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THE PYRO-TANNIC ACID METHOD FOR THE QUANTITATIVE DETERMINATION OF CARBON MONOXIDE IN BLOOD AND AIR.¹

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Introduction.

Methods have been devised for the quantitative analysis of carbon monoxide when present in the blood and in the air in quantities large enough to be dangerous to the health and safety of a person. Some of them are suitable from a standpoint of accuracy, yet all have some objectionable features in that they require elaborate and expensive apparatus, special technique, and training on the part of the analyst, or are too delicate and cumbersome for field use. The last-mentioned factor is important in investigations pertaining to the cause, diagnosis, and treatment of this type of industrial and domestic accident. In view of the above facts, an apparatus has been designed which gives accurate results in the field and laboratory, yet it is compact (can be carried in the pocket) and durable, and is sufficiently simple in operation to be used by a person without special training. The method and apparatus described herein should fulfill the needs of hospitals, industrial surgeons, safety engineers, coroners, departments of public safety, boards of health, and other allied organizations.

Quantitative Determination of CO in Blood.

Description of method.—Essentially it is the tannic-acid method previously described,² and it is based on the fact that a light gray-brown suspension is formed after a few minutes when normal blood diluted with water is treated with a solution of tannic and pyrogallic acids, whereas with blood having CO in combination with the hemoglobin (Hb) a light carmine suspension is formed; but in any mix-

¹ Investigations carried on in cooperation with the Bureau of Mines, Department of the Interior.

² The tannic-acid method for the determination of CO in blood. By R. R. Sayers and W. P. Yant. Bureau of Mines Reports of Investigations, Serial No. 2336, May, 1922. Also Public Health Reports, Oct. 6, 1922, pp. 2433-2439. (Reprint No. 790.)

ture of normal blood and blood containing CO the suspension will be a corresponding mixture of the two extremes of color. Thus, by making a set of standards to represent the different colors of varying but known amounts of CO in combination with Hb, unknown specimens can be matched with them, and the amount of carbon monoxide-hemoglobin (COHb) evaluated.

Apparatus and technique.—The former technique³ of making a determination was to prepare standards from blood; but these were not permanent, and the frequent necessity for making them was undesirable. To overcome this objection, standards have been developed and prepared from pigments, which have been found to be satisfactory for routine analysis. These standards should not be exposed to light when not in use. Also, the former procedure involved the use of chemical solutions which deteriorated on standing, and it was necessary to have them freshly prepared. This objection has been eliminated by preparing the chemicals in solid form. These changes, together with the adoption of a dilution pipette, have lessened the number of operations and pieces of apparatus required for a determination. The apparatus is ready for immediate use at all times. The complete outfit is shown in (A), Plate I, and consists of the following pieces:

A. Set of permanent standards made to match the color of blood having varying amounts of COHb (0, 10, 20, 30, etc., per cent), arranged in a rack with spaces between for interposing tubes of similar size containing specimens of blood for analysis.

B. Small test tubes (of the same size and glass as those used for standards) for preparing the specimens of blood.

C. A dilution pipette for measuring blood. The long capillary stem is calibrated to a 0.10 c. c. mark, and the total pipette has a volume of 2 c. c. This allows the dilution of a 0.10 c. c. sample of blood with water to 2 c. c., or a ratio of 1 in 20.

D. A spring hemospast for making small puncture wounds from which the blood is obtained.

E. Small spot plate (not shown in the figure) to collect the blood.

F. Rubber hose for wrapping the finger during the taking of the blood sample.

G. Tannic-pyrogallic-acid capsules (0.04 gram of a 1:1 mixture) for producing the colored suspension in the diluted specimen of blood.

H. Small bottle of water for diluting the blood.

All of the above apparatus is arranged in a compact pocket case, 3 by 7 by 1½ inches.

Procedure.—A small puncture wound (approximately 2 mm. deep) is made with the hemospast in the tip of the finger of the victim

³ Loc. cit.

or suspected victim of carbon-monoxide poisoning, and several drops of blood are caught on the spot plate. If the blood does not flow freely, the finger is wrapped with the rubber hose, beginning at the base and progressing toward the tip. Massaging the finger also aids the flow. (If death has occurred, it may be difficult to obtain liquid blood, but this can be done during the process of embalming.) When the blood has been procured, it is quickly drawn into the stem of the pipette to the 0.1 c. c. mark. The pipette is then held in a horizontal position and any blood on the exterior of the tip is removed. The tip is slightly raised to allow a little of the blood to flow into the diluting bulb, and, by inserting it quickly into the bottle of water and using suction at the same time, it can be filled to the 2 c. c. mark to give the proper dilution. The blood solution is then discharged into one of the test tubes, a little of the solution being drawn back once or twice into the pipette to wash out any adhering concentrated blood. The entire procedure of obtaining the blood specimen should be as rapid as possible to eliminate possible clotting. In case it is desired to take more than one sample, the pipette can be rinsed out by using a little of the dilution water, being careful to blow the capillary stem free from water before taking the next sample.

Immediately after the blood solution has been discharged into the test tube, the contents of a capsule of the tannic and pyrogallie acids are added and the tube is inverted three or four times to insure thorough mixing of the reagents. The tube is then placed in the rack and allowed to stand 15 minutes at room temperature, at the end of which time it is compared with the standards by interposing it between them, and the standard is found which most nearly matches it. The percentage of carbon monoxide-hemoglobin is estimated from the value of that standard.

The observations are best made in daylight, but not in direct sunlight. The observer should stand with his back to the light, viewing the tubes by reflection, and should change the positions several times to note any difference due merely to unequal lighting effect. The values of the standards give directly the quantity of COHb in the specimen of blood. If CO is indicated, the tube should be allowed to stand 15 minutes longer and another reading made. The latter reading should be taken as being the more accurate. Observations may be made after several hours without serious loss of accuracy, although this is not advisable except in case of necessity.

The Quantitative Determination of CO in Air.

Description of method.—When a blood solution is exposed to air containing carbon monoxide, there is competition between both the carbon monoxide and the oxygen (O_2) for the hemoglobin, the

competing or combining power (reaction constant) of the former being approximately 300 times that of the latter per unit volume of each gas. If the exposure is long enough, and the temperature and pressure are constant, equilibrium will be established between the competing forces, the amount of hemoglobin combining with each depending upon the product of its competitive power times the respective partial pressures of carbon monoxide and oxygen in the gas mixture. Thus, by a determination of the amount of hemoglobin combining with either of the gases (CO or O_2), and with a knowledge of the partial pressure of one of them, it is possible to calculate the partial pressure of the other. This phenomenon has long been known, and has recently been described by Prince.⁴ But this method has been little utilized, owing to some of the objections to the methods for the determination of the COHb. However, with the apparatus described in this paper, the COHb can be easily determined, hence the CO content of an air-CO mixture.

Apparatus.—The apparatus required for this method is shown in Plate I, and consists of the following:

A. Complete set of standards, as shown in (A) Plate I.

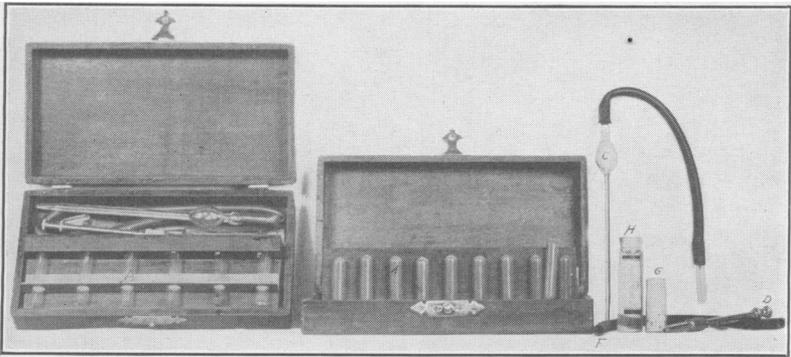
B. Air sample bottles of at least 250-c. c. capacity, fitted with rubber stoppers.

C. Rubber aspirator bulb with attached scrubber (tube of soda lime) for removing gases which might have an interfering effect.

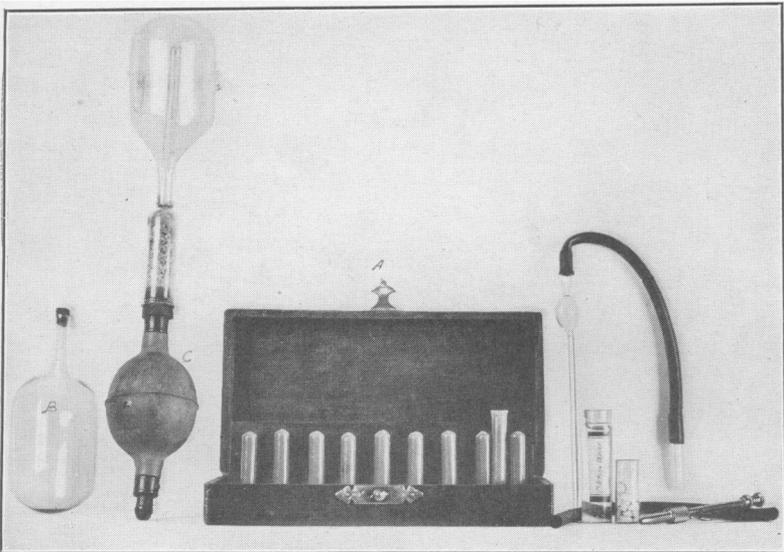
Sampling.—Obtain the sample by inserting the glass tube on the end of the scrubber into the sample bottle as shown in (B) Plate I, and then aspirate the air through the sample bottle long enough to purge it of its original contents—at least 25 squeezes of the bulb. The last bulb of gas should be expelled through the sample bottle while the glass tube is being removed, after the removal of which the rubber stopper should be quickly and tightly inserted. The samples can then be transported to the place for making the analysis, usually away from the place where the sample has been taken.

Blood for making analysis.—The blood to be used in making the analysis should be taken from a person who has not been exposed to carbon monoxide or who has been exposed to a concentration at least not higher than that contained in the sample. The 0.10 c. c. of blood is diluted to 2 c. c. and put in a test tube as described for the determination of CO in the blood; but the contents of the tannic-pyrogalllic acid capsule are not added at this time. All of the 2 c. c. of blood solution is then poured into the sample bottle, the operation being such as to allow as little as possible of the gas to escape.

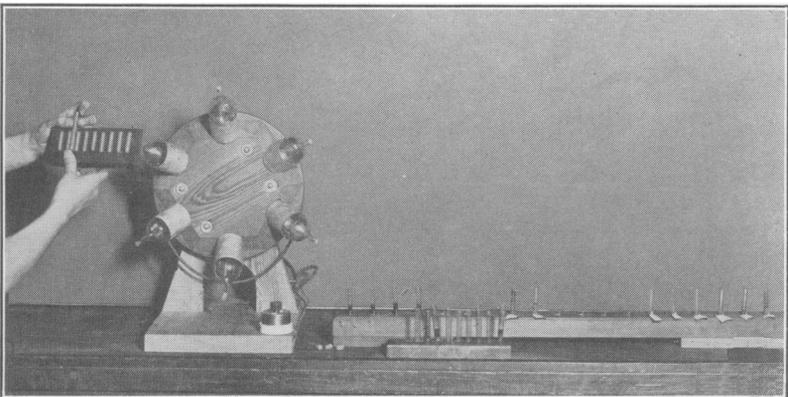
⁴ Appendix No. 4, Report on Tunnel Gas Investigations to the Chief Engineer of the New York State Bridge and Tunnel Commission and the New Jersey Interstate Bridge and Tunnel Commission. Problem No. 2—Physiological effects of exhaust gases. By Yandell Henderson, 1921, pp. 143-220.



A. Apparatus for quantitative determination of carbon monoxide in blood.



B. Apparatus for quantitative determination of carbon monoxide in air.



C. Motor-driven equilibrator.

Equilibration.—This should be done in a dimly lighted place. After the stopper has been tightly replaced, the bottle is held horizontally and rotated constantly for 15 to 20 minutes, avoiding violent shaking and agitation. As much as possible of the surface of the bottle should be covered with the blood solution. Every now and then the solution can be centrifugally thrown from the sides to the bottom of the bottle by a quick swinging motion, which allows a new surface to be formed and aids in reaching equilibrium. When a great many samples have to be analyzed, a motor-driven equilibrator, as shown in (C) Plate I, will save time. On this, six sample bottles are held at a 60-degree angle from a revolving vertical disk, the speed of revolution being such as to allow the solution to flow over the inner surface of the bottles. This apparatus is not essential, however, and would not be needed for only occasional analyses.

Analysis.—When the equilibrating has been finished, the solution is poured back into the test tube, the tannic-pyrogallic acid added, and the determination of COHb made according to the procedure already described.

Calculation of results.—When equilibrium has been established between CO and O₂ and hemoglobin, the amount of hemoglobin combined with each (as has been stated) depends on the product of the competitive power or affinity (A) times the partial pressure (P), and the ratio of the amounts can be expressed by the following equation:

$$\frac{\text{Amount combining with CO}}{\text{Amount combining with O}_2} \text{ or } \frac{\text{COHb}}{\text{O}_2\text{Hb}} = \frac{\text{Pco} \times \text{Aco}}{\text{Po}_2 \times \text{Ao}_2} \quad (1)$$

With the oxygen partial pressures above 14 per cent⁵ of an atmosphere, all the hemoglobin will be combined with one or the other of the gases.

In the use of equation (1) for the determination of Pco it is necessary to know all the other members, at least to a degree of accuracy that will not effect the results beyond the desired limits of the method. Fortunately, the equation allows a considerable variation without seriously affecting the results, and on that basis average figures can be selected which serve as constants for all practical purposes. A brief discussion of each follows:

COHb.—This is determined by the prescribed method of blood analysis to a degree of accuracy affecting the results obtained with an error of ± 0.005 in the region of 0.01 per cent CO, and slowly increasing to ± 0.02 in the region of 0.15 per cent CO.

O₂Hb.—The O₂Hb content is obtained by difference: $100 - \text{COHb} = \text{O}_2\text{Hb}$.

⁵ The laws of combination of hemoglobin with carbon monoxide and oxygen. By C. G. Douglas, J. S. Haldane, and J. B. S. Haldane, Jour. Physiology, vol. 41, 1912, p. 275.

P_{O_2} .—The amount of oxygen in normal air is 20.93 per cent by volume, or 2,093 parts per 10,000. With CO-air mixtures this will decrease, depending upon the manner in which the mixture is formed, as, for instance, by the addition of CO by external means, or by incomplete combustion, the latter having the greater effect on the oxygen content. But unless the amount present falls below 19 per cent, or 1,900 parts per 10,000, the results obtained for P_{CO} will be well within the error incurred through the analysis for COHb. Even with lower percentages (than 14 per cent) of O_2 , the results will not be invalidated from the standpoint of health investigation. If determinations for oxygen are made, or some knowledge (flame test, etc.) is had of the approximate amount present, these values can be used; otherwise, 20.93 per cent can be taken as a constant.

A_{O_2} .— $A_{O_2} = 1$. The affinity of oxygen is taken as unity.

A_{CO} .—On the basis of $A_{O_2} = 1$, the A_{CO} is, according to Henderson,⁶ approximately 300. This figure has been verified by calculations of partial pressures of CO. Although there is a variation with different individuals, that variation could be 50 without seriously affecting the method, the error incurred being approximately ± 0.0015 in the region 0.01 per cent, and ± 0.015 in the region of 0.10 per cent CO.

From this it seems that 300 is a fairly suitable value for A_{CO} on the basis of $A_{O_2} = 1$. Thus we can substitute these values in equation (1), which becomes:

$$\frac{COHb}{100 - COHb} = \frac{P_{CO} \times 300}{2093 \times 1}, \quad (2)$$

and solving for P_{CO} we get

$$P_{CO} = \frac{COHb}{100 - COHb} \times \frac{2093}{100} \quad (3)$$

from which the actual value of P_{CO} can be obtained by substituting the value of COHb obtained by analysis. For example: A blood solution equilibrated with a gas sample was found to contain 50 per cent of COHb by comparison with the standards. Substituting this value in equation (3) gives the following:

$$P_{CO} = \frac{50}{100 - 50} \times \frac{2093}{300} = 7 \text{ parts per 10,000, or } 0.07 \text{ per cent.}$$

Corrections.

