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PUBLIC HEALTH REPORTS

VOL. 43

DECEMBER 14, 1928

NO. 50

INFLUENZA PREVALENCE IN THE UNITED STATES

Influenza continues to increase in certain parts of the country. For the week ended December 1, 1928, California reported 8,213 cases of influenza, Oregon 296 cases, Montana 3,372 cases, Utah 258, and New Mexico 66. The State health officer of Arizona, in a telegram dated December 5, 1928, stated that influenza was scattered over the State, but was not of a severe type.

More than the usual prevalence of influenza is also indicated by reports from some States in the southeastern part of the country. For the week ended December 1, South Carolina reported 2,718 cases, Georgia 344, Tennessee 107, and Alabama 158 cases.

Many cases of influenza are not reported, and it is possible that some States which do not report, or which report very few cases, have extensive epidemics of mild influenza.

The table on pages 3326 and 3327 of this issue of the PUBLIC HEALTH REPORTS gives the numbers of cases reported, by States, for the week ended December 1, 1928, and a comparison with similar reports for the corresponding week of 1927.

A REVIEW OF THE CURRENT PRACTICE OF THE LIGHTING OF SCHOOL BUILDINGS IN THE UNITED STATES

By JAMES E. IVES, *Physicist, United States Public Health Service*

This article presents a review of the current practice of the lighting of school buildings in the United States which was prepared at the request of the committee on lighting legislation of the Illuminating Engineering Society.

Apart from an actual survey of the lighting of school buildings all over the United States, which at the present time is not feasible, it was felt that the best information on this subject could be had by obtaining from the departments of education of all the States and principal cities copies of their codes of requirements for the lighting of school rooms. Letters were therefore sent by Surg. Grover A. Kempf of the Office of Child Hygiene of the United States Public Health Service to the departments of education of the 48 States, and of 12 of the principal cities. Answers were received from 39 of the States and 9 of the cities.

The information supplied in answer to the letters came in the form of lighting rules and codes, building codes, and information contained

in letters. This information has been summarized under the following heads:

- Color of walls.
- Color of ceiling.
- Finish and color of woodwork.
- Unilateral or other lighting by windows.
- Preferred exposure of windows.
- Dimensions of classrooms.
- Ratio of window area to floor area.
- Type and location of windows:
 - Height of sill.
 - Height of ceiling.
- Character of shades.
- Artificial lighting:
 - Intensity of illumination on desks, recommended or required.
 - Watts per square foot.
 - Control of lights by switches.
 - Exit and emergency lighting.
- Inspection and maintenance.
- Glare.

The information obtained was as follows:

Color of walls and ceilings.—Sixteen recommend a choice between one or more of the following colors: Light buff, light gray, light yellow, or light green, the preference usually being in the order given. Three recommend brown for the dado, or wainscoting, and one, French gray. A dull finish is recommended in three cases, and in four cases it is specifically recommended that the walls shall not be white. In one case a finish is required having an initial coefficient of reflection of from 0.25 to 0.50.

Color of ceiling.—Fifteen recommend a choice between one or more of the following colors: Cream, ivory white, or white, the preference usually being in the order given. Four recommend that the ceiling shall be of the same color as the walls, but of a lighter shade. Two recommend flat paint; one a neutral color, and one specifies that the color shall not be white—one requires that the ceilings be finished with a matte or semimatte service having an initial coefficient of reflection of at least 0.70.

Finish and color of woodwork.—Only five refer to the finish and color of the woodwork. The individual specifications are as follows: Eggshell gloss, dull finish, same color as walls, natural color with a dull surface; and usually dark but light oak in new schools.

Unilateral or other lighting by windows.—Thirty-one specify unilateral lighting. Fourteen of these permit also windows in the rear. In some cases it is specified that windows in the rear must be at least 6 feet above the floor, and in one case it is specified that no more than 50 per cent of the light shall come from the rear. One states that the windows shall be on the long side only. Other individual

cases are as follows: If room is more than 23 feet wide, high windows on right-hand side may be used, at least 6 feet from the floor. Small windows on other sides than the left, placed high, are permissible. High windows on the right side are permissible if they are at least 7 feet above the floor. Unilateral, except when the room is more than 24 feet wide. No skylights unless they are constructed to exclude direct sunlight and excessively bright light from the sky.

Preferred exposure.—Ten of the States recommend or require that the windows shall have certain exposures. In five cases an east or west exposure for the windows is preferred. In one case it is required. In another case east is preferred, and west is given as second choice. The three other cases are: East or north; east, northeast, northwest, or west; north or southeast; and east or southeast.

Dimensions of classrooms.—Twenty of the States and cities have requirements as to the length, breadth, and height of classrooms. There is some agreement as to the height of the ceiling, nine of them specifying that it shall not be less than 12 feet. In four cases a width of room of 23 feet is specified. Usually the width and length are specified in combination with each other and sometimes the ratio of length to width is given. The individual cases are given in the following table:

Requirements of 20 States, or large cities, as to dimensions of classrooms

Width	Length	Ratio of length to width	Height of ceiling	Ratio of width of room to height of top of window above the floor
(1) 18 feet 8 inches to 21 feet 10 inches.	27 feet 4 inches to 31 feet 4 inches.			
(2) Not greater than 24 feet.	Not greater than 32 feet.		Not less than 12 feet.	
(3) 23 feet.	31 feet.		11 to 14 feet.	
(4) .				
(5) 23 feet.	Not greater than 32 feet.	$\frac{4}{3}$	12 feet.	
(6) 23 feet.			12 feet.	
(7) .				
(8) .			Not less than 12 feet.	Not more than $2\frac{1}{4}$. Not more than 2. Do.
(9) .				
(10) .		$\frac{5}{4}$ or $\frac{3}{2}$		
(11) .			12 feet.	
(12) 19 to 22 feet.	24 feet 6 inches to 30 feet.		11 feet 3 inches to 12 feet.	Do.
(13) 21 feet.	23 to 27 feet.		12 feet.	
(14) .				Top of window shall be at height above floor equal to one-half width of room minus 8 inches.
(15) { 23 feet.	30 feet.		Not less than 12 feet.	
(16) { Or 24 feet.	32 feet.		do	
(17) { 23 feet.	30 feet.		do	
(18) { 22 feet.	28 feet.		do	
(19) .			do	
(20) 23 feet.	32 feet.			Not more than 2, except in very wide rooms, when light must be distributed by other means.

Ratio of window area to floor area.—The least permissible ratio of window area to floor area is specified in 32 cases. In 1 case it is specified that the ratio shall not be less than 1 to 4; in 21 cases, not less than 1 to 5; in 6 cases, not less than 1 to 6; and in 1 case, not less than 1 to 7. In one case it is specified that in general the ratio must not be less than 1 to 5, but that when the light is from the north, the ratio must be not less than 1 to 4. In another case it is specified that it must not be less than 1 to 5 if the windows are on the left only, and not less than 1 to 4 if the windows are on the left and rear.

Height of window sill from the floor.—This is specified in 19 cases. The least permissible height varies in individual cases from 2 feet 6 inches to 4 feet. In 3 cases a height of 3 feet is specified, in 2 cases 3 feet 6 inches, and in 2 cases, 4 feet. In 1 case a height of not less than 2 feet 6 inches is specified, but 3 feet to 3 feet 6 inches is recommended for grades above the fourth. In another case, not less than 3 feet 2 inches nor more than 3 feet 6 inches, except in special cases, is specified. In other cases values are given as the least values permissible.

Distance from top of window to ceiling.—This distance is mentioned in 21 cases and varies from "a distance as near to the ceiling as possible," to "a distance of 18 inches for a ceiling 14 feet high." In 5 cases it is stated that it should not be more than 6 inches; in 4 cases not more than 1 inch. In 1 case the least distance is made to depend upon the height of the ceiling, 1 inch if the ceiling is from 11 to 12 feet high, and 18 inches if the ceiling is from 13 to 14 feet high. In 1 case it is specified that window heads shall not be less than 11 feet 4 inches above the floor, and that there shall be less than 12 inches from the top of the glass to the ceiling.

Character of window shades.—The character of window shades is specified in 17 cases—translucent shades are specified in 12 cases. Double rollers are specified in five cases. The colors recommended are very variable, white, ecru, blue, gray, slate, buff, tan, champagne, neutral, cream, straw, etc. In two cases it is stated that the shade should be adjustable both from the top and bottom of the window. In two cases a choice is given between two shades adjustable at middle of the window, or a single roller with patent adjustable fixtures. In one case a translucent shade which rolls from the top down and a heavy dark shade (green) which rolls from the bottom up, is recommended. In one case it is stated that the color of the shades must harmonize with the color of the walls.

Intensity of artificial illumination on desks.—In only seven cases is the least permissible intensity of the illumination on the desks specified. The values given range from 3 to 8 foot candles, the individual values being 3, 3.41, 4-7, 5, 6, and 8 required and 8 recommended.

Least watts per square foot of floor area.—This quantity is specified in only four cases, the values given being 0.9, 1.1 to 1.3, 1.25, and about 1.74.

Control of light by switches.—This is specified in four cases, as follows: Switches should be at points of entrance. Switching and controlling apparatus should be installed at entrance to classrooms, hallways, etc.—one switch for lights next to corridor and one for lights next to windows. Switching or controlling apparatus should be so arranged at entrance to each room that a portion of the lights of the room may be turned on.

Exit and emergency lighting.—This is specified in four cases, as follows: Corridors, stairways, and egresses shall be suitably lighted and there shall be a suitable number of emergency lights. Emergency lights should be placed at main stairways and exits. Exit lights should be used for halls and gymnasiums. Electric emergency lighting should be supplied from an independent connection extending back to main service entrance, and in every building used at night a red light shall be placed over every emergency exit door, and over every exit door where other doors may cause confusion.

Inspection and maintenance.—There were only three references under this head, viz: Walls must be kept clean. All parts of lighting system should be frequently inspected and properly maintained. All parts of system should be frequently inspected and defective parts replaced or repaired. Windows should be frequently washed, walls and ceilings washed or redecorated periodically.

Glare.—Provisions against glare occur in 18 cases. They deal with the character and position of blackboards, the nature and position of lighting units, and the distance from the front wall of the room to the first window. The most important provisions specified are:

1. Blackboards shall be nonreflecting.
2. Blackboards shall be placed in front (behind the teacher's desk) and upon walls on the right-hand side of the classroom.
3. Lights should be shaded and placed well out of the ordinary range of vision.

4. There should be a distance of from 4 to 8 feet from the front wall of the room to the first window on the left-hand side of the classroom.

This last important specification is made in nine cases. In one case it is stated that it is desirable that artificial lighting should have the same general direction as natural lighting; that is, from the left and slightly from the rear.

It will be noted that there is a great divergence among the different States and cities of the Union as to their requirements for natural and artificial lighting of school rooms. It is evident that these requirements should be standardized as far as possible. Most of

these requirements are discussed in the American Standard Code of Lighting School Buildings, prepared and issued by the Illuminating Engineering Society and the American Institute of Architects in 1924, and the requirements of this code might logically be made the requirements of the individual States and cities. Since most of the schools in the United States have no provision for artificial lighting and are only occupied in the daytime, provisions for the proper day lighting of schools are more important at the present time than those for artificial lighting. However, as schools become used more and more in the evening for instructional and social purposes, the artificial lighting of schools will become more and more important.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Sewerage System in North York Township. Anon. *Contract Record and Engineering Review*, vol. 42, No. 23, June 6, 1928, pp. 611-613. (Abstract by Rudolph E. Thompson.)

An illustrated description of the new sewerage and sewage disposal system under construction at Armour Heights, a new subdivision, is contained in this article. The whole system, which is designed to serve an estimated population of 3,000, will tie in with the future township system, and the township authorities will operate it, charging the costs of operation to the area benefited. The average amount of sewage to be treated is 120,000 gallons per day. The plant will consist of a grit tank providing $2\frac{1}{4}$ minutes' detention, bar screen (1 inch), settling tank providing average detention of $1\frac{1}{2}$ hours, aeration tank providing an average contact of the settled sewage with the activated sludge of 4 hours, and final hopper-bottomed settling tank of capacity equal to $1\frac{1}{2}$ hours' flow. The preliminary and excess activated sludge will be digested together for period of 2 to 6 months, depending upon temperature conditions, and dried on beds of sand and gravel provided with underdrains. The treatment plant is estimated to cost \$23,000 and the entire system, \$60,000.

Degasification of Imhoff Tanks at Cleburne, Texas. Chester Cohen. *The Engineering News-Record*, vol. 101, No. 9, August 30, 1928, pp. 319-320. (Abstract by S. H. Smith.)

Slow delivery of sewage to, and a long settling period (5.4 hours) in Imhoff tanks, resulted in a septic sewage high in hydrogen sulphide. A small digestion compartment capacity ($\frac{1}{2}$ cubic foot per capita) caused belching of solids upward into settling compartments, resulting in foaming and gassing. Clogging of sprinkling filter, overloading secondary sedimentation tank, and stream pollution were demanding attention.

