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STUDIES ON LEPTOSPIRA ICTEROHEMORRHAGIAE

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Several thousand rats are examined monthly at the Federal laboratory, San Francisco, Calif. Opportunity was therefore offered to inquire into the presence of *Leptospira icterohemorrhagiae* among wild rats in this locality. Rats are ordinarily caught in snap traps, brought dead to the laboratory, and examined the following day. Most of the rats in this series were examined on the day after their capture in snap traps.

During March, 1930, 50 rats were examined as to the presence of *Leptospirae*.¹ One kidney was exposed, and with sterile forceps a small piece of macerated kidney tissue was rubbed up in a drop of salt solution and examined by dark-field illumination. Each slide was observed for about 10 minutes unless the organisms were found sooner. Only adult rats of the *norvegicus* species coming from areas near the slaughterhouse district and water front in San Francisco and Oakland were examined.

Leptospirae were found by dark-field examination in the kidneys of 17 rats, or about one-third of the total. No doubt a larger percentage could be found infected by more critical examinations and animal inoculations from rats captured alive.

Noguchi (1) describes and defines the morphology and characteristics of *Leptospira icterohemorrhagiae* and says that the American strains in wild rats are the same as the European and Japanese strains. The *Leptospirae* from rats' kidneys seen by dark field in this study apparently agree with the description of Noguchi as to size, shape, and motility.

Animal inoculations.—Kidneys from rats found to be infected upon dark-field examinations were ground up in salt solution and used for the inoculation of guinea pigs. Ten pigs were inoculated with material from 17 rats. Inoculations were made subcutaneously or by rubbing infected material on the shaved and abraded abdomen. Six pigs failed to develop leptospirosis.

¹ Acknowledgment is made of the assistance of Senior Surg. J. C. Perry, in charge of the laboratory, and Technicians M. Burkel and E. M. Tennis.

Inoculations were successful in four pigs. These developed fever and jaundice of eyes, skin, and mucous membranes. One pig recovered, and at autopsy on the twenty-first day all internal organs were apparently normal and examinations for *Leptospirae* were negative. The remaining three pigs upon autopsy showed jaundice of subcutaneous tissues and hemorrhages of subcutaneous tissues, lungs, and intestines. These symptoms and findings in guinea pigs are typical of infection with *Leptospira icterohemorrhagiae*.

Emulsions of internal organs from these pigs were pathogenic in successive guinea-pig inoculations, and the strains were carried along for several passages, producing fever, with loss of appetite, emaciation, and jaundice. Pigs as a rule began to have fever in 3 to 6 days and died in 9 to 12 days. Temperature was subnormal for a day or two before death. Upon autopsy the lungs were found studded with punctate hemorrhagic areas. The spleen was usually normal in size but dark in color. The liver was usually normal in size, but often with a yellowish tinge and friable in consistency. Suprarenals were often found enlarged. Two pigs which recovered from the infection became blind. *Leptospirae* were frequently but not always found by dark-field examination of the organs of pigs showing typical symptoms of infection. They were found in the kidneys, urine, and liver tissue. It was noted after several months that the infection apparently became less virulent, and several pigs recovered after having fever and jaundice for several days.

Discussion.—Inada and his associates (2) in 1914 discovered the spirochetal origin of a severe febrile jaundice endemic in Japan. The same organism was later found by English, German, French, and Italian investigators in cases of febrile jaundice occurring among soldiers in the trenches, and it was agreed that the disease was the same as Weil's disease, which had been described in 1886. Inada describes the symptoms which occurred in guinea pigs injected with blood from human cases. Fever as high as 40° was present on the fourth to fifth day after intraperitoneal inoculation, with loss of appetite, conjunctival congestion, anemia, jaundice, and albuminuria. Hemorrhages were noted at autopsy. He describes the spirochete involved.

Noguchi (3) reports the finding of *Leptospira icterohemorrhagiae* in American wild rats in the vicinity of New York. This organism was pathogenic for pigs in 9 to 12 days and when cultivated was found to agree in agglutination and immunity reactions with *Leptospirae* cultivated in Japan and Europe. Jobbing and Eggstein (4) report the finding of *Spirocheta icterohemorrhagica* in at least 10 per cent of more than 100 rats examined in Nashville, Tenn. Guinea pigs, after inoculation, died in 12 to 14 days, showing jaundice of sclera and

mucous membranes before death and yellowing of subcutaneous tissues. Spirochetes were found in organs and urine.

Blumer (5) reports various epidemics of infectious jaundice occurring in the United States for the last 100 years and distinguishes these epidemics from the sporadic cases of Weil's disease, or *spirochetosis icterohemorrhagiae*. Ido and associates (6) report the finding of *Spirocheta icterohemorrhagiae* in the kidneys of 40.2 per cent of 149 *Mus decumanus* [*Rattus norvegicus*] and in 0.8 per cent of 24 *Mus* [*Rattus*] *alexandrinus* examined in Japan. When inoculated into guinea pigs it caused death in 8 to 11 days.

Langworthy and Moore (7) give a detailed discussion of infectious jaundice and Weil's disease. They report finding that about 40 per cent of 69 rats in Albany, N. Y., had *Leptospirae* in their kidneys. Guinea pigs, when inoculated, showed fever, jaundice, albuminuria, and, at autopsy, hemorrhages. The incubation period in pigs was about 48 hours, and death often occurred in 5 to 6 days.

Noguchi (8) found that 67 per cent of wild rats and mice tested in Guayaquil harbored in their kidneys a *Leptospira* which produced in guinea pigs symptoms and lesions identical with those produced by *Leptospira icterohemorrhagiae* derived from patients in Japan and Europe and wild rats from New York.

Middleton (9) examined 235 rats near Oxford, England, and demonstrated that about 41.7 per cent of them had *Leptospirae* in their kidneys.

Cameron (10) examined 78 rats in Toronto, Canada, and demonstrated *Leptospirae* in their kidneys in 37 per cent. This organism was pathogenic for guinea pigs, causing jaundice and capillary hemorrhages. McKinley (11) has also studied the same problem in the Philippine Islands and found a small percentage of infected rats. The organism has also been reported in rats from London, North Africa, and, more recently, from Russia.

The fact seems established that rats in many parts of the world harbor a *Leptospira* which is pathogenic for guinea pigs and is identical with the organism causing Weil's disease, or leptospirosis, with jaundice in humans. The identity has been established by immunity reactions between the human and rat strains.

Epidemiology.—Weil's disease is not found in extensive epidemics, but sporadic cases occur, chiefly among males exposed to contamination by dirty surface waters or damp soils. Most cases have been reported among troops in trenches, sewer workers, swimmers in canals, and those exposed to muddy water. It is possible that human infection comes through the broken skin contaminated by dirty water or mud.

Leptospira icterohemorrhagiae is not considered to be pathogenic for wild rats. On the other hand a proportion of adult rats of the

norvegicus species are probably chronic carriers of this organism, which is excreted in the urine and so contaminates soil and water. It may be spread from rat to rat by food contaminated with urine or by other means.

Free-living *Leptospirae* of a nonpathogenic type are also commonly found in surface waters and slime. The relationship of the pathogenic and nonpathogenic types is still a matter for study.

Morphology.—Noguchi describes the *Leptospira* as a tightly and regularly wound cylindrical filament tapering to sharply pointed extremities, and with hooks on one or both ends. It is active in motion, having a flexible wavy motion and a rotary motion forward and backward. Length is usually between 7μ and 14μ ; it may be shorter or extend in length to 30μ . The number of spirals varies with the length, but the distance between spirals equals 0.5μ .

Staining.—Specimens from rats and guinea pigs were stained by Giemsa stain after the process recommended by Noguchi (1) with fairly satisfactory results. Staining is by no means as practical as the use of the dark field for the detection of infected rats.

Culture.—Attempts were made to culture the organism from the tissues of all guinea pigs which had lesions indicating infection with *Leptospira icterohemorrhagiae*. Four positive cultures were obtained, and three were used for the inoculation of pigs. Two cultures were obtained from kidney tissue, one from liver, and one from blood. Two of the pigs inoculated from cultures died from the infection and one recovered. These showed the characteristic symptoms of fever and jaundice and lesions with hemorrhages. The *Leptospira media*, as described by Noguchi (12), was used.

SUMMARY

Leptospirae were found in the kidneys of wild rats from San Francisco Bay cities. These apparently conform to the descriptions of *Leptospira icterohemorrhagiae*.

Guinea pigs were inoculated with material from the kidneys of rats harboring *Leptospirae* and died, showing fever and jaundice of the eyes and skin before death. At autopsy they showed subcutaneous jaundice and hemorrhages of subcutaneous tissues and internal organs, which are the gross pathological changes described by several writers as typical of infection with *Leptospira icterohemorrhagiae*.

Leptospirae were found in the internal organs and urine of infected guinea pigs. Positive cultures were obtained.

Guinea pigs were infected by injection of positive cultures. The disease was carried over in successive guinea-pig inoculations, both from original rat injections and from culture injections.

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

Review of the More Important Activities During the Fiscal Year Ended June 30, 1930

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

STATISTICAL

The continued gradual increase in the number of new lepers annually hospitalized suggests the prediction that the peak load has not yet been reached. Estimates made 10 years ago of the probable number of cases of leprosy in the United States, based on the number of reported cases, placed the leprosy population at about 1,100. Subsequent experience has taught that this estimate was very nearly correct.

During the fiscal year ended June 30, 1930, 112,923 days of relief were furnished, 55 new patients were admitted, 7 absconded, 6 absconders were readmitted, 1 was deported as not entitled to hospitalization at the expense of the Government, 22 died, 1 paroled patient returned with leprosy symptoms recurring, and 3 paroled patients returned for surgical or medical assistance required for the relief of symptoms only secondarily related to their former leprosy.

Twenty-three patients were paroled with leprosy arrested and as no longer a menace to public health; eight additional patients complied with the requirements for parole, but due to deformities and disfigurements which could not be corrected, these patients elected to remain in the hospital rather than be subjected to hardships and humiliations, the inevitable outlook of many paroled lepers.