Temperature effect on dissociation curve for CO.—Temperature changes the dissociation constant ($A_{CO} = 300$); but if the variation does not exceed $\pm 5^\circ$ F. from 68° F., no correction need be made. To avoid having to make a correction for temperature, the equilibrating should be done within these limits.

⁶ Loc. cit.

Correction for loss of CO through combination with hemoglobin.—As there has been some loss of CO from the CO-air mixture, due to its being taken into combination with the hemoglobin, the results obtained do not represent the CO content in the original sample of gas. If the sample of gas is small (250 c. c. or less), there is a slight error introduced by the CO going into combination with the hemoglobin, which can be corrected by assuming 0.0185 c. c. per 0.1 c. c. of blood as the average amount of CO in combination with hemoglobin when the latter is completely saturated; and from the percentage saturation found by analysis, a pro rata calculation can be made which will serve to correct the results obtained for the CO in the sample of gas. For example: If 37 per cent is found to be the percentage of COHb in a specimen of blood, it would signify that the blood was in equilibrium with 0.04 per cent of CO in air. But since 0.37×0.018 , or 0.006 c. c., was lost to the hemoglobin, the original sample, should it be 100 c. c. in volume, in reality con-

tained $0.04 + \frac{(0.37 \times 0.018 \times 100)}{100}$, or 0.046 per cent CO; or should

the sample be 200 c. c., it contained 0.043 per cent.

In order to simplify the operation of making calculations and applying corrections for CO in air, the curves shown in Figure 1 were prepared. These graphically represent the calculations and corrections; and by following the instructions given thereon, the corrected result of CO in air for the blood saturation found can be easily and quickly determined.

Accuracy of method.—To test the accuracy of the method as outlined, synthetic CO-air mixtures varying from 0.01 to 0.20 per cent were carefully made by volume, and 150-c. c. samples were taken for blood analysis and some of the higher percentages for combustion analysis by the Haldane method.⁷ The blood analyses were run in triplicate, using blood from a different subject for each analysis.

Observations as to amount of COHb were made by three men, one experienced and two inexperienced, the latter having no knowledge of the origin of the sample. The results obtained are shown in the table.

Since this test of the accuracy was made, the method has been used continuously as a check on the carbon monoxide found by analysis of mine and tunnel atmospheres and products of combustion from gas stoves, by the Haldane combustion apparatus,⁸ and in all cases the agreement of the results obtained has been very satisfactory.

⁷ The sampling and analysis of mine gases and natural gas. By G. A. Burrell and F. M. Seibert. Bureau of Mines Bull. 42, 1913.

⁸ Loc. cit.

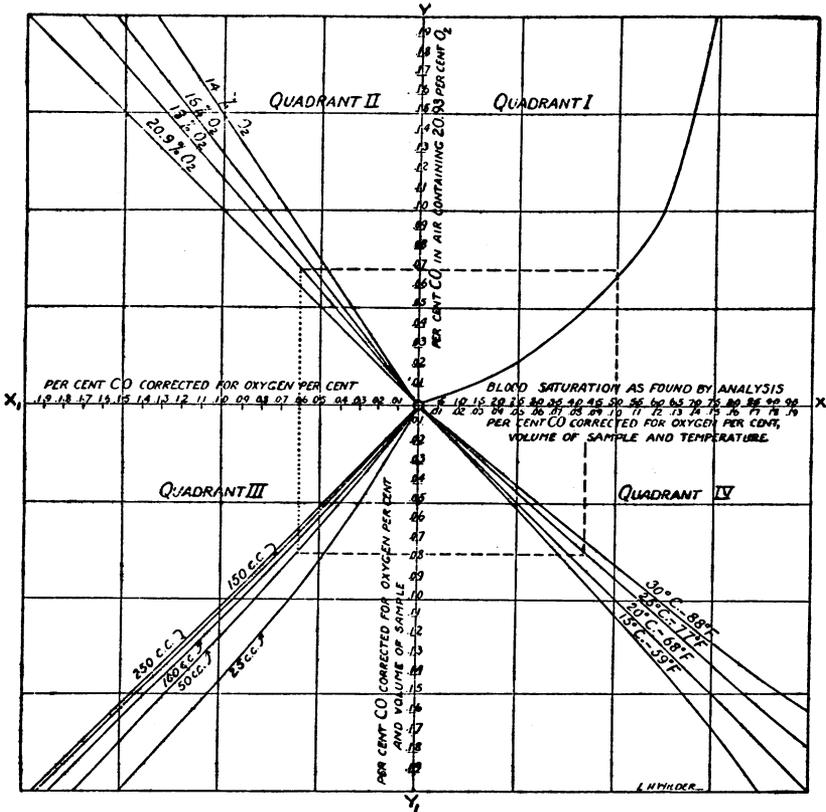


FIG. 1.—Curves for calculating the per cent of carbon monoxide from the per cent blood saturation.

If the percentage of oxygen is between 19 and 20.9 per cent, the volume of the sample taken for analysis is 250 c. c. or greater, and the testing is made at temperatures between 63° and 73° F. (17°-23° C.), the CO values are read directly from quadrant I. Example: If percentage saturation is found to be 50 per cent, this value is taken on the OX axis, and the vertical line passing through this point is followed upward until it intercepts the curve, then horizontally to the left to the OY axis. The point of interception of the OY axis gives the CO (0.07 per cent).

If the sample contains less than 19 per cent oxygen, correction is made for reduced oxygen percentages by following the horizontal line through the OY axis into the second quadrant until it intercepts the curve representing the oxygen percentage which the sample contains. The vertical line passing through this point is followed down to where it intercepts the OX₁ axis, the interception with which gives the corrected per cent of carbon monoxide (0.06 in the above example).

If the sample used is less than 250 c. c., the vertical line is extended into the third quadrant until it intercepts the curve representing the volume of the sample taken; then from this point the horizontal line is followed to the right until it intercepts the OY₁ axis, and the corrected percentage of CO is read (0.077 per cent).

If the temperature is not between 63° and 73° F., the horizontal line is extended into the fourth quadrant until it intercepts the curve representing the temperature at which the analysis was made; then, from this point the vertical line upward is followed to the OX axis, the interception of which gives the corrected percentage of CO (0.085 per cent).

Agreement of results obtained and comparison with combustion analyses.

Per cent of CO by tannic acid method.					Calculated from gas volumes.	By combustion analyses.
Observer.			Maximum variation.	Average.		
1	2	3				
0.000	0.000	0.000	} 0.005	0.001	0.000	-----
0.000	0.000	0.005				
0.000	0.000	0.000				
0.000	0.005	0.008	} 0.005	0.009	0.010	-----
0.012	0.010	0.008				
0.010	0.008	0.010				
0.020	0.025	0.025	} 0.010	0.021	0.020	-----
0.020	0.020	0.020				
0.025	-----	0.020				
0.035	0.040	0.045	} 0.010	0.038	0.030	0.045
0.035	0.035	0.035				
0.040	0.040	0.040				
0.065	0.060	0.065	} 0.020	0.054	0.050	0.060
0.050	0.050	0.050				
0.065	0.045	-----				
0.060	0.060	0.065	} 0.025	0.077	0.070	-----
0.060	0.060	0.065				
0.140	0.140	0.120	} 0.030	0.120	0.150	0.150
0.110	0.115	0.120				
0.17	0.16	0.18	} 0.030	0.180	0.200	0.190
0.19	0.19	0.18				

Discussion.

From the table it is evident that the agreement between the results obtained by different observers when using blood from different subjects is very good. When no CO was present, out of nine observations on three samples, only one reported it as present, and then only 0.005 per cent. The greatest percentage error reported was that in the case in which 0.000 per cent CO was recorded by one observer for one of the samples when 0.010 per cent was present. As the percentage of CO increased, the absolute error also increased, as would be expected from the nature of the dissociation curve; but in all events the results obtained are within the limits of error allowable from the standpoint of the purpose for which the method was devised.

Summary.

1. A durable and compact laboratory or field apparatus for the quantitative determination of carbon monoxide in blood and air has been described. On account of the compactness, durability, and ease with which accurate and dependable results can be obtained, it should be of great use in investigations pertaining to the cause, diagnosis, and treatment of carbon-monoxide poisoning.

2. The percentage saturation of CO in blood can easily be determined to a degree of accuracy involving only 5 per cent error.

3. The actual error of the method for determination of CO in air, even when used by inexperienced men, was found to be 0.005 in regions of 0.000 to 0.05 per cent CO; 0.01 in regions of 0.05 to 0.08 per cent; 0.02 in regions of 0.08 to 0.12 per cent; and 0.03 in regions of 0.12 to 0.18 per cent carbon monoxide.

HEALTH CONDITIONS AMONG CHEMICAL WORKERS, WITH RESPECT TO EARNINGS.

By FRANK M. PHILLIPS, Ph. D., and GERTRUDE A. SAGER, M. A., Office of Industrial Hygiene and Sanitation, United States Public Health Service.

During the close of 1916 and the beginning of 1917, officers of the United States Public Health Service made a physical examination of 916 men employed in the various occupations of the general chemical industry. Of this number, 629 were married men supporting one or more dependents. Data were gathered showing the monetary income of these men, making possible a classification of them by income.

The purpose of this particular study is to make comparisons by income classes, of the physical measurements, diseases, defects, and impairments as revealed by this physical examination. No attempt is made either to substantiate or to refute the conclusions of other investigators who have made similar studies. This report contains simple statements of certain conditions as they were found to exist in this particular group of persons.

The income range is not large. The 629 men examined are divided into income classes as follows: Incomes of \$16 and under \$20 per week; \$20 and under \$25 per week; and \$25 and over per week. The numbers of men in each of these three income classes are 291, 230, and 108, respectively. The average ages of the groups are 35.07 years, 35.04, and 34.99, in the order named. Slight adjustments for age distributions are made in the rates given. No attempt is made to adjust for difference in occupation, length of service, or nationality. The majority of these men are Americans. The nationalities next in order of frequency are Poles, then Slavs. There were a few Italians and some persons of other nationalities.

Table I shows, by income classes, certain physical measurements, certain economic and vital facts, and certain disease and defect rates per thousand for these economic groups. No attempt is made to test the reliability of the rates, but the number in each group is large enough to make the probable errors comparatively small.

TABLE I.—*Certain physical measurements, diseases, and vital and economic facts concerning 629 married, male, white, chemical employees by income groups.*

Item compared.	Income group.			All groups.
	\$16-\$19.99 per week.	\$20-\$24.99 per week.	\$25 and over per week.	
Number of men examined.....	291	290	108	629
Average age.....	35.07	35.04	34.99	35.03
Average yearly earning.....	\$861	\$1,099	\$1,341	\$1,017
Average number of hours per day.....	9.3	9.2	9.7	9.3
Average chest expansion in inches.....	2.25	2.30	2.50	2.30
Average right-hand dynamometer in kgs.....	40.0	40.8	43.5	40.7
Average vital capacity in cubic inches.....	224	234	238	231
Average number of children born.....	3.05	2.57	2.43	2.81
Average number of children living.....	2.35	2.21	2.09	2.25
Per cent of children born who are still living.....	77.3	85.6	86.0	80.1
Average number rooms per person.....	1.04	1.18	1.38	1.16
Average number persons per bedroom.....	2.63	2.31	2.25	2.46
Heart disorders per 1,000.....	82	52	45	65
Pyorrhea per 1,000.....	460	417	203	400

It is shown in Table I that these groups are about the same average age and that they work about the same number of hours per day. As the occupations are nonseasonal, there is no unemployment to be charged against any group, even if difference in wages means difference in occupation.

Dynamometer readings, chest expansion, and vital capacity all increase with income. The number of children born and the number still living decrease with increase in income, whereas the per cent of children born who are still living increases with income. It thus appears that a child has a better chance of living in the better-paid group. The number of rooms per person increases, while the number of persons per bedroom decreases with increase in income. An average sized family of a little over four persons was found to have an average of nearly five rooms with an average of 1.6 bedrooms. In the lower income groups the congestion is slightly higher than this, whereas in the better-paid groups it is slightly lower.

Heart disorders and pyorrhea are both high in the lower-income class, decreasing as the income increases.

In this study, then, chest expansion, dynamometer readings, vital capacity, number of rooms per person, and per cent of children still living all show a direct correlation with income, whereas the number of children born, number of children living, number of persons per bedroom, cases of pyorrhea, and of heart disorders all show a negative correlation with income.

Blood count, as measured by the Tolquist index, shows no regular series in either income direction. The same statement may be made regarding overweight and underweight, hernia, defective vision, defective hearing, defective teeth, tuberculosis, bad posture, and diseased tonsils.

It should be remembered that results of this kind are subject to at least two interpretations of an entirely different nature unless further analysis is possible. Quite often it is the man's physical impairments and other unfortunate circumstances that rob him of both time and energy, and thus keep him out of the higher-income classes and prevent his getting a larger salary.

An observation might be made here regarding heart disorders. It is generally conceded by physicians that these occur among rich and poor alike. If so, it is possible that a bad heart condition may keep a man out of the better-paid groups by limiting his earning capacity.

On the other hand, it is also possible that lack of income renders it impossible for the employee to care for physical ills that cost money for correction.

Both of these forces operate at all times, and unless sufficient data are gathered and carefully analyzed, it is impossible to draw any definite conclusions.

There is no purpose nor advantage in this study of making any other claim than that of relationship between size of income and the items enumerated. The income range is small. The differences noted in Table I are, for the most part, small also. The statement of facts and the accompanying discussion are submitted as one more contribution to the literature on the subject of income and its relation to physical measures and bodily ills.

TREND OF CANCER MORTALITY RATE IN A GROUP OF INSURED PERSONS.

The question of whether or not mortality from cancer has been actually or only apparently increasing during recent years has been a matter of controversy for some time. Statisticians of the Metropolitan Life Insurance Co. are studying the cancer mortality data for wage earners insured in the industrial department of the company for the period 1911 to 1922. (There were approximately 14,000,000 persons in this group during 1922.) From a preliminary study of the rates,¹ "standardized" to account for changes in the composition of this group of persons, with respect to color, sex, and age, the conclusion is reached that the slight upward trend in the cancer death rate during the years under consideration is due more to changes in diagnosis and recording than to any circumstances really affecting cancer incidence.² It was found that the

¹ Statistical Bulletin, Metropolitan Life Ins. Co., Vol. IV, No. 8, August, 1923.

² Recorded increases in mortality from cancer of accessible sites probably represent actual increases, as diagnoses of such forms of the disease were probably no better in 1922 than in 1911.—Ed.

“standardized” or adjusted death rate for cancer increased approximately at the rate of six deaths per million policy holders per year during the period 1911–1922. The change of rate among females, for whom the cancer death rate is much higher than for males, was slight—an increase of about two deaths per million per year for white females and a small decrease, less than one death per million per year, among colored females. The death rates for males showed a higher average increase than did those for females, the increase being at the rate of about 11 deaths per million per year for white males and about 12 deaths per million per year among colored males. The following table is given, showing the average annual increment or decrement for this group, by color and sex, during the period under consideration:

Standardized death rates for cancer (all forms) and the uniform annual increase¹ or decrease,² 1911–1922.

[Industrial Department, Metropolitan Life Insurance Co.]

Color and sex.	Uniform annual increase ¹ of—		Standardized death rate per 100,000.	
	Crude death rate.	Standardized death rate.	1922	1911
Total.....	+0.10	+0.58	80.3	74.2
White:				
Males.....	+0.32	+1.05	80.5	69.8
Females.....	+0.37	+0.22	102.2	100.4
Colored:				
Males.....	+0.98	+1.16	46.9	33.5
Females.....	+0.62	+0.05	89.5	90.3

¹ In deaths per year per 100,000 exposed.

² Decrease.