An inexpensive compressor, operated by floats in the dosing chamber, was made and installed to remove gas from the gas vents of the Imhoff tank and deliver it to a gas-storage tank. A vacuum of from 6 to 12 inches of water is now maintained on the gas vents of the Imhoff tank. Utilization of this gas will soon pay the cost of installing collecting equipment.

Operation of the Imhoff tanks has been greatly improved, foaming eliminated, and odors greatly reduced. The filter effluent now has a stability of over 98 per cent, a B. O. D. of 15 parts per million, and a turbidity of not more than 12. The vacuum on gas vents serves to raise considerable digested sludge to surface, which is drawn off daily into earth lagoons without objection. Anticipated additions to Imhoff and filtration plant are not necessary.

New Sewage Works for Bloomington and Normal, Ill. Anon. *Engineering News-Record*, vol 101, No. 4, July 28, 1928, p. 131. (Abstract by Frank Raab.)

The sewage is carried to this plant by a 27-inch vitrified pipe 2 miles long. The sewage passes through bar screens, grit chambers, Imhoff tanks, two sprinkling filters, four automatic dosing tanks, and a secondary settling tank. The Imhoff tanks are 28 feet wide, 90 feet long, and 29½ feet deep. The sprinkling filters have an area of 2½ acres. The spray nozzles are spaced 14 feet center to center. The secondary tank has revolving plows to remove sludge through a central discharge pipe. There are twenty 22 by 94 feet sludge beds arranged in pairs. Each pair is served by three gates. The beds represent an area of 0.774 square foot per capita for the estimated population of 1955. The first three beds on each side are glass covered in the manner of greenhouses. The sludge will be used as fertilizer. The laboratory at the sewage plant will be in charge of Professor Adams, of Normal University.

Liquor Effluents from Gas Works. A. Parker. *Water and Water Engineering*, vol. 30, No. 355, July 20, 1928, pp. 329-333; No. 356, August 20, 1928, pp. 377-379; No. 357, September 20, 1928, pp. 414-416. (Abstract by Rudolph E. Thompson.)

The most important effluents, as regards difficulty of disposal, result from manufacture of ammonium sulphate and other ammonia products from the crude ammoniacal liquor. The effluents arising from the manufacture of sulphate of ammonia are: (A) Spent liquor from still (residual); (B) "Devil" liquor, the condensed distillate after ammonia has been absorbed from still vapor by passage through dilute sulphuric acid. The works effluent is usually made up of 85 to 90 per cent A and 10 to 15 per cent B. The volume of waste is dependent on the strength of the ammoniacal liquor, but may reasonably be assumed to be for horizontal retorts—49.5 gallons per ton of coal carbonized; 4,440 gallons per ton of ammonium sulphate. Continuous vertical retorts—76.5 gallons per ton of coal carbonized; 5,700 gallons per ton of ammonium sulphate.

The principal obnoxious constituents of the effluent liquors are phenols, higher tar acids, salts containing sulphur, and salts containing cyanogen. Analyses are given showing the concentrations of these substances in ammoniacal liquors from horizontal and vertical retorts, and the composition of the corresponding effluents are calculated on the basis that 100 volumes of ammoniacal liquor give rise to 150 volumes of effluent. The composition of the spent liquor from the still and of the "devil" liquor are also given. The spent liquor is usually brown in color and turbid with particles of spent lime and tarry matters. Most of the lime settles readily, leaving a liquid possessing a high affinity for oxygen.

Effect on streams and sewage purification.—A discharge of this type renders water poisonous to fish and cattle and unfit for ordinary use, and its high oxygen-absorbing capacity retards or prevents self-purification. Assuming the oxygen-absorbed values of effluents from horizontal and vertical retorts to be 400 and 750 parts per 100,000, respectively, as shown in the analyses previously referred to, the effect of addition of one and two volumes of the waste on the oxygen-absorbed values of strong, average, and weak sewage, is calculated. Addition of one volume of the horizontal retort effluent to 100 volumes of strong domestic sewage ($O/A=15$) increases the oxygen-absorbed value 1.27 times; and two volumes of vertical retort liquor added to 100 volumes of weak domestic sewage ($O/A=5$), increases the oxygen-absorbed value four times. In practice, as purification is not carried to completion, the effect is relatively greater than these figures would indicate. Data are included on the oxygen-absorbing capacities of the more important constituents—phenol, thiosulphate, and thiocyanate.

Methods proposed for reducing or eliminating difficulties in disposal of effluents.—The methods which have been proposed are classified as follows: (A) Modifica-

tions in practice to reduce volume of spent liquor; (B) modifications in practice to improve the composition of spent liquor; (C) methods proposed for the purification or disposal of spent gas liquor. The volume of ammoniacal liquor, and therefore of the spent liquor, depends on the coal moisture, the water formed during carbonization, and the amount of water applied to the scrubbers. With steamed vertical retorts the volume is augmented by the steam which passes through the retorts without being decomposed. Although coal moisture is important, preliminary drying has never been suggested. Substitution of an acid washer for the usual scrubbers in one instance effected a reduction of 28 to 37 per cent in the volume of liquor. Water from undecomposed steam can be kept to a minimum by insuring optimum steaming conditions. Other methods employed for reducing the volume of effluent are countercurrent scrubbing, the use of fixed liquor in the scrubbers, and direct ammonia recovery. The latter is frequently adopted in coke-oven practice but has been found unsatisfactory for gas works use. The only effluent from this process is the liquor which separates in the condensers following the saturator. Analysis of a sample of this condensate showed the concentration of phenols to be high (0.63 grams per 100 cubic centimeters), and the amounts of the other constituents to be very low. Methods proposed for improving the quality of the spent liquor include early separation of tar and liquor, minimum circulation of the liquor, and removal of cyanide from the gas before condensation of the liquor has occurred. Brief details are given regarding these modifications in the manufacturing process.

Methods of purification or disposal of spent liquor.—An excellent review of the literature dealing with the disposal of spent liquor is given. It has been found at many plants that the liquor can be disposed of by treatment with domestic sewage, but, although the volume of waste is usually only approximately 1 per cent of the total volume of sewage, an appreciable increase in purifying area is necessary owing to the high oxygen-consuming power of the liquor. These wastes in volumes of up to 9 per cent of the sewage flow were successfully dealt with on contact beds at Oldbury by providing a large area of beds, giving triple contact and reducing the rate of flow through the beds. Fowler and his collaborators found that a high degree of purification could be effected by filtration of the diluted liquor through bacterial filters matured by treatment with sewage. This method has been in operation at the Bradford Corporation Chemical Works since 1908. These investigators succeeded in isolating a particular organism which oxidizes phenol. Little success has been attained in attempts to oxidize spent liquor by chemical means. By passage of steam and hot flue gases through the liquor, maintaining a temperature above 90° C., a considerable amount of phenol can be volatilized. This method has been employed at Hornsey gas works, analyses indicating a removal of 71 per cent of the phenols and a reduction in oxygen-consuming power of 42 per cent. The waste is also decolorized by this method, but this effect is only temporary, being due to acidification by the flue gases. When the product is neutralized, the color returns. The literature contains many references to processes for the extraction of phenol from spent liquor and ammonia liquor. Benzol has been the chief solvent used. The method is employed at several places, and high recovery efficiencies have been reported. Evaporation to dryness is another method of disposal, but unless sufficient waste heat is available for this purpose this method must be expensive in fuel. At some gas works the "devil liquor" is evaporated by injection in the form of a fine spray into the base of a hot chimney. This reduces the total work of purifying the effluent about 20 per cent. Other methods of evaporation, including coke quenching, are not considered to be of general applicability. The admixture of spent gas liquor with sewage appears to be the only satisfactory method of disposal known at the present time.

Annual Report Rivers Department City of Manchester, Year Ended March 30, 1927. F. J. West. *Bulletin of Hygiene*, vol. 3, No. 5, May, 1928, p. 428. (Abstract by G. Bertram Kershaw).

This report is divided into two parts. Part I deals with maintenance of rivers and streams, and inspection of trade wastes discharged into the sewers of the city. Part II deals with administration of the Withington, Moss Side, Gorton, and Davyhulme sewage works.

The average daily flow of sewage at the Davyhulme works for the year covered by the report was 48,111,000 gallons, the flow per head of population ranging from 55 to 76 gallons. Fifty-three per cent of the total flow of sewage received treatment by either primary contact beds and storm-water filters or the activated sludge process. The sludge produced during the year was 221,546 tons, equal to 12.65 tons per million gallons of sewage treated. The total cost of treatment, apart from interest charges and repayment of debt, amounted to £3 5s. 7.2d. per million gallons, the average cost per head of population being 16.2d. The volume treated by the activated sludge process was about 0.65 per cent of the total sewage flow. Studies have been made as to the possibility of anaerobic fermentation of the surplus activated sludge, with a view to the recovery and utilization of the gases produced, while a similar investigation has been set on foot regarding the Emscher tank gases at the Withington works.

The Advantages of Different Types of Sewage Tanks. Wm. Clifford. *Surveyor*, vol. 73, No. 1899, June 15, 1928, p. 645. (Abstract by H. W. Streeter.)

Measurement of flow.—Many attempts have been made to connect the amount of suspended matter deposited in a sewage tank with the rate of flow through the tank. The measurement of the mean velocity of flow in model tanks, using the salt-curve method, is possible when the water is turbulent, but unreliable when conditions favor sedimentation. Baffles have proved ineffective in controlling movement of water in the case of slow motion. Observations made in model tanks have shown (a) the form and position of the inlet have marked effect in determining the movement of the liquid; (b) turbulence increases with kinetic energy, where provision is not made for absorbing such energy of the inflowing liquid; (c) baffle walls and deep scum boards produce "dead" water and limit the working capacity of the tank; (d) "dead" water can be produced in any type of tank; (e) a bell-shaped orifice to the inlet pipe has no effect on the direction of the inflowing liquid.

Types of sewage tanks.—As usually constructed, the detritus or grit tank is least effective when settlement is most needed. By suitable control, detritus can be deposited in shallow channels and removed without difficulty. The capacity of detritus tanks need not exceed one one-hundred-and-twentieth of the daily flow, but additional tanks with capacity of one three-hundred-and-sixtieth of dry-weather flow should be provided for automatic service at three times dry-weather flow.

Brief History of Sewage and Waste Disposal. H. B. Hommon. *Pacific Municipalities*, vol. 42, No. 5, May, 1928, pp. 161–162 and 173. (Abstract by M. S. Foreman.)

This interesting article gives a short account of the history of sewage and waste disposal in Europe and the United States. In 1855, just after the cholera epidemic in England, a "nuisance removal act" was passed. In 1857 the "Royal Sewage Commission" was appointed to determine methods of safeguarding river pollution. This commission created sufficient interest in sewage disposal to bring about the appointment of the "Royal Commission on River Pollution" in 1865. This commission was directed to determine whether or not the restrictions of sewage into water courses would result in other serious conditions. The commission was unable to come to a definite conclusion but

functioned until 1870, when the biological process of sewage treatment was developed. Prior to 1870 both France and Germany had attempted sewage treatment, but with little success. After 1870 rapid progress was made in sewage disposal in Europe. The first study of sewage disposal in the United States was made by the State Board of Health of Massachusetts in 1872. Little was accomplished, however, prior to the establishment of the Lawrence Experiment Station in 1888. Shortly after that several cities made studies of sewage and waste disposal. Several instances were cited where the industries are now cooperating with State boards of health to solve waste-disposal problems.

The essential conditions for continuous flow settlement are quiescence and elimination of internal circulation. Almost any shape of tank will serve, the hopper tank being useful for humus or light sludge. Deep scum boards maintain "dead" water near the surface; the shallow floating appears to be as effective as any. In the rectangular horizontal flow tank, unguarded submerged inlets and outlets are undesirable, as they promote short circuiting. With properly guarded inlet there is no necessity for long tanks. The advantages of shallow as compared with deep tanks are (a) lower cost, (b) possibility of larger units, (c) small loss of level for cleaning, and (d) production of denser sludge. Temperature and density usually are not controllable.

For effective action of septic tanks the fresh liquid should mix with the older liquid, this being accomplished through the energy of the inflowing liquid. Settlement and dissipation of energy should be accomplished in a separate tank.

For storm-water tanks the necessity for frequent emptying almost limits construction to the shallow rectangular type. The design for the tank should provide (a) means for dissipating the energy of the inflowing liquid, (b) convenient means for removal of solid matter, (c) rapid decantation of the supernatant liquid, and (d) sufficient width of weir.

Sewage Disposal at Wakefield; Bio-Aeration Plants. L. Ives. *Surveyor*, vol. 73, No. 1899, June 15, 1928, pp. 631-632. (Abstract by H. W. Streeter.)

The original works, installed in 1893, consisted of screening chambers, detritus tanks, sedimentation tanks and 34 acres of underdrained land. In 1909 the land filters were found to be insufficient and the works were remodeled and extended in 1910-1913. In 1922 the sewage flow had increased and the works had become defective, mainly because of settlement of the works from 2.7 to 3 feet, resulting from working and subsidence of coal seams underlying the works.