Nativity of patients in hospital

Alabama.....	2	Hawaiian Territory..	9	Pennsylvania.....	1
Arkansas.....	1	Indiana.....	1	Philippine Islands...	7
Bahama Islands...	2	India.....	2	Porto Rico.....	6
Bermuda Islands...	2	Ireland.....	1	Portugal.....	3
Brazil.....	1	Italy.....	8	Rhode Island.....	1
British Guiana.....	2	Jamaica.....	1	Russia.....	6
British West Indies..	5	Japan.....	1	Society Islands.....	1
California.....	5	Louisiana.....	103	South Carolina.....	1
Canada.....	2	Maryland.....	1	Spain.....	6
Cape Verde Islands..	1	Mexico.....	37	Tahiti Islands.....	1
Central America.....	1	Mississippi.....	2	Texas.....	28
China.....	14	Missouri.....	1	Virginia.....	1
Dutch Guiana.....	1	New Jersey.....	1	West Indies.....	1
Finland.....	1	New York.....	2	Wisconsin.....	2
Florida.....	13	North Carolina.....	1		
France.....	1	Ohio.....	1		308
Georgia.....	3	Palestine.....	1		
Greece.....	12	Panama.....	1		

Admissions July 1, 1929-June 30, 1930, by State or country

Alabama.....	1	Indiana.....	1	Spain.....	2
Brazil.....	1	Italy.....	1	Tahiti.....	1
British West Indies..	1	Louisiana.....	20	Texas.....	5
California.....	1	Mexico.....	13	Wisconsin.....	1
Germany.....	1	Philippine Islands...	1		
Georgia.....	1	Porto Rico.....	1		55
Hawaii.....	1	Russia.....	2		

LEPRA THERAPY

There were admitted to the infirmaries 186 patients—126 males and 60 females. Approximately 20 men and women are permanently invalidated, due to debilities which render them helpless.

On many occasions both men's and women's infirmaries have been so crowded that it has been necessary to treat patients in their quarters. The average stay in the infirmary for patients admitted for acute conditions was two weeks, although a number remained as long as three to four months.

Of the 308 patients, 163 are taking chaulmoogra oil by mouth as routine treatment, the dosage ranging from 5 drops to 375 drops daily. One hundred and twenty patients are taking biweekly intramuscular injections of benzocaine-chaulmoogra oil, 5 c. c. at each injection, as routine treatment; and a survey of this group shows a general improvement in nearly all patients.

The out-patient clinic has cared for 754 patients during the past year. This number includes station employees and their families.

Twenty patients were under experimental treatment with vaccinated calf serum during the year, 10 of whom continued throughout the year, during which time 650 injections of 1.5 c. c. at weekly

intervals have been given. Three of these patients have had one or two negative bacteriological tests for the first time, but later showed positive tests. All but one have been free of marked leprosy reactions and have shown general improvement, with quite noticeable clearing of extensive skin manifestations in several.

The local irritation produced by the unconcentrated serum is quite severe but disappears within 24 hours, with little or no general symptoms. Three patients showed immediate reaction symptoms, relieved by adrenalin, and subsequently discontinued the treatment.

A group of nine recent admissions were given four weekly injections of 1.5 c. c. of vaccinated calf serum taken one month after height of vaccinia, and were then vaccinated with smallpox vaccine by pressure method. Five of these showed previous scars and gave immune reactions; the other four gave typical takes. It seems probable, therefore, that the serum of vaccinated calves does not carry immune bodies, at least sufficient in dosage given to produce immune effect.

The use of mercurochrome with glucose intravenously in dosage just below that giving sharp reaction has continued to give good results in the comparatively few cases in which it has been used. The use of mercurochrome in similar dosage, alternating with sulpharsphenamine, in patients showing resistant positive Kolmer and Kahn tests has been recently tried, and of 7 patients the Kolmer has been changed favorably in 5, the Kahn in 4, and in 3 patients the change was in agreement. Only one case showed a negative test (Kolmer). In view of the practical difficulty in giving mercury to leper patients taking chaulmoogra oil by mouth and intramuscularly, this experiment will be continued in a larger group.

One patient who had improved under mercurochrome, which had to be discontinued on account of vein obliteration, was given neutral acriflavine orally in keratinized capsules, with exposure to ultraviolet light two hours after the daily dose of the drug. During about three months of this treatment, the patient has continued general improvement.

High-frequency fulguration by dessication and coagulation has given good service in removal of discrete leprosy nodules, and even large patches. The smaller areas show practically no scars, and the larger leave smooth pliable scar tissue.

Following the recent introduction of para-thio-cresol as a stimulator of healthy granulation tissue, this preparation is being used experimentally. The results so far indicate that a valuable means for such cell stimulation has been found.

DERMATOLOGIC SERVICE

A survey of the total number of patients in the leprosarium, made during the last year, revealed the fact that certain anatomical skin

regions were comparatively more immune to leprous nodular lesions than were other skin areas. The results of this investigation were published in the Archives of Dermatology and Syphilology.

Twenty-five patients are being given weekly intramuscular injections of hydnocarpus ethyl esters. The maximum dose up to the present time has been 3 c. c. There has been but little discomfort caused by the injections, either locally or from systemic reaction. No abscesses have resulted nor has there been any appreciable infiltration in the gluteal muscles at the site of injection. The esters were obtained through the courtesy of Dr. H. I. Cole, of the Philippine Health Service, Culion Leper Colony, P. I. It is thought that improvement in some cases might be attributed to this medication.

The ethyl esters of chaulmoogra oil are still being administered intramuscularly, but to a diminishing number of patients. The decrease in the popularity of the ethyl esters may, in part, be due to a disposition on the part of patients to seek relief by some of the newer treatments, especially the successful combination of chaulmoogra and benzocaine.

Glandular extracts are still being administered in a few selected cases. Up to the present time there has not been noted any marked influence on the course of leprosy from the administration of these extracts which, until now, have been given in very small doses.

It is still noted that crude chaulmoogra oil, by oral administration is of benefit in those cases in which there is a tolerance for large doses. Arsenic by mouth (Fowler's solution) is being used in those patients whose lesions exhibit acute inflammation. The arsenic seems to be of great benefit in this type, especially in those cases in which in addition to the inflammatory reaction in skin and nerve, there is also elevation of body temperature.

EYE, EAR, NOSE, AND THROAT SERVICE

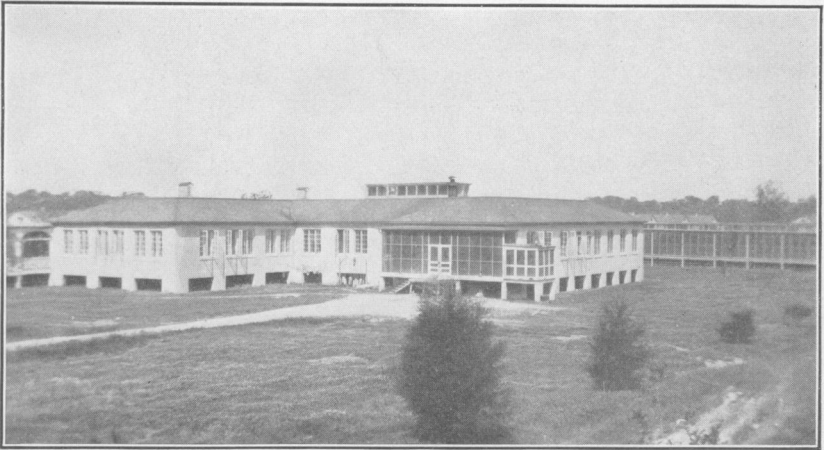
The seriousness of eye conditions coexisting with leprosy, prompted the hospital, in 1922, to begin intensive work with the hope that treatment might alleviate some suffering and that prophylaxis might retard the appearance of new eye disorders.

During the ensuing eight years, much has been accomplished and the results have more than justified the effort. Prophylaxis was not entirely satisfactory, however, and a broadening of the field for further experimentation was suggested, and the scope of the ophthalmologic clinic has been enlarged to include ear, nose, and throat.

Students of leprosy have long known of the devastation of leprosy in the nasal passages and of the progress of the disease into the respiratory tracts. The nasal passages frequently show definite pathology of leprosy before symptoms of eye disease are detected. It therefore seems a logical step to concentrate on these contiguous regions with



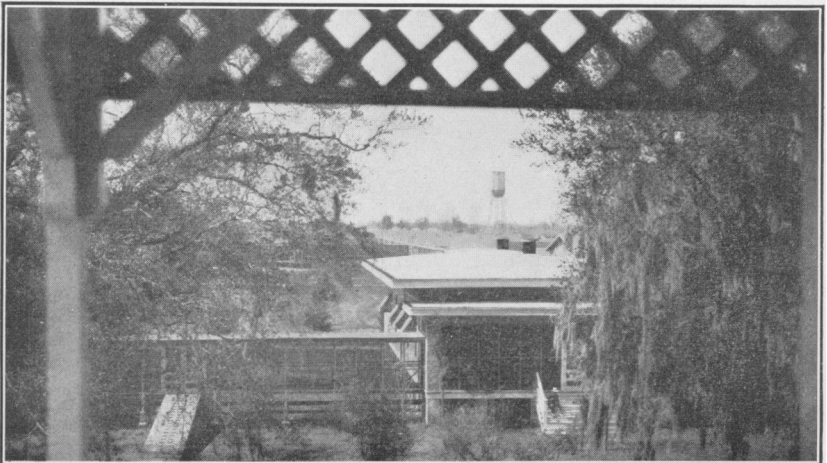
NEW ENTRANCE GATE TO THE NATIONAL LEPER HOME



NEW KITCHEN AND MESS HALL



OBSERVATION TOWER BUILT BY PATIENTS FROM WHICH TO WATCH THE RIVER TRAFFIC



VIEW OF SOME OF THE PATIENTS' COTTAGES FROM THE OBSERVATION TOWER

the hope that leprous invasion might be stopped in its local position and not be permitted to invade the eye regions by mechanical contamination from the nasal discharges or otherwise.

The treatment of nasal lesions is being carried on by daily local treatments in more than 200 lepers, and the results of this experiment will be the subject of subsequent report.

NEUROPSYCHIATRIC SERVICE

During the fiscal year, 45 new patients, ranging in age from 10 to 72 years were examined, 33½ per cent of whom were in their third decade of life. There were 30 males and 15 females of various nationalities, Mexican predominating (26 per cent). Seventy-nine old patients were examined and advised therapeutically concerning neurological manifestations.

While routine neurological examinations were made, it became quite evident that many of the painful manifestations of leprosy were due to involvement of nerve roots, clinical evidence of the encroachment of the lepra organism in more centrally located nerve tissue.

Twenty-three patients, candidates for parole, were examined. Many of these presented marked improvement in their neurological symptoms. Some who presented marked evidence of sensory modality changes were found greatly benefited and normal sensation reappeared.