Another point brought out in this preliminary study is that the cancer death rate in this group has shown very little yearly variation from the line of general trend over the period 1911–1922, the average deviation being but 2 per cent and not over 4 per cent in any one year. This small deviation is interpreted by the statisticians of the company as signifying that no fundamental change in cancer mortality actually took place. In the following table are given the crude mortality rates for cancer among the industrial policyholders of the company for the years 1911–1922, together with the standardized death rates and the standardized trend death rates and the uniform annual increment. The crude death rates from cancer and other malignant tumors in the death registration area of the United States (exclusive of Hawaii) during the period 1911–1920 are also given.

Mortality rates for cancer (all forms), industrial department, Metropolitan Life Insurance Co., 1911-1922.

Year.	Death rate per 100,000.			Year.	Death rate per 100,000.		
	Crude. ¹	Standardized un-trended death rate.	Standardized trended death rate.		Crude. ¹	Standardized un-trended death rate.	Standardized trended death rate.
1922.....	72.0	80.3	81.7	1914.....	69.8	75.2	77.1
1921.....	71.7	82.2	81.1	1913.....	70.5	77.8	76.5
1920.....	69.8	82.0	80.6	1912.....	70.3	78.7	76.0
1919.....	67.0	80.4	80.0	1911.....	68.0	74.2	75.4
1918.....	67.2	77.9	79.4	Uniform annual increment.....			
1917.....	70.9	81.2	78.8			0.58	
1916.....	70.3	77.0	78.3				
1915.....	70.9	75.6	77.7				

¹ Little trend is shown in the crude death rates; the average for the first half of the period (70) is greater than that for the last half (69.8). Age, sex, and race distribution are such important factors in cancer mortality, however, that crude death rates of groups of different composition are of little value for comparative purposes.—Ed.

Crude death rates for cancer and other malignant tumors in the death registration area of the United States (exclusive of Hawaii) during the period 1911-1920.

	Year.									
	1920	1919	1918	1917	1916	1915	1914	1913	1912	1911
Death rate per 100,000 population.....	83.4	80.5	80.3	82.0	82.1	81.4	79.6	79.0	77.1	74.4

It is pointed out that while a slight increase in the death rate for cancer has been recorded in this group during the period 1911-1922, this fact can not be accepted as evidence that the disease has actually increased as a cause of death. It is concluded that when such factors as precision in death certificates, the increase in the number of certifications on autopsy findings, or from data obtained at time of operation or in the microscopic examination of tissues, and a diminished degree of reluctance on the part of families to have deaths certified from cancer, the recorded changes in the cancer death rate in this group will give no indication that the disease is exacting a heavier toll now than formerly.

EDUCATIONAL CAMPAIGN AGAINST CANCER.

The American Society for the Control of Cancer Announces a Series of Local Campaigns for 1923-24.

The American Society for the Control of Cancer announces that the plan of educational campaign which it so successfully conducted as "cancer weeks" in 1921 and 1922 has been modified this year as a foundation on which to build permanent and consistent educational

work. The "National cancer week" held from October 30 to November 5, 1921, was the first attempt on the part of the society to carry out a uniform campaign at one time throughout the country. This year, instead of attempting to cover the whole country in a single week of intensive publicity, the United States and Canada have been divided into six districts, in each of which a period of three weeks will be devoted to preparation and a final week to the carrying out of the activities. The first campaign will begin in the Northwest and extend from October 15 to November 14, 1923. The last will end May 14, 1924, in the New England States. The schedule for these campaigns is given below.

The chief object of the campaign is, by means of authoritative information, to acquaint the public with the early symptoms of cancer and the necessity for competent and prompt treatment of the disease. People will be told that accurate knowledge and prompt action will prevent deaths from cancer, and that one of the most treacherous things connected with the disease is the fact that it is painless in the beginning. A little knowledge in this instance is not a dangerous thing, but of the utmost value.

Through lectures, lantern slides, motion pictures, circulars, posters, and other publicity the society will present only those phases of the cancer problem which have been well established and are based on sound opinion. It is its hope that the people will become so informed and so alert that they will act as promptly when cancer is suspected as they now do on discovering symptoms of appendicitis.

The work of the society bespeaks the cooperation of all National, State, and local health agencies that are vitally concerned with the public health. All persons interested in these local campaigns should get in touch with the headquarters office. The society will be glad to answer questions or provide information upon written request. The address is 370 Seventh Avenue, New York City.

Following is the schedule for the campaign of 1923-24:

District.	States and Provinces included in district.	Date of campaigns.
Northwestern.....	Washington, Idaho, Oregon, Montana, Wyoming, North Dakota, South Dakota, Minnesota, Nebraska, Iowa, British Columbia, Alberta, Saskatchewan, Manitoba.	Oct. 15 to Nov. 14.
Southwestern.....	California, Nevada, Utah, Arizona, Colorado, New Mexico, Texas, Kansas, Missouri, Oklahoma, Arkansas.	Nov. 15 to Dec. 15.
Southeastern.....	Louisiana, Mississippi, Tennessee, Alabama, Georgia, Florida, North Carolina, South Carolina, Virginia.	Jan. 15 to Feb. 14.
Lake.....	Wisconsin, Michigan, Illinois, Ohio, Indiana, West Virginia, Kentucky.	Feb. 15 to Mar. 14.
Eastern.....	Pennsylvania, Maryland, Delaware, District of Columbia, New Jersey, Connecticut, New York, Ontario.	Mar. 15 to Apr. 14.
New England.....	Rhode Island, Massachusetts, Vermont, Maine, New Hampshire, Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland, and Quebec.	Apr. 15 to May 14.

DEATHS DURING WEEK ENDED SEPTEMBER 22, 1923.

Summary of information received by telegraph from industrial insurance companies for week ended September 22, 1923, and corresponding week of 1922. (From the Weekly Health Index, September 25, 1923, issued by the Bureau of the Census, Department of Commerce.)

	Week ended Sept. 22, 1923.	Corresponding week, 1922.
Policies in force.....	54, 997, 408	50, 614, 343
Number of death claims.....	9, 265	7, 908
Death claims per 1,000 policies in force, annual rate.....	8. 8	8. 1

Deaths from all causes in certain large cities of the United States during the week ended September 22, 1923, infant mortality, annual death rate, and comparison with corresponding week of 1922. (From the Weekly Health Index, September 25, 1923, issued by the Bureau of the Census, Department of Commerce.)

City.	Week ended Sept. 22, 1923.		Annual death rate per 1,000, cor- responding week, 1922.	Deaths under 1 year.		Infant mor- tality rate, week ended Sept. 22, 1923. ¹
	Total deaths.	Death rate. ¹		Week ended Sept. 22, 1923.	Corre- sponding week, 1922.	
Total.....	6, 245	11. 3	10. 2	910	831	.....
Akron, Ohio.....	45	11. 3	7. 8	11	6	68
Albany, N. Y. ²	23	10. 2	13. 0	2	4	81
Atlanta, Ga.....	67	15. 7	10. 0	11	5	.....
Baltimore, Md. ²	195	13. 1	12. 0	28	37	57
Birmingham, Ala.....	66	12. 6	12. 0	12	8	.....
Boston, Mass.....	175	11. 8	13. 4	18	38	77
Bridgeport, Conn.....	24	8. 7	7. 6	4	4	66
Buffalo, N. Y.....	112	10. 9	12. 1	15	25	93
Cambridge, Mass.....	18	8. 4	11. 8	4	3	64
Camden, N. J. ²	23	9. 7	6. 0	3	5	92
Chicago, Ill. ²	630	11. 4	9. 9	112	99	.....
Cleveland, Ohio ²	166	9. 7	10. 2	26	37	74
Columbus, Ohio.....	74	14. 8	13. 0	4	10	80
Dallas, Tex.....	32	9. 4	8. 5	8	4	.....
Dayton, Ohio.....	30	9. 5	11. 6	5	4	73
Denver, Colo.....	73	14. 0	14. 2	12	12	.....
Des Moines, Iowa.....	34	12. 6	.....	2	.....	.....
Detroit, Mich.....	215	11. 3	9. 8	47	37	83
Duluth, Minn.....	22	10. 8	.....	3	.....	64
Erie, Pa.....	22	10. 2	13. 3	2	7	70
Fall River, Mass. ²	28	12. 1	13. 8	4	10	114
Flint, Mich.....	21	9. 3	.....	4	.....	79
Fort Worth, Tex.....	20	7. 3	7. 3	2	2	.....
Grand Rapids, Mich.....	27	9. 6	6. 5	3	2	69
Houston, Tex.....	29	9. 8	10. 8	4	8	.....
Indianapolis, Ind.....	106	16. 1	11. 2	16	7	75
Jacksonville, Fla.....	42	21. 9	17. 1	9	3	.....
Jersey City, N. J.....	40	6. 7	8. 5	5	7	84
Kansas City, Kans.....	19	8. 6	7. 3	3	3	71
Kansas City, Mo.....	81	12. 0	12. 3	5	19	.....
Los Angeles, Calif.....	198	15. 5	12. 6	23	17	68
Louisville, Ky.....	72	14. 6	8. 3	11	7	73
Lowell, Mass.....	29	13. 1	11. 8	7	8	90
Lynn, Mass.....	11	5. 6	.....	2	.....	76
Memphis, Tenn.....	60	18. 4	15. 8	5	11	.....
Milwaukee, Wis.....	86	9. 3	7. 4	10	9	82
Minneapolis, Minn.....	83	10. 6	9. 0	8	10	56
Nashville, Tenn. ²	48	20. 7	13. 0	6	3	.....
New Bedford, Mass.....	28	11. 2	12. 7	6	4	95
New Haven, Conn.....	45	13. 6	10. 1	10	7	61
New Orleans, La.....	128	16. 5	15. 8	9	10	.....
New York, N. Y.....	1, 096	9. 6	8. 6	163	115	72
Bronx borough.....	113	7. 0	6. 1	9	10	61
Brooklyn borough.....	335	8. 1	7. 7	52	38	65
Manhattan borough.....	528	12. 1	10. 2	82	56	81
Queens borough.....	79	7. 7	8. 5	13	11	68
Richmond borough.....	41	16. 8	9. 6	7	0	70

¹ Annual rate per 1,000 population.

² Deaths under 1 year per 1,000 births—an annual rate based on deaths under 1 year for the week and estimated births for 1922. Cities left blank are not in the registration area for births.

³ Deaths for week ended Friday, Sept. 21, 1923.

Deaths from all causes in certain large cities of the United States during the week ended September 22, 1923, infant mortality, annual death rate, and comparison with corresponding week of 1922. (From the Weekly Health Index, September 25, 1923, issued by the Bureau of the Census, Department of Commerce.)—Continued.

City.	Week ended Sept. 22, 1923.		Annual death rate per 1,000, corresponding week, 1922.	Deaths under 1 year.		Infant mortality rate, week ended Sept. 22, 1923.
	Total deaths.	Death rate.		Week ended Sept. 22, 1923.	Corresponding week, 1922.	
Newark, N. J.	84	10.0	9.8	13	10	72
Norfolk, Va.	25	8.2	10.0	7	3	90
Oakland, Calif.	66	14.3	8.7	5	4	52
Omaha, Nebr.	33	8.4	10.4	3	4	79
Paterson, N. J.	36	13.4	7.9	5	3	77
Philadelphia, Pa.	373	10.1	9.8	65	65	78
Pittsburgh, Pa.	147	12.5	11.8	21	21	97
Portland, Oreg.	54	10.3	10.3	4	6	50
Providence, R. I.	35	7.5	12.8	6	6	84
Richmond, Va.	47	13.5	10.2	10	7	101
Rochester, N. Y.	52	8.5	8.2	6	5	80
St. Louis, Mo.	209	13.6	9.1	22	10	.....
St. Paul, Minn.	56	12.1	8.7	8	2	54
Salt Lake City, Utah ¹ ..	25	10.3	10.9	4	3	74
San Antonio, Tex.	48	13.5	13.2	9	9	.....
San Francisco, Calif.	145	14.0	11.6	3	6	51
Seattle, Wash.	47	7.8	9.4	2	6	52
Spokane, Wash.	24	12.0	12.5	2	3	55
Springfield, Mass.	30	10.8	13.0	7	4	72
Tacoma, Wash.	18	9.2	.....	1	.....	56
Toledo, Ohio.	66	12.8	9.6	14	3	75
Trenton, N. J.	21	8.6	15.0	5	10	80
Utica, N. Y.	15	7.6	.....	5	.....	87
Washington, D. C.	113	13.5	11.1	18	16	83
Wilmington, Del.	31	13.7	8.1	1	3	93
Worcester, Mass.	39	10.6	8.3	5	8	77
Yonkers, N. Y.	13	6.3	3.5	2	1	63
Youngstown, Ohio.	50	19.7	11.4	13	6	89

¹ Deaths for week ended Friday, Sept. 21, 1923.

MARYLAND.¹

	Cases.
Chicken pox.....	5
"Devil's grip".....	1
Diphtheria.....	48
Dysentery.....	10
German measles.....	1
Influenza.....	1
Lethargic encephalitis.....	1
Malaria.....	5
Measles.....	11
Mumps.....	6
Ophthalmia neonatorum.....	2
Paratyphoid fever.....	1
Pneumonia (all forms).....	21
Scarlet fever.....	34
Smallpox.....	5
Tuberculosis.....	58
Typhoid fever.....	61
Whooping cough.....	50

MASSACHUSETTS.

Cerebrospinal meningitis.....	6
Chicken pox.....	48
Conjunctivitis (suppurative).....	4
Diphtheria.....	181
German measles.....	1
Hookworm disease.....	2
Influenza.....	4
Lethargic encephalitis.....	2
Measles.....	58
Mumps.....	27
Ophthalmia neonatorum.....	28
Pneumonia (lobar).....	39
Poliomyelitis.....	12
Scarlet fever.....	102
Septic sore throat.....	2
Tetanus.....	1
Trachoma.....	1
Tuberculosis (all forms).....	150
Typhoid fever.....	25
Whooping cough.....	81

MICHIGAN.

Diphtheria.....	207
Measles.....	85
Pneumonia.....	50
Scarlet fever.....	170
Smallpox.....	18
Tuberculosis.....	300
Typhoid fever.....	46
Whooping cough.....	65

MINNESOTA.

Chicken pox.....	12
Diphtheria.....	126
Lethargic encephalitis.....	1
Measles.....	129
Pneumonia.....	3
Scarlet fever.....	253
Smallpox.....	10
Trachoma.....	6
Tuberculosis.....	51
Typhoid fever.....	21
Whooping cough.....	8

MISSISSIPPI.

	Cases.
Diphtheria.....	50
Scarlet fever.....	17
Typhoid fever.....	19

MISSOURI.

Cerebrospinal meningitis.....	2
Chicken pox.....	15
Diphtheria.....	110
Epidemic sore throat.....	2
Measles.....	32
Mumps.....	12
Pneumonia.....	5
Poliomyelitis.....	1
Scarlet fever.....	113
Smallpox.....	13
Trachoma.....	11
Tuberculosis.....	85
Typhoid fever.....	35
Whooping cough.....	71

MONTANA.

Diphtheria.....	7
Poliomyelitis—Libby.....	1
Scarlet fever.....	8
Smallpox.....	19
Typhoid fever.....	4

NEW JERSEY.

Cerebrospinal meningitis.....	2
Chicken pox.....	22
Diphtheria.....	82
Influenza.....	7
Measles.....	19
Paratyphoid fever.....	1
Pneumonia.....	36
Poliomyelitis.....	8
Scarlet fever.....	43
Typhoid fever.....	33
Whooping cough.....	43

NEW MEXICO.

Cerebrospinal meningitis.....	1
Diphtheria.....	14
Dysentery.....	2
Influenza.....	1
Measles.....	1
Mumps.....	1
Scarlet fever.....	10
Tuberculosis.....	9
Typhoid fever.....	13
Whooping cough.....	3

NEW YORK.

(Exclusive of New York City.)