In consequence of experimental work, a bio-aeration activated sludge plant, modeled after Mr. Haworth's design at Sheffield, has been designed to deal with a dry weather sewage flow of 3 m. g. d. from a population of 61,405. A smaller bio-aeration plant, treating 162,000 gallons daily (d. w. f.) of sewage from 8,470 people, has been installed at Agbrigg, a part of Wakefield. New works have been designed to treat 267,000 gallons daily (d. w. f.) of sewage from a population of 13,350, based on 20 gallons per day per head. The Agbrigg sewage is essentially a domestic sewage of more than average strength, with practically no trade waste of importance.

London Sewage and the River Thames. Anon. *The British Medical Journal*, No. 3511, April 21, 1928, pp. 676-677. (Abstract by C. H. Kibbey.)

The present volume of sewage effluent daily entering the Thames at Barking and Crossness, the outfalls, is some 260,000,000 gallons.

"These streams form, in effect, tributaries of no inconsiderable size to the River Thames. Discharge from the outfalls is constant, and the effluents mix with the river and take part in its movement."

Progressive passage of the water in the river in the direction of the sea is not continuous. Owing to oscillation of the tide, the progress of the effluent seaward from the outfall is subject to reversal. The rate of curtailed progression con-

tinues until ultimately it reaches the sea. On the flood tide the movement of effluent in the first instance is upriver, and, in consequence, the condition of the river is affected throughout its course in its passage through London.

The principal factors of pollution are the organic matters which have passed into solution and flow out with the effluent. The effluent also contains the lighter suspended matters which disintegration of the grosser solids in the sewers has produced. It is inferred that a degree of pollution has been reached which it would be unsafe to permit to continue. "Experience has proved that the calls which are being made on the London main drainage system, and on the capacity of the river as the final place of disposal, have reached a point when further steps should be taken."

In 1891 engineers contemplated moving an effluent outfall farther down the river and even considered the idea of extending an outfall sewer from Crossness to the deep water of the sea off Dungeness, a distance of 56 miles. But with the advance in knowledge of sewage purification, it is now seen that such colossal expenditure as would be involved in engineering undertakings of this magnitude is not only unnecessary, but would provide no real remedy. "Whether discharged into the sea or into the estuary, sewage in such volume as that of London would necessarily have to be treated." To London, the preservation of the salubrity of the river is of the first importance. The great waterway and spacious and unobstructed airway of the Thames estuary is doubtless one of the main environmental factors which have given London the enviable position in regard to health of which it is justly proud.

"The method which, after the fullest investigation, the council has decided to apply provisionally, on a scale which can be regarded only as an installment, involves no scrapping of the present inadequate methods of sewage treatment. It begins where the present treatment leaves off, and carries purification to an innocuous stage at which, without menace to the great health interests of the metropolis, the effluent may safely be discharged into the Thames."

A Study of Coliform Organisms in Samples of "Certified Milk." C. H. Chalmers. *Journal of Hygiene* (England), vol. 27, No. 3, March, 1928, pp. 295-305. (Abstract by P. R. Carter.)

Due to the fact that no detailed study appeared to have been made on coliform organisms generally found in "certified" milk, and that the presence of coliform organisms in milk has received considerable attention since the introduction into England of graded milk, this work was undertaken. The Milk Special Designation Order, 1923, required that certified milk must not contain coliform organisms in 1/10 c. c. on delivery to the consumer.

Thirty-two samples of milk, which by the presumptive test did not show the presence of *B. coli* in 1/10 c. c., were examined. The methods of isolating and typing the organisms are given in considerable detail.

The conclusions reached are as follows: (1) Of the 268 coliform organisms isolated from 32 samples of certified milk, 65.7 per cent fall within the true *B. coli* group and 18.6 per cent in groups X and Y of Stewart; (2) 54.1 per cent of the organisms, i. e., those of the *B. fecalis alkaligenes* group and those in subgroups 1, 2, and 3 of MacConkey which fermented lactose, gave a negative Voges Proskauer and a positive methyl red reaction, can be assumed to be of fecal origin; (3) 45.9 per cent, namely, those organisms of the *B. proteus* group, those of subgroup 4 of the *B. coli* group and those of groups X and Y are of the type generally found in soil and water; (4) all of the 32 samples examined contained coliform organisms in a dilution of 1 in 10 as shown by bile salt agar plates. None of these samples, however, gave a positive reaction with the presumptive test in two out of three tubes of 1/10 c. c. dilution. The presumptive test can not, therefore, be relied upon to give a true indication of the presence of coliform organisms

in milk. The inaccuracy of the test may be due in part to the structure of the ordinary Durham's tube, which fails to insure the collection of the gas produced; (5) although the majority of the coliform organisms present in milk ferment lactose, other members of the group which are not lactose fermenters occur and consequently their presence is not demonstrated by the presumptive test.

DEATHS DURING WEEK ENDED DECEMBER 1, 1928

Summary of information received by telegraph from industrial insurance companies for the week ended December 1, 1928, and corresponding week of 1927. (From the Weekly Health Index, December 5, 1928, issued by the Bureau of the Census, Department of Commerce)

	Week ended Dec. 1, 1928	Corresponding week, 1927
Policies in force.....	71, 976, 700	69, 585, 309
Number of death claims.....	11, 484	13, 358
Death claims per 1,000 policies in force, annual rate.....	8. 3	10. 0

Deaths from all causes in certain large cities of the United States during the week ended December 1, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, December 5, 1928, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Dec. 1, 1928		Annual death rate per 1,000 corresponding week, 1927	Deaths under 1 year		Infant mortality rate, week ended Dec. 1, 1928 ²
	Total deaths	Death rate ¹		Week ended Dec. 1, 1928	Corresponding week, 1927	
Total (65 cities).....	7, 165	12. 6	12. 3	683	687	³ 57
Akron.....	38			8	3	85
Albany ⁴	37	16. 1	19. 2	6	8	125
Atlanta.....	70	14. 3	14. 4	10	10	
White.....	33		12. 2	5	6	
Colored.....	37	(⁵)	19. 8	5	4	
Baltimore ⁴	223	14. 0	14. 3	18	13	55
White.....	156		12. 3	13	12	52
Colored.....	67	(⁵)	25. 5	5	1	78
Birmingham.....	73	17. 2	18. 7	6	8	51
White.....	41		15. 3	4	5	55
Colored.....	32	(⁵)	24. 0	2	3	45
Boston.....	208	13. 6	13. 3	19	21	52
Bridgeport.....	28			2	4	33
Buffalo.....	155	14. 6	12. 8	19	19	83
Cambridge.....	36	15. 0	10. 5	3	3	54
Camden.....	24	9. 3	12. 1	2	5	32
Canton.....	38	17. 0	10. 6	6	4	140
Chicago ⁴	683	11. 3	12. 1	62	70	53
Cincinnati.....	136			10	15	59
Cleveland.....	191	9. 9	8. 7	15	19	41
Columbus.....	68	11. 9	11. 8	9	5	84
Dallas.....	52	12. 5	14. 0	7	4	
White.....	36		11. 3	6	4	
Colored.....	16	(⁵)	32. 4	1	0	
Denver.....	91	16. 2	13. 7	9	8	
Des Moines.....	41	14. 1	10. 2	2	3	35
Detroit.....	306	11. 6	10. 0	45	39	70
Duluth.....	27	12. 1	7. 7	2	3	47
El Paso.....	29	12. 9	12. 9	4	2	
Erie.....	28			2	2	43
Fall River ⁴	23	9. 0	14. 9	1	7	18
Fort Worth.....	25	7. 7	7. 0	2	1	
White.....	20		6. 2	1	1	
Colored.....	5	(⁵)	13. 3	1	0	
Grand Rapids.....	32	10. 2	9. 0	2	3	29
Houston.....	55			6	7	
White.....					5	
Colored.....		(⁵)			2	
Indianapolis.....	119	16. 3	13. 4	2	7	16
White.....	102		13. 0	2	7	18
Colored.....	17	(⁵)	16. 3	0	0	0
Jersey City.....	63	10. 1	12. 3	7	7	54

(Footnotes at end of table.)

Deaths from all causes in certain large cities of the United States during the week ended December 1, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927—Continued

City	Week ended Dec. 1, 1928		Annual death rate per 1,000 corresponding week, 1927	Deaths under 1 year		Infant mortality rate, week ended Dec. 1, 1928
	Total deaths	Death rate		Week ended Dec. 1, 1928	Corresponding week, 1927	
Kansas City, Kans.	25	11.0	12.9	4	2	89
White	22		13.5	4	1	101
Colored	3	(¹)	9.8	0	1	0
Kansas City, Mo.	115	15.4	10.2	10	7	81
Knoxville	31	15.4	12.3	5	6	110
White	25		10.4	4	6	98
Colored	6	(¹)	25.6	1	0	212
Los Angeles	374		14.5	16	18	46
Louisville	75	11.9	12.5	6	8	49
White	49		25.6	3	0	23
Colored	26	(¹)	11.8	3	1	190
Lowell	28	13.3	11.8	3	0	65
Lynn	24	11.9	9.0	2	2	55
Memphis	55	15.1	18.4	6	13	71
White	32		16.3	3	4	57
Colored	23	(¹)	22.2	3	9	94
Milwaukee	105	10.1	12.3	14	13	63
Minneapolis	90	10.3	11.1	9	4	55
Nashville	38	14.2	17.8	2	6	33
White	15		12.7	0	2	0
Colored	23	(¹)	30.8	2	4	129
New Bedford	21	9.2	11.8	7	2	150
New Haven	45	12.5	17.5	3	4	44
New Orleans	194	23.6	19.0	17	19	85
White	117		15.3	7	7	52
Colored	77	(¹)	29.8	10	12	152
New York	1,400	12.2	11.4	131	133	53
Bronx Borough	166	9.1	9.0	17	14	51
Brooklyn Borough	501	11.3	10.3	54	56	55
Manhattan Borough	563	16.8	14.9	50	48	60
Queens Borough	128	7.8	8.6	10	11	41
Richmond Borough	42	14.6	15.6	0	4	0
Newark, N. J.	95	10.5	11.2	11	13	57
Oakland	78	14.9	10.3	2	1	22
Oklahoma City	25			3	4	—
Omaha	56	13.1	15.9	7	6	82
Paterson	21	7.6	14.9	2	8	35
Philadelphia	448	11.3	13.8	42	53	57
Pittsburgh	186	14.4	13.2	20	16	67
Portland, Oreg.	51			4	2	44
Providence	73	13.3	11.5	7	5	61
Richmond	45	12.1	12.2	8	3	110
White	27		9.2	2	1	42
Colored	18	(¹)	19.7	6	2	234
Rochester	83	13.2	12.2	7	6	57
St. Louis	217	13.4	14.5	17	22	57
St. Paul	57			2	4	19
Salt Lake City ⁴	60	22.7	12.3	5	3	81
San Antonio	53	12.7	8.9	9	6	—
San Diego	52	22.7	13.1	3	0	57
San Francisco	201	18.0	13.1	6	6	38
Schenectady	21	11.8	15.1	5	2	157
Seattle	86	11.7	9.3	4	4	43
Somerville	12	6.1	10.3	2	2	56
Springfield, Mass.	35	12.2	9.2	3	0	50
Syracuse	43	12.1	11.1	4	3	49
Tacoma	13	6.2	9.7	2	1	53
Toledo	78	13.0	11.4	8	8	77
Trenton	42	15.8	17.9	5	5	86
Utica	31	15.6	17.6	6	3	142
Washington, D. C.	134	12.7	13.2	10	12	58
White	93		11.8	4	6	34
Colored	41	(¹)	17.6	6	6	111
Waterbury	21			1	4	25
Wilmington, Del.	18	7.3	12.0	0	3	0
Worcester	58	15.3	9.6	6	2	73
Yonkers	27	11.6	11.4	0	2	0
Youngstown	36	10.8	10.8	5	3	66

¹ Annual rate per 1,000 population.

² Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.

³ Data for 67 cities.

⁴ Deaths for week ended Friday, Nov. 30, 1928.