At the time of this report seven patients were confined to the psychopathic ward, and there was an equal number with abnormal mental conditions not requiring confinement. One female patient, after a severe manic depressive episode of 13 months' duration, is showing marked improvement. It is known that this is not her first manifestation of this complication. One male patient, after satisfying parole requirements, developed a psychoneurotic manifestation of the hysterical type. This soon cleared after his return home on parole. One patient of the paranoid dementia præcox type caused considerable concern.

One patient soon after his admission to the hospital developed epileptoid convulsions, which increased in number and severity, often taking the form of status epilepticus. During the latter month or so of his life he was almost continually in a state of convulsion. All therapeutic and dietetic measures proved to be unavailing. The gross post-mortem findings showed an edematous brain. The brain now preserved in formalin is the subject of minute pathologic study.

One patient showed marked amelioration, if not complete disappearance, of prolonged melancholic state. This improvement in his mental condition followed *pari pasu* the amelioration in his leprous condition. At the time of examination before his discharge, this depressed and melancholic state had completely disappeared.

One patient, after a stay of 5½ years in this institution, still presented a catatonic type of schizophrenia. After his leprosy had been arrested, he was returned to his home.

A tentative survey of the personality reactions of the individual patients with a view of determining abnormal reactions in this sphere is in progress. Insufficient data precludes a report at this time.

ORTHOPEDIC SERVICE

The majority of cases under treatment have attended regularly and persistently. Marked improvement has been noted in some, and gradual improvement in all cases applying for treatment regularly.

Hot boracic acid soaks followed by wet compresses of the same have continued to produce the best results in ulcerative and suppurative conditions of the hands and feet.

During the year Viosterol (irradiated ergosterol) has been used in certain bone cases where necrosis and suppurations were present and also in certain ulcerative skin lesions. In these cases the lesions healed more rapidly than similar lesions in patients not taking Viosterol; the patients report feeling better, possessing more energy, and have gained weight.

A few patients with claw hand deformity have consented to wear splints during the night and an earlier correction of such deformities is to be anticipated.

DENTAL SERVICE

Dental service continues with an increase of treatments rendered owing to increase of patients admitted to the hospital. A gradual decrease in the percentage of oral ulcers and pyorrhea alveolaris has been observed. In two patients recently admitted, sections were made of gum tissue labially of incisors, which revealed presence of organisms morphologically resembling Hansen's bacillus.

Dental service has consisted principally of full and partial denture constructions, extractions, miscellaneous treatments, crown and bridge work, prophylaxis, and, in a small percentage of patients, postoperative treatments.

X-RAY DEPARTMENT

The routine Röntgenologic examination of lepers has continued with increasing interest. The bone pathology of leprosy is so complex and the pictures are so susceptible to variations due to physical and technical factors, that interpretations, particularly of progress, are made only with great caution. Much of the work has been

the reexamination of patients under observation for deficiencies in deposition of calcium, the clinical experiments being observed and in a measure controlled through X-ray and blood serum analysis.

The recognition of the different degrees of decalcification and resorption require the most balanced judgment. Normal individuals and advanced cases of nerve leprosy, with marked calcium unbalance, have been rayed on the same plate and the pictures were sometimes indistinguishable from each other. The main factors, which are prominent in effecting the decalcification of bone, are present in a very large majority of our cases, namely, chronic infection, local vascular disturbances, nerve involvement, disuse, and probably other unknown factors.

Besides the common leprotic changes presented in a bone picture of leprosy, which include atrophy, hypertrophy, resorption to the extent of complete disappearance of the phalanges of both hands and feet, there is presented also marked rarefaction. The clinical, Röntgenologic, and physiochemical data in many of our cases do not correlate, a high calcium balance showing, very often, a marked osteoporosis and vice versa.

LABORATORY SERVICE

Experimental.—During the last 12 months several experimental treatments have been supervised by the laboratory section. Fifty-nine patients received 2,433 subcutaneous injections of smallpox virus. Some very encouraging results were noted. Local heat applications to circumscribed lepromata on the exposed surfaces of the body continue in popularity with the patients, and 666 such treatments were given during the year.

Encouraging results have been obtained by the addition of anti-neuritic vitamine "B" to the diet of certain cases, particularly those who have been showing chronic toxic symptoms of intestinal origin. The action of antirachitic vitamine "D" contained in preparations of Viosterol (irradiated ergosterol), cod-liver oil, and irradiated yeasts, and of paroidin (parathyroid extract), both with and without the addition of calcium lactate, is being studied on the total calcium, diffusible calcium, and phosphorus of the sera of lepers and also on the clinical symptoms of patients who are deficient in diffusible calcium. A preliminary report of this work is being submitted for publication.

Laboratory examinations.—The following blood examinations were made during the year:

Kolmer's quantitative complement fixation.....	179	Blood albumens.....	45
Kahn's precipitation test.....	179	Erythrocyte sedimentation.....	123
Erythrocyte counts.....	48	Creatinine.....	1
Leucocyte counts.....	117	Hydrogen ion concentration.....	18
Differential leucocyte counts....	118	Sugar.....	3
Malaria.....	100	Urea nitrogen.....	1
Blood serum calcium total.....	289	Uric acid nitrogen.....	1
Blood serum calcium diffusible..	289	Total nitrogen.....	8
Blood serum inorganic phosphorus.....	282	Cholesterol.....	2
Blood proteins.....	56	Hemoglobin.....	42
Blood globulins.....	45	Chloride.....	2
		Unclassified.....	11
		Coagulation time.....	4

Miscellaneous laboratory examinations during the year totaled 5,280, in addition to which 508 clinical photographs were made.

NURSING SERVICE

There exists, as in the past, a commendable spirit of cooperation and enthusiasm on the part of the nursing staff. This attitude of the nursing staff is especially essential to vitalize the work, which in its nature so severely taxes the physical and mental resources of the individual. The range of efficiency of the patient-orderly personnel is considerably reduced by the fact that all the leper orderlies and attendants are handicapped by a disabling chronic disease which reduces their output approximately 50 per cent.

FARM AND DAIRY

The dairy at present consists of 68 milch cows, 4 bulls, and 11 young stock. There were 41,893 gallons of milk produced in the last 12 months, at a saving of \$2,840.29. Pork, beef, fruit, vegetables and alfalfa hay produced on the 64 acres of pasture land and 26 acres of agricultural land effected a saving of \$2,583.91, making a total saving on farm and dairy of \$5,424.20 for the 12-month period. Sixty-nine acres of swamp land are a total loss, due to overflows after rains, rendering this area useless for either pasture or planting.

MAIL AND LIBRARY

Outside of regular office routine, the incoming and outgoing mail for the station consists of approximately 90,000 letters yearly and 100,000 papers, books, magazines, and packages. Of this number 10 daily newspapers and 40 monthly and weekly magazines are purchased by the Government for use by the patients.

During the fiscal year 89 volumes of popular fiction were purchased from the "Leper Patients' Benefit Fund."

DEATHS DURING WEEK ENDED DECEMBER 13, 1930

Summary of information received by telegraph from industrial insurance companies for the week ended December 13, 1930, and corresponding week of 1929. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

	Week ended December 13, 1930	Corresponding week, 1929
Policies in force.....	75, 006, 785	75, 198, 818
Number of death claims.....	14, 526	14, 796
Death claims per 1,000 policies in force, annual rate.....	10. 1	10. 3

Deaths¹ from all causes in certain large cities of the United States during the week ended December 13, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

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

City	Week ended Dec. 13, 1930				Corresponding week 1929		Death rate ¹ for first 50 weeks	
	Total deaths	Death rate ²	Deaths under 1 year	Infant mortality rate ³	Death rate ²	Deaths under 1 year	1930	1929
Total (78 cities).....	7, 686	11. 6	684	55	13. 3	764	11. 9	12. 7
Akron.....	46	9. 4	6	55	8. 7	4	7. 8	9. 4
Albany.....	38	15. 5	3	62	18. 2	6	14. 8	16. 3
Atlanta.....	86	16. 7	11	112	15. 5	10	16. 5	16. 0
White.....	41		3	48		3		
Colored.....	45	(⁹)	8	230	(⁹)	7	(⁹)	(⁹)
Baltimore.....	189	12. 3	12	42	16. 8	16	14. 0	14. 6
White.....	147		10	44		9		
Colored.....	42	(⁹)	2	32	(⁹)	7	(⁹)	(⁹)
Birmingham.....	46	9. 2	4	38	13. 9	7	13. 6	15. 8
White.....	22		1	16		1		
Colored.....	24	(⁹)	3	73	(⁹)	6	(⁹)	(⁹)
Boston.....	212	14. 1	18	52	14. 2	17	14. 0	14. 9
Bridgeport.....	30	10. 6	4	68	8. 2	4	10. 8	11. 9
Buffalo.....	122	11. 1	14	62	16. 4	16	12. 9	14. 0
Cambridge.....	26	11. 9	3	60	13. 8	4	11. 8	12. 6
Camden.....	28	12. 5	5	88	20. 9	8	13. 6	14. 4
Canton.....	19	9. 4	2	53	8. 5	1	9. 8	11. 2
Chicago.....	708	10. 9	61	54	11. 7	64	10. 4	11. 3
Cincinnati.....	124	14. 4	7	41	16. 7	12	15. 6	17. 0
Cleveland.....	174	10. 0	15	45	13. 8	22	11. 0	12. 4
Columbus.....	86	15. 5	9	89	15. 5	7	15. 4	14. 8
Dallas.....	53	10. 5	7		14. 8	4	11. 4	11. 6
White.....	42		6			3		
Colored.....	11	(⁹)	1		(⁹)	1	(⁹)	(⁹)
Dayton.....	44	11. 4	1	15	13. 0	5	10. 8	11. 5
Denver.....	93	16. 8	3	33	16. 1	8	14. 9	14. 8
Des Moines.....	29	10. 6	3	55	7. 0	1	11. 6	11. 5
Detroit.....	258	8. 5	46	71	10. 9	57	9. 2	11. 1
Duluth.....	28	14. 4	2	54	12. 4	1	11. 5	11. 5
El Paso.....	35	17. 8	9		19. 2	7	17. 1	19. 4
Erie.....	18	8. 1	2	44	13. 2	7	11. 0	12. 0
Fall River.....	19	8. 7	0	0	15. 0	0	11. 6	13. 4
Flint.....	17	5. 6	5	59	6. 9	3	9. 0	10. 6
Fort Worth.....	33	10. 7	3		9. 5	4	11. 0	12. 3
White.....	18		2			3		
Colored.....	15	(⁹)	1		(⁹)	1	(⁹)	(⁹)
Grand Rapids.....	39	12. 0	3	45	6. 3	3	10. 2	10. 1
Houston.....	77	13. 7	10		11. 9	4	12. 3	12. 6
White.....	49		5			3		
Colored.....	28	(⁹)	5		(⁹)	1	(⁹)	(⁹)
Indianapolis.....	82	11. 7	5	38	15. 9	9	14. 4	14. 8
White.....	68		4	35		9		
Colored.....	14	(⁹)	1	58	(⁹)	0	(⁹)	(⁹)
Jersey City.....	55	9. 1	6	52	12. 9	6	11. 3	12. 4
Kansas City, Kans.....	28	11. 9	1	23	11. 6	1	11. 7	12. 7
White.....	25		1	28		1		
Colored.....	3	(⁹)	0	0	(⁹)	0	(⁹)	(⁹)
Kansas City, Mo.....	97	12. 8	3	25	14. 9	13	13. 4	14. 0
Knorrville.....	30	14. 7	1	23	11. 1	3	13. 5	13. 8
White.....	22		1	26		2		
Colored.....	8	(⁹)	0	0	(⁹)	1	(⁹)	(⁹)

Footnotes at end of table.