Cerebrospinal meningitis.....	3
Diphtheria.....	160
Influenza.....	6
Measles.....	141
Pneumonia.....	69
Poliomyelitis.....	20
Scarlet fever.....	132
Smallpox.....	3
Typhoid fever.....	47
Whooping cough.....	127

¹ Week ended Friday.

² Including 2 cases for week ended Sept. 22, 1923.

NORTH CAROLINA.		VERMONT—continued.	
	Cases.		Cases.
Chicken pox.....	13	Poliomyelitis.....	4
Diphtheria.....	262	Scarlet fever.....	9
German measles.....	1	Typhoid fever.....	1
Measles.....	118	Whooping cough.....	33
Poliomyelitis.....	1		
Scarlet fever.....	90	WASHINGTON.	
Septic sore throat.....	12	Chicken pox.....	12
Smallpox.....	8	Diphtheria.....	18
Typhoid fever.....	37	Dysentery.....	4
Whooping cough.....	235	Lethargic encephalitis—Spokane.....	2
		Measles.....	13
OREGON.		Mumps.....	4
Chicken pox.....	6	Pneumonia.....	2
Diphtheria.....	12	Scarlet fever.....	41
Influenza.....	1	Smallpox.....	3
Lethargic encephalitis.....	2	Tuberculosis.....	31
Measles.....	13	Typhoid fever.....	17
Scarlet fever:		Whooping cough.....	11
Portland.....	14		
Scattering.....	14	WEST VIRGINIA.	
Tuberculosis.....	3	Diphtheria.....	27
Typhoid fever.....	17	Scarlet fever:	
Whooping cough.....	6	Wheeling.....	10
		Scattering.....	20
SOUTH DAKOTA.		Typhoid fever.....	10
Chicken pox.....	6		
Diphtheria.....	12	WISCONSIN.	
Measles.....	4	Milwaukee:	
Scarlet fever.....	15	Cerebrospinal meningitis.....	2
Smallpox.....	10	Chicken pox.....	13
Tuberculosis.....	24	Diphtheria.....	17
Typhoid fever.....	1	Lethargic encephalitis.....	1
Whooping cough.....	7	Measles.....	2
		Pneumonia.....	2
TEXAS.		Scarlet fever.....	19
Cerebrospinal meningitis.....	1	Tuberculosis.....	26
Dengue.....	3	Whooping cough.....	17
Diphtheria.....	17	Scattering:	
Measles.....	6	Cerebrospinal meningitis.....	3
Mumps.....	2	Chicken pox.....	16
Scarlet fever.....	8	Diphtheria.....	49
Smallpox.....	7	German measles.....	1
Tuberculosis.....	20	Influenza.....	4
Typhoid fever.....	8	Measles.....	33
Whooping cough.....	10	Ophthalmia neonatorum.....	1
		Pneumonia.....	3
VERMONT.		Poliomyelitis.....	1
Chicken pox.....	12	Scarlet fever.....	87
Diphtheria.....	6	Smallpox.....	3
Measles.....	10	Tuberculosis.....	29
Mumps.....	2	Typhoid fever.....	8
		Whooping cough.....	66

¹ Deaths.

Reports for Week Ended September 22, 1923.

DISTRICT OF COLUMBIA.		NORTH DAKOTA.	
	Cases.		Cases.
Diphtheria.....	8	Chicken pox.....	3
Influenza.....	2	Diphtheria.....	18
Lethargic encephalitis.....	1	German measles.....	1
Measles.....	1	Measles.....	6
Scarlet fever.....	9	Pneumonia.....	2
Smallpox.....	1	Poliomyelitis.....	1
Tuberculosis.....	25	Scarlet fever.....	13
Typhoid fever.....	4	Smallpox.....	4
Whooping cough.....	9	Tuberculosis.....	3
		Typhoid fever.....	14
		Whooping cough.....	25
NEBRASKA.		WYOMING.	
Chicken pox.....	21	Measles.....	1
Diphtheria.....	19	Paratyphoid fever.....	1
German measles.....	2	Pneumonia (broncho).....	1
Measles.....	16	Scarlet fever.....	1
Mumps.....	1	Typhoid fever.....	2
Poliomyelitis:		Whooping cough.....	2
Central City.....	2		
Omaha.....	5		
Otoe County.....	2		
Scarlet fever.....	54		
Smallpox.....	1		
Whooping cough.....	15		

SUMMARY OF CASES REPORTED MONTHLY BY 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.	Cerebrospinal meningitis.	Diphtheria.	Influenza.	Malaria.	Measles.	Pellagra.	Poliomyelitis.	Scarlet fever.	Smallpox.	Typhoid fever.
<i>August, 1923.</i>										
Hawaii.....	1	8	205		9			1		22
Illinois.....	12	411	11	14	306		37	227	24	233
Iowa.....		74			10		22	78	14	25
Kansas.....	4	103	10	13	123		70	174	9	226
Maine.....		23			148		2	74	3	22
Mississippi.....		137	168	17, 141	407	608	2	24	10	320
New Mexico.....		81	1	7	28			7	3	60
North Carolina.....	3	311			699		2	135	88	342
North Dakota.....		51			97		5	62	22	19
Oregon.....		36			14			48	36	23
Pennsylvania.....	14	786		3	400	1	23	416	6	321
Rhode Island.....	1	40			9		2	13		10
South Carolina.....	1	193		44	40	4	1	13	8	68
Virginia.....	12	181	326	546	836	13	20	160	3	381
Washington.....	1	77			61		7	95	68	108
West Virginia.....	2	76	13		94		10	113	4	221

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923.

ANTHRAX.

City.	Cases.	Deaths.
Wisconsin:		
Milwaukee.....	1	1

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923—Continued.

CEREBROSPINAL MENINGITIS.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Sept. 15, 1923.		City.	Median for previous years.	Week ended Sept. 15, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
California:				New York:			
San Diego.....	0	1	1	New York.....	4	3	4
Florida:				Yonkers.....	0		1
Tampa.....	0	1	1	Ohio:			
Illinois:				Canton.....	0		2
Chicago.....	1	1		Pennsylvania:			
Indiana:				Philadelphia.....	0	2	1
Anderson.....			1	Pittsburgh.....	0		1
Muncie.....	0		1	Texas:			
Massachusetts:				San Antonio.....			1
Boston.....	1	2	1	West Virginia:			
Michigan:				Charleston.....	0		1
Detroit.....	1	2		Wisconsin:			
Minnesota:				Milwaukee.....	0	1	
St. Paul.....	0		1				
New Jersey:							
Bayonne.....	0	1					

DENGUE.

City.	Cases.	Deaths.
Texas:		
San Antonio.....	8	

DIPHTHERIA.

See p. 2339; also Current State summaries, p. 2328, and Monthly summaries by States, p. 2332.

INFLUENZA.

City.	Cases.		Deaths, week ended Sept. 15, 1923.	City.	Cases.		Deaths, week ended Sept. 15, 1923.
	Week ended Sept. 16, 1922.	Week ended Sept. 15, 1923.			Week ended Sept. 16, 1922.	Week ended Sept. 15, 1923.	
Alabama:				Massachusetts—Contd.			
Montgomery.....		3		Chelsea.....	1		
California:				Saugus.....	1		
Los Angeles.....	3	7		Michigan:			
Oakland.....		2		Detroit.....	1		1
San Francisco.....	2			Missouri:			
Connecticut:				Kansas City.....		1	1
Hartford.....	1			New Jersey:			
New Haven.....		1		East Orange.....	1		
Florida:				Long Branch.....			1
Tampa.....	2			Newark.....	3	5	
Georgia:				New York:			
Atlanta.....		2		New York.....	7	14	5
Valdosta.....	6			Schenectady.....	1		
Illinois:				Pennsylvania:			
Chicago.....		6	1	Philadelphia.....	1	2	3
Danville.....	2			Texas:			
Elgin.....			1	Fort Worth.....	1		
Louisiana:				Houston.....	80		
New Orleans.....	0	1	1	Vermont:			
Maryland:				Rutland.....	1		
Baltimore.....	6	1	1	West Virginia:			
Massachusetts:				Parkersburg.....			1
Amesbury.....	1						
Boston.....		2					

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923—Continued.

LEPROSY.

City.	Cases.	Deaths.
Louisiana: New Orleans.....	2

LETHARGIC ENCEPHALITIS.

California: San Francisco.....	1	1
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MALARIA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Alabama: Anniston.....	4	Kentucky: Louisville.....	1
Birmingham.....	7	.....	Owensboro.....	3	.....
Dothan.....	1	.....	Louisiana: New Orleans.....	2	.....
Montgomery.....	5	.....	Missouri: Kansas City.....	1	1
Tuscaloosa.....	1	.....	New Jersey: Newark.....	1	.....
Arkansas: Little Rock.....	3	.....	New York: New York.....	1	.....
California: Oakland.....	1	.....	Tennessee: Memphis.....	18	2
Florida: Tampa.....	1	.....	Virginia: Norfolk.....	1	.....
Georgia: Albany.....	4	.....	Wisconsin: Janesville.....	1	.....
Macon.....	3	.....		
Savannah.....	1	.....		
Illinois: Chicago.....	1	.....		

MEASLES.

See p. 2339; also Current State summaries, p. 2323, and Monthly summaries by States, p. 2332.

PELLAGRA.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Alabama: Anniston.....	1	.....	Kansas: Topeka.....		1
Birmingham.....	1	.....	Pennsylvania: Philadelphia.....	1	.....
Mobile.....		1	South Carolina: Columbia.....		2
Montgomery.....		1	Texas: Dallas.....	1	.....
California: Pasadena.....	1	.....	Fort Worth.....	1	1
Georgia: Atlanta.....		1			

PNEUMONIA (ALL FORMS).

Alabama: Anniston.....	2	.....	Colorado: Denver.....		3
Birmingham.....	3	2	Connecticut: New Haven.....		2
Mobile.....		1	New London.....		1
Arkansas: Little Rock.....	1	.....	Norwalk.....		1
California: Glendale.....		1	District of Columbia: Washington.....		9
Long Beach.....		1	Florida: Tampa.....		1
Los Angeles.....	17	8	Georgia: Atlanta.....		11
Oakland.....	5	1	Illinois: Champaign.....	1	.....
Riverside.....		2	Chicago.....	77	23
Sacramento.....		2	East St. Louis.....		1
San Francisco.....	8	6			
Santa Barbara.....		1			
Stockton.....	2	1			

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923—Continued.

PNEUMONIA (ALL FORMS)—Continued.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Illinois—Continued.			New Mexico:		
Freeport.....	1	.....	Albuquerque.....	1	.....
Galesburg.....	.....	1	New York:		
Kewanee.....	2	.....	Albany.....	2	.....
Springfield.....	5	.....	Buffalo.....	4	1
Indiana:			Coates.....	1	.....
Crawfordsville.....	.....	1	Geneva.....	.....	1
East Chicago.....	.....	1	Hudson.....	1	.....
Gary.....	.....	2	Ithaca.....	.....	1
Hammond.....	.....	1	Lackawanna.....	1	.....
Indianapolis.....	.....	1	Lockport.....	.....	1
Muncie.....	.....	1	New York.....	135	59
Iowa:			Olean.....	.....	1
Iowa City.....	1	.....	Poughkeepsie.....	.....	1
Muscatine.....	.....	1	Rochester.....	5	1
Kansas:			Saratoga Springs.....	1	.....
Kansas City.....	1	.....	Schenectady.....	1	.....
Kentucky:			Syracuse.....	.....	1
Covington.....	.....	1	Troy.....	.....	1
Lexington.....	.....	2	North Carolina:		
Lexington.....	.....	4	Raleigh.....	.....	1
Louisville.....	.....	4	Ohio:		
Louisiana:			Akron.....	3	.....
New Orleans.....	7	5	Barberton.....	.....	1
Maine:			Cleveland.....	9	6
Bangor.....	1	.....	Columbus.....	.....	3
Maryland:			Dayton.....	1	.....
Baltimore.....	13	11	East Cleveland.....	1	.....
Cumberland.....	1	.....	Mansfield.....	1	.....
Massachusetts:			Springfield.....	.....	1
Boston.....	.....	8	Toledo.....	.....	1
Cambridge.....	2	1	Youngstown.....	.....	2
Chelsea.....	1	1	Oklahoma:		
Chicopee.....	1	1	Oklahoma.....	.....	1
Clinton.....	.....	1	Oregon:		
Haverhill.....	13	.....	Portland.....	.....	2
Lowell.....	1	.....	Pennsylvania:		
Malden.....	1	.....	Philadelphia.....	38	17
Melrose.....	.....	1	Pittsburgh.....	.....	27
New Bedford.....	1	.....	Rhode Island:		
Newton.....	1	.....	Pawtucket.....	.....	1
Northampton.....	1	.....	Providence.....	.....	4
Southbridge.....	1	.....	South Carolina:		
Springfield.....	.....	1	Columbia.....	.....	3
Worcester.....	4	1	Tennessee:		
Michigan:			Memphis.....	.....	5
Detroit.....	20	15	Nashville.....	.....	1
Flint.....	.....	1	Texas:		
Hamtramck.....	2	1	Beaumont.....	.....	1
Highland Park.....	4	1	Fort Worth.....	.....	2
Kalamazoo.....	.....	1	Houston.....	.....	5
Minnesota:			San Antonio.....	.....	1
Minneapolis.....	2	.....	Waco.....	.....	1
St. Paul.....	4	.....	Utah:		
Missouri:			Provo.....	1	.....
Cape Girardeau.....	1	.....	Virginia:		
Kansas City.....	7	.....	Norfolk.....	.....	2
St. Joseph.....	2	.....	Petersburg.....	.....	3
Nebraska:			Richmond.....	1	.....
Lincoln.....	.....	1	West Virginia:		
Omaha.....	.....	2	Charleston.....	.....	1
New Jersey:			Wheeling.....	.....	3
Camden.....	1	.....	Wisconsin:		
Clifton.....	4	.....	Milwaukee.....	4	.....
Elizabeth.....	.....	3	Oshkosh.....	.....	1
Englewood.....	1	.....	Racine.....	.....	1
Hackensack.....	.....	1	Superior.....	.....	2
Hoboken.....	.....	1			
Jersey City.....	1	.....		
Kearny.....	1	.....		
Newark.....	18	3			

1 Lobar.

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923—Continued.

POLIOMYELITIS (INFANTILE PARALYSIS).

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Sept. 15, 1923.		City.	Median for previous years.	Week ended Sept. 15, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
California:				Michigan:			
Long Beach.....	0	1		Detroit.....	0	1	
Los Angeles.....	0	1		Minnesota:			
San Diego.....	0	1		St. Paul.....	1	1	
Connecticut:				Winona.....		1	1
Bridgeport.....	0	1		Nebraska:			
Norwalk.....	0		1	Omaha.....	0	3	
Illinois:				New Jersey:			
Chicago.....	4	3		Newark.....	0	1	
Kansas:				West New York.....	0	1	
Atchison.....	0	1		New York:			
Topeka.....	0	2		Lockport.....		1	
Kentucky:				Mount Vernon.....	0	1	
Paducah.....		1		New York.....	5	25	4
Louisiana:				Poughkeepsie.....	0	1	
New Orleans.....	0	1		Yonkers.....	0	2	
Maine:				Ohio:			
Sanford.....	0		1	Ashtabula.....	0	1	
Maryland:				Cleveland.....	1	1	
Baltimore.....	2	1		Pennsylvania:			
Massachusetts:				Philadelphia.....	1	1	
Boston.....	2	2		Tennessee:			
Newton.....	0	1		Memphis.....	0	1	
Northampton.....	0	2		Wisconsin:			
Wakefield.....	0	1		Milwaukee.....	0	1	1
Worcester.....	0	1					

RABIES IN ANIMALS.

City.	Cases.	City.	Cases.
California:		New Jersey:	
Los Angeles.....	5	Orange.....	1
Oakland.....	1	Ohio:	
San Francisco.....	1	Martins Ferry.....	1

RABIES IN MAN.

City.	Cases.	Deaths.
California:		
Los Angeles.....	1	1

SCARLET FEVER.

See p. 2339; also Current State summaries, p. 2328, and Monthly summaries by States, p. 2332.