⁵ In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended December 1, 1928, and December 3, 1927

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 1, 1928, and December 3, 1927

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec 1, 1928	Week ended Dec. 3, 1927	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927
New England States:								
Maine.....	6	12	3	6	137	46	1	0
New Hampshire.....	3		11		13		0	
Vermont.....					5	2	0	0
Massachusetts.....	96	169	13	13	482	516	4	3
Rhode Island.....	35	31		10	27	2	0	0
Connecticut.....	15	43	5	5	80	29	0	0
Middle Atlantic States:								
New York.....	218	422	20	10	421	299	20	5
New Jersey.....	97	178	9	7	60	62	3	1
Pennsylvania.....	233	328			890	433	2	6
East North Central States:								
Ohio.....	155	115	22	8	236	52	5	1
Indiana.....	63	39	261	26	62	20	0	0
Illinois.....	260	195	92	20	213	15	9	9
Michigan.....	98	109	4		22	217	10	1
Wisconsin.....	12	33	22	30	147	120	4	1
West North Central States:								
Minnesota.....	21	56		4	24	5	2	1
Iowa.....	26	19				3	0	0
Missouri.....	74	89	37	5	21	10	1	2
North Dakota.....	15	6			3	15	0	0
South Dakota.....	1	10			2	33	0	0
Nebraska.....	29	42	17	3		7	1	0
Kansas.....	32	29	7	3	10	45	0	0
South Atlantic States:								
Delaware.....	1	2			3		0	0
Maryland.....	37	37	15	24	28	64	1	1
District of Columbia.....	17	29	4		1	1	0	1
West Virginia.....	26	13	16	13	69	7	1	0
North Carolina.....	146	122			14	806	0	0
South Carolina.....	66	57	2,718	559	4	261	0	0
Georgia.....	48	37	344	82	26	17	2	0
Florida.....	15	34	25	14	3	1	1	0
East South Central States:								
Kentucky.....	16						3	
Tennessee.....	28	40	107	52	3	94	2	0
Alabama.....	94	109	158	70	18	38	0	0
Mississippi.....	23	39					0	0
West South Central States:								
Arkansas.....	21	36	90	96	38	63	1	0
Louisiana.....	34	43	17	12	31	37	0	2
Oklahoma.....	70	119	53	75	6	85	1	1
Texas.....	86	111	31	64	31	17	20	0

¹ New York City only.

² Week ended Friday.

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

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended December 1, 1928, and December 3, 1927—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927
Mountain States:								
Montana.....	2	4	3,372	-----	83	1	4	1
Idaho.....	4	4	11	-----	3	1	6	0
Wyoming.....	3	2	6	-----	3	2	1	0
Colorado.....	11	12	37	-----	10	2	3	1
New Mexico.....	3	7	66	-----	1	9	0	1
Arizona.....	7	9	18	-----	1	2	0	0
Utah ¹	3	10	258	3	1	-----	1	3
Pacific States:								
Washington.....	28	43	8	-----	25	214	3	1
Oregon.....	14	22	296	29	48	18	1	3
California.....	76	137	8,213	32	25	36	6	2
Division and State	Polioomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927	Week ended Dec. 1, 1928	Week ended Dec. 3, 1927
New England States:								
Maine.....	1	1	24	42	28	0	4	2
New Hampshire.....	0	-----	26	-----	0	-----	1	-----
Vermont.....	0	0	10	1	1	0	0	0
Massachusetts.....	0	24	173	279	0	0	5	14
Rhode Island.....	4	2	17	25	0	0	0	0
Connecticut.....	2	1	31	68	7	0	3	2
Middle Atlantic States:								
New York.....	5	19	259	361	0	8	21	33
New Jersey.....	1	2	76	119	0	0	7	18
Pennsylvania.....	4	13	276	575	0	0	27	39
East North Central States:								
Ohio.....	4	22	253	264	20	25	11	35
Indiana.....	0	2	99	123	50	57	4	9
Illinois.....	2	3	295	226	32	24	21	15
Michigan.....	1	3	342	224	15	41	16	18
Wisconsin.....	0	3	114	165	21	29	3	5
West North Central States:								
Minnesota.....	5	4	89	128	1	0	1	2
Iowa.....	0	6	99	77	103	45	3	4
Missouri.....	1	2	77	101	14	47	9	13
North Dakota.....	1	0	38	54	0	7	2	0
South Dakota.....	0	3	23	33	17	11	2	1
Nebraska.....	0	1	66	50	18	10	3	3
Kansas.....	1	1	101	191	13	34	7	0
South Atlantic States:								
Delaware.....	0	0	3	4	0	0	0	2
Maryland ²	3	1	40	59	0	0	9	14
District of Columbia.....	0	0	10	19	0	0	0	1
West Virginia.....	0	4	64	51	9	6	10	3
North Carolina.....	2	0	133	148	7	39	10	4
South Carolina.....	1	3	31	43	0	7	17	21
Georgia.....	1	0	48	37	0	0	16	10
Florida.....	2	2	18	16	0	2	12	6
East South Central States:								
Kentucky.....	0	-----	36	-----	6	-----	7	-----
Tennessee.....	1	3	25	35	9	5	14	25
Alabama.....	0	0	31	33	9	6	8	18
Mississippi.....	0	1	20	28	1	5	7	3
West South Central States:								
Arkansas.....	0	3	18	20	0	4	6	21
Louisiana.....	0	1	32	15	6	11	14	14
Oklahoma ¹	1	3	66	53	28	41	25	53
Texas.....	0	10	41	50	13	6	42	13
Mountain States:								
Montana.....	0	1	49	48	45	27	1	1
Idaho.....	0	1	7	21	37	9	3	0
Wyoming.....	0	0	18	28	1	5	0	3
Colorado.....	1	0	25	54	3	11	0	7
New Mexico.....	1	2	10	8	0	0	3	7
Arizona.....	0	0	7	2	14	0	0	2
Utah ¹	0	1	5	10	4	19	1	1
Pacific States:								
Washington.....	4	17	44	50	25	31	5	6
Oregon.....	0	26	32	39	51	29	3	8
California.....	5	10	161	162	13	10	4	2

¹ Week ended Friday.

² Figures for 1928 are exclusive of Oklahoma City and Tulsa and for 1927 are exclusive of Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Ma- laria	Mea- sles	Pel- lagra	Polio- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
<i>October, 1928</i>										
Massachusetts.....	9	413	32	-----	796	3	50	532	0	40
Montana.....	8	20	6	-----	49	-----	2	46	68	17
South Dakota.....	1	19	6	-----	4	-----	7	85	23	4
Virginia.....	4	552	1,040	77	207	28	16	446	5	118
Washington.....	4	37	15	1	116	-----	63	124	116	44

<i>October, 1928</i>		<i>October, 1928—Continued</i>	
Actinomycosis:	Cases	Mumps—Continued.	Cases
Massachusetts.....	1	South Dakota.....	2
Chicken pox:		Washington.....	156
Massachusetts.....	421	Paratyphoid fever:	
Montana.....	197	South Dakota.....	1
South Dakota.....	51	Ophthalmia neonatorum:	
Virginia.....	176	Massachusetts.....	114
Washington.....	398	Rabies in animals:	
Dysentery:		Washington.....	3
Massachusetts.....	4	Rocky Mountain spotted or tick fever:	
Virginia.....	110	Montana.....	1
Washington.....	4	Scabies:	
German measles:		Washington.....	16
Massachusetts.....	21	Septic sore throat:	
Montana.....	5	Massachusetts.....	13
Washington.....	54	Washington.....	2
Hookworm disease:		Tetanus:	
Virginia.....	9	Massachusetts.....	2
Impetigo contagiosa:		Trachoma:	
Washington.....	36	Massachusetts.....	3
Lead poisoning:		Montana.....	63
Massachusetts.....	2	Whooping cough:	
Lethargic encephalitis:		Massachusetts.....	336
Massachusetts.....	7	Montana.....	23
Washington.....	1	South Dakota.....	16
Mumps:		Virginia.....	168
Massachusetts.....	149	Washington.....	60
Montana.....	5		

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 31,400,000. The estimated population of the 93 cities reporting deaths is more than 30,700,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended November 24, 1928, and November 26, 1927

	1928	1927	Estimated expectancy
Cases reported			
Diphtheria:			
42 States.....	2,543	2,671	
98 cities.....	990	1,196	1,230
Measles:			
41 States.....	3,406	2,855	
98 cities.....	655	800	
Poliomyelitis:			
42 States.....	48	195	
Scarlet fever:			
42 States.....	3,360	3,061	
98 cities.....	1,059	934	1,058
Smallpox:			
42 States.....	487	593	
98 cities.....	45	126	40
Typhoid fever:			
42 States.....	379	424	
98 cities.....	56	57	70
Deaths reported			
Influenza and pneumonia:			
93 cities.....	809	611	
Smallpox:			
93 cities.....	0	0	

City reports for week ended November 24, 1928

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding 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 1919 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	Population July 1, 1926, estimated	Chicken pox, cases re-ported	Diphtheria		Influenza		Meas-les, cases re-ported	Mumps, cases re-ported	Pneu-monia, deaths re-ported
			Cases, esti-mated expect-ancy	Cases re-ported	Cases re-ported	Deaths re-ported			
NEW ENGLAND									
Maine:									
Portland.....	76,400	10	2	0	1	0	22	0	1
New Hampshire:									
Concord.....	22,546	0	0	1	0	0	0	0	1
Vermont:									
Barre.....	10,008	0	1	1	0	0	0	2	1
Massachusetts:									
Boston.....	787,000	80	52	13	7	2	16	5	22
Fall River.....	131,000	2	5	2	0	1	125	1	2
Springfield.....	145,000	9	5	15	0	0	52	0	3
Worcester.....	193,000	20	7	1	0	0	5	8	4
Rhode Island:									
Pawtucket.....	71,000	1	2	2	0	0	1	0	1
Providence.....	275,000	21	11	20	0	0	16	0	3
Connecticut:									
Bridgeport.....	(?)	8	10	1	0	0	13	0	5
Hartford.....	164,000	5	9	4	0	0	0	3	1
New Haven.....	182,000	17	3	1	0	1	3	2	2

¹ Estimated, July 1, 1925.² No estimate made.

City reports for week ended November 24, 1928—Continued

Division, State, and city	Population July 1, 1926, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC									
New York:									
Buffalo.....	544,000	32	23	10	-----	1	1	2	11
New York.....	5,924,000	178	185	171	20	14	77	47	150
Rochester.....	321,000	15	9	6	-----	0	9	20	6
Syracuse.....	185,000	18	7	1	-----	0	1	2	8
New Jersey:									
Camden.....	131,000	8	8	2	0	1	2	2	5
Newark.....	459,000	62	15	34	3	0	3	30	7
Trenton.....	134,000	4	6	2	0	0	0	0	3
Pennsylvania:									
Philadelphia.....	2,008,000	135	84	40	-----	7	8	8	43
Pittsburgh.....	637,000	84	39	11	-----	8	5	11	27
Reading.....	114,000	13	5	4	-----	0	15	0	3
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	411,000	6	20	6	0	0	0	1	15
Cleveland.....	960,000	152	63	33	5	1	54	5	13
Columbus.....	285,000	22	16	1	1	1	2	2	4
Toledo.....	295,000	137	15	2	4	4	9	2	6
Indiana:									
Fort Wayne.....	99,900	3	6	4	0	0	0	0	0
Indianapolis.....	367,000	130	14	8	0	1	0	3	18
South Bend.....	81,700	11	3	2	0	0	0	0	0
Terre Haute.....	71,900	0	3	1	0	0	0	0	0
Illinois:									
Chicago.....	3,048,000	187	99	169	12	2	54	3	71
Springfield.....	64,700	6	3	0	0	0	0	0	0
Michigan:									
Detroit.....	* 1,242,044	167	82	48	3	0	7	16	25
Flint.....	136,000	28	12	2	0	0	2	3	5
Grand Rapids.....	156,000	13	5	0	0	0	2	2	5
Wisconsin:									
Kenosha.....	52,700	13	2	1	1	0	1	0	0
Milwaukee.....	517,000	207	33	3	0	0	26	11	3
Racine.....	69,400	23	3	0	1	0	13	1	3
Superior.....	* 39,671	2	1	1	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth.....	113,000	22	1	0	0	0	0	20	1
Minneapolis.....	434,000	237	34	12	0	0	20	35	4
St. Paul.....	248,000	100	21	1	0	1	3	16	8
Iowa:									
Davenport.....	* 152,469	4	2	0	0	-----	0	0	-----
Des Moines.....	146,000	0	6	2	0	-----	0	0	-----
Sioux City.....	78,000	-----	3	-----	-----	-----	-----	-----	-----
Waterloo.....	35,900	24	0	14	0	-----	1	43	-----
Missouri:									
Kansas City.....	375,000	21	13	6	0	0	16	3	5
St. Joseph.....	78,400	8	2	3	0	0	0	0	6
St. Louis.....	830,000	46	52	42	0	1	2	1	-----
North Dakota:									
Fargo.....	* 26,403	19	0	0	0	1	1	0	0
Grand Forks.....	* 14,811	0	0	0	0	-----	0	0	-----
South Dakota:									
Aberdeen.....	* 15,036	2	0	0	0	-----	0	0	-----
Sioux Falls.....	* 30,127	0	1	1	0	-----	0	0	-----
Nebraska:									
Omaha.....	216,000	2	8	15	0	0	1	0	5
Kansas:									
Topeka.....	56,500	23	3	1	0	0	8	0	0
Wichita.....	92,500	0	7	1	0	0	0	0	5
SOUTH ATLANTIC									
Delaware:									
Wilmington.....	124,000	0	3	2	0	0	7	0	6
Maryland:									
Baltimore.....	808,000	101	30	18	9	1	2	30	32
Cumberland.....	* 33,741	0	1	0	0	0	5	0	2
Frederick.....	* 12,035	0	0	0	0	0	0	0	0
District of Columbia:									
Washington.....	528,000	14	24	43	3	1	5	0	12

* Estimated, July 1, 1925.

* Special census.