Deaths¹ from all causes in certain large cities of the United States during the week ended December 13, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Dec. 13, 1930				Corresponding week 1929		Death rate ² for first 50 weeks	
	Total deaths	Death rate ²	Deaths under 1 year	Infant mortality rate ³	Death rate ²	Deaths under 1 year	1930	1929
Los Angeles.....	268	10.8	28	85	14.2	28	11.0	11.3
Louisville.....	49	8.3	3	26	17.8	5	13.4	15.2
White.....	33		3	30		5		
Colored.....	16	(⁴)	0	0	(⁴)	0	(⁴)	(⁴)
Lowell ⁵	23	12.0	1	26	15.5	2	13.3	14.1
Lynn.....	30	15.3	2	56	18.4	5	10.4	11.4
Memphis.....	72	14.8	9	106	15.0	4	16.9	18.9
White.....	43		4	72		3		
Colored.....	29	(⁴)	9	168	(⁴)	1	(⁴)	(⁴)
Milwaukee.....	107	9.8	11	48	12.0	18	9.8	10.9
Minneapolis.....	120	13.5	14	92	10.6	3	10.8	10.8
Nashville.....	42	14.9	3	47	22.0	3	17.2	18.7
White.....	26		3	63		3		
Colored.....	16	(⁴)	0	0	(⁴)	0	(⁴)	(⁴)
New Bedford ⁷	19	8.8	2	51	11.5	0	10.9	11.9
New Haven.....	29	9.3	3	46	16.4	3	12.5	13.5
New Orleans.....	152	17.3	18	100	20.5	15	17.4	17.8
White.....	87	(⁴)	11	93		9		
Colored.....	65	(⁴)	7	113	(⁴)	6	(⁴)	(⁴)
New York.....	1,368	10.2	117	49	11.9	114	10.7	11.3
Bronx Borough.....	178	7.3	11	32	8.2	18	7.8	8.2
Brooklyn Borough.....	470	9.4	32	34	10.6	43	9.7	10.2
Manhattan Borough.....	528	14.9	54	69	17.5	38	16.0	16.3
Queens Borough.....	155	7.4	16	64	9.0	13	7.0	7.6
Richmond Borough.....	37	12.2	4	78	12.5	2	13.9	15.9
Newark, N. J.....	99	11.6	4	21	14.2	8	11.9	12.7
Oakland.....	63	11.5	2	25	11.4	6	11.0	11.3
Oklahoma City.....	36	10.1	1	18	14.5	6	11.0	11.0
Omaha.....	68	16.5	7	85	12.8	2	13.5	13.5
Paterson.....	22	8.3	2	35	17.7	4	12.0	13.4
Philadelphia.....	461	12.2	48	71	13.7	46	12.5	13.1
Pittsburgh.....	193	15.0	19	67	15.5	30	13.8	14.8
Portland, Oreg.....	66	11.5	3	37	12.3	4	12.2	12.7
Providence.....	52	10.8	5	46	17.9	7	12.9	14.5
Richmond.....	55	15.7	5	73	14.6	6	14.9	16.2
White.....	27		3	66		3		
Colored.....	28	(⁴)	2	85	(⁴)	3	(⁴)	(⁴)
Rochester.....	55	8.8	4	36	13.1	6	11.6	12.3
St. Louis.....	212	13.4	7	24	15.7	10	14.0	14.6
St. Paul.....	56	10.7	2	20	11.3	4	10.1	10.6
Salt Lake City ⁴	40	14.8	4	63	12.4	2	12.6	13.0
San Antonio.....	68	13.8	5	17	17.9	9	14.3	14.7
San Diego.....	45	15.7	1	21	20.0	3	14.5	15.1
San Francisco.....	170	14.1	9	61	13.3	5	13.2	13.1
Schenectady.....	19	10.3	2	62	13.7	1	11.1	12.1
Seattle.....	87	12.5	8	81	10.4	7	10.9	11.2
Somerville.....	21	10.5	3	95	10.6	0	9.6	9.2
Spokane.....	22	9.9	0	0	16.3	2	12.4	12.8
Springfield, Mass.....	32	11.1	2	34	13.4	3	12.0	12.6
Syracuse.....	42	10.5	4	49	11.4	6	11.7	12.9
Tacoma.....	38	18.5	2	55	11.8	2	12.5	11.8
Toledo.....	76	13.6	9	83	15.2	5	12.6	13.7
Trenton.....	41	17.4	5	96	18.7	6	16.7	17.0
Utica.....	17	8.6	0	0	10.2	3	14.4	15.4
Washington, D. C.....	133	14.2	9	53	17.0	17	15.2	15.4
White.....	76		6	52		12		
Colored.....	57	(⁴)	3	64	(⁴)	5	(⁴)	(⁴)
Waterbury.....	19	9.8	2	49	9.3	4	9.4	9.3
Wilmington, Del. ⁷	30	14.9	4	96	11.9	3	14.6	13.8
Worcester.....	51	13.5	3	42	8.5	3	12.6	12.5
Yonkers.....	23	8.8	5	119	10.2	1	8.1	9.4
Youngstown.....	36	11.0	3	43	13.9	6	10.4	12.3

¹ Deaths of nonresidents are included. Stillbirths are excluded.

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

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

⁴ Data for 73 cities.

⁵ Deaths for week ended Friday.

⁶ For the cities for which deaths are shown by color the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 28; 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 December 20, 1930, and December 21, 1929

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 20, 1930, and December 21, 1929

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929
New England States:								
Maine.....	5	1	2	21	37	6	0	0
New Hampshire.....	1	5			26	13	0	0
Vermont.....	3	1				6	0	0
Massachusetts.....	79	126	6	9	308	89	1	1
Rhode Island.....	7	4				1	0	0
Connecticut.....	14	21	2	9	77	4	0	3
Middle Atlantic States:								
New York.....	118	171	123	163	136	368	10	16
New Jersey.....	79	116	18	18	140	78	1	7
Pennsylvania.....	147	150			457	391	7	6
East North Central States:								
Ohio.....	42	43	9	18	87	357	0	4
Indiana.....	38	19	12		125	21	3	18
Illinois.....	173	223	8	24	290	322	11	10
Michigan.....	64	99	8	4	49	113	5	15
Wisconsin.....	21	21	24	32	197	589	1	4
West North Central States:								
Minnesota.....	20	26		2	5	131	1	1
Iowa.....	17	6			4	134	2	0
Missouri ¹	17	36	4	13	8	30	3	16
North Dakota.....	2	2				20	0	0
South Dakota.....	13				2	14	0	1
Nebraska.....	18	26	8			140	0	1
Kansas.....	15	24	1	1	7	71	1	2
South Atlantic States:								
Delaware.....	3	3		3	2		0	0
Maryland ²	32	24	14	53	38	15	1	1
District of Columbia.....	14	13	1	1	16		0	0
West Virginia.....	34	20	26	13	23	221	0	1
North Carolina.....	76	73	16	39	52	3	0	0
South Carolina.....	19	20	516	653	25		0	0
Georgia.....	16	11	81	63	25	14	2	0
Florida.....	24	12	1	2	38	9	1	0

¹ New York City only.

² Figures for 1930 are exclusive of St. Louis.

³ Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 20, 1930, and December 21, 1929—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929
East South Central States:								
Kentucky.....						189	0	0
Tennessee.....	19	4	76	63	29	7	1	2
Alabama.....	43	82	91	117	61	9	0	1
Mississippi.....	20	29					2	1
West South Central States:								
Arkansas.....	5	14	28	102		4	0	7
Louisiana.....	26	41	10	25		16	1	9
Oklahoma ⁴	47	45	87	84	38	28	2	2
Texas.....	55	112	60	80	51	10	1	0
Mountain States:								
Montana.....	5	4			1	14	1	1
Idaho.....					10	58	1	0
Wyoming.....	2	2	2		1		0	0
Colorado.....	10	7			17	27	0	6
New Mexico.....	10	5	16	6	76	1	0	4
Arizona.....	5	15	2	29	15	4	4	9
Utah ¹	2	3	18		2	25	2	3
Pacific States:								
Washington.....	24	6		2	20	67	0	2
Oregon.....	7	13	10	17	46	11	0	1
California.....	61	78	73	42	223	216	5	10

Division and State	Pollomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929
New England States:								
Maine.....	0	0	33	51	0	0	7	10
New Hampshire.....	0	0	1	21	0	0	1	0
Vermont.....	0	0	5	11	0	1	0	0
Massachusetts.....	8	1	206	255	0	0	4	5
Rhode Island.....	0	0	22	16	0	0	0	0
Connecticut.....	0	1	87	85	0	0	3	3
Middle Atlantic States:								
New York.....	3	0	464	336	4	10	16	10
New Jersey.....	1	1	172	146	0	0	4	4
Pennsylvania.....	5	1	450	418	0	2	20	19
East North Central States:								
Ohio.....	3	2	387	187	49	161	19	7
Indiana.....	0	1	199	76	71	119	5	3
Illinois.....	6	0	344	491	61	115	16	14
Michigan.....	3	4	191	263	45	35	5	1
Wisconsin.....	12	0	146	102	7	40	5	9
West North Central States:								
Minnesota.....	7	1	55	126	13	11	1	3
Iowa.....	3	2	90	65	33	85	3	4
Missouri ²	1	0	55	85	7	30	4	13
North Dakota.....	0	0	21	24	9	18	3	1
South Dakota.....	2	0	17	19	16	17	1	0
Nebraska.....	3	1	61	50	81	62	1	1
Kansas.....	1	0	50	96	33	37	5	6
South Atlantic States:								
Delaware.....	0	0	11	5	0	0	0	1
Maryland ³	0	0	92	82	0	0	10	4
District of Columbia.....	1	0	22	22	0	0	2	0
West Virginia.....	2	1	53	60	9	25	18	7
North Carolina.....	1	2	65	74	3	13	8	3
South Carolina.....	1	0	21	8	0	3	11	7
Georgia.....	0	0	51	4	0	0	5	0
Florida.....	1	1	12	17	0	5	1	1
East South Central States:								
Kentucky.....	1	0	34	23	0	5	13	7
Tennessee.....	0	0	29	17	2	7	2	0
Alabama.....	0	1	54	30	1	4	2	22
Mississippi.....	0	0	21	21	4	0	7	5

¹ Figures for 1930 are exclusive of St. Loui's.