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923—Continued.

SMALLPOX.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Sept. 15, 1923.		City.	Median for previous years.	Week ended Sept. 15, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
California:				Minnesota:			
Los Angeles.....	0	1	.....	Duluth.....	0	1	.....
District of Columbia:				Minneapolis.....	1	1	.....
Washington.....	0	14	.....	St. Paul.....	1	1	.....
Indiana:				New York:			
Gary.....	1	1	.....	Niagara Falls.....	0	1	.....
Hammond.....	0	1	.....	North Carolina:			
Indianapolis.....	0	1	.....	Winston-Salem.....	0	1	.....
Logansport.....	0	1	.....	Ohio:			
Muncie.....	0	4	.....	Youngstown.....	0	1	.....
Iowa:				Oregon:			
Sioux City.....	0	1	.....	Portland.....	5	2	.....
Kansas:				Vermont:			
Lawrence.....	0	1	.....	Burlington.....	0	4	.....
Maryland:				Washington:			
Baltimore.....	0	1	.....	Aberdeen.....	.....	1	.....
Michigan:				Seattle.....	0	1	.....
Detroit.....	1	2	.....	Spokane.....	4	1	.....
Grand Rapids.....	0	3	.....	Wisconsin:			
Holland.....	0	8	.....	Superior.....	0	1	.....
				Wausau.....	0	1	.....

TETANUS.

City.	Cases.	Deaths.	City.	Cases.	Deaths.
Illinois:			Missouri:		
Chicago.....	2	.....	Kansas City.....	1	.....
Iowa:			New York:		
Dubuque.....	.....	1	New York.....	2	.....
Ottumwa.....	3	.....	North Carolina:		
Michigan:			Winston-Salem.....	.....	1
Detroit.....	.....	1	Pennsylvania:		
			Philadelphia.....	.....	1

TUBERCULOSIS.

See p. 2339; also Current State summaries, p. 2328.

TYPHOID FEVER.

The column headed "Median for previous years" gives the median number of cases reported during the corresponding week of the years 1915 to 1922, inclusive. In instances in which data for the full eight years are incomplete, the median is that for the number of years for which information is available.

City.	Median for previous years.	Week ended Sept. 15, 1923.		City.	Median for previous years.	Week ended Sept. 15, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
Alabama:				Colorado:			
Anniston.....	0	1	.....	Denver.....	5	9	1
Birmingham.....	11	11	.....	Connecticut:			
Dothan.....	.....	1	.....	Bridgeport.....	2	1	.....
Montgomery.....	0	1	2	New Haven.....	1	11	2
Arkansas:				District of Columbia:			
Little Rock.....	1	2	.....	Washington.....	12	3	2
California:				Florida:			
Long Beach.....	0	1	.....	Tampa.....	0	1	.....
Los Angeles.....	4	7	1	Georgia:			
Sacramento.....	0	2	.....	Atlanta.....	10	2	1
San Francisco.....	2	2	.....	Macon.....	0	3	.....
Santa Ana.....	0	1	.....	Savannah.....	1	2	2

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923—Continued.

TYPHOID FEVER—Continued.

City.	Median for previous years.	Week ended Sept. 15, 1923.		City.	Median for previous years.	Week ended Sept. 15, 1923.	
		Cases.	Deaths.			Cases.	Deaths.
Illinois:				New York—Continued.			
Chicago.....	11	10	1	Poughkeepsie.....	0	.....	1
East St. Louis.....	1	3	.....	Rochester.....	2	5	1
Galesburg.....	1	3	.....	Syracuse.....	3	3	.....
Kewanee.....	1	1	.....	Watertown.....	0	2	.....
Mattoon.....	0	1	.....	Yonkers.....	0	1	.....
Peoria.....	0	11	1	North Carolina:			
Springfield.....	2	2	1	Winston-Salem.....	4	1	.....
Indiana:				Ohio:			
East Chicago.....	0	3	.....	Cleveland.....	6	3	.....
Fort Wayne.....	3	.....	4	Columbus.....	3	3	.....
Huntington.....	0	.....	1	Coshocton.....	0	1	.....
Indianapolis.....	4	2	.....	Dayton.....	1	1	.....
Logansport.....	0	.....	1	Findlay.....	0	1	.....
Terre Haute.....	0	3	.....	Kenmore.....	0	1	.....
Kansas:				Lancaster.....	0	1	.....
Kansas City.....	1	3	.....	Mansfield.....	0	2	.....
Topeka.....	0	2	.....	Springfield.....	1	2	.....
Wichita.....	3	1	1	Oklahoma:			
Kentucky:				Oklahoma.....	2	1	.....
Lexington.....	0	1	1	Tulsa.....	2	1	.....
Louisville.....	7	4	.....	Oregon:			
Owensboro.....	0	5	.....	Portland.....	2	3	.....
Louisiana:				Pennsylvania:			
New Orleans.....	4	7	1	Beaver Falls.....	0	1	.....
Maryland:				Bethlehem.....	1	1	.....
Baltimore.....	22	15	3	Chester.....	0	3	.....
Cumberland.....	2	1	.....	Columbia.....	0	6	.....
Massachusetts:				Eric.....	1	1	.....
Arlington.....	0	1	.....	Johnstown.....	1	2	.....
Boston.....	7	3	1	Lancaster.....	1	1	.....
Brockton.....	0	1	.....	New Kensington.....	0	1	.....
Gardner.....	0	1	.....	Norristown.....	0	1	.....
Lawrence.....	0	1	.....	Philadelphia.....	22	17	2
Leominster.....	0	1	.....	Pittsburgh.....	7	4	1
Malden.....	0	1	.....	Scranton.....	1	1	.....
Melrose.....	0	1	.....	Shenandoah.....	0	1	.....
Milford.....	0	1	.....	South Carolina:			
Somerville.....	0	2	.....	Charleston.....	3	2	.....
Taunton.....	0	1	.....	Columbia.....	1	1	.....
Wakefield.....	0	1	.....	Greenville.....	0	1	.....
Waltham.....	0	1	.....	South Dakota:			
Worcester.....	.....	1	.....	Sioux Falls.....	0	1	.....
Michigan:				Tennessee:			
Alpena.....	0	1	.....	Knoxville.....	3	5	2
Detroit.....	10	4	2	Memphis.....	3	7	2
Flint.....	2	2	1	Nashville.....	9	5	.....
Grand Rapids.....	0	1	.....	Texas:			
Muskegon.....	0	3	.....	Beaumont.....	0	.....	1
Port Huron.....	1	1	.....	Dallas.....	2	1	2
Saginaw.....	0	2	1	Fort Worth.....	1	1	.....
Minnesota:				Houston.....	1	3	.....
Mankato.....	0	1	.....	Waco.....	0	2	1
Minneapolis.....	2	2	.....	Utah:			
Rochester.....	0	1	.....	Salt Lake City.....	2	1	1
St. Paul.....	3	1	.....	Virginia:			
Virginia.....	0	1	.....	Alexandria.....	1	1	.....
Winona.....	0	1	.....	Charlottesville.....	.....	1	.....
Missouri:				Lynchburg.....	2	3	.....
Joplin.....	0	.....	2	Norfolk.....	2	1	.....
Kansas City.....	1	1	.....	Portsmouth.....	1	2	.....
St. Louis.....	10	4	3	Roanoke.....	3	3	.....
New Jersey:				Washington:			
Bayonne.....	0	1	.....	Everett.....	0	5	.....
Elizabeth.....	1	1	.....	Seattle.....	1	5	.....
Hoboken.....	0	1	.....	Spokane.....	1	1	.....
Long Branch.....	0	1	.....	Walla Walla.....	1	2	.....
Summit.....	0	1	.....	Yakima.....	0	1	.....
Trenton.....	0	1	.....	West Virginia:			
New Mexico:				Charleston.....	2	2	1
Albuquerque.....	3	1	.....	Huntington.....	0	1	2
New York:				Parkersburg.....	0	1	1
Albany.....	2	2	.....	Wheeling.....	0	2	.....
Buffalo.....	5	6	.....	Wisconsin:			
Cohoes.....	0	1	.....	Green Bay.....	0	2	.....
Hudson.....	0	1	.....	Oshkosh.....	0	1	.....
Lackawanna.....	0	1	.....	Wausau.....	0	2	.....
New York.....	65	49	6				

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Popula- tion Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Maryland:										
Baltimore.....	733,826	166	15	3	6	1	12	1	25	14
Cumberland.....	29,837	14	1					1		
Frederick.....	11,066	2								
Massachusetts:										
Adams (town).....	12,967	1								
Amesbury (town).....	10,036	1								
Arlington (town).....	18,665	5	2			1		1		
Attleboro.....	19,731	7							2	
Belmont (town).....	10,749						1			
Beverly.....	22,561	6								
Boston.....	748,060	141	46	4	8		18	37	16	
Braintree (town).....	10,580	4	2						1	
Brockton.....	66,254	16	1					3		
Brookline.....	37,748	4			1	1		3		
Cambridge.....	109,694	21	1		1	2		2	2	
Chelsea.....	43,184	9						1	1	
Chicopee.....	36,214	8						3		
Clinton.....	12,979	6								
Danvers.....	11,108					2				
Dedham.....	10,792	0								
Everett.....	40,120	9						1		
Fall River.....	120,485	24	5			5		5	2	
Gardner.....	16,971	6	1					1	1	
Greenfield.....	15,462	1								
Haverhill.....	53,884	5	2		2	3			1	
Holyoke.....	60,263	16	2			1			1	
Lawrence.....	94,270	23	1					6	2	
Leominster.....	19,744	1								
Lowell.....	112,759	16	1		5	2		2		
Lynn.....	99,148	15	1			3		4		
Malden.....	49,103	6	1			1		2	1	
Medford.....	39,638	7	1							
Melrose.....	18,264	8								
Methuen.....	15,189	2								
Milford.....	13,471	5								
New Bedford.....	121,217	22						8	2	
Newburyport.....	15,618	1				1				
Newton.....	46,054	12								
North Adams.....	22,282	1								
Northampton.....	21,951	8						1	1	
Northbridge.....	10,174	2								
Peabody.....	19,552	1	2			3		1		
Pittsfield.....	41,763	10	3		1	1				
Plymouth.....	13,045	2								
Quincy.....	47,876	6	3					2		
Revere.....	28,823	2								
Salem.....	42,529	2	4	1		3			1	
Somerville.....	93,091	17	2		1			2	2	
Southbridge.....	14,245	1				1			1	
Springfield.....	129,614	27				1		8		
Taunton.....	37,137	6							1	
Wakefield.....	13,025	5	1			2		1		
Waltham.....	30,915	8	1	1				3		
Watertown.....	21,457	2								
Webster.....	13,258	1								
Westfield.....	18,604	3						3		
Winchester.....	10,485	1					1			
Winthrop.....	15,455	2								
Woburn.....	16,574	3								
Worcester.....	179,754	34		1	2				4	
Michigan:										
Alpena.....	11,101				1					
Ann Arbor.....	19,516	15	1		1					
Battle Creek.....	36,164	0	1		2			1		
Detroit.....	993,678	222	29	3	4		16	1	41	
Flint.....	61,599	30	17	2	7		3		1	
Grand Rapids.....	137,634	23	4				7			
Hamtramck.....	48,615	9	1			1			1	
Highland Park.....	46,499	16	2		1					
Holland.....	12,183		1							
Kalamazoo.....	48,487	12	3		1		1		3	
Marquette.....	12,718	2	4		2					
Muskegon.....	36,570						2			

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Population Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuberculosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Michigan—Continued.										
Pontiac.....	34,273	19	5				5		1	1
Port Huron.....	25,944	6			2		1			
Saginaw.....	61,903	14	6		1		2			2
Sault Ste. Marie.....	12,096	5								
Minnesota:										
Duluth.....	98,917	11			1		4		1	
Faribault.....	11,089	7			41		2			1
Hibbing.....	15,089	10					5			1
Minneapolis.....	380,582	78	22	2	2		11		19	3
Rochester.....	13,722	22								1
St. Cloud.....	15,873						3			
St. Paul.....	234,698	57	23				6	1	14	3
Virginia.....	14,022	1					4			
Winona.....	19,143	4			1					
Missouri:										
Cape Girardeau.....	10,252	4								
Independence.....	11,686		3				2			
Kansas City.....	324,410	65	14	1			12	1	9	4
St. Joseph.....	77,939	38			1					1
St. Louis.....	772,897	190	15		1		19		17	9
Springfield.....	39,631	10								2
Montana:										
Anaconda.....	11,668	0			2					
Billings.....	15,100	9								
Great Falls.....	24,121	5							1	
Helena.....	12,437	6								1
Missoula.....	12,668	4								
Nebraska:										
Lincoln.....	54,948	10	3	1			4			
Omaha.....	191,601	58	15				1			3
Nevada:										
Reno.....	12,016	6								
New Hampshire:										
Concord.....	22,167	7			6					
Dover.....	13,029	2			1					
Keene.....	11,210	4			78		2			
Manchester.....	78,331	11	2				1		3	
New Jersey:										
Asbury Park.....	12,400	5								
Atlantic City.....	50,707	19	3						1	1
Bayonne.....	76,751		3						6	
Belleville.....	15,660								2	
Bloomfield.....	22,019	2					1		1	
Camden.....	116,309	24					2		7	1
Clifton.....	26,470	3	1						1	
East Orange.....	50,710	7								
Elizabeth.....	95,783		6				1		2	
Engle wood.....	11,627	3								
Garfield.....	19,381	0			1				1	
Hackensack.....	17,667	3	1		1		1			
Harrison.....	15,721						2			
Hoboken.....	68,166	12	1						1	
Jersey City.....	298,103		5						8	
Kearny.....	26,724	5	1							
Long Branch.....	13,521	4								
Morristown.....	12,548	5								
Newark.....	414,524	71	4		5		7		21	4
Orange.....	38,268	8								1
Passaic.....	63,841	9	7	1	1				1	1
Paterson.....	135,875	2	3		2				3	
Perth Amboy.....	41,707	9								
Phillipsburg.....	16,923	2								
Plainfield.....	27,700	8							1	
Summit.....	10,174	0								
Trenton.....	119,289	27	3		2				3	1
West Hoboken.....	40,074	1					1			
West New York.....	29,926	0								
New Mexico:										
Albuquerque.....	15,157	7					1		2	3
New York:										
Albany.....	113,344		2				1		8	
Auburn.....	36,192	6	1				1		1	
Buffalo.....	506,775	92	3		1		2		17	3

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Popula- tion Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
New York—Continued.										
Cohoes.....	22,987	5	1		3		1		1	
Geneva.....	14,648	6								
Hornell.....	15,025	2								
Hudson.....	11,745	2	1							
Ithaca.....	17,004	10	1					1		1
Lackawanna.....	17,918	6	1		5			2		
Little Falls.....	13,029	3	1	1						
Lockport.....	21,308	2			7					
Mount Vernon.....	42,726	5	2							
New York.....	5,620,048	1,064	48	5	32	2	16	1	176	192
Newburgh.....	30,366	13								2
Niagara Falls.....	50,760	12			2			2		
North Tonawanda.....	15,482	3	1				1			
Olean.....	20,506	6					1			1
Peekskill.....	15,868	4	1				1		1	
Poughkeepsie.....	35,000	10							3	1
Rochester.....	295,750	63	8		4		4		16	3
Rome.....	26,341	8	1		6					
Saratoga Springs.....	13,181	7								
Schenectady.....	88,723	15	12		2		1		1	1
Syracuse.....	171,717	30	5		1		9		12	1
Troy.....	72,013	14	1		1				4	
Watertown.....	31,285	7	1		2		2		1	
White Plains.....	21,031	4								
Yonkers.....	100,176	17	2	1			1			1
North Carolina:										
Durham.....	21,719	5	1							1
Raleigh.....	24,418	9	3							1
Rocky Mount.....	12,742	5								
Salisbury.....	13,684	4								
Wilmington.....	33,372	8	3							1
Winston-Salem.....	48,395	18	9		3		6		3	1
North Dakota:										
Fargo.....	21,961	9								1
Grand Forks.....	14,010						5			
Ohio:										
Akron.....	208,435	18	9				9			
Ashtabula.....	22,082	3	1	1						
Barberton.....	18,811	4							1	
Bucyrus.....	10,425	0	2							
Cambridge.....	13,104	3					1			
Canton.....	87,091	17	10	1	1				2	1
Chillicothe.....	15,831	3								1
Cleveland.....	796,841	141	28	3	2		11		43	14
Columbus.....	237,031	77	8				6		5	5
Dayton.....	152,559	32	15				4		7	
East Cleveland.....	27,292	2								
East Youngstown.....	11,237									1
Findlay.....	17,021	3			2					
Kenmore.....	12,683		3							
Lancaster.....	14,706	4							1	
Lima.....	41,326	11		1			1			2
Lorain.....	37,295		3				5		1	
Mansfield.....	27,824	11								1
Martins Ferry.....	11,634	4								
New Philadelphia.....	10,718		1				4			
Niles.....	13,089	3	2							1
Norwood.....	24,066	2			1		1			
Salem.....	10,305	6								
Sandusky.....	22,897	6								
Springfield.....	60,840	12					1			
Staubenville.....	28,508	11	3						1	
Tiffin.....	14,375	5	1	1			1			
Toledo.....	243,164	44	27	1	2		6		1	5
Youngstown.....	132,355	31	17	3	1		9			1
Zanesville.....	29,569	8					2			
Oklahoma:										
Oklahoma.....	91,295	17	5	1			2			
Tulsa.....	72,075		1				2			

¹ Pulmonary only.