City reports for week ended November 24, 1928—Continued

Division, State, and city	Population, July 1, 1926, estimated	Chicken pox, cases re-ported	Diphtheria		Influenza		Meas-les, cases re-ported	Mumps, cases re-ported	Pneu-monia, deaths re-ported
			Cases, esti-mated expectancy	Cases re-ported	Cases re-ported	Deaths re-ported			
SOUTH ATLANTIC—con-tinued									
Virginia:									
Lynchburg	¹ 38,493	2	4	5	0	0	0	10	1
Norfolk	174,000	8	5	6	0	0	0	0	5
Richmond	189,000	0	19	18	0	0	0	1	7
Roanoke	61,900	1	5	3	0	0	0	0	1
West Virginia:									
Charleston	50,700	15	3	2	2	1	0	0	0
Wheeling	¹ 56,208	8	4	0	0	0	12	15	0
North Carolina:									
Raleigh	¹ 30,371	0	3	3	0	0	0	0	2
Wilmington	37,700	2	1	3	0	0	0	0	1
Winston-Salem	71,800	0	5	3	0	0	0	2	7
South Carolina:									
Charleston	74,100	0	2	0	52	1	0	0	2
Columbia	41,800	2	1	1	0	0	0	5	2
Greenville	¹ 27,311		2						
Georgia:									
Atlanta	(?)	0	8	15	62	1	3	0	5
Brunswick	¹ 16,809	0	0	0	0	0	0	2	0
Savannah	94,900	0	3	2	6	1	0	0	6
Florida:									
Miami	¹ 131,286	0	3	4	0	0	1	0	2
St. Petersburg	¹ 42,629		1			0			0
Tampa	102,000	0	3	2	0	1	0	0	0
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,500	1	2	1	0	0	0	0	5
Louisville	311,000	0	10	5	4	0	0	1	3
Tennessee:									
Memphis	177,000	12	11	3	0	2	0	0	7
Nashville	137,000	0	6	2	0	2	0	0	2
Alabama:									
Birmingham	211,000	6	9	10	0	0	1	1	6
Mobile	66,800	0	2	5	0	0	0	1	2
Montgomery	47,000	2	3	0	0		0	0	
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	¹ 31,643	3	2	2	0		0	0	
Little Rock	75,900	1	3	0	0	0	0	7	0
Louisiana:									
New Orleans	419,000	0	13	18	3	4	0	0	9
Shreveport	59,500	10	2	0	0	0	1	0	1
Oklahoma:									
Oklahoma City	(?)	0	5	17	6	1	0	0	5
Tulsa	133,000	22	6	13	0		1	0	
Texas:									
Dallas	203,000	6	16	25	2	2	0	0	2
Fort Worth	159,000	0	5	14	0	1	0	0	6
Galveston	49,100	0	1	4	0	0	0	0	2
Houston	¹ 164,954	0	8	15	0	1	0	0	11
San Antonio	205,000	0	5	3	0	1	0	0	6
MOUNTAIN									
Montana:									
Billings	¹ 17,971	3	0	0	0	0	0	0	1
Great Falls	¹ 29,883	30	1	0	0	1	21	2	1
Helena	¹ 12,037	0	0	0	1	0	0	0	0
Missoula	¹ 12,668	0	0	0	280	0	0	0	1
Idaho:									
Boise	¹ 23,042	3	0	0	0	0	0	0	0
Colorado:									
Denver	285,000	53	16	14		1	4	20	9
Pueblo	43,900	8	3	0	0	0	1	1	1
New Mexico:									
Albuquerque	¹ 21,000	0	1	1	11	0	1	0	1
Utah:									
Salt Lake City	133,000		5						
Nevada:									
Reno	¹ 12,665	0	0	0	12	0	0	0	2

¹ Estimated, July 1, 1925.² No estimate made.³ Special census.

City reports for week ended November 24, 1928—Continued

Division, State, and city	Population, July 1, 1928, estimated	Chick- en pox, cases re- ported	Diphtheria		Influenza		Meas- les, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
			Cases, esti- mated expec- tancy	Cases re- ported	Cases re- ported	Deaths re- ported			
PACIFIC									
Washington:									
Seattle.....	(?)	27	7	6	0	-----	0	7	-----
Spokane.....	109,000	1	3	0	0	-----	0	0	-----
Tacoma.....	106,000	27	4	2	0	0	1	61	1
Oregon:									
Portland.....	1 282,383	22	10	14	7	3	24	2	5
California:									
Los Angeles.....	(?)	24	52	22	802	14	4	10	41
Sacramento.....	73,400	5	3	4	135	2	1	14	4
San Francisco.....	567,000	13	19	7	327	12	0	1	4

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expec- tancy	Cases re- ported	Cases, esti- mated expec- tancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expec- tancy	Cases re- ported	Deaths re- ported		
NEW ENGLAND											
Maine:											
Portland.....	2	4	0	0	0	0	0	0	1	3	21
New Hampshire:											
Concord.....	1	0	0	0	0	0	0	0	0	0	13
Vermont:											
Barre.....	0	0	0	0	0	1	0	0	0	6	3
Massachusetts:											
Boston.....	57	47	0	0	0	10	2	3	1	24	223
Fall River.....	3	3	0	0	0	2	0	0	1	5	37
Springfield.....	6	7	0	0	0	1	0	0	0	0	16
Worcester.....	11	4	0	0	0	3	0	0	0	10	43
Rhode Island:											
Pawtucket.....	1	4	0	0	0	0	0	0	0	0	15
Providence.....	8	11	0	0	0	1	1	0	0	4	51
Connecticut:											
Bridgeport.....	8	4	0	0	0	3	0	0	0	1	36
Hartford.....	5	6	0	0	0	1	0	0	0	5	20
New Haven.....	6	2	0	0	0	2	0	0	0	4	37
MIDDLE ATLANTIC											
New York:											
Buffalo.....	20	13	1	0	0	8	2	0	0	37	153
New York.....	124	101	0	0	0	94	19	8	2	55	1,408
Rochester.....	8	5	0	0	0	0	1	2	1	34	77
Syracuse.....	11	7	0	0	0	0	0	2	0	37	51
New Jersey:											
Camden.....	4	6	0	0	0	1	0	1	1	3	40
Newark.....	17	14	0	0	0	4	1	0	0	27	92
Trenton.....	2	4	0	0	0	3	0	0	0	5	28
Pennsylvania:											
Philadelphia.....	74	44	0	0	0	32	5	2	0	112	512
Pittsburgh.....	37	26	0	0	0	6	0	3	1	18	179
Reading.....	2	4	0	0	0	0	0	0	0	6	32
EAST NORTH CENTRAL											
Ohio:											
Cincinnati.....	15	20	0	0	0	12	0	1	0	12	145
Cleveland.....	29	23	0	0	0	13	2	1	0	67	159
Columbus.....	11	4	1	0	0	3	0	0	0	2	68
Toledo.....	14	9	0	0	0	2	1	0	0	29	76
Indiana:											
Fort Wayne.....	2	1	0	0	0	3	0	0	0	0	27
Indianapolis.....	14	6	3	0	0	3	0	1	1	9	84
South Bend.....	4	2	0	0	0	0	0	0	0	1	18
Terre Haute.....	4	1	0	0	0	0	0	0	0	0	13

¹ Estimated July 1, 1925.² No estimate made.

City reports for week ended November 24, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	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		
EAST NORTH CENTRAL—contd.											
Illinois:											
Chicago.....	107	91	1	23	0	42	4	3	0	53	769
Springfield.....	2	11	0	0	0	0	0	0	0	0	10
Michigan:											
Detroit.....	76	104	0	1	0	26	2	0	1	164	302
Flint.....	11	15	0	0	0	0	0	0	0	9	24
Grand Rapids.....	9	5	0	2	0	2	0	1	0	1	35
Wisconsin:											
Kenosha.....	2	3	0	0	0	0	0	1	0	2	6
Milwaukee.....	19	59	1	0	0	8	0	0	0	99	84
Racine.....	4	1	0	0	0	0	0	0	0	7	14
Superior.....	2	1	0	0	0	1	0	0	0	0	7
WEST NORTH CENTRAL											
Minnesota:											
Duluth.....	7	6	1	0	0	2	0	0	0	9	17
Minneapolis.....	45	28	2	0	0	5	0	1	0	26	84
St. Paul.....	21	12	4	0	0	5	1	0	0	22	70
Iowa:											
Davenport.....	1	1	1	1	—	—	0	0	—	0	—
Des Moines.....	8	14	1	0	—	—	0	0	—	0	36
Sioux City.....	3	—	1	—	—	—	0	—	—	—	—
Waterloo.....	2	35	0	0	—	—	0	0	—	8	—
Missouri:											
Kansas City.....	12	10	1	0	0	8	1	1	0	9	112
St. Joseph.....	3	7	1	0	0	1	0	1	0	1	37
St. Louis.....	35	24	1	1	0	7	3	3	2	38	231
North Dakota:											
Fargo.....	3	2	0	0	0	0	0	0	0	0	8
Grand Forks.....	0	4	1	0	—	—	0	0	—	1	—
South Dakota:											
Aberdeen.....	2	0	0	0	—	—	0	0	—	0	—
Sioux Falls.....	3	2	0	0	—	—	0	0	—	0	—
Nebraska:											
Omaha.....	6	9	1	0	0	1	0	2	0	3	54
Kansas:											
Topeka.....	3	9	0	0	0	0	1	0	0	4	13
Wichita.....	6	3	0	0	0	2	1	0	0	4	35
SOUTH ATLANTIC											
Delaware:											
Wilmington.....	5	0	0	0	0	0	0	0	0	5	33
Maryland:											
Baltimore.....	21	19	0	0	0	17	3	1	0	105	261
Cumberland.....	1	0	0	0	0	2	0	0	0	0	7
Frederick.....	0	0	0	0	0	0	0	0	0	2	3
District of Col.:											
Washington.....	19	14	0	0	0	6	2	2	0	17	121
Virginia:											
Lynchburg.....	1	2	0	0	0	0	0	1	0	0	12
Norfolk.....	3	4	0	0	0	2	0	0	0	0	—
Richmond.....	8	2	0	0	0	1	1	1	0	0	48
Roanoke.....	3	4	0	0	0	0	0	0	0	0	17
West Virginia:											
Charleston.....	2	5	0	0	0	2	0	0	0	8	49
Wheeling.....	2	0	0	0	0	1	1	0	0	1	12
North Carolina:											
Raleigh.....	2	1	0	0	0	1	0	0	0	3	21
Wilmington.....	1	1	0	0	0	1	0	1	0	0	15
Winston-Salem.....	2	7	0	0	0	1	0	0	0	0	30
South Carolina:											
Charleston.....	1	0	0	0	0	0	1	0	0	0	31
Columbia.....	0	2	0	0	0	0	0	0	0	0	15
Greenville.....	1	—	0	—	—	—	0	—	—	—	—
Georgia:											
Atlanta.....	6	16	1	0	0	11	1	0	0	1	83
Brunswick.....	0	0	0	0	0	0	0	0	0	0	0
Savannah.....	1	1	0	0	0	3	1	0	0	2	30

City reports for week ended November 24, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	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											
Florida:											
Miami.....	1	2	0	0	0	0	0	0	0	0	14
St. Petersburg.....	0		0		0	0	0	0	0		5
Tampa.....	0	3	0	0	0	2	0	0	0	2	26
EAST SOUTH CEN- TRAL											
Kentucky:											
Covington.....	2	9	0	1	0	0	0	0	0	0	23
Louisville.....	6	10	1	1	0	6	1	0	0	5	71
Tennessee:											
Memphis.....	6	13	1	0	0	4	2	3	1	5	65
Nashville.....	4	5	0	0	0	3	1	0	0	0	39
Alabama:											
Birmingham.....	4	10	0	1	0	2	1	1	0	3	57
Mobile.....	0	0	1	0	0	1	0	0	1	0	26
Montgomery.....	1	2	0	0			0	1		0	
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith.....	1	0	0	0			1	0		0	
Little Rock.....	1	9	1	0	0	1	0	0	0	0	
Louisiana:											
New Orleans.....	7	13	0	0	0	12	2	1	0	0	140
Shreveport.....	2	1	0	0	0	0	1	1	0	0	29
Oklahoma:											
Oklahoma City.....	3	1	0	0	0	1	0	0	0	0	40
Tulsa.....	2	3	0	0			1	0		3	
Texas:											
Dallas.....	6	6	0	0	0	3	1	1	1	3	51
Fort Worth.....	2	9	0	0	0	1	0	0	0	0	55
Galveston.....	1	1	0	0	0	2	0	0	0	0	13
Houston.....	1	4	0	2	0	6	0	0	0	0	80
San Antonio.....	2	2	0	0	0	9	0	0	0	0	61
MOUNTAIN											
Montana:											
Billings.....	1	0	0	0	0	0	0	0	0	0	5
Great Falls.....	1	0	1	0	0	0	0	0	0	6	15
Helena.....	0	0	0	0	0	0	0	0	0	0	9
Missoula.....	0	1	0	0	0	0	0	0	0	0	5
Idaho:											
Boise.....	0	1	0	0	0	0	0	0	0	0	9
Colorado:											
Denver.....	11	7	1	0	0	8	0	0	0	4	88
Pueblo.....	1	0	0	0	0	0	0	0	0	0	8
New Mexico:											
Albuquerque.....	0	3	0	0	0	5	0	0	0	3	10
Utah:											
Salt Lake City.....	2		1				1				
Nevada:											
Reno.....	0	0	0	0	0	0	0	0	0	0	6
PACIFIC											
Washington:											
Seattle.....	9	2	3	3	0		1	3		12	
Spokane.....	11	0	6	1	0		0	0		0	
Tacoma.....	2	4	2	2	0	1	0	0	0	3	22
Oregon:											
Portland.....	8	9	5	28	0	3	0	0	1	0	77
California:											
Los Angeles.....	24	25	3	0	0	23	1	2	0	16	307
Sacramento.....	2	25	0	0	0	5	0	0	0	0	51
San Francisco.....	13	20	0	1	0	5	1	0	0	0	194