² Week ended Friday.

⁴ Figures for 1930 are exclusive of Oklahoma City and Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 20, 1930, and December 21, 1929—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929	Week ended Dec. 20, 1930	Week ended Dec. 21, 1929
West South Central States:								
Arkansas.....	0	1	8	23	3	6	18	2
Louisiana.....	0	0	15	17	6	2	35	13
Oklahoma.....	1	0	31	47	44	26	24	6
Texas.....	4	0	43	56	22	23	13	3
Mountain States:								
Montana.....	0	0	25	47	26	9	0	2
Idaho.....	1	0	4	16	1	14	0	0
Wyoming.....	0	0	21	6	1	7	0	0
Colorado.....	0	2	10	20	0	51	0	0
New Mexico.....	1	0	5	6	1	1	1	0
Arizona.....	0	0	9	12	2	11	2	1
Utah.....	0	0	8	12	0	1	1	0
Pacific States:								
Washington.....	0	1	51	63	18	59	3	1
Oregon.....	0	1	4	53	1	13	0	1
California.....	19	1	84	223	54	39	10	8

¹ Week ended Friday.

⁴ Figures for 1930 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	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Ma- laria	Mea- sles	Pellag- ra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>November, 1930</i>										
Indiana.....	13	250	33	-----	350	-----	29	829	233	54
Iowa.....	3	55	-----	-----	12	-----	28	256	45	23
Maine.....	2	24	2	-----	138	-----	15	93	0	64
Michigan.....	21	347	20	1	206	-----	35	819	132	44
New Jersey.....	13	258	43	1	452	-----	7	539	0	31
New Mexico.....	5	27	-----	28	55	1	7	16	0	23
New York.....	38	374	-----	4	526	-----	49	1,401	30	107
Ohio.....	20	320	49	2	145	-----	95	1,707	198	125
Pennsylvania.....	23	503	-----	-----	1,011	1	17	1,663	1	156
South Carolina.....	-----	325	2,584	2,256	26	309	7	133	-----	107
Tennessee.....	27	318	200	71	69	13	8	380	13	135
West Virginia.....	4	132	145	-----	75	-----	7	287	113	139

November, 1930

Anthrax:	Cases	Conjunctivitis:	Cases
New Jersey.....	1	New Mexico.....	2
Pennsylvania.....	1	Dengue:	
Chicken pox:		South Carolina.....	14
Indiana.....	684	Diarrhea and enteritis (under two years):	
Iowa.....	342	Ohio.....	48
Maine.....	199	Dysentery:	
Michigan.....	1,352	Michigan.....	1
New Jersey.....	905	New York.....	48
New Mexico.....	54	Ohio.....	1
New York.....	2,135	Pennsylvania.....	5
Ohio.....	2,401	Tennessee.....	3
Pennsylvania.....	2,799	German measles:	
South Carolina.....	181	Iowa.....	1
Tennessee.....	332	Maine.....	9
West Virginia.....	317	New Jersey.....	27
		New York.....	131

	Cases		Cases
German measles—Continued.		Rabies in animals:	
Ohio.....	13	New York.....	8
Pennsylvania.....	38	South Carolina.....	14
South Carolina.....	20	Rabies in man:	
Glanders:		New Jersey.....	1
Indiana.....	1	Septic sore throat:	
Hookworm disease:		Indiana.....	1
South Carolina.....	93	Maine.....	1
Impetigo contagiosa:		Michigan.....	41
Iowa.....	2	New York.....	26
Tennessee.....	10	Ohio.....	2
Lead poisoning:		Tennessee.....	10
New Jersey.....	3	Tetanus:	
Ohio.....	10	New Jersey.....	2
Pennsylvania.....	1	New York.....	5
Leprosy:		South Carolina.....	2
Indiana.....	1	Trachoma:	
Lethargic encephalitis:		Indiana.....	2
Indiana.....	17	New Jersey.....	2
Maine.....	1	New York.....	1
Michigan.....	6	Ohio.....	8
New Jersey.....	1	Pennsylvania.....	3
New York.....	9	Tennessee.....	2
Ohio.....	1	Trichinosis:	
Pennsylvania.....	6	New Jersey.....	5
South Carolina.....	3	Pennsylvania.....	4
Tennessee.....	1	Tularaemia:	
Mumps:		Indiana.....	6
Indiana.....	23	Ohio.....	8
Iowa.....	45	Pennsylvania.....	1
Maine.....	235	Tennessee.....	4
Michigan.....	253	West Virginia.....	2
New Jersey.....	44	Typhus fever:	
New Mexico.....	14	South Carolina.....	2
New York.....	513	Undulant fever:	
Ohio.....	311	Iowa.....	11
Pennsylvania.....	646	Michigan.....	1
South Carolina.....	70	New Jersey.....	4
Tennessee.....	62	New York.....	18
Ophthalmia neonatorum:		Ohio.....	11
New Jersey.....	2	Pennsylvania.....	4
New Mexico.....	2	South Carolina.....	1
New York.....	4	Tennessee.....	1
Ohio.....	79	Vincent's angina:	
Pennsylvania.....	15	Iowa.....	9
South Carolina.....	16	Maine.....	6
Tennessee.....	1	New York ¹	69
Paratyphoid fever:		Tennessee.....	3
Maine.....	2	Whooping cough:	
New Jersey.....	3	Indiana.....	104
New York.....	5	Iowa.....	25
Ohio.....	1	Maine.....	219
South Carolina.....	16	Michigan.....	503
Puerperal septicemia:		New Jersey.....	337
New York.....	7	New Mexico.....	2
Ohio.....	8	New York.....	1,407
Pennsylvania.....	12	Ohio.....	220
Tennessee.....	1	Pennsylvania.....	545
		Tennessee.....	78
		West Virginia.....	112

¹ Exclusive of New York City.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 94 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,920,000. The estimated population of the 88 cities reporting deaths is more than 30,360,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended December 13, 1930, and December 14, 1929

	1930	1929	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
46 States.....	1,722	2,270	
94 cities.....	550	807	1,071
Measles:			
45 States.....	3,213	4,135	
94 cities.....	1,020	684	
Meningococcus meningitis:			
46 States.....	121	189	
94 cities.....	47	91	
Poliomyelitis:			
46 States.....	80	27	
Scarlet fever:			
46 States.....	4,231	4,487	
94 cities.....	1,404	1,678	1,180
Smallpox:			
46 States.....	495	1,342	
94 cities.....	89	142	36
Typhoid fever:			
46 States.....	342	235	
94 cities.....	50	35	40
<i>Deaths reported</i>			
Influenza and pneumonia:			
88 cities.....	687	49	
Smallpox:			
88 cities.....	0	0	

City reports for week ended December 13, 1930

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded, and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible but no year earlier than 1921 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND								
Maine:								
Portland.....	2	1	0		0	3	1	3
New Hampshire:								
Concord.....	0	0	0		0	0	0	4
Vermont:								
Barre.....	0	0	0		0	1	0	0
Burlington.....	2	0	0		0	0	0	0
Massachusetts:								
Boston.....	91	39	26	3	1	51	8	27
Fall River.....	36	4	2		0	0	0	0
Springfield.....	32	5	2		0	2	11	6
Worcester.....	27	6	8		0	2	0	0

City reports for week ended December 13, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND—CON.								
Rhode Island:								
Pawtucket.....	3	2	4	-----	0	1	0	1
Providence.....	14	10	8	-----	0	0	0	1
Connecticut:								
Bridgeport.....	0	6	0	1	1	0	0	1
Hartford.....	4	7	3	-----	0	41	1	0
New Haven.....	14	2	0	-----	0	12	6	6
MIDDLE ATLANTIC								
New York:								
Buffalo.....	58	18	15	-----	0	13	36	14
New York.....	222	188	44	13	8	110	31	136
Rochester.....	17	7	2	-----	0	1	2	4
Syracuse.....	41	3	2	-----	0	0	0	1
New Jersey:								
Camden.....	11	6	2	-----	0	21	6	5
Newark.....	65	23	3	8	0	3	9	5
Trenton.....	7	4	0	-----	0	0	0	3
Pennsylvania:								
Philadelphia.....	189	70	21	3	4	19	18	36
Pittsburgh.....	89	22	14	-----	4	13	7	23
Reading.....	10	2	1	-----	0	7	30	2
EAST NORTH CENTRAL								
Ohio:								
Cincinnati.....	13	13	5	-----	2	4	21	11
Cleveland.....	182	44	14	3	1	3	72	13
Columbus.....	20	9	1	1	0	1	1	3
Toledo.....	121	9	7	1	0	1	16	4
Indiana:								
Fort Wayne.....	6	6	2	-----	0	3	0	2
Indianapolis.....	59	10	14	-----	0	1	16	15
South Bend.....	1	-----	-----	-----	-----	-----	-----	-----
Terre Haute.....	10	1	0	-----	0	0	0	1
Illinois:								
Chicago.....	139	139	107	6	3	8	67	61
Springfield.....	7	2	0	-----	0	1	0	1
Michigan:								
Detroit.....	130	65	39	8	2	9	11	17
Flint.....	33	3	4	-----	0	5	4	0
Grand Rapids.....	8	2	0	-----	0	0	1	0
Wisconsin:								
Kenosha.....	43	1	0	-----	0	0	7	0
Madison.....	86	3	3	-----	0	0	17	-----
Milwaukee.....	168	20	7	1	0	6	107	9
Racine.....	44	2	0	-----	0	0	0	1
Superior.....	5	0	0	-----	0	1	0	0
WEST NORTH CENTRAL								
Minnesota:								
Duluth.....	14	0	0	-----	0	0	0	2
Minneapolis.....	89	23	11	-----	1	2	27	10
St. Paul.....	45	13	0	-----	1	0	2	14
Iowa:								
Davenport.....	4	1	0	-----	-----	0	0	-----
Des Moines.....	3	3	1	-----	-----	0	2	-----
Sioux City.....	3	1	1	-----	-----	0	2	-----
Waterloo.....	23	1	3	-----	-----	0	0	-----
Missouri:								
Kansas City.....	37	9	8	-----	1	0	2	11
St. Joseph.....	1	2	0	-----	0	0	0	0
St. Louis.....	45	44	19	2	3	553	11	-----
North Dakota:								
Fargo.....	16	0	0	-----	0	0	9	1
Grand Forks.....	0	0	0	-----	-----	0	4	-----
South Dakota:								
Aberdeen.....	4	0	0	-----	-----	0	0	-----
Sioux Falls.....	0	0	0	-----	-----	1	0	-----
Nebraska:								
Omaha.....	27	7	7	-----	0	0	9	9
Kansas:								
Topeka.....	15	2	1	-----	1	0	0	2
Wichita.....	6	3	0	-----	0	1	0	1

