		1		1		1								
	D	1		1															
On vessel:																			
S. S. Rotterdam at Naples from Venice	C	1																	
S. S. Clan McTavish at Manila from Chittagong	C		1																
S. S. Taif (pilgrim ship) at Suakin from Jeddah	C		1													1			
S. S. Talodi at Suakin	C			1															

Place		Jan., 1931	Feb., 1931	Mar., 1931	Apr., 1931	May, 1931	June, 1931	July, 1931
China: Harbin (see also table above)	C			7		13	10	
Chosen	C	1		11		1	4	
	D	1		3				
France	C	4	16	15	6	54		
Greece	C		4			3	1	
Mexico (see also table above)	D		3		1	1	2	
Morocco	C		4	6	7	49	48	23
Rumania	C				1		1	
Turkey	C	63	37	1		9	1	
	D	7	6					
Union of Socialist Soviet Republics:								
Territories in Asia	C	194	532					
Ukraine	C	44	23					
Other territories in Europe	C	896	1,577					
Railroads, etc	C	43	77					

Place		January, 1931	February, 1931	March, 1931	April, 1931	May, 1931			June, 1931			July, 1931			August, 1931		
						1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31
Indo-China (see also table above)	C	141	168	264	142		17	41	30	16	1	1		7	29		
Ivory Coast	C																7
Sudan (French)	C			4													
Syria: Beirut	C	1								1							

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

TYPHUS FEVER

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

Place		Mar. 8–Apr. 4, 1931	Apr. 5–May 2, 1931	May 3–30, 1931	Week ended— June, 1931 6	13	20	27	July, 1931 4	11	18	25	August, 1931 1	8	15	22	29	Sept. 5, 1931
Algeria:																		
Algiers	C	3	3	7	4	4		1			2							
Bone	C														1	1		
Constantine Department	C	3	9	22	6	3	1	16	2		1		3					
Oran	C		1	2	2									1				1
Australia, Western	C	1	1	1														
Bulgaria	C	9	30	16	11	10	6	3										
	D	2	3	4	2	1	1	2										
China:																		
Canton	C	1																
Manchuria—Harbin	C	3	8					16										
Shanghai	C										1							
Tientsin	C		2															
Chosen (see table below).																		
Czechoslovakia (see table below)																		
Egypt:																		
Alexandria	C		1		1	1		1										
Beheira Province	C		4															
	D		2															
Cairo	C																1	
Eritrea: Asmara	C	1																
Great Britain: Scotland—Fife County	C			1														
Greece (see table below).																		
Guatemala [1] (see table below).																		
Iraq: Baghdad	C	2		2														
	D			2														
Irish Free State:																		
Cork County—																		
Schull	C									1								
Skibbereen	C					1		1	1									
Kerry County—																		
Dingle	C			1														
Listowel	C							1										

Limerick County—																		
Limerick	C								2				1					
Michelstown	C								1									
Mayo County—																		
Belmullet	C			1														
Westport	C															1		
Japan	C							1										
Latvia (see table below).																		
Lithuania (see table below).																		
Mexico (see also table below):																		
Durango	D											1						
Mexico City, including municipalities in Federal District	C	216	170	75	7	12	27		28	9	7	9	7	6		5		
	D	84	56	33	4	4	11		4	3	2	3	5	3		2		
San Luis Potosi	C	5	3	2						1	3					1		
Torreon	C											1						
	D											1						
Morocco	C	7	13	42		31	42	28	37	20	24	21		2	1	5		
	D		1	4		2	3	1	4	4								
Palestine	C	5	5	4		2	3		2				3	3	1	4		
Panama Canal Zone—Balboa	C			2														
Paraguay: Asuncion	D	1																
Poland	C	287	538	298		48	33	16	9	17	13	14	10	4	10	7	6	
	D	15	28	18		2	1	1	2	1	1	1	1		1			
Rumania	C	214	70	169	42	16	12	10	2	2	7							
	D	16	8	18	4	7	2		2	2	1							
Syria	C			4														
Tunisia:																		
Sbeitla, vicinity of	C	20	12															
	D	7																
Sfax	C	2																
Tunis	C	14	13	29		64	9		1			1						
	D			3		4												
Turkey (see table below).																		
Union of Socialist Soviet Republics (see table below.)																		
Union of South Africa:																		
Cape Province	C	1	P	P	P	P	P		P	P	P	P						
Municipality of East London	C	P					1						1					
Natal	C	1	P	P	P	P	P	P			P	P						
Orange Free State	C	P	P	P	P	P	P		P	P	12	P						
Transvaal	C	P	P	P	P	P	P		P	P	P	P						
Yugoslavia (see table below).																		

[1] On Feb. 27, 1931, the Director General of Public Health of Guatemala reported an unusua loutbreak of typhus fever in a small village in Guatemala.

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

TYPHUS FEVER—Continued

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

Place		Feb., 1931	Mar., 1931	Apr., 1931	May, 1931	June, 1931	July, 1931
Chosen: Seoul	C	124	3	4	-------	6	-------
	D	8	-------	1	-------	1	-------
Czechoslovakia	C	26	-------	5	11	2	-------
Greece	C	17	8	22	6	9	1
	D	2	1	3	-------	-------	-------
Guatemala	C	-------	-------	-------	-------	33	34
	D	-------	-------	-------	-------	15	5
Latvia	C	12	-------	-------	-------	-------	-------
Lithuania	C	3	99	34	10	13	-------
	D	1	3	5	-------	2	-------
Mexico (see also table above)	D	83	-------	-------	-------	-------	-------
Turkey	C	18	15	-------	3	3	2
Union of Socialist Soviet Republics:							
Territories in Asia	C	260	-------	-------	-------	-------	-------
Ukraine	C	419	-------	-------	-------	-------	-------
Other territories in Europe	C	1,373	-------	-------	-------	-------	-------
Railroads, etc	C	158	-------	-------	-------	-------	-------
Yugoslavia	C	12	10	43	14	2	3
	D	-------	1	5	-------	-------	-------

YELLOW FEVER

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

Place		Mar. 8–Apr. 4, 1931	Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	Week ended— July, 1931: 4	11	18	25	August, 1931: 1	8	15	22	29	September, 1931: 5	12	19
Brazil;																	
Alagoas State	C	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	-------	-------	-------	-------
	D	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	-------	-------	-------	-------
Bahia State	C	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Ceara State	C	2	2	1	1	-------	-------	-------	-------	-------	-------	-------	1	-------	-------	-------	-------
	D	-------	2	1	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	-------	-------	-------
Minas Geraes State	C	2	5	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	1	2	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Rio de Janeiro State	C	2	-------	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Cambucy	C	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Sergipe State	C	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
British Cameroons: Mamfe	C	-------	-------	3	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	-------	-------	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Colombia—Magdalena Province—Near Cienaga	C							4										
Gold Coast:																		
Akuse	C					2												
	D					1												
Dagomba District	C									2								
Kintampo	C							1										
	D							1										
Oda	C																	1
	D																	1
Tamale	C						2											
	D						2											
Wale Wale	C									1								
	D									1								
Ivory Coast:																		
Bobo Dioulasso	C						1											
	D						1											
Grand Bassam	C									4								
Kong Circle	C							4										
Seguela	C													P				
Nigeria: Abakaliki	C											1						
	D											1						
Senegal: Podor (Hinterland)	C													1				
	D													1				
Sudan (French)	C							4	P									
Upper Volta:																		
Banfora	C								2									
	D								1									
Ouagadougou	C													1				

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