City reports for week ended November 24, 1928—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland.....	1	1	0	0	0	0	0	0	0
Massachusetts:									
Boston.....	3	2	1	1	1	0	1	1	0
Springfield.....	0	1	0	0	0	0	0	0	0
Connecticut:									
Hartford.....	1	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
New York.....	17	4	2	0	0	0	5	0	1
Syracuse.....	0	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia.....	1	1	1	2	0	0	0	0	0
Pittsburgh.....	0	0	0	1	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland.....	1	1	0	0	0	1	1	3	1
Columbus.....	0	0	1	1	0	0	0	1	0
Illinois:									
Chicago ¹	4	3	0	0	0	0	1	0	0
Michigan:									
Detroit.....	7	2	2	0	0	0	1	0	1
Wisconsin:									
Milwaukee.....	1	1	1	0	0	0	1	0	0
WEST NORTH CENTRAL									
Missouri:									
Kansas City.....	0	1	0	0	0	0	0	0	0
St. Louis.....	5	0	0	0	0	0	0	0	0
SOUTH ATLANTIC²									
Maryland:									
Baltimore.....	0	0	0	1	0	0	1	1	0
Virginia:									
Richmond.....	0	0	0	0	0	0	0	1	0
North Carolina:									
Winston-Salem.....	0	0	0	0	3	0	0	0	0
South Carolina:									
Charleston ³	0	0	0	0	3	1	0	0	0
Georgia:									
Atlanta.....	0	0	0	0	0	0	0	0	1
Savannah.....	0	0	0	0	1	0	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis.....	1	0	0	0	0	0	0	0	0
Nashville.....	0	0	0	0	1	1	0	0	0
Alabama:									
Birmingham.....	0	0	1	0	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock.....	0	0	1	0	0	1	0	0	0
Louisiana:									
New Orleans.....	0	0	0	0	1	1	0	0	0
Shreveport.....	0	0	0	0	0	2	0	0	0
Oklahoma:									
Oklahoma City.....	0	0	0	0	0	1	0	0	0
Texas:									
Dallas.....	0	0	0	0	1	1	0	0	0
Galveston.....	0	0	0	0	0	1	0	0	0

¹ Rabies (in man); 1 case and 1 death at Chicago, Ill.² Typhus fever; 1 case at Tampa, Fla.³ Dengue; 18 cases at Charleston, S. C.

City reports for week ended November 24, 1928—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MOUNTAIN									
Montana:									
Billings.....	0	0	0	0	0	0	0	0	1
Colorado:									
Denver.....	1	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle.....	0	0	0	0	0	0	1	2	0
Oregon:									
Portland.....	1	1	0	0	0	0	0	0	0
California:									
Los Angeles.....	1	0	0	0	1	0	0	0	0
Sacramento.....	2	1	0	0	0	0	0	0	0
San Francisco.....	0	0	1	0	0	0	1	0	0

The following table gives the rates per 100,000 population for 101 cities for the 5-week period ended November 24, 1928, compared with those for a like period ended November 26, 1927. The population figures used in computing the rates are approximate estimates as of July 1, 1928 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 31,657,000 in 1928 and 31,050,000 in 1927. The 95 cities reporting deaths had nearly 30,961,000 estimated population in 1928 and nearly 30,370,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, October 21 to November 24, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927¹

DIPHTHERIA CASE RATES

	Week ended—									
	Oct. 27, 1928	Oct. 29, 1927	Nov. 3, 1928	Nov. 5, 1927	Nov. 10, 1928	Nov. 12, 1927	Nov. 17, 1928	Nov. 19, 1927	Nov. 24, 1928	Nov. 26, 1927
101 cities.....	131	195	140	213	152	² 215	159	228	³ 165	203
New England.....	156	135	90	114	122	160	159	163	140	170
Middle Atlantic.....	98	190	110	225	109	204	134	233	137	212
East North Central.....	154	232	169	261	169	253	166	251	183	219
West North Central.....	158	139	144	194	210	160	197	152	⁴ 191	178
South Atlantic.....	179	191	226	184	242	189	207	216	⁵ 223	195
East South Central.....	155	259	170	152	180	208	100	238	130	122
West South Central.....	172	294	220	318	272	294	240	343	268	302
Mountain.....	27	99	71	99	71	278	239	206	⁶ 162	170
Pacific.....	66	151	64	141	79	² 224	97	222	105	162

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, 1928, and 1927, respectively.

² Seattle, Wash., and Spokane, Wash., not included.

³ Sioux City, Iowa, Greenville, S. C., and Salt Lake City, Utah, not included.

⁴ Sioux City, Iowa, not included.

⁵ Greenville, S. C., not included.

⁶ Salt Lake City, Utah, not included.

Summary of weekly reports from cities, October 21 to November 24, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927—Continued

MEASLES CASE RATES

	Week ended—									
	Oct. 27, 1928	Oct. 29, 1927	Nov. 3, 1928	Nov. 5, 1927	Nov. 10, 1928	Nov. 12, 1927	Nov. 17, 1928	Nov. 19, 1927	Nov. 24, 1928	Nov. 26, 1927
101 cities.....	52	70	58	77	73	96	94	124	109	136
New England.....	244	191	338	242	402	342	382	391	582	500
Middle Atlantic.....	25	72	33	72	42	124	69	93	59	128
East North Central.....	41	18	39	29	57	27	86	54	105	60
West North Central.....	49	34	68	14	43	16	62	22	104	24
South Atlantic.....	63	106	46	132	56	135	84	281	160	200
East South Central.....	0	203	10	233	5	76	15	147	5	162
West South Central.....	8	21	8	21	8	12	12	70	4	87
Mountain.....	124	63	80	9	177	18	203	72	300	27
Pacific.....	43	91	15	78	43	76	51	212	15	175

SCARLET FEVER CASE RATES

	114	145	125	148	164	150	169	177	176	158
101 cities.....	114	145	125	148	164	150	169	177	176	158
New England.....	117	212	131	200	175	205	193	249	211	181
Middle Atlantic.....	57	97	69	110	95	110	108	152	109	122
East North Central.....	151	166	172	173	233	177	245	201	227	195
West North Central.....	214	247	197	164	253	186	224	232	291	204
South Atlantic.....	107	168	116	159	142	182	105	155	143	171
East South Central.....	120	137	140	167	160	152	249	112	244	86
West South Central.....	76	124	136	149	176	103	196	103	144	165
Mountain.....	62	143	62	179	88	152	97	233	104	179
Pacific.....	179	97	148	141	169	117	143	154	194	131

SMALLPOX CASE RATES

	2	7	1	18	4	16	3	19	7	22
101 cities.....	2	7	1	18	4	16	3	19	7	22
New England.....	2	9	0	0	0	0	0	0	0	0
Middle Atlantic.....	0	0	0	0	0	0	0	0	0	0
East North Central.....	3	0	0	6	7	4	4	6	21	1
West North Central.....	2	51	2	58	6	156	2	160	12	202
South Atlantic.....	0	0	2	14	0	5	2	9	10	2
East South Central.....	5	5	5	0	0	0	5	5	15	0
West South Central.....	4	0	4	4	4	4	0	4	8	4
Mountain.....	0	45	0	36	9	27	88	27	10	54
Pacific.....	15	16	5	18	15	13	3	29	18	44

TYPHOID FEVER CASE RATES

	18	17	13	19	9	15	10	15	9	10
101 cities.....	18	17	13	19	9	15	10	15	9	10
New England.....	16	19	7	16	9	16	16	23	7	14
Middle Atlantic.....	18	12	11	20	7	15	10	14	9	10
East North Central.....	10	13	5	7	5	9	6	7	5	6
West North Central.....	14	16	18	24	4	28	14	20	16	14
South Atlantic.....	40	22	32	31	16	20	11	25	11	9
East South Central.....	50	46	35	35	30	5	10	15	25	15
West South Central.....	24	37	20	58	40	33	20	29	12	12
Mountain.....	27	27	18	36	27	9	18	18	10	27
Pacific.....	13	16	5	5	3	17	5	13	13	5

²Seattle, Wash., and Spokane, Wash., not included.

³Sioux City, Iowa, Greenville, S. C., and Salt Lake City, Utah, not included.

⁴Sioux City, Iowa, not included.

⁵Greenville, S. C., not included.

⁶Salt Lake City, Utah, not included.

Summary of weekly reports from cities, October 21 to November 24, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927—Continued

INFLUENZA DEATH RATES

	Week ended—									
	Sept. 1, 1928	Sept. 3, 1927	Sept. 8, 1928	Sept. 10, 1927	Sept. 15, 1928	Sept. 17, 1927	Sept. 22, 1928	Sept. 24, 1927	Sept. 29, 1928	Oct. 1, 1927
95 cities.....	10	8	10	9	12	8	15	9	⁷ 16	10
New England.....	5	0	2	5	5	2	9	5	9	2
Middle Atlantic.....	8	4	5	8	12	9	9	7	15	10
East North Central.....	5	5	10	9	9	5	10	2	3	5
West North Central.....	8	6	8	10	2	2	6	10	6	6
South Atlantic.....	11	13	11	7	7	16	14	20	⁵ 12	13
East South Central.....	5	43	21	16	26	16	16	21	21	48
West South Central.....	12	17	25	25	37	17	33	34	33	34
Mountain.....	44	27	18	18	27	18	53	36	⁶ 23	18
Pacific.....	54	10	27	7	41	0	64	3	95	7

PNEUMONIA DEATH RATES

95 cities.....	86	91	86	89	91	104	102	112	⁷ 122	95
New England.....	74	65	90	63	80	95	57	102	106	60
Middle Atlantic.....	92	92	83	87	105	113	124	119	128	97
East North Central.....	79	82	79	93	77	89	82	96	106	89
West North Central.....	41	68	71	62	65	75	73	81	69	87
South Atlantic.....	110	87	93	115	74	117	124	157	⁵ 161	144
East South Central.....	131	117	131	117	146	144	162	154	131	133
West South Central.....	82	187	119	89	90	127	70	140	127	110
Mountain.....	124	143	97	117	97	143	115	99	⁶ 173	99
Pacific.....	98	97	88	100	125	100	98	76	169	38

⁵ Greenville, S. C., not included.

⁶ Salt Lake City, Utah, not included.

⁷ Greenville, S. C., and Salt Lake City, Utah, not included.

Number of cities included in summary of weekly reports, and aggregate population of cities of each group, approximated as of July 1, 1928, and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1928	1927	1928	1927
Total.....	101	95	31,657,000	31,050,300	30,960,700	30,369,500
New England.....	12	12	2,274,400	2,242,700	2,274,400	2,242,700
Middle Atlantic.....	10	10	10,732,400	10,594,700	10,732,400	10,594,700
East North Central.....	16	16	7,991,400	7,820,700	7,991,400	7,820,700
West North Central.....	12	10	2,683,500	2,634,500	2,566,400	2,518,500
South Atlantic.....	21	21	2,981,900	2,890,700	2,981,900	2,890,700
East South Central.....	7	6	1,048,300	1,028,300	1,000,100	980,700
West South Central.....	8	7	1,307,600	1,260,700	1,274,100	1,227,800
Mountain.....	9	9	591,100	581,600	591,100	581,600
Pacific.....	6	4	2,046,400	1,996,400	1,548,900	1,512,100

FOREIGN AND INSULAR

THE FAR EAST

Report for the two weeks ended November 17, 1928.—The following reports for the two weeks ended November 17, 1928, were transmitted by the eastern bureau of the health section of the secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva.

Plague, cholera, or smallpox was reported at the following ports:

Report for the week ended November 10, 1928

PLAGUE	SMALLPOX
<i>Indo-China.</i> —Saigon. <i>Madagascar.</i> —Tamatave.	<i>India.</i> —Bombay, Madras, Negapatam, Calcutta, Rangoon. <i>French India.</i> —Pondicherry. <i>Indo-China.</i> —Pnompenh. <i>Dutch East Indies.</i> —Belawan Deli. <i>China.</i> —Hong Kong, Shanghai. <i>Kwantung Territory.</i> —Dairen.
CHOLERA	
<i>India.</i> —Calcutta, Madras, Tuticorin. <i>Siam.</i> —Bangkok.	