City reports for week ended December 13, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC								
Delaware:								
Wilmington.....	4	1	1	-----	0	0	0	1
Maryland:								
Baltimore.....	99	29	9	15	1	1	7	22
Cumberland.....	0	0	2	-----	0	0	0	3
Frederick.....	1	0	1	-----	0	0	1	0
District of Columbia:								
Washington.....	18	18	17	3	3	3	0	9
Virginia:								
Lynchburg.....	13	3	1	-----	0	0	0	1
Norfolk.....	28	2	5	-----	0	0	0	3
Richmond.....	2	10	4	-----	2	15	0	6
Roanoke.....	8	3	5	-----	1	0	0	2
West Virginia:								
Charleston.....	3	1	2	1	0	0	7	1
Wheeling.....	29	2	2	1	0	0	0	2
North Carolina:								
Raleigh.....	-----	1	-----	-----	-----	-----	-----	-----
Wilmington.....	8	1	1	-----	1	0	0	1
Winston-Salem.....	3	2	0	-----	0	0	0	4
South Carolina:								
Charleston.....	2	1	2	106	1	1	0	3
Columbia.....	14	0	2	-----	1	1	7	0
Greenville.....	4	0	0	-----	0	0	0	0
Georgia:								
Atlanta.....	3	6	8	19	0	13	0	5
Brunswick.....	0	0	0	-----	0	0	0	1
Savannah.....	0	2	3	8	1	0	0	4
Florida:								
Miami.....	1	3	2	-----	0	0	0	1
St. Petersburg.....	-----	0	-----	-----	0	-----	-----	0
Tampa.....	0	2	1	-----	1	6	0	0
EAST SOUTH CENTRAL								
Kentucky:								
Covington.....	1	1	0	-----	1	1	0	1
Tennessee:								
Memphis.....	79	7	1	-----	1	0	6	8
Nashville.....	3	3	5	-----	0	0	1	2
Alabama:								
Birmingham.....	15	6	11	2	2	49	1	4
Mobile.....	0	1	1	1	0	0	0	4
Montgomery.....	8	2	5	3	-----	0	0	-----
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith.....	-----	0	-----	-----	-----	-----	-----	-----
Little Rock.....	16	0	0	-----	-----	0	0	1
Louisiana:								
New Orleans.....	1	13	11	-----	0	0	0	20
Shreveport.....	-----	1	-----	-----	-----	-----	-----	-----
Oklahoma:								
Muskogee.....	0	2	1	-----	0	0	0	0
Tulsa.....	21	5	6	-----	-----	1	1	-----
Texas:								
Dallas.....	32	16	15	-----	1	2	1	6
Fort Worth.....	5	7	6	-----	1	0	0	0
Galveston.....	0	2	0	-----	0	0	0	3
Houston.....	2	8	7	-----	0	0	0	7
San Antonio.....	1	6	3	-----	2	0	0	6
MOUNTAIN								
Montana:								
Billings.....	4	0	0	-----	0	0	0	0
Great Falls.....	7	1	0	-----	0	0	0	0
Helena.....	8	0	0	-----	0	0	0	0
Missoula.....	0	0	0	-----	0	0	0	0
Idaho:								
Boise.....	1	0	0	-----	0	0	0	1
Colorado:								
Denver.....	31	8	0	-----	0	6	3	10
Pueblo.....	5	1	0	-----	0	11	0	1
New Mexico:								
Albuquerque.....	12	1	0	-----	0	2	0	0
Arizona:								
Phoenix.....	1	0	0	-----	0	0	0	6

City reports for week ended December 13, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported			
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported						
MOUNTAIN—CON											
Utah:											
Salt Lake City.....	3	4	2	-----	1	0	0	5			
Nevada:											
Reno.....	0	0	1	-----	0	0	0	1			
PACIFIC											
Washington:											
Seattle.....	11	5	5	-----		0	24	-----			
Spokane.....	0	2	0	-----		4	0	-----			
Tacoma.....	13	3	6	-----		0	0	1			
Oregon:											
Portland.....	20	11	1	-----	0	2	20	9			
Salem.....	1	0	0	-----	0	0	6	0			
California:											
Los Angeles.....	29	38	9	31	2	4	10	17			
Sacramento.....	16	2	1	-----	0	3	8	6			
San Francisco.....	43	16	6	-----	1	2	6	0			
Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland.....	2	4	0	0	0	0	1	0	32	24	
New Hampshire:											
Concord.....	0	0	0	0	0	2	0	0	0	12	
Vermont:											
Barre.....	0	0	0	0	0	0	0	0	1	3	
Burlington.....	1	0	0	0	0	0	0	0	0	7	
Massachusetts:											
Boston.....	68	49	0	0	0	4	1	5	1	41	
Fall River.....	5	2	0	0	0	1	0	0	0	19	
Springfield.....	7	6	0	0	0	1	0	0	0	31	
Worcester.....	10	11	0	0	0	2	0	0	0	51	
Rhode Island:											
Pawtucket.....	2	4	0	0	0	0	0	0	0	1	
Providence.....	8	12	0	0	0	1	0	0	0	12	
Connecticut:											
Bridgeport.....	8	3	0	0	0	0	0	0	0	0	
Hartford.....	6	15	0	0	0	1	0	2	0	0	
New Haven.....	4	1	0	0	0	0	0	0	0	0	
MIDDLE ATLANTIC											
New York:											
Buffalo.....	26	26	1	0	0	6	0	0	1	21	
New York.....	169	136	0	0	0	97	11	12	10	149	
Rochester.....	6	48	0	0	0	2	1	2	1	9	
Syracuse.....	11	12	0	0	0	1	0	0	0	7	
New Jersey:											
Camden.....	4	2	0	0	0	0	0	0	0	2	
Newark.....	16	15	0	0	0	3	1	0	0	51	
Trenton.....	4	16	0	0	0	2	0	0	0	1	
Pennsylvania:											
Philadelphia.....	75	108	0	0	0	22	3	0	0	20	
Pittsburgh.....	34	47	0	0	0	11	1	0	0	4	
Reading.....	2	1	0	0	0	2	0	0	0	0	
EAST NORTH CENTRAL											
Ohio:											
Cincinnati.....	15	35	0	0	0	7	1	0	0	4	
Cleveland.....	35	82	0	0	0	13	1	0	0	40	
Columbus.....	12	14	1	0	0	4	0	2	1	1	
Toledo.....	12	8	0	7	0	4	1	0	0	8	

City reports for week ended December 13, 1930—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths reported	Typhoid fever			Whoop- ing cough, cases reported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
SOUTH ATLANTIC—											
continued											
Georgia:											
Atlanta.....	6	17	0	0	0	5	0	0	1	0	86
Brunswick.....	0	0	0	0	0	0	0	0	0	0	5
Savannah.....	0	2	0	0	0	4	1	0	1	0	
Florida:											
Miami.....	4	3	0	0	0	1	0	0	0	5	23
St. Petersburg.....	0		0		0	2	0		0		13
Tampa.....	1	1	0	0	0	0	0	0	0	0	26
EAST SOUTH CENTRAL											
Kentucky:											
Covington.....	2	8	0	0	0	1	0	0	0	0	16
Tennessee:											
Memphis.....	6	28	0	0	0	4	1	0	0	0	72
Nashville.....	3	9	0	0	0	3	1	2	0	0	42
Alabama:											
Birmingham.....	4	15	0	0	0	4	1	1	0	0	46
Mobile.....	0	1	1	0	0	2	0	0	0	0	29
Montgomery.....	1	2	0	0			0	0		3	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith.....	1		0				0				
Little Rock.....	2	2	0	0	0	0	1	0	0	0	
Louisiana:											
New Orleans.....	9	7	0	0	0	7	2	2	2	6	152
Shreveport.....	2		0				0				
Oklahoma:											
Muskogee.....	1	1	0	0			0	1		0	
Tulsa.....	3	8	0	2			0	0		0	
Texas:											
Dallas.....	7	11	0	1	0	2	0	2	1	5	53
Fort Worth.....	4	5	1	0	0	4	0	0	1	0	35
Galveston.....	0	1	0	0	0	0	0	1	0	0	18
Houston.....	3	2	1	1	0	1	0	1	0	0	77
San Antonio.....	3	0	0	0	0	9	0	0	0	0	68
MOUNTAIN											
Moniana:											
Billings.....	1	0	1	17	0	0	0	0	0	3	6
Great Falls.....	4	4	1	0	0	0	0	0	0	4	8
Helena.....	0	0	0	0	0	0	0	0	0	0	6
Missoula.....	0	0	0	0	0	0	0	0	0	15	7
Idaho:											
Boise.....	1	0	0	0	0	0	0	0	0	5	7
Colorado:											
Denver.....	13	20	0	0	0	9	1	0	0	7	90
Pueblo.....	1	0	0	0	0	1	0	0	0	3	12
New Mexico:											
Albuquerque.....	1	0	0	0	0	3	0	0	0	0	10
Arizona:											
Phoenix.....	2	0	0	0	0	1	1	0	0	0	14
Utah:											
Salt Lake City.....	4	0	1	0	0	1	1	0	0	11	40
Nevada:											
Reno.....	0	0	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle.....	9	8	1	0			1	2		16	
Spokane.....	9	5	4	0			0	0		0	
Tacoma.....	5	2	3	3	0	0	0	0	0	2	23
Oregon:											
Portland.....	7	3	6	2	0	1	0	0	0	1	66
Salem.....	0	2	0	0	0	0	0	0	0	1	
California:											
Los Angeles.....	32	9	1	0	0	18	1	1	0	19	235
Sacramento.....	3	1	1	0	0	6	0	0	0	3	35
San Francisco.....	16	10	1	0	0	9	0	0	0	26	145