CITY REPORTS FOR WEEK ENDED SEPTEMBER 15, 1923—Continued.

DIPHTHERIA, MEASLES, SCARLET FEVER, AND TUBERCULOSIS—Continued.

City.	Popula- tion Jan. 1, 1920.	Total deaths from all causes.	Diphtheria.		Measles.		Scarlet fever.		Tuber- culosis.	
			Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Oregon:										
Portland.....	298,288	42	7		5		9		3	1
Salem.....	17,679	7								1
Pennsylvania:										
Allentown.....	73,502		2				1		4	
Altoona.....	60,331		2				1			
Ambridge.....	12,730		1				2			
Beaver Falls.....	12,802		4							
Berwick.....	12,181		3				1			
Bethlehem.....	50,358		3		1					
Braddock.....	20,879		1				1			
Canonsburg.....	10,632		3							
Columbia.....	10,836		2				1			
Connellsville.....	13,804		2				1			
Dubois.....	13,681				1					
Duquesne.....	19,011		1				2			
Erie.....	93,372		2		1		1		1	
Farsall.....	15,586		4				1			
Greensburg.....	15,033		2				2			
Harrisburg.....	75,917		3				1			
Homestead.....	20,452		1				2		1	
Johnstown.....	67,327		4				1		2	
Lancaster.....	53,150		6							
McKees Rocks.....	16,713		1				1			
McKeesport.....	48,781						1			
Monessen.....	13,179				1					
New Kensington.....	11,987		1							
Norristown.....	32,319		2							
Philadelphia.....	1,823,779	368	31	2	8		12		74	31
Pittsburgh.....	588,343	143	27	4	4		1	3	10	10
Reading.....	107,794						1			
Scranton.....	137,783		3		1					
Sharon.....	21,747						4		4	
Shenandoah.....	28,726		1							
Steelton.....	18,428		1				3			
Sunbury.....	15,721		3							
Swissvale.....	10,906		2							
Tamaqua.....	12,363				1					
Uniontown.....	15,692		1							
Washington.....	21,440		2		2		2			
Wilkes-Barre.....	73,633		3						2	
Wilkesburg.....	24,408		1							
Williamsport.....	38,198				19		2			
Rhode Island:										
Cranston.....	29,407	15	1							2
Newport.....	30,255	3					1			1
Pawtucket.....	64,248	14								
Providence.....	297,565	57	4	1	9		3			2
South Carolina:										
Charleston.....	67,987	28								4
Columbia.....	37,524	19	1		1				1	
Greenville.....	23,127	4								
South Dakota:										
Sioux Falls.....	25,202	2	1				2			
Tennessee:										
Chattanooga.....	57,895		3				1			•
Knoxville.....	77,818		2		1				1	1
Memphis.....	162,351	46	5		1		1		8	7
Nashville.....	118,342	41							4	3
Texas:										
Amarillo.....	15,494	1								
Beaumont.....	40,422	9					4			
Corpus Christi.....	10,522	3								
Dallas.....	158,976	40	2		1		1		2	3
El Paso.....	77,560	36			3	1				14
Fort Worth.....	108,482	18	1		1		1		3	
Galveston.....	44,255	13	2							3
Houston.....	138,276	49			1					2
San Antonio.....	161,379	37	1		1		1		4	9
Waco.....	38,500	7							1	1
Utah:										
Provo.....	10,303	2								
Salt Lake City.....	118,110	24	4	1						

FOREIGN AND INSULAR.

ALGERIA.

Leprosy—Algiers.

Three cases of leprosy, occurring among the military, were reported at Algiers during the month of August, 1923.

BRAZIL.

Yellow Fever—Bahia.

During the week ended August 11, 1923, one case of yellow fever was reported at Bahia, Brazil.

CHILE.

Epidemic Influenza—Valparaiso.

On August 28, 1923, epidemic influenza was reported still prevalent in the district of Valparaiso.¹

Influenza Mortality—Concepcion.

Influenza has been reported present at Concepcion, Chile, from July 3 to August 27, 1923, with a total of 148 deaths. Population officially estimated, 64,512. The greatest total mortality (all causes) reported at Concepcion during any one week of this period was 121 (influenza mortality, 42), and the lowest total mortality was 66 for two weeks, each, with 4 and 8 deaths from influenza, respectively.

CUBA.

Disease Reporting and Sanitary Measures.

Acting Asst. Surg. Richard Wilson states, under date of September 17, that considerable improvement has been made in the reporting of preventable diseases, and also in the application of measures for their control. This is particularly true with regard to typhoid fever. In the active campaign which has been carried on by Dr. Lopez del Valle, director of sanitation, not only has there been great improvement in case reporting, but in every instance in which a case has been brought to the attention of the sanitary authorities, anti-typhoid vaccine has been given to the other members of the patient's family and to a large number of people in the neighborhood, sometimes including almost the entire population in the vicinity.

¹Public Health Reports, Sept. 7, 1923, p. 2105; Sept. 14, 1923, p. 2188, and Sept. 21, 1923, p. 2233.

Fatal Case of Malaria—From S. S. "Saramacca"—Habana.

Information dated September 19, 1923, shows the occurrence of a fatal case diagnosed as malaria taken from the steamship *Saramacca* which arrived at Habana September 18 from Puerto Barrios, Guatemala. The patient was stated to have been several weeks at Puerto Barrios and to have been sick when he embarked. The *Saramacca* left New Orleans September 8, arriving at Puerto Barrios September 11, and sailing from that port for Habana September 16, 1923.

EGYPT.**Plague.**

The occurrence of plague in Egypt has been reported as follows: Week ended August 5, 1923—28 cases, of which 2 occurred at Port Said and 1 at Suez, the remainder being distributed in eight districts; week ended August 12—7 cases, 2 occurring at Port Said and 1 at Suez, remainder in three districts; week ended August 19—21 cases, with 4 cases at Alexandria, 1 case at Port Said, and 2 cases at Suez, the remainder distributed in two districts. Total from January 1 to August 23, 1923, 1,319 cases, with 643 deaths.

Statement of Occurrence, 1922 and 1923—Comparative.

The comparative statement of plague occurrence for the years 1922 and 1923 has been given as follows: January 1 to August 5, 1923, cases, 1,258; corresponding period, 1922, 397 cases. January 1 to August 12, 1923, cases, 1,293; corresponding period, 1922, 414 cases. January 1 to August 19, 1923, cases, 1,314; corresponding period, 1922, 426 cases.

ECUADOR.**Plague-Infected Rats—Guayaquil.**

During the period August 16 to 31, 1923, out of 19,510 rats examined at Guayaquil, 7 rats were found plague-infected.

FRANCE.**Precautions Against Importation of "Alastrim."**

According to information received under date of September 3, 1923, notice has been published at Basse Terre, Guadeloupe, that vessels plying from France to the Panama Canal and stopping at Basse Terre and Pointe à Pitre will, from date of publication, require all persons sailing from ports in the islands of Guadeloupe, where "alastrim" prevails, to be revaccinated on board en route and to show a sanitary passport to that effect at St. Nazaire, on landing. The passports permit the observation of all such persons for such time as added to the time elapsed since vaccination will total 20 days in all. Persons not so vaccinated will be subject to 20 days' observation in full at St. Nazaire.

GUADELOUPE (WEST INDIES).**Further Relative to Smallpox (Alastrim).¹**

Information dated September 14, 1923, shows epidemic smallpox (alastrim) to be generally diffused in the two islands comprising Guadeloupe, and in the outlying island of Marie Galante. Proclamations have been issued by mayors calling upon populations to be vaccinated. At Pointe à Pitre there were reported for the week ended September 8, 1923, 1,500 cases of smallpox (reported as alastrim) present, with 8 deaths. (Population, 27,679.) At that locality a system of sanitary passports had been instituted, requiring the passports to be shown to the police under penalty. In rural and mountain areas no vaccination is being carried out, nor is vaccination generally compulsory in places other than Pointe à Pitre which are known to be infected.

IRAQ (MESOPOTAMIA).**Further Relative to Cholera—Bassorah.**

Information dated August 21, 1923, showed cholera present at Bassorah, Iraq, and the port declared infected August 6, 1923.² Later information received under date of August 23 shows the total number of cases of cholera reported at Bassorah to August 18 as 166, with 74 deaths.

JAMAICA.**Smallpox (Alastrim).**

During the three weeks ended September 8, 1923, 93 new cases of smallpox (reported as alastrim) were reported in the Island of Jamaica. Of these, 6 cases occurred in the Parish of Kingston.

Typhoid Fever—Kingston and Vicinity.

During the same period, 12 cases of typhoid fever were reported at Kingston and 33 cases in the vicinity of Kingston.

JAPAN.**Dysentery—Typhoid Fever—Tokio—Yokohama.**

Under date of September 25, 1923, about 200 cases of dysentery and 300 cases of typhoid fever were reported present at Tokio, Japan. Dysentery and typhoid fever were reported present at Yokohama under the same date, but the number of cases was not stated.

LATVIA.**Communicable Diseases.**

Communicable diseases have been reported in the Republic of Latvia as follows:

¹ Public Health Reports, Sept. 7, 1923, p. 2107, and Sept. 14, 1923, p. 2189.

² Public Health Reports, Aug. 31, 1923, p. 2042.

June, 1923.

Disease.	Cases.	Remarks.
Cerebrospinal meningitis.....	3	
Diphtheria.....	55	
Measles.....	35	
Scarlet fever.....	147	
Typhoid fever.....	79	
Typhus fever.....	45	Paratyphus, 1 case.
Whooping cough.....	71	

July, 1923.

Diphtheria.....	62	
Measles.....	5	
Scarlet fever.....	89	
Typhoid fever.....	76	
Typhus fever.....	22	Typhus fever, recurrent, 1 case.
Whooping cough.....	65	

Dysentery—Leprosy—Malaria—Rabies.

During the month of June, 1923, 8 cases of dysentery, 8 of leprosy, 7 of malaria, and 1 case of rabies were reported in Latvia. During the month of July, 1923, 23 cases of dysentery and 6 of malaria were reported in Latvia. (Population, June 15, 1920, 1,503,193.)

PERU.**Plague—August, 1923.**

During the month of August, 1923, eight cases of plague with four deaths were reported in the coast region of Peru. For distribution of occurrence according to locality, see p. 2350.

TURKEY.**Plague—Constantinople—August, 1923.**

Two cases of plague were reported at Constantinople, Turkey, occurring August 16, 1923, in employees of a bakery.

VIRGIN ISLANDS.**Disease Prevalence—August, 1923.**

Disease prevalence was reported in the Virgin Islands of the United States for the month of August, 1923, as follows:

August, 1923.

Island and disease.	Cases.	Remarks.
St. Thomas and St. John:		
Chancroid.....	1	
Dengue.....	17	
Fish poisoning.....	4	
Gonorrhea.....	10	One case in St. John.
Pellagra.....	1	
Syphilis.....	5	Secondary; 2 imported.
St. Croix:		
Chicken pox.....	1	
Dysentery.....	4	Entamebic.
Filariasis.....	4	Bancrofti.
Gonococcus infection.....	1	
Trachoma.....	13	
Tuberculosis.....	1	Chronic pulmonary.
Uncinariasis.....	1	Necator americanus.

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

The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended October 5, 1923.¹**CHOLERA.**

Place.	Date.	Cases.	Deaths.	Remarks.
India.....	.....	.....	.....	July 15-28, 1923: Cases, 3,055; deaths, 1,581.
Bombay.....	Aug. 12-18.....	13	10	
Madras.....	Aug. 19-25.....	4	1	
Rangoon.....	Aug. 5-11.....	1	1	
Iraq (Mesopotamia):				
Bassorah.....	Aug. 6-18.....	166	74	
Philippine Islands:				
Province—				
Mindoro.....	Aug. 5-11.....	2	2	

PLAGUE.

British East Africa:				
Kenya—				
Kisumu.....	Aug. 5-11.....		1	
Tanganyika.....	July 15-21.....	20	12	Territory.
Ceylon:				
Colombo.....	Aug. 12-18.....	5	5	One plague rodent.
China:				
Hongkong.....	July 29-Aug. 4....	4	4	
Ecuador:				
Guayaquil.....				Aug. 16-31, 1923: Rats examined, 19,510; found infected, 7.
Egypt:				
City—				
Alexandria.....	Aug. 13-19.....	4		
Port Said.....	Aug. 5-19.....	5		
Suez.....	do.....	4		
India.....				July 15-28, 1923: Cases, 1,448; deaths, 973.
Bombay.....	Aug. 12-18.....	2	1	
Karachi.....	Aug. 12-25.....	21	18	
Rangoon.....	Aug. 5-18.....	50	45	
Peru.....				Aug. 1-31, 1923: Cases, 8; deaths, 4.
Locality—				
Callao.....	Aug. 1-31.....	1		
Chiclayo.....	do.....	1	1	
Lima (city).....	do.....	4	2	
Lima (country).....	do.....	1		
Reque.....	do.....	1	1	
Siam:				
Bangkok.....	July 22-Aug. 4....	3	4	
Turkey:				
Constantinople.....	Aug. 19-25.....		1	On Aug. 16, 1923: 2 cases reported.

SMALLPOX.

Brazil:				
Pernambuco.....	July 29-Aug. 11....	11	1	
British East Africa:				
Kenya—				
Tanganyika.....	July 15-28.....	24	2	Territory.
Zanzibar.....				July 1-31, 1923: Cases, 7; deaths, 3.
China:				
Canton.....				June 1-30, 1923: Present. July 1-31, 1923: Present.
Hongkong.....	July 29-Aug. 11....	10	9	
Ecuador:				
Esmeraldas.....	Aug. 16-31.....	2		
Montecristi (Manabi).....	do.....			Present.
Riobamba.....	do.....	1	1	
Rocafuerte.....	do.....			Do.
Zaruma (El Oro).....	do.....			Do.

¹ From medical officers of the Public Health Service, American consuls, and other sources.

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

Reports Received During Week Ended October 5, 1923—Continued,

SMALLPOX—Continued.