Report for the week ended November 17, 1928

PLAGUE	SMALLPOX
<i>Indo-China.</i> —Pnompenh. <i>India.</i> —Bassein. <i>Siam.</i> —Bangkok.	<i>Arabia.</i> —Aden. <i>Iraq.</i> —Basra. <i>India.</i> —Bombay, Madras, Negapatam. <i>French India.</i> —Pondicherry. <i>Indo-China.</i> —Pnompenh. <i>Dutch East Indies.</i> —Belawan Deli. <i>China.</i> —Hong Kong, Shanghai.
CHOLERA	
<i>India.</i> —Calcutta, Madras. <i>Siam.</i> —Bangkok. <i>French India.</i> —Pondicherry. <i>Indo-China.</i> —Saigon. <i>China.</i> —Canton.	

ALASKA

Deering, Kotzebue, and Candle—Smallpox.—An indirect report received by the Public Health Service December 5, 1928, stated that smallpox was prevalent among Indians at Deering, Kotzebue, and Candle, Alaska. Vaccine was sent to the locality by airplane.

BRITISH GUIANA

Vital statistics, 1927.—According to the annual report of the registrar general of British Guiana, for the year 1927, the estimated population of the colony on December 31, 1927, was 308,473. During the year 10,041 births were registered, the birth rate per 1,000 population being 32.6, as compared with 34.7 for 1926. There were 8,024 deaths registered, a death rate of 26 per 1,000 population, as compared with 25.5 for 1926.

The following table shows the deaths from the principal diseases during the year 1927:

Deaths in British Guiana from principal diseases, 1927

Disease	Deaths	Disease	Deaths
Beriberi.....	5	Leprosy.....	21
Cancer and other malignant tumors.....	81	Malaria.....	1,715
Cerebral hemorrhage, apoplexy.....	104	Meningitis.....	28
Diabetes.....	18	Nephritis.....	661
Diarrhea and enteritis.....	370	Pellagra.....	3
Diphtheria.....	15	Pneumonia, all forms.....	747
Dysentery.....	136	Puerperal fever.....	22
Encephalitis.....	3	Syphilis.....	122
Erysipelas.....	2	Tetanus.....	15
Hemoglobinuric or blackwater fever.....	19	Tuberculosis, all forms.....	345
Heart, diseases of.....	232	Typhoid fever.....	90
Influenza.....	201		

CANADA

Provinces—Communicable diseases—Week ended November 17, 1928.—The department of pensions and national health reports cases of certain communicable diseases from seven Provinces of Canada for the week ended November 17, 1928, as follows:

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever.....				1				1
Influenza.....	14							14
Poliomyelitis.....				5	3		1	9
Smallpox.....			39	3		4	3	49
Typhoid fever.....	1		19	11			5	36

Ontario—Communicable diseases—November, 1928—Comparative.—During the months of November, 1928, and November, 1927, communicable diseases were reported in the Province of Ontario, Canada, as follows:

Disease	November, 1928		November, 1927	
	Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis.....	5	0	1	0
Chicken pox.....	810	0	1,080	0
Diphtheria.....	210	10	343	17
Dysentery.....		1		4
German measles.....	15	0	14	0
Influenza.....		15		3
Lethargic encephalitis.....	2	2	4	1
Measles.....	709	0	542	0
Mumps.....	329	0	1,007	0
Paratyphoid fever.....	1	0	0	0
Poliomyelitis.....	16	0	7	0
Pneumonia.....		92		74
Scarlet fever.....	316	6	402	4
Septic sore throat.....	1	0	0	0
Smallpox.....	16	0	271	0
Syphilis.....	92	0	115	0
Tuberculosis.....	85	56	94	53
Typhoid fever.....	41	8	59	1
Whooping cough.....	335	1	285	0

Quebec Province—Communicable diseases—Week ended November 24, 1928.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended November 24, 1928, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	106	Scarlet fever.....	144
Diphtheria.....	68	Smallpox.....	25
German measles.....	15	Tuberculosis.....	35
Influenza.....	19	Typhoid fever.....	23
Measles.....	52	Whooping cough.....	22

CHINA

Mongolia—Plague.—A bulletin issued by the Plague Prevention Service of the three eastern Provinces, dated October 31, 1928, states that the total deaths from plague in Inner Mongolia from September 1 to October 31, 1928, were 424. The bulletin states that no new cases had developed for several days in Chien Chia Tien, and that no persons were being held in isolation in the village.

The medical authorities are maintaining personnel at strategic points, and are prepared to take prompt action in the event of a new outbreak.

CUBA

Habana—Malaria.—There has been a slow increase in the number of cases of malaria reported in the city of Habana during the last few months. Cases occurring since the 1st of July are reported to be as follows:

	Cases		Cases
July.....	11	October.....	101
August.....	27	November (1 to 19).....	97
September.....	43		

GREAT BRITAIN

England and Wales—Vital statistics—July–September, 1928.—During the third quarter of the year 1928, 165,853 births and 93,738 deaths were registered in England and Wales, giving a birth rate on an annual basis of 16.7 per 1,000 and a death rate of 9.4 per 1,000. The infant mortality rate was 51 per 1,000 births.

During the 13 weeks ended September 29, 1928, communicable diseases were notified in England and Wales as follows:

Disease	Cases	Disease	Cases
Diphtheria.....	12,093	Puerperal pyrexia.....	1,239
Ophthalmia neonatorum.....	1,496	Scarlet fever.....	21,753
Pneumonia.....	7,816	Smallpox.....	1,712
Puerperal fever.....	555	Typhoid fever.....	1,562

IRAQ

Plague—January, 1924–October, 1928.—The numbers of cases of plague which have occurred in Iraq from January 1, 1924, to October 22, 1928, are shown in the following table:

Year	Cases	Year	Cases
1924.....	214	1927.....	17
1925.....	16	1928 to October 22.....	46
1926.....	352		

The number of cases occurring in 1928 are as follows:

Month	Cases	Month	Cases
January.....	3	July.....	1
February.....	4	August.....	0
March.....	3	September.....	3
April.....	8	Oct. 1-22.....	0
May.....	14	Total.....	46
June.....	10		

ITALY

Communicable diseases—August 13-26, 1928.—During the two weeks ended August 26, 1928, communicable diseases were reported in the Kingdom of Italy as follows:

Disease	Aug. 13-19		Aug. 20-26	
	Cases	Communes affected	Cases	Communes affected
Anthrax.....	54	44	83	56
Cerebrospinal meningitis.....	7	7	7	7
Chicken pox.....	28	22	42	28
Diphtheria.....	214	135	276	173
Dysentery.....	44	27	73	33
Lethargic encephalitis.....	1	1	4	4
Measles.....	554	170	529	156
Poliomyelitis.....	20	16	17	17
Scarlet fever.....	183	93	256	122
Typhoid fever.....	1, 120	459	1, 633	675

MALTESE ISLANDS

Health conditions, 1927.—A report recently issued by the chief Government medical officer of the Maltese Islands gives a civil population of 228,575; Malta, 204,420, and Gozo, 24,155, the density of population per square mile being, in Malta 2,154.7, and in Gozo 895.4.

There were 1,355 marriages recorded in the two islands, and 7,467 live births, a birth rate of 32.66 per 1,000 population. There were 5,449 deaths registered, a crude death rate of 23.03 per 1,000 popula-

tion. The infant mortality rate was high being 301.32 per 1,000 live births.

The following table shows cases and deaths from certain communicable diseases in the two islands during the year 1927:

Disease	Cases	Deaths	Diseases	Cases	Deaths
Diphtheria.....	54	12	Undulant fever.....	699	19
Trachoma.....	761		Whooping cough.....		35
Typhoid fever.....	715				

PALESTINE

Communicable diseases—August, September, 1928.—The Department of Health, Government of Palestine, Jerusalem, reports cases and deaths of communicable diseases in Palestine for the months of August and September, 1928, as follows:

AUGUST, 1928

Disease	Seaport towns				Else- where in Palestine	Total
	Jaffa and Tel-Aviv	Haifa	Gaza	Acro		
Cerebrospinal meningitis:						
Cases.....		1				1
Deaths.....		1				1
Diphtheria:						
Cases.....	2	4			4	10
Deaths.....	1	1			2	3
Dysentery:						
Cases.....	31	28		2	43	104
Deaths.....				1	1	2
Enteric group:						
Cases.....	28				44	72
Deaths.....	3				7	10
Influenza—cases.....					1	1
Poliomyelitis—cases.....					3	3
Pneumonia:						
Cases.....	7	2		1	21	31
Deaths.....	4				15	19
Relapsing fever—cases.....					1	1
Scarlet fever—cases.....	2		2		2	6
Typhus fever—cases.....	3	3			8	14

SEPTEMBER, 1928

Diphtheria:						
Cases.....	2	5			5	12
Deaths.....		1				1
Dysentery:						
Cases.....	15	34		3	63	115
Deaths.....	1					1
Enteric group:						
Cases.....	17	10	2	1	43	73
Deaths.....	1				7	8
Influenza—cases.....		2			3	5
Poliomyelitis—cases.....					1	1
Pneumonia:						
Cases.....	3	1			13	17
Deaths.....	2	1			12	15
Relapsing fever—cases.....					5	5
Scarlet fever—cases.....	1				1	2
Typhus fever—cases.....	3	3			4	10

PANAMA CANAL ZONE

Communicable diseases—October, 1928.—Communicable diseases were reported in the Canal Zone during the month of October, 1928, as follows:

Disease	Probable place of infection								Total	
	Panama		Colon		Canal Zone		Outside the zone and terminal cities			
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Chicken pox.....	2		2						4	
Diphtheria.....	12	1	1		3		1		17	1
Dysentery, amebic.....		1					7		7	1
Leprosy.....	1							2	1	2
Malaria.....	17		3		84		47		151	
Measles.....	12		2						14	
Meningococcus meningitis.....					1	1	1	1	2	2
Mumps.....	56		6		12				74	
Pneumonia.....		24		14		7		5		50
Relapsing fever.....	1								1	
Scarlet fever.....					5				5	
Tuberculosis.....		32		5		1		1		39
Typhoid fever.....	1	1							1	1
Whooping cough.....			6	1	7				13	1

YUGOSLAVIA

Communicable diseases—October, 1928.—During the month of October, 1928, communicable diseases were reported from Yugoslavia as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax.....	176	25	Polioomyelitis.....	1	1
Cerebrospinal meningitis.....	4	2	Rabies.....	1	1
Diphtheria.....	462	93	Scarlet fever.....	3,741	461
Dysentery.....	229	29	Tetanus.....	26	18
Lethargic encephalitis.....	1		Typhoid fever.....	706	82
Measles.....	1,158	5	Typhus fever.....	1	

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

From medical officers of the Public Health Service, / m rican consuls, health section of the League of Nations, and other sources. The reports contained in the following table 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. 11- Apr. 7, 1928	Apr. 8- May 5, 1928	May 6- June 2, 1928	June 3-30, 1928	July 1-28, 1928	July 29- Aug. 25, 1928	Week ended—									
							September, 1928					October, 1928				
							1	8	15	22	29	6	13	20	27	November, 1928
Ceylon: Colombo.....	C					1										
China:	D					1										
Canton.....	2		1	2	8	4		1							1	
Kwantung-Dairen.....	2		1	2	8	2		1		3						
D										1						
Shanghai.....						3	1	1				1	1	1		
D									3							
Swatow.....				3	7											
Dutch East Indies: Java-Batavia.....	C					1										
India:	21,270	32,564	30,177	31,346	44,240	52,786	9,449	9,032	7,617	6,189						
11,877	20,432	20,162	20,114	23,216	26,967	5,046	5,046	4,885	4,272	3,518						
D	51	41	8				3	2	1		9	4	1	1		
Bassein.....	D				6	9										
Bombay.....	3		1		11	5	2	2				2	3	2		
D																
Calcutta.....	664	446	552	462	206	93	17	16	17	18	21	12	8			
D	442	428	410	323	133	51	7	10	13	10	12	9	6	12	25	38
Madras.....	10	22	27	20	72	555	65	49	25	10	57	23	17	17	69	45
D	4	18	16	21	31	271	34	33	15	6	27	25	12	9	31	32
Madras Presidency.....	1,483	1,314	878													21
D	812	675	460													6
Moulmein.....	D															
Negapatnam.....	D															
Rangoon.....	22	23	7	13	1	3		1	5	1	1					
D	16	15	5	9	1	8			1	1		1				
Tuticorin.....	10	110				1										1
D	9	71			7	31	5									
Vizagapatnam.....	D															