City reports for week ended December 13, 1930—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland.....	0	0	0	0	0	0	0	1	0
Massachusetts:									
Boston.....	0	0	0	0	1	0	1	3	0
Worcester.....	0	0	0	0	0	0	0	1	0
Connecticut:									
Hartford.....	1	0	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York.....	13	9	2	2	0	0	1	1	0
Pennsylvania:									
Philadelphia.....	0	0	0	0	0	0	0	1	0
Pittsburgh.....	1	1	0	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	0	2	1	0	0	0	0	0	0
Cleveland.....	1	0	0	0	0	0	0	2	0
Columbus.....	0	1	0	0	0	0	0	9	0
Indiana:									
Indianapolis.....	2	2	0	0	0	0	0	0	0
Illinois:									
Chicago.....	8	5	1	0	0	0	0	3	1
Springfield.....	0	0	0	0	0	0	0	1	0
Michigan:									
Detroit.....	2	1	0	0	0	0	0	2	0
Flint.....	1	1	0	0	1	0	0	0	0
Grand Rapids.....	0	0	0	1	0	0	0	0	0
Wisconsin:									
Madison.....	1	0	0	0	0	0	0	0	0
Milwaukee.....	0	0	0	0	0	0	0	1	0
WEST NORTH CENTRAL									
Missouri:									
Kansas City.....	0	0	0	0	0	1	0	0	0
St. Louis.....	3	0	1	1	0	0	0	0	0
South Dakota:									
Sioux Falls.....	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore.....	1	1	1	0	1	0	0	0	0
Virginia:									
Richmond.....	0	1	0	0	0	0	0	0	0
South Carolina:									
Charleston.....	0	0	0	0	6	0	0	0	0
Georgia:									
Atlanta ¹	3	2	0	0	0	0	0	0	0
Savannah ¹	0	0	0	0	2	2	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis.....	2	0	0	0	0	0	0	0	0
Nashville.....	1	1	0	0	0	0	0	0	0
Alabama:									
Birmingham.....	2	0	1	0	1	0	0	0	0
Mobile.....	0	0	0	0	0	2	0	0	0
Montgomery.....	0	0	0	0	1	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock.....	0	0	0	0	0	1	0	0	0
Louisiana:									
New Orleans.....	3	3	0	0	0	0	0	0	0
Texas:									
Dallas.....	0	0	0	0	2	2	0	0	0
Fort Worth.....	0	0	0	0	0	0	0	1	0
Galveston.....	0	0	0	0	0	0	0	1	0

¹ Typhus fever: 7 cases and 1 death; 1 case at Atlanta, Ga.; 5 cases and 1 death at Savannah, Ga.; and 1 case at Los Angeles, Calif.

City reports for week ended December 13, 1930—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Pollomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MOUNTAIN									
Colorado:									
Denver.....	1	1	0	0	0	0	0	1	0
Arizona:									
Phoenix.....	2	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City.....	1	0	0	0	0	0	0	0	0
PACIFIC									
Oregon:									
Portland.....	0	0	1	0	0	0	0	0	0
California:									
Los Angeles ¹	1	1	0	0	1	1	0	1	0
Sacramento.....	0	0	0	0	0	0	0	1	0
San Francisco.....	0	1	0	0	0	0	0	0	0

¹ Typhus fever: 7 cases and 1 death; 1 case at Atlanta, Ga.; 5 cases and 1 death at Savannah, Ga.; and 1 case at Los Angeles, Calif

The following tables give the rates per 100,000 population for 98 cities for the 5-week period ended December 13, 1930, compared with those for a like period ended December 14, 1929. The population figures used in computing the rates are approximate estimates, authoritative figures for many of the cities not being available. The 98 cities reporting cases have an estimated aggregate population of more than 32,000,000. The 91 cities reporting deaths have more than 30,500,000 estimated population.

Summary of weekly reports from cities November 9 to December 13, 1930.—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929¹

DIPHTHERIA CASE RATES

	Week ended—									
	Nov. 15, 1930	Nov. 16, 1929	Nov. 22, 1930	Nov. 23, 1929	Nov. 29, 1930	Nov. 30, 1929	Dec. 6, 1930	Dec. 7, 1929	Dec. 13, 1930	Dec. 14, 1929
98 cities.....	91	159	102	³ 186	89	139	² 92	146	⁴ 90	134
New England.....	75	168	113	117	80	177	111	112	117	117
Middle Atlantic.....	46	112	54	123	50	123	61	110	50	112
East North Central.....	130	205	125	302	123	167	113	191	⁵ 122	170
West North Central.....	104	165	108	169	108	114	⁶ 99	121	95	148
South Atlantic.....	110	122	141	135	60	144	⁷ 104	127	⁸ 113	107
East South Central.....	209	232	310	239	155	157	162	226	155	137
West South Central.....	172	427	183	446	164	259	⁹ 159	362	¹⁰ 147	293
Mountain.....	26	44	26	¹¹ 89	77	17	¹² 0	157	26	61
Pacific.....	73	84	73	60	111	56	76	84	64	58

¹ The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimates as of July 1, 1930, and 1929, respectively.

² Reno, Nev., not included.

³ Raleigh, N. C., Shreveport, La., and Denver, Colo., not included.

⁴ South Bend, Ind., Raleigh, N. C., Fort Smith, Ark., and Shreveport, La., not included.

⁵ South Bend, Ind., not included.

⁶ Raleigh, N. C., not included.

⁷ Shreveport, La., not included.

⁸ Fort Smith, Ark., and Shreveport, La., not included.

⁹ Denver, Colo., not included.

Summary of weekly reports from cities November 9 to December 13, 1930.—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929—Continued

MEASLES CASE RATES

	Week ended—									
	Nov. 15, 1930	Nov. 16, 1929	Nov. 22, 1930	Nov. 23, 1929	Nov. 29, 1930	Nov. 30, 1929	Dec. 6, 1930	Dec. 7, 1929	Dec. 13, 1930	Dec. 14, 1929
98 cities.....	93	56	129	72	109	74	146	98	167	113
New England.....	157	45	164	56	148	70	202	81	250	85
Middle Atlantic.....	71	26	80	34	73	33	89	54	89	47
East North Central.....	17	91	31	94	28	101	28	93	27	133
West North Central.....	491	50	751	81	636	100	933	216	1,055	202
South Atlantic.....	24	7	59	24	40	22	57	4	74	28
East South Central.....	20	14	169	14	74	0	175	14	337	14
West South Central.....	0	19	4	27	11	38	12	46	8	61
Mountain.....	300	252	318	107	275	131	51	165	146	104
Pacific.....	38	142	33	280	12	249	31	377	31	464

SCARLET FEVER CASE RATES

98 cities.....	191	205	200	218	178	212	207	252	229	277
New England.....	253	265	217	249	241	258	246	276	237	375
Middle Atlantic.....	133	135	168	127	156	116	187	148	196	172
East North Central.....	290	311	266	347	224	361	259	409	318	438
West North Central.....	140	139	214	223	137	183	194	231	205	271
South Atlantic.....	141	238	198	163	172	139	211	159	241	193
East South Central.....	310	157	236	157	243	137	337	144	425	89
West South Central.....	127	152	101	156	142	118	100	156	94	137
Mountain.....	378	226	275	267	223	348	120	392	206	322
Pacific.....	116	179	102	261	97	266	113	355	83	340

SMALLPOX CASE RATES

98 cities.....	4	13	3	24	8	14	7	19	15	23
New England.....	0	25	0	0	0	0	0	0	0	2
Middle Atlantic.....	0	0	0	0	0	0	0	0	0	0
East North Central.....	2	22	0	33	4	13	1	26	3	29
West North Central.....	21	42	33	50	66	48	47	64	120	56
South Atlantic.....	0	0	0	2	0	0	0	0	0	0
East South Central.....	0	0	0	0	0	0	0	0	0	0
West South Central.....	4	4	4	38	4	11	7	19	8	34
Mountain.....	0	9	43	71	34	35	205	78	146	78
Pacific.....	21	31	7	111	9	75	12	60	7	118

TYPHOID FEVER CASE RATES

98 cities.....	15	8	15	13	10	5	10	5	8	6
New England.....	22	22	15	11	11	2	7	2	18	7
Middle Atlantic.....	4	3	5	10	3	2	8	4	7	6
East North Central.....	5	6	9	9	4	5	10	4	7	3
West North Central.....	19	4	23	12	8	6	6	2	6	6
South Atlantic.....	31	9	26	19	29	4	6	17	6	7
East South Central.....	54	14	13	34	13	34	13	48	20	14
West South Central.....	93	8	90	34	75	15	28	0	25	8
Mountain.....	26	44	51	36	9	26	17	26	0	9
Pacific.....	12	10	12	5	7	2	12	10	7	7

¹ Reno, Nev., not included.

² Raleigh, N. C., Shreveport, La., and Denver, Colo., not included.

³ South Bend, Ind., Raleigh, N. C., Fort Smith, Ark., and Shreveport, La., not included.

⁴ South Bend, Ind., not included.

⁵ Raleigh, N. C., not included.

⁶ Shreveport, La., not included.

⁷ Fort Smith, Ark., and Shreveport, La., not included.

⁸ Denver, Colo., not included.