Place.	Date	Cases.	Deaths.	Remarks.
Gaudeloupe (West Indies).....				Sept. 14, 1923: Epidemic smallpox (reported as alastrim) generally diffused.
Pointe à Pitre.....	Sept. 2-8		8	Present 1,500 cases.
India.....				July 15-28, 1923: Cases, 2,014; deaths, 514.
Bombay.....	Aug. 12-18	5	3	
Karachi.....	do.	1	1	
Madras.....	Aug. 19-25	5	4	
Rangoon.....	Aug. 5-18	8	6	
Jamaica.....				Aug. 19-Sept. 8, 1923: Cases, 93.
Kingston.....	Aug. 19-Sept. 8	6		
Java:				
Batavia.....	Aug. 4-10	1		Province.
Mexico:				
Mexico City.....	Aug. 19-Sept. 1	21		
Portugal:				
Lisbon.....	Aug. 26-Sept. 1	3		
Oporto.....	Aug. 26-Sept. 8	8	3	
Siam:				
Bangkok.....	July 29-Aug. 11	54	32	
Sierra Leone:				
Sambuya.....	Aug. 1-15	1		
Spain:				
Valencia.....	Aug. 26-Sept. 1	4	2	
Turkey:				
Constantinople.....	Aug. 12-25		6	

TYPHUS FEVER.

Algeria:				
Algiers.....				August, 1923: Cases, 4; deaths, 4.
Bolivia:				
La Paz.....				July 1-31, 1923: Cases, 8; deaths, 1.
Bulgaria:				
Sofia.....	Aug. 12-25	2		Paratyphus, 4 cases.
Chile:				
Valparaiso.....	Aug. 19-25		5	On Aug. 25, 88 cases of typhus in Lazaretto, 8 new cases having been received on that date.
Egypt:				
Alexandria.....	Aug. 13-19	1	1	Paratyphoid, 2 cases.
Germany:				
Königsberg.....	Aug. 12-18	1		
Latvia:				
June 1-July 31, 1923: Cases, 67; paratyphus, 1 case; recurrent typhus, 1 case.				
Mexico:				
Mexico City.....	Aug. 19-Sept. 1	25		Including municipalities in Federal District.
Palestine.....				Aug. 14-20, 1923: One case. In northern district.
Turkey:				
Constantinople.....	Aug. 5-25		8	
Yugoslavia:				
Serbia—				
Belgrade.....	Aug. 12-18	1		

YELLOW FEVER.

Brazil:				
Bahia.....	Aug. 5-11	1		

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

Reports Received from June 30 to September 28, 1923.¹

CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Shanghai.....	Aug. 28.....			Reported moderately prevalent.
India:				
Bombay.....	June 3-30.....	34	23	Apr. 15-June 30, 1923: Cases, 19,470; deaths, 14,608. July
Do.....	July 1-28.....	84	51	1-14, 1923: Cases, 2,357; deaths, 1,291.
Calcutta.....	May 6-June 30.....	371	300	
Do.....	July 8-Aug. 4.....	116	84	
Madras.....	June 3-30.....	2		
Do.....	July 1-Aug. 18.....	5	3	
Rangoon.....	May 13-June 30.....	18	15	
Do.....	July 1-Aug. 4.....	7	5	
Indo-China:				
City—				
Saigon.....	May 20-June 30.....	12	11	Oct. 1-31, 1922: Cases, 92; deaths, 53. Preceding month: Cases, 24; deaths, 14. October, 1921: Cases, 100; deaths, 61. Nov. 1-30, 1922: Cases, 121; deaths, 47 (native); European, 1 case. Including 100 square kilometers of surrounding country.
Do.....	July 1-28.....	13	12	Do.
Province—				
Annam.....	Oct. 1-Nov. 30.....	144	55	Sept. 1-30, 1922: Cases, 2; deaths, 1.
Cambodge.....	do.....	43	27	Sept. 1-30, 1922: Cases, 3.
Cochin-China.....	do.....	26	18	Sept. 1-30, 1922: Cases, 19; deaths, 13.
Tonkin.....	do.....	1		Preceding month: No cases.
Iraq (Mesopotamia):				
Bassorah.....	Aug. 21.....			Present. Port declared infected since Aug. 6, 1923.
Philippine Islands:				
City—				
Manila.....	June 10-16.....	2	1	Death in foreign case from Ching-kang, China.
Province—				
Bulacan.....	May 17-23.....	1		
Capiz.....	May 27-June 2.....	1	1	
Cebu.....	Apr. 8-21.....	1	1	
Cotabato.....	Apr. 8-14.....	1	1	
Laguna.....	May 6-June 9.....	2	1	
Mountain.....	Mar. 25-31.....	1	1	
Pangasinan.....	June 24-30.....	2	2	
Russia (Soviet):				
Siam:				
Bangkok.....	May 13-June 30.....	10	11	Jan. 1-May 15, 1923: Cases, 10.
Do.....	July 1-21.....	4	2	

PLAGUE.

Algeria:				
Algiers.....	Aug. 11-20.....	2	1	Actual dates of occurrence, Aug. 16 and 17, 1923.
St. Eugène.....	Aug. 1-20.....	2	2	Locality 5 miles north of Algiers.
Australia:				
Sydney.....	June 30.....	1	1	
Azores:				
St. Michael Island.....	May 6-26.....	12	5	In one locality.
Brazil:				
Porto Alegre.....				Jan. 1-Mar. 31, 1923. Deaths, 19.
British East Africa:				
Kenya—				
Kisumu.....	June 10-16.....	2	1	
Tanganyika.....	May 6-June 2.....	3	3	Territory.
Uganda.....	Apr. 1-30.....	7	5	
Canary Islands:				
Las Palmas.....	June 7.....	1		
Ceylon:				
Colombo.....	May 6-June 30.....	18	19	Plague rats, 38.
Do.....	July 1-Aug. 11.....	26	23	Plague rats, 18.

¹ From medical officers of the Public Health Service, American consuls, and other sources.

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

Reports Received from June 30 to September 28, 1923—Continued.

PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
China:				
Amoy.....	May 13-June 25.....		10	
Do.....	July 1-28.....		6	
Foochow.....	May 27-June 23.....			Present.
Do.....	July 8-28.....			Reported as endemic.
Hongkong.....	Apr. 29-June 30.....	63	40	
Do.....	July 1-28.....	23	28	
Manchuria— Yakoshih.....	May 31.....	1	1	Station on Eastern Chinese Railway. Occurring in tarabagan (marmot) hunter. Bubonic. Rodent plague present.
Nanking.....	June 17-30.....			
Do.....	July 1-Aug. 4.....			Do.
Ecuador:				
Guamote.....	Aug. 1-15.....	9	2	Country district.
Guayaquil.....	May 16-June 30, 1923; Rats examined, 13,809; found infected, 39. July 1-Aug. 15, 1923: Rats examined, 13,450; found infected, 23.			
Do.....	July 1-15.....	2	2	
Santa Ana (Manabi).....	July 16-Aug. 15.....	7	3	
Egypt.....				Jan. 1-June 21, 1923: Cases, 1,051; deaths, 548. May 1-29, Cases, 345. Jan. 1-June 24, 1923: Cases, 1,069. Jan. 1-Aug. 23, 1923: Cases, 1,319, deaths, 643. July 23-29, 1923: Cases, 47.
City—				
Alexandria.....	Jan. 7-June 24.....	35	15	May 1-29, 1923: Cases, 14.
Do.....	July 1-Aug. 20.....	8	2	
Port Said.....	Jan. 7-June 24.....	24	12	May 1-29, 1923: Cases, 13.
Do.....	July 1-Aug. 23.....	18	1	
Suez.....	Mar. 2-June 15.....	12	7	May 1-29, 1923: Cases, 3.
Do.....	July 16-Aug. 23.....	3	1	
Province—				
Assiout.....	May 1-29.....	64		Deaths not reported.
Benisouef.....	.....do.....	7		Do.
Fayoum.....	.....do.....	14		Do.
Garbich.....	.....do.....	2		Do.
Geizeh.....	.....do.....	3		Do.
Girgeh.....	.....do.....	123		Do.
Keneh.....	.....do.....	22		Do.
Menoufieh.....	.....do.....	34		Do.
Minieh.....	.....do.....	46		Do.
Hawaii:				
Hamakua.....				Plague-infected rats: Pohakca, May 23, 1923, 1 rat; vicinity of Pacific Sugar Co. mill, June 2, 1 rat; Aug. 2, 1 rat at Hamakua Mill Co. plantation. Aug. 16, plague rat found at Kapulena.
Honokaa.....				July 20, 1923: One plague rat; July 30, 2 plague rats: Honokaa Sugar Co. mill and Honokaa village.
India.....				Apr. 29-June 23, 1923: Cases, 5,783; deaths, 4,481. July 1-14, 1923: Cases, 952; deaths, 677.
Bombay.....	Apr. 29-June 30.....	503	411	July 22-28, 1923: Cases, 4; deaths, 3.
Do.....	July 1-21.....	11	10	Plague rats, 5.
Calcutta.....	May 6-June 9.....	13	13	
Karachi.....	May 13-June 30.....	110	85	
Do.....	July 1-Aug. 11.....	44	38	
Madras Presidency.....	May 13-June 30.....	254	141	
Do.....	July 1-Aug. 18.....	1,036	548	
Rangoon.....	May 6-June 30.....	260	229	
Do.....	July 1-Aug. 4.....	162	137	
Indo-China.....				Oct. 1-Nov. 30, 1922: Cases, 161; deaths, 154. Sept. 1-30, 1922: 70 cases; 68 deaths.
City—				
Saigon.....	June 24-30.....	5	5	Including 100 square kilometers of surrounding country.
Do.....	July 1-7.....	1	1	Do.
Province—				
Annam.....	Oct. 1-Nov. 30.....	27	23	Preceding month, 15 deaths.
Cambodge.....	Oct. 1-31.....	75	75	Preceding month, 51 deaths.
Cochin China.....	Oct. 1-Nov. 30.....	3	1	Preceding month, 4 cases, 2 deaths.

**CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW
FEVER—Continued.**
Reports Received from June 30 to September 28, 1923—Continued.
PLAGUE—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Iraq (Mesopotamia):				
Bagdad.....	May 1-June 30....	335	224	
Java.....				May 1-June 30, 1923: Deaths, 912.
Province—				
Djakakarta.....	June 1-30.....		5	
Kedoe.....	do.....		135	
Pekalongan.....	do.....		48	
Samarang.....	do.....		143	
Soerabaya.....	do.....		1	
Soerakarta.....	do.....		109	May 16, 1923: Epidemic in 5 districts.
Madagascar.....				Apr. 1-June 15, 1923: Cases, 74; deaths, 71. Bubonic, pneumonic, septicemic.
Province—				
Tananarive.....	Apr. 1-June 30....	57	54	
Tananarive.....	Apr. 16-June 30...	21	21	
Do.....	July 1-15.....	1		
Mauritius Island				May 4-21, 1923: 2 cases.
Port Louis.....	May 4.....	1		
Mexico:				
Tampico.....				Apr. 15-21, 1923: 1 plague rat. Aug. 8, 1923: At Dona Cecelia, a suburb of Tampico, 1 plague-infected rat found. From Jan. 1 to Aug. 8, 1923, plague-infected rats found, 5.
Palestine:				
Jaffa.....	June 19-July 16..	10	1	Bubonic and septicemic.
Peru.....				May 1-June 30, 1923: Cases, 111; deaths, 68. July 1-31, 1923: Cases, 23; deaths, 12.
Locality—				
Ayabaca.....	May 16-June 30..	15	13	
Do.....	July 1-31.....	4	2	
Callao.....	May 1-June 30..	5	3	
Do.....	July 1-31.....	1	1	
Canete.....	May 16-June 30..	3	2	
Do.....	July 1-31.....	6	3	
Cerro Azul.....	May 1-31.....	3	1	
Chiclayo.....	May 1-June 30..	9	2	
Do.....	July 1-31.....	5	3	
Cutervo.....	May 1-15.....	2	1	
Huancabamba.....	May 1-June 30..	34	25	
Huacho.....	July 1-31.....	1		
Huaral.....	June 1-30.....	2	2	
Do.....	July 1-31.....	3	1	
Lima (city).....	May 1-31.....	17	8	
Do.....	July 1-31.....	2	1	
Lima (country).....	May 1-31.....	7	4	
Do.....	July 1-31.....	1	1	
Mollendo.....	June 1-30.....	1	1	
Salaverry.....	May 1-June 30..	11	3	
Trujillo.....	do.....	2	3	
Russia.....				Jan. 1-May 15, 1923: Few cases in Far East regions.
Senegal:				
Dakar.....	July 1-31.....	4	4	Reported to have come from port of Rufisque, Senegal.
Rufisque.....	Aug. 6.....			Present.
Slam:				
Bangkok.....	Apr. 29-June 30..	31	30	
Do.....	July 1-21.....	5	4	
Siberia.....				Sporadic cases of plague reported yearly in localities vicinity of stations Matsievskaya and Borzia, Transbaikai Railway.
Haramhor.....	May 6.....	1	1	Village in zone of endemic tarabagan (marmot) plague, Transbaikai region.
Station No. 83.....				Station on Transbaikai Railway. Marmot plague during recent years.
Soktu.....				Do.
Straits Settlements:				
Singapore.....	May 6-June 30..	6	8	
Do.....	July 22-28.....	1	1	
Syria:				
Beirut.....	May 12-June 20..	3		
Do.....	July 1-31.....	4		

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

Reports Received from June 30 to September 28, 1923—Continued.

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:				
Algiers.....	May 1-31.....	2		
Do.....	Aug. 1-10.....	1		July 1-31, 1923: Cases, 2.
Arabia:				
Aden.....	May 27-June 2.....		2	
Do.....	July 8-Aug. 11.....	7	1	
Azores:				
St. Michael Island.....	July 15-21.....	7		Mild.
Bolivia:				
La Paz.....	Apr. 1-June 30.....	2	3	
Brazil:				
Pernambuco.....	May 6-June 16.....	5		
Do.....	July 1-28.....	16	1	
Rio de Janeiro.....	May 13-June 23.....	25	3	
Do.....	July 15-Aug. 18.....	18		
Rio Grande do Sul.....				Jan. 1-Mar. 31, 1923: Present with some mortality.
British East Africa:				
Kenya—				
Mombasa.....	May 20-26.....	1		From vessel from Bombay.
Tanganika.....	Apr. 29-June 9.....	3		Territory.
Uganda—				
Entebe.....	Apr. 1-30.....	4		
Canada:				
Alberta—				
Calgary.....	May 27-June 2.....	1		Infection from Deer Lodge, Mont.
British Columbia—				
Vancouver.....	May 27-June 30.....	33	1	
Do.....	July 1-14.....	5	1	
Victoria.....	Aug. 5-25.....	2		
Manitoba—				
Winnipeg.....	June 3-30.....	1		
Do.....	July 1-31.....	1		
New Brunswick—				
Kent County.....	July 1-7.....	1		
Ontario.....				June 1-30, 1923: Cases, 13. July
London.....	July 15-21.....	1		1-Aug. 31, 1923: Cases, 23.
Toronto.....	June 24-30.....	3		
Do.....	July 15-21.....	1		
Quebec—				
Quebec.....	June 10-16.....	1		Varioloid.
Saskatchewan—				
Moose Jaw.....	July 8-14.....	1		
Regina.....	June 24-30.....	3		
Ceylon:				
Colombo.....	May 6-June 2.....	23	1	
Chile:				
Concepcion.....	May 22-June 11.....		3	June 1-30, 1923: Cases, 2. July
Talcahuano.....	Aug. 12-18.....	1		1-31, 1923: 1 death.
Valparaiso.....	May 7-June 23.....	6	121	Landed from vessel.
Do.....	July 1-28.....	12	10	June 10-16, 1923: 29 cases reported from 2 districts.
				July 30, 1923: 25 cases in lazaretto.
				Aug. 6: 20 cases. Aug. 14: 60 cases present.
China:				
Amoy.....	May 13-June 23.....		3	June 19-25, 1923. Present.
Do.....	July 1-Aug. 4.....			Present.
Antung.....	May 14-20.....	1		
Chungking.....	May 13-June 30.....			Present and endemic.
Do.....	July 1-Aug. 4.....			Do.
Foochow.....	May 13-July 28.....			Present.
Hongkong.....	Apr. 29-June 30.....	98	82	
Do.....	July 1-28.....	37	34	
Manchuria—				
Dairen.....	May 21-27.....	1		
Harbin.....	May 7-June 24.....	5		
Do.....	July 1-22.....	3		
Mukden.....	May 13-20.....	1		
Nanking.....	May 13-June 23.....			Do.
Do.....	June 24-Aug. 4.....			Do.
Shanghai.....	May 21-June 3.....	4		Foreign.
Do.....	July 2-Aug. 5.....	1	3	Case, foreign; deaths, Chinese.
Chosen (Korea):				
Chemulpo.....	May 1-31.....	1		
Fusan.....	May 1-June 30.....	4		
Do.....	July 1-31.....	22	6	