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

PLAGUE

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

Place	Mar. 11-Apr. 7, 1928	Apr. 8- May 5, 1928	May 6- June 2, 1928	June 3-30, 1928	July 1-28, 1928	July 29- Aug. 25, 1928	Aug. 26- Sept. 22, 1928	Week ended—										Dec. 1, 1928
								October, 1928					November, 1928					
								Sept. 28, 1928	6	13	20	27	3	10	17	24		
Algeria (see also table below):																		
Algiers.....		1	1	2														
Oran.....																		
Philippeville.....																		
Arabis: Aden.....	651	224	7	1														
529	191	9	1															
Argentina:																		
Avellaneda.....			1															
Buenos Aires ¹			1															
			6	1														
			3	2														
Catamarca Province: Recono.....																		
Cordoba Province.....																		
Canada Honda.....	5																	
El Mohlar.....																		
Entre Rios.....				5														
Loreto.....			3															
Rosario.....			1															
Santa Fe.....				9	1													
Santiago del Estero.....				10	1													
Suardi.....			2					7										
Tucuman.....																		
Azores: St. Michaels Island.....	3	5	1	1				2	1				2	1				
	2	2	1										2					
Belgian Congo: Diangu Ituri.....																		
Bolivia: Valle Grande.....																		
Brazil:																		
Bahia.....	28	6	3															
	21	6	3															
Rio de Janeiro.....	3																	
British East Africa (see also table below):																		
Mombasa.....								1	1	1	1	1	1	1	1	1	1	1

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

PLAGUE—Continued

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

Place	Mar. 11-Apr. 7, 1928	Apr. 8- May 5, 1928	May 6- June 2, 1928	June 3-30, 1928	July 1-28, 1928	July 29- Aug. 26, 1928	Aug. 26- Sept. 22, 1928	Week ended—							Dec. 1-7, 1928	
								October, 1928								
								Sept. 23-29, 1928	6	13	20	27	3	10	17	24
Siam.....	C 33 30	27 13	15 11	6 7 2 1	10 8 2 2											
Ayudhya.....	C															
Bangkok.....	C 1 1	4 2													1 1	
Nagara.....	C		1	2												
Straits Settlements:																
Ipoh.....	C						2 2									
Singapore.....	C 1 1															
Syria (see table below).																
Tunisia: Bengardane region.....	C 8 6															
Turkey:																
Adalia.....	C				1					1					1	
Constantinople.....	C				P	P										
Union of South Africa: Orange Free State.....	C 6 6															
Union of Socialist Soviet Republics:																
Astrakhan—																
Arary District.....	C			3												
Kirghis District.....	C			2												
Kramolark District.....	C						64									
Chita District.....	C						1									
Ural Government.....	C														7 7	
On vessel:																
S. S. Tymeric, at Barbados, from New Orleans.....	C		1													
S. S. Automedon, at Penang, Straits Settlements.....	C									P						

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

SMALLPOX

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

Place	Apr. 8- May 5, 1928	May 6- June 2, 1928	June 3-30, 1928	July 1-28, 1928	July 29- Aug. 25, 1928	Aug. 26- Sept. 22, 1928	Week ended—										
							October, 1928					November, 1928					Dec. 1, 1928
							Sept. 20, 1928	6	13	20	27	3	10	17	24		
Algeria.....	12																
Algiers.....	4	5	15	3	8	2			2								
Oran.....	17	5	4	8	5				20	1				1			
Angola (see table below).																	
Arabia: Aden.....			11		1	1								1			
Brazil (see also table below):																	
Fernambuco (Recife).....		1			1												
Rio de Janeiro.....				1													
British East Africa: Kenya—Mombasa.....	1					1											
British South Africa:																	
Northern Rhodesia.....	628	195	15	48	310	382	4	22									
Southern Rhodesia.....	24	13	36	22	17	5	3	5									
Canada:	10		4	4													
Alberta.....	12	44	9	3	25	6			4	1							
Edmonton.....	3			4													
British Columbia—Vancouver.....	24	11	4	11		5	5	3									
Manitoba.....	7	4	10	4					1			14					
Winnipeg and vicinity.....														13	2		
New Brunswick.....			7		5												
Ontario.....	50	41	33	11	5	3		10	5	5		4					
Kingston.....	3			2	1	1				1							
Ottawa.....	4	6	1		1	6			2	2	1	2	1	1			
Sarnia.....																	
Toronto.....	11	12	3	1													
Quebec.....	83	78	81	62	27	28	14	11	19	31	20	9	40	49	25		
Montreal.....	9	3	11	5	2	12						1	2				
Quebec.....	23	47	52	44	12	13	2	3	4	3	3	1	3	5	3		
Sherbrooke.....			4														
Saskatchewan.....	52	28	16		6	3		1		6							
Moose Jaw.....	3	1		1		2								2	1		
Regina.....	8	1	1		1	1									2		

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

SMALLPOX—Continued

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

Place	Apr. 8- May 5, 1928	May 6- June 2, 1928	June 3-30, 1928	July 1-28, 1928	July 29- Aug. 25, 1928	Aug. 26- Sept. 22, 1928	Week ended—										Dec. 1, 1928
							October, 1928					November, 1928					
							Sept. 26, 1928	6	13	20	27	3	10	17	24		
Ecuador (see table below).																	
Egypt.....	12	1															
	7	1															
Belera Province.....					1												
France (see table below).																	
Gold Coast (see table below).																	
Great Britain:																	
England and Wales.....	1,344	1,199	1,146	681	492	430	94	130	162	128	148	122	149	162			
Birmingham.....	1	2	2	1	1	1											
Bradford.....	14	17	10	2	2					1							
Bristol.....	17	10	2														
Cardiff.....	3	2															
Castleford.....	69	24	18	14	10	5	4	1	1	2		5	1				
Hull.....			8	1	1	13	2	3	1	1		1	1				
Leeds.....	1		1			6											
London.....	42	25	96	19	9	8	4	5		3	4	4	4	9			
Manchester.....	8	5	1			3	1										
Newcastle-on-Tyne.....	4	12	6	28	2	15	1	1				1					
Nottingham.....	17	20	3	6	10	11	1	1	2	1	1						
Plymouth.....					6	3	2										
Sheffield.....					1	4							8	1			
Stoke-on-Trent.....	14	4	2	2	1	8											
Weymouth.....	32	24	14	5													
Scotland—																	
Arbroath.....					4	3											
Dundee.....						1				3			1	1			
Greece (see table below).																	
Hedjaz.....																	
		6	14	18	1												
		2	1	6													
India.....	30,436	21,489	13,497	9,981	6,218	4,553	830	708									
	6,672	5,046	3,700	2,758	1,733	1,116	243	157									
Basseln.....																	
Bombay.....	200	136	71	67	28	14	7	2	12	3	5	2	1	1			
		178	46	33	21	11	7		4	1	2	2	1	1			
Calcutta.....	171	130	61	52	22	13				3							

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

SMALLPOX—Continued

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

Place	Janu- ary- March, 1928	April- June, 1928	July, 1928	Aug- ust, 1928	Sep- tem- ber, 1928	Octo- ber, 1928
Angola.....	47	8				
Congo.....	36					
Cuana-Norte.....	C					
Cuana-Sul.....	C					
Leanda.....	C					
Brazil (see also table above):			1			
Porto Alegre.....	1					
Chosen.....	48	221		2	1	
Seoul.....	16	65				
Ecuador: Guayaquil.....	35	61	35	38	22	6
France.....	1		10	6	1	3
Gold Coast.....	34	31				
Greece.....	4	54	9	3	6	
	36	3	1			1
	4					
Latvia.....	1					
Mexico (see also table above).....	1,064	958	1			
Morocco.....	132	54	55			
Nigeria (see also table above).....	592	739	1,059	1	4	5
Persia.....	84	156	159			
Portugal (see also table above).....	7					
Union of Socialist Soviet Republics:	258	172	82		24	1
Railways, etc.....	30	12	10		2	
Other territories in Europe.....	59					
Transcaucasia, Siberia, and	1,717					
Central Asia.....						
Ukraine.....	25					
	27					

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

TYPHUS FEVER

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

Place	Mar. 11-Apr. 7, 1928	Apr. 8- May 5, 1928	Apr. 6- May 2, 1928	June 3-30, 1928	July 1-28, 1928	July 29- Aug. 25, 1928	Aug. 26- Sept. 22, 1928	Week ended—							
								October, 1928				November, 1928			
								6	13	20	27	3	10	17	24
								Sept. 20, 1928							Dec. 1, 1928
Algeria:															
Algiers.....	C 9	4	13	32	3	10	2		1		1	1	1		
Oran.....	D 4	2	4	6	16	4	2		1						
Bulgaria.....	C 11	1	1	7	1										
	C 26	26		16	P	8	6	5	1	1	1	2			
Sofia.....	C 2	2		2	2	2									
	C 20	1	20	14	1		3								
Chile:				6											
Iquique.....	C				1										
Talcahuano.....	C 1				1										
Valparaiso.....	D			3	2										
China:				1											
Manchuria—															
Harbin.....	C	2	16	23											
Kwantung.....	C 17	17	253	539	431	60	3	2							
South Manchuria Railway Zone.....	C		2	10	6	1									
Tientsin.....	C			2											
Chosen (see table below)															
Czechoslovakia (see table below)															
Egypt:															
Alexandria.....	C 2	3	11	7											
	C 1	1	2	3											
Assiout Province.....	C				1	2	2								
Assuan Province.....	C			2	2	1	1								
Assuan Province.....	C			2	2	1	1	1							
Behers Province.....	C 29	32	43	7	2										
	C 7	7	7	2											
Cairo.....	C 2	4			1	1									
	C 1	4			1	1									
Dakaleh.....	C			1											

Mexico City, including municipalities in Federal District.....	12	8	19	14	10	10	10	15	2	3	2	2	6	2	2	1	4
Monterrey.....	D	3	1	2	3	3	3	1	1	1	1	1	1	1	1	1	4
Morocco.....	D	1	280	214	153	44	44	3	4	5	1	1	2	1	1	3	4
Palestine.....	C	7	0	4	8	9	14	10	4	5	1	1	2	1	1	3	4
Peru (see table below).....	C	382	144	228	134	96	55	65	12	8	4	7	13	2	2	2	4
Poland.....	C	25	12	17	6	5	6	5	2	2	2	2	2	2	2	2	4
Portugal: Oporto.....	C	141	142	99	80	33	1	16	2	2	7	7	6	2	2	2	4
Rumania.....	C	11	12	8	11	1	1	3	1	3	1	1	1	1	1	1	4
Syria: Aleppo.....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4
Tunisia.....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4
Tzanzania.....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4
Union of South Africa.....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4
Cape Province.....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4
East London.....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4
Natal.....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4
Orange Free State.....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4
Transvaal.....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4
Union of Socialist Soviet Republics (see table below).....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4
Yugoslavia (see table below).....	C	18	19	7	7	1	1	7	1	1	1	1	1	1	1	1	4

Place	Jan-uary, March, 1928	April-June, 1928	July, 1928	Aug-ust, 1928	Sep-tem-ber, 1928	Octo-ber, 1928	No-ven-ber, 1928	Place	Jan-uary, March, 1928	April-June, 1928	July, 1928	Aug-ust, 1928	Sep-tem-ber, 1928	Octo-ber, 1928	No-ven-ber, 1928
Chosen.....	896	633	5	5	5	5	5	Mexico (see also table above).....	46	46					
China.....	88	75	2	2	2	2	2	Peru: Arequipa.....	2	2	1	1			
Chernulpo.....	2	2						La Oroya.....	P	P	6	4	6		
Germany.....	1	1						Turkey.....	17	15	6	2			
Seoul.....	10	46	5	1	2	1	1	Union of Socialist Soviet Republics: Railways, etc.....	1	2					
Czechoslovakia.....	25	33	6	6	6	6	6	Transcaucasus, Siberia, and Cen-tral Asia.....	109						
Greece: Athens.....	4	5	1	1	1	1	1	Ukraine.....	17						
Japan.....	27	7	12	15	15	15	15	Other territories in Europe.....	1,470						
Latvia.....	223	162	12	12	12	12	12	Yugoslavia.....	5,167	45	12	6	1		
Lithuania.....	22	7	4	4	4	4	4		3	5	3	3			

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

YELLOW FEVER

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

Place	Mar. 11-Apr. 7, 1928	Apr. 8- May 6, 1928	May 6- June 2, 1928	June 3-30, 1928	July 1-28, 1928	July 29-Aug. 25, 1928	Aug. 26- Sept. 22, 1928	Week ended—										Dec. 1, 1928
								October, 1928					November, 1928					
								6	13	20	27	3	10	17	24			
Belgian Congo: Matadi.....	C	2	2															
Brazil:																		
Aracaju.....	D	2		4			1											
Bahia.....	D						2											
Pernambuco (Recife).....	D			1														
Rio de Janeiro.....	C	2	2	48	40	14	9	3				1	1			1		
Sao Felix.....	D		2	22	26	4	8	2				1				1		
Dahomey:	C			P														
Grand Popo.....	C			3														
Ouiskah Military Camp.....	D			2														
Gambia: Bathurst.....	D																	
Gold Coast.....	D		2									2	1	2				1
Ivory Coast.....	C			1														
Abidjan.....	D			1														
Feres-Sedougou.....	D			1														
On vessel: S. S. Bernini, at Santos, Brazil.....	D				1							4	1					