Summary of weekly reports from cities November 9 to December 13, 1930.—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929—Continued

INFLUENZA DEATH RATES

	Week ended—									
	Nov. 15, 1930	Nov. 16, 1929	Nov. 22, 1930	Nov. 23, 1929	Nov. 20, 1930	Nov. 30, 1929	Dec. 6, 1930	Dec. 7, 1929	Dec. 13, 1930	Dec. 14, 1929
91 cities.....	10	9	11	8	9	11	10	17	10	16
New England.....	4	9	7	4	2	4	4	11	4	7
Middle Atlantic.....	9	4	8	9	11	5	6	14	8	9
East North Central.....	9	9	5	6	7	10	8	9	5	15
West North Central.....	6	3	6	9	0	21	12	27	21	12
South Atlantic.....	5	11	22	4	9	17	19	28	22	19
East South Central.....	44	22	15	30	29	15	15	60	29	60
West South Central.....	31	31	38	16	15	55	37	47	12	78
Mountain.....	9	26	60	9	26	17	34	17	9	0
Pacific.....	6	9	9	6	9	13	3	13	9	19

PNEUMONIA DEATH RATES

91 cities.....	118	98	119	101	112	106	102	136	108	150
New England.....	104	88	115	88	71	92	66	74	109	135
Middle Atlantic.....	136	103	140	106	125	101	107	139	109	156
East North Central.....	86	71	83	96	78	84	78	126	85	116
West North Central.....	77	120	136	102	92	126	130	126	145	174
South Atlantic.....	157	107	143	94	165	129	143	131	121	191
East South Central.....	214	231	199	254	155	224	177	239	140	216
West South Central.....	111	121	123	129	165	156	139	238	176	230
Mountain.....	215	157	163	107	223	157	137	165	154	192
Pacific.....	83	85	61	28	86	104	74	138	74	107

¹ Reno, Nev., not included.
² Raleigh, N. C., Shreveport, La., and Denver, Colo., not included.
³ South Bend, Ind., not included.
⁴ Raleigh, N. C., not included.
⁵ Shreveport, La., not included.
⁶ Denver, Colo., not included.
⁷ South Bend, Ind., Raleigh, N. C., and Shreveport, La., not included.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended December 13, 1930.—The Department of Pensions and National Health reports cases of certain communicable diseases in Canada for the week ended December 13, 1930, as follows:

Province	Cerebro-spinal fever	Dysentery	Influenza	Poliomyelitis	Typhoid fever
Prince Edward Island ¹					
Nova Scotia.....			4		
New Brunswick.....					7
Quebec.....			2		17
Ontario.....			1	1	2
Manitoba.....					1
Saskatchewan.....	1				
Alberta.....					1
British Columbia.....	1	6			4
Total	2	6	7	1	33

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

Quebec Province—Communicable diseases—Week ended December 13, 1930.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended December 13, 1930, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	122	Paratyphoid fever.....	4
Diphtheria.....	44	Scarlet fever.....	96
Erysipelas.....	5	Smallpox.....	1
German measles.....	1	Tuberculosis.....	44
Influenza.....	2	Typhoid fever.....	17
Measles.....	80	Whooping cough.....	33
Mumps.....	27		

CZECHOSLOVAKIA

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

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax.....	9		Paratyphoid fever.....	18	1
Cerebrospinal meningitis.....	10	7	Puerperal fever.....	40	20
Diphtheria.....	2,877	160	Scarlet fever.....	2,617	41
Dysentery.....	135	15	Trachoma.....	218	
Malaria.....	10		Typhoid fever.....	671	49

LATVIA

Communicable diseases—October, 1930.—During the month of October, 1930, cases of certain communicable diseases were reported in the Republic of Latvia, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis.....	3	Poliomyelitis.....	11
Diphtheria.....	91	Puerperal fever.....	9
Erysipelas.....	58	Scarlet fever.....	134
Influenza.....	177	Tetanus.....	1
Leprosy.....	4	Trachoma.....	125
Measles.....	50	Typhoid fever.....	108
Mumps.....	27	Whooping cough.....	42

VIRGIN ISLANDS

Communicable diseases—November, 1930.—During the month of November, 1930, cases of certain communicable diseases were reported in the Virgin Islands as follows:

St. Thomas and St. John:	Cases	St. Croix:	Cases
Dysentery.....	2	Gonorrhoea.....	1
Chancroid.....	1	Syphilis.....	2
Gonorrhoea.....	3		
Syphilis.....	18		
Tuberculosis.....	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

(O indicates cases; D, deaths; P, present)

Place	Week ended—												
	October, 1930			November, 1930			December, 1930			Sept. 27, 1930	Aug. 24-27, 1930	July 27-30, 1930	June 1-25, 1930
	4	11	18	25	1	8	15	22	29				
Afghanistan.....													
China:													
Almoy.....													
Canton.....													
Shanghai.....													
Shensi Province.....													
Swatow.....													
Tientsin.....													
India.....													
Bassell.....													
Bombay.....													
Calcutta.....													
Madras.....													
Negapatam.....													
Rangoon.....													
Tuticorin.....													

! An outbreak of cholera was reported in June, 1930, in Afghanistan.

Place	May, 1930	June, 1930	July, 1930	August, 1930			September, 1930			October, 1930			November, 1930			
				1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31	
Iloilo.....	C	2	309	571	238	18	7	13	12	10	10	4	6	11	21	13
La Union.....	C	1	193	376	151	15	6	7	12	7	7	3	6	8	11	8
Leyte.....	C	47	1													
Maabata.....	C	10	11													
Misamis, Occidental.....	C	3	35	34												
Negros, Occidental.....	C	140	568	343	122	8	10	5	5	12	3	19	22	44	38	48
Negros, Oriental.....	C	88	363	237	91	6	6	6	3	12	3	12	14	33	17	45
Nueva Adja.....	C	13	4													
Pampanga.....	C	1	1													
Pangasinan.....	C	2	2	1												
Ribal.....	C	1	1													
Samar.....	C	18	4	4	4	4	4	4	3	6	3	4	3	4	4	4
Sorsogon.....	C	16	2	2	2	4	4	4	3	5	1	4	2	4	4	4
Surigao.....	C	1	1													
Tarlac.....	C	27	20	17	2	(1)										
Bangkok.....	C	19	9	2												
Songkla.....	C	12	8	1												
On vessel: S. S. Malwa from Shanghai.....	C	6	10													
On small boat at Port Cebu, from Bantayan Island.....	C	1														

Place	May, 1930	June, 1930	July, 1930	August, 1930			September, 1930			October, 1930			November, 1930			
				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 (French) (see also table above):																
Annam.....	C	16	1													
Cambodia.....	C	88	43	3	23	13	2	10	2	18	6	6	8	1	1	5
Cochin-China.....	C	671	273	27	22	6	9	6	6	14	6	8	8			

¹ During the period from Aug. 24 to Sept. 23, 1930, 26 cases of cholera were reported in Manitum, Surigao Province, P. I. ² Reports incomplete.

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

SMALLPOX—Continued

[O Indicates cases; D, deaths; F, present]

Place	Week ended—										
	October, 1930			November, 1930			December, 1930				
	4	11	18	25	1	8	15	22	29	6	13
	June 1-28, 1930	June 29-July 26, 1930	July 27-Aug. 23, 1930	Aug. 24-Sept. 20, 1930	Sept. 21, 1930						December, 1930
Colombia:											
Barranquilla.....	O										
Buenaventura.....	O	6	10	2	2						
Calli.....	D										
Costa Rica: Port Limon.....	O	2									
Curaçao (alastrim).....	O	1	2	1							
Dutch East Indies:											
Borneo.....	O	12	2								
Java—											
Batavia and West Java.....	O	13	8	12	11	10	2	1	2	13	
East Java and Madura.....	D	8	5	5	5	4	1	1	2	1	
Sanggi Islands.....	O		11	35	14				29		
	O		8	2	8				8		
Egypt: Port Said.....	O										
France (see table below).											
Great Britain:											
England and Wales.....	O	928	539	344	341	82	74	44	125	86	87
London.....	O	7	9				1	1	1	1	1
Scotland.....	O										
London under Lyme.....	O										
Bradford.....	O										
Cardiff.....	O										
Leeds.....	O										
London.....	O	498	260	178	164	30	34	23	33	29	32
London and Great Towns.....	O	783	408	285	268	55	56	52	80	52	58
	O										
Stoke-on-Trent.....	D	32	9	2	2						
Scotland.....	O	4	1	5	5						
Honduras: Naco.....	D										
India:											
Bombay.....	D	12,962	7,690	4,877	3,131	611	528	567			
	D	3,531	2,348	1,246	690	292	122	113			
	D	3,113	60	12	6						
	D	79	33	10	5						

	May, 1930	June, 1930	July, 1930	Aug., 1930	Sept., 1930	Oct., 1930	Nov., 1930	Dec., 1930	Total
Mexico:									
Durango.....	9	6	1	9	1	1	1	1	33
Mexico City, including municipalities in Federal District.....	15	11	2	2	2	2	2	2	53
Morocco.....									
Durango.....	2	6	3	3	3	3	3	3	26
Palestine.....	117	36	34	3	3	3	3	3	196
Poland.....	11	4	1	1	1	1	1	1	22
Portugal: Oporto.....									
Rumania.....	68	28	4	4	4	4	4	4	116
Spain.....	3	3	3	3	3	3	3	3	24
Tunisia.....									
Turkey (see table below).	18	24	10	10	10	10	10	10	116
Union of South Africa:									
Cape Province.....									
Natal.....	P	P	P	P	P	P	P	P	
Orange Free State.....	P	P	P	P	P	P	P	P	
Transvaal.....	P	P	P	P	P	P	P	P	
Yugoslavia (see table below).									

Place	May, 1930	June, 1930	July, 1930	Aug., 1930	Sept., 1930	Oct., 1930	Nov., 1930	Dec., 1930	Total
China: Harbin (see also table above)....	C	240	14	5					264
Chosen, Seoul.....	C	43	3	2	1				49
Czechoslovakia.....	C	12	1	1					14
Greece: Athens.....	C	3	3	6	6	4	2		25
Latvia.....	C	3	3	3	1				10
Lithuania.....	C								
Turkey.....	D	16	7	7	2				32
Yugoslavia.....	D	16	6	6	6				34

YELLOW FEVER

Place	May, 1930	June, 1930	July, 1930	Aug., 1930	Sept., 1930	Oct., 1930	Nov., 1930	Dec., 1930	Total
Brazil:									
Campos, Rio de Janeiro Province, May 23, 1930.....									
Pata, June 23, 1930.....									
Gold Coast:									
July 10, 1930.....									
Alibosso, Aug. 5, 1930 (death).....									
Ijberia, Ykonrovia, June 8, 1930.....									
Nigeria, Lagos, July 12, 1930 (probably laboratory infection).....									

X