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

Reports Received from June 30 to September 28, 1923—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Chosen (Korea)—Continued.				
Gensan.....	May 1-31.....	1		
Seoul.....	May 1-June 30.....	42	13	
Do.....	July 1-31.....	6	7	
Cuba:				
Antilla.....	July 8-14.....		2	From Preston.
Czechoslovakia.				
Province—				Jan.-Mar., 1923: Cases, 15; Apr.-June, 1923: Cases, 16; deaths, 4.
Bohemia.....	Jan. 1-Mar. 31.....	15	4	
Ecuador:				
Alausi.....	July 16-31.....	3		
Guayaquil.....	May 16-30.....	1		
Egypt:				
Cairo.....	Mar. 12-June 10.....	22	6	
Esthonia.....				
Finland.....				
Great Britain:				
Birmingham.....	June 18-30.....	3		
Bristol.....	June 28.....			Present.
Cardiff.....	June 3-30.....	6		
Gloucester.....	June 28.....			123 cases reported in hospital; present in rural districts. July 15, 1923: Present. Aug. 9, 1923: 33 cases in isolation hospital; two weeks previously about 250 cases present in hospital.
Do.....	July 12.....	19		May 1-31, 1923: Cases, 211.
Nottingham.....	June 3-9.....	1		
Do.....	July 8-21.....	2		
Greece:				
Athens.....	May 1-31.....	53		
Patras.....	Apr. 24-June 15.....		19	
Saloniki.....	Apr. 30-May 20.....	2	2	
Do.....	June 25-July 8.....	2	3	
Guadeloupe (West Indies).....				
				July 22-Aug. 4, 1923: Present in epidemic form. (Reported as alastrim.) Aug. 17, 1923: Stated to be officially declared present.
Basse Terre.....	Aug. 17.....			Present.
Pointe à Pitre.....	do.....			Estimated from 2,000 to 3,000 cases.
Hungary.....				
India.....				
Bombay.....	Apr. 22-June 30.....	298	141	Apr. 15-June 30, 1923: Cases, 8,112; deaths, 2,933. July 1-14, 1923: Cases, 1,933; deaths, 505.
Do.....	July 1-28.....	46	29	
Calcutta.....	May 13-June 9.....	12	9	
Do.....	July 1-Aug. 11.....	11	11	
Karachi.....	May 13-June 30.....	24	8	
Do.....	July 1-Aug. 11.....	11	3	
Madras.....	May 13-June 23.....	91	16	
Do.....	July 8-Aug. 11.....	31	9	
Rangoon.....	May 6-June 30.....	125	67	
Do.....	July 1-Aug. 4.....	31	12	
Indo-China.....				
City—				Nov. 1-30, 1922: Cases, 115; deaths, 30.
Saigon.....	May 20-June 30.....	34	23	Including 100 surrounding square kilometers.
Do.....	July 1-28.....	31	18	Do.
Provinces—				
Annam.....	Nov. 1-30.....	3	1	
Cambodia.....	do.....	43	16	
Cochin-China.....	do.....	69	22	
Iraq (Mesopotamia):				
Bagdad.....	Apr. 1-June 30.....	32	11	
Italy.....				
Turin.....	May 28-June 3.....	1		
Do.....	July 2-15.....	2		
Jamaica.....				
Kingston.....	May 27-June 30.....	39		May 27-June 30, 1923: Cases, 226.
Do.....	July 1-Aug. 18, 1923.....	33		July 1-Aug. 18, 1923: Cases, 194. (Reported as alastrim.)
Japan:				
Kobe.....	May 18-June 10.....	2		
Do.....	July 2-8.....	1		

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

Reports Received from June 30 to September 28, 1923—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Java:				
East Java—				
Soerabaya.....	Apr. 22-June 30...	187	22	
Do.....	July 15-21.....	19	2	
West Java—				
Batavia.....	May 5-June 8.....	17	3	Province.
Do.....	June 30-July 20...		1	
Latvia.....				Apr. 1-May 31, 1923: Cases, 8.
Mexico:				
Aguascalientes.....	July 8-14.....		1	
Chihuahua.....	June 11-24.....	7		
Guadalajara.....	July 22-Sept. 8.....		9	June 1-30, 1923: Cases, 15; deaths, 2.
Mexico City.....	May 19-June 30...	164		Including municipalities in Federal district.
Do.....	July 1-Aug. 18.....	143		Do.
Palestine:				
Jaffa.....	June 5-11.....	1		
Persia:				
Tabriz.....	Apr. 1-June 30.....		2	District.
Teheran.....	Feb. 22-June 14.....		30	Mar. 22-Apr. 1, 1923: Deaths, 7. District.
Poland.....				Apr. 29-June 30, 1923: Cases, 1,861; deaths, 43. July 1-14, 1923: Cases, 9; deaths, 1.
Portugal:				
Lisbon.....	May 20-June 30.....	25	3	
Do.....	July 1-Aug. 25.....	31	6	
Oporto.....	June 10-30.....	6	3	
Do.....	July 9-Aug. 25.....	34	18	
Portuguese West Africa:				
Angola—				
Loanda.....	Apr. 1-21.....		2	
Rhodesia (British Africa):				
Northern Rhodesia.....	May 9-14.....	21	8	
Southern Rhodesia.....	May 3-16.....	4	2	
Siam:				
Bangkok.....	Apr. 29-June 30.....	90	53	
Do.....	July 1-21.....	51	27	Sept. 8, 1923: Reported prevalent.
Sierra Leone:				
Freetown.....	July 16-31.....	1		Landed from S. S. Tsad, from Southampton via Las Palmas.
Kaballa.....	May 1-15.....	1		In Sembahun district.
Pujehun.....	May 16-31.....	1		
Spain:				
Barcelona.....	May 31-June 6.....		1	
Do.....	June 28-Aug. 1.....		3	
Seville.....	July 19-25.....		1	
Valencia.....	May 15-June 30.....	44	2	
Do.....	July 1-Aug. 25.....	40	4	
Switzerland:				
Basel.....	May 27-June 30.....	4		
Do.....	July 8-Aug. 25.....	8		
Berne.....	May 20-June 30.....	11		
Do.....	July 1-28.....	10		
Luzerne.....	May 1-June 7.....	36		
Do.....	July 1-31.....	14		
Zurich.....	May 20-June 23.....	10		
Do.....	July 15-Aug. 25.....	7		
Syria:				
Aleppo.....	July 15-21.....	6		
Damascus.....	May 15-June 11.....	7		
Tunis:				
Bizerta.....	June 10-20.....	1		
Tunis.....	June 11-17.....	1		
Do.....	June 26-July 1.....	1		
Turkey:				
Constantinople.....	May 13-June 26.....		45	
Do.....	June 27-Aug. 7.....	1	10	
Union of South Africa:				
Cape Province.....				May 1-June 30, 1923: Cases, 66; deaths, 1 (colored). May 1-31, 1923: Cases, 32 (colored). Outbreaks.
Do.....	May 6-June 30.....			Do.
Do.....	July 1-Aug. 4.....			
East London.....	July 8-14.....	1		

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

Reports Received from June 30 to September 28, 1923—Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Union of South Africa—Contd.				
Natal.....	July 8-14.....			Outbreaks.
Orange Free State.....	Apr. 29-June 30.....			Do.
Do.....	July 1-29.....			Do.
Transvaal.....				May 1-31, 1923: 1 case.
Do.....	July 1-Aug. 4.....			Outbreaks.
Yugoslavia.				
Province—				
Bosnia-Herzegovina.....	July 1-7.....	1		
Croatia-Slavonia.....	do.....	4	1	
Serbia.....	do.....	2	1	
Belgrade.....	June 10-16.....	1	1	
Do.....	July 8-14.....			
Zagreb.....	June 24-30.....	1		
Woiwodina.....	July 1-7.....	1		
On vessels:				
S. S. Kargola.....	May 20-26.....	1		At Mombasa, British East Africa. Vessel arrived from Bombay Mar. 25, 1923.
S. S. Makura.....	May 26.....	2		Two cases in quarantine (reported as alastrim). Vessel left Victoria, B. C., Apr. 28, 1923. Touched at Honolulu.
S. S. Tsad.....	July 16-31.....	1		At Freetown, Sierra Leone, Africa, from European and West African ports.
S. S. —.....	Aug. 12-18.....	1		Landed at Talcahuano, Chile.

TYPHUS FEVER.

Algeria:				
Algiers.....	May 1-June 30.....	66	19	
Do.....	Aug. 11-20.....	1		July 1-31, 1923: Cases, 1; deaths, 2.
Argentina:				
Rosario.....	May 25-31.....		3	
Bolivia:				
La Paz.....	June 1-30.....	4		
Bulgaria:				
Sofia.....	Apr. 22-June 23.....	11	2	Paratyphus, 2 cases, 2 deaths.
Do.....	July 15-Aug. 11.....	15	1	
Chile:				
Concepcion.....	May 22-June 18.....		3	
Do.....	Aug. 7-13.....		1	
Talcahuano.....	May 13-19.....	1		
Valparaiso.....	May 7-June 23.....		26	June 11, 1923: 34 cases in Salvador Hospital. July 30, 1923: 45 cases in hospital. Aug. 6: 58 cases. Aug. 12-18: 82 cases stated to be present.
Do.....	July 1-Aug. 18.....		43	
China:				
Antung.....	May 28-June 24.....	12		
Do.....	July 16-22.....	1		
Hankow.....	May 19-25.....	1		
Manchuria—				
Harbin.....	May 6-13.....	1		
Mukden.....	May 14-20.....	2		
Czechoslovakia				
Province—				
Bohemia.....	Apr. 1-June 30.....	8		Jan.-Mar., 1923: Cases, 191; deaths, 6. Apr. 1-June 30: Cases, 132; deaths, 4. Paratyphoid A, 1; paratyphoid B, 20.
Moravia.....	do.....	2		
Russia.....	do.....	98	1	
Silesia.....	do.....	1	1	
Slovakia.....	do.....	23	2	
Egypt:				
Alexandria.....	May 14-June 24.....	7	5	
Do.....	June 25-Aug. 12.....	6	4	
Cairo.....	Apr. 12-June 10.....	36	25	
Port Said.....	Aug. 3-19.....	1		
Esthonia.....				
				June 1-30, 1923: Recurrent typhus, 1 case; paratyphus, 2 cases.
Finland.....				
				Aug. 1-15, 1923: Paratyphus, 16 cases.

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

Reports Received from June 30 to September 28, 1923—Continued.

TYPHUS FEVER—Continued.

Place	Date.	Cases.	Deaths.	Remarks.
France:				
Marseille.....	Mar. 1-May 31.....		3	
Germany:				
Coblenz.....	May 27-June 2.....		1	
Hamburg.....	May 20-26.....	3		
Do.....	July 23-Aug. 4.....	1		Case developed July 28, 1923, at Emigration Hall, Hamburg.
Königsberg.....	May 13-June 2.....	2		
Stettin.....	May 27-June 9.....	1	1	
Greece:				
Athens.....	May 1-31.....	150	5	May 1-31, 1923: Cases, 876.
Do.....	July 22-31.....		1	
Patras.....	Apr. 24-June 15.....		30	
Piræus.....	May 1-June 30.....	356	11	
Do.....	July 1-10.....	3		
Saloniki.....	Apr. 30-June 24.....	56	16	Apr. 30-May 27, 1923: Recurrent typhus: Cases, 3; deaths, 3.
Do.....	July 9-15.....	1		
Guatemala:				
Guatemala City.....	Apr. 1-June 30.....		5	
Hungary:				
Budapest.....	Jan. 1-June 2.....	48	12	Jan. 1-May 19, 1923: Cases, 318; deaths, 36. In 11 counties.
Iraq (Mesopotamia):				
Bagdad.....	Apr. 1-June 30.....	3		
Japan:				
Nagasaki.....	July 2-8.....	1		
Latvia:				
				Apr. 1-June 30, 1923: Cases, 231. Paratyphus, 5 cases.
Mexico:				
Guadalajara.....	June 1-July 31.....	2		
Mexico City.....	May 20-June 30.....	75		Including municipalities in Federal District.
Do.....	July 1-Aug. 18.....	73		
San Luis Potosi.....	July 29-Aug. 4.....		1	Do.
Palestine:				
Jaffa.....	May 22-28.....	2		Relapsing fever, 1 case.
Do.....	June 26-Aug. 6.....	5		
Jerusalem.....	May 22-28.....	1		
Persia:				
Tabriz.....	Apr. 1-14.....	2		
Teheran.....	Feb. 22-June 14.....		4	
Do.....	July 1-14.....		1	
Poland:				
				Mar. 4-Apr. 7, 1923: Cases, 2,253; deaths, 172. Recurrent typhus: Cases, 338; deaths, 6. Apr. 29-June 30, 1923: Cases, 2,206; deaths, 177. July 1-14, 1923: Cases, 286; deaths, 16. Recurrent typhus: Apr. 29-June 23, 1923: Cases, 337; deaths, 3. July 1-14, 1923: Cases, 24; deaths, 2.
Portugal:				
Oporto.....	June 10-16.....	1		
Do.....	July 1-21.....	3		
Rumania:				
Kishineff.....	May 1-June 30.....	41		
Russia:				
European Russia and autonomous republics.....	Jan. 1-Apr. 30.....	93,999		Jan. 1-Apr. 30, 1923: Cases, 106,854. (Corresponding period 1922: Cases, 847,516.) Feb. 1-28, 1923: Cases, 17,577. Recurrent, Jan. 1-Feb. 28, 1923: Cases, 43,540.
Siberia, Caucasus, and Central Asia.....	do.....	9,921		
Waterways and railways.....	do.....	2,934		
Spain:				
Barcelona.....	June 21-27.....		1	
Do.....	Aug. 23-29.....		1	
Madrid.....	May 1-31.....		1	
Do.....	July 1-31.....		2	
Syria:				
Aleppo.....	May 20-June 16.....	4	2	July 8-14, 1923: Present.
Do.....	July 15-21.....	3	1	
Beirut.....	May 1-10.....	1		
Tunis:				
Tunis.....	May 28-June 24.....	3	2	
Do.....	July 9-15.....	1	1	
Turkey:				
Constantinople.....	May 13-June 26.....		19	
Do.....	June 27-Aug. 4.....	2	1	

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

Reports Received from June 30 to September 28, 1923—Continued.

TYPHUS FEVER—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Union of South Africa.....				May 1-June 30, 1923: Cases, 230; deaths, 47 (colored). White—
Cape Province.....				Cases, 15; deaths, 1. Total, 245 cases, 48 deaths.
Do.....	Apr. 28-June 30.....			May 1-31, 1923: Cases, 49 (colored); white, 5.
Do.....	July 1-29.....			Outbreaks.
Natal.....				Do.
Orange Free State.....				May 1-31, 1923: One case (colored).
Do.....	May 6-June 16.....			May 1-31, 1923: Cases, 45 (colored).
Do.....	July 15-29.....			Outbreaks.
Transvaal.....				Do.
Johannesburg.....	May 1-June 30.....	4	4	May 1-31, 1923: Cases, 7.
Yugoslavia.....				July 1-7, 1923: Cases, 4.
Province—				
Bosnia-Herzegovina.....	July 1-7.....	4		
Croatia-Slavonia—				
Zagreb.....	May 27-June 2.....	1		

YELLOW FEVER.

Brazil:				
Bahia.....	May 13-June 30.....	25	6	
Do.....	July 1-Aug. 4.....	9	3	
Colombia:				
Bucaramanga.....	June 26-Aug. 26.....			Present.