PUBLIC HEALTH REPORTS

VOL. 46 NOVEMBER 6, 1931 NO. 45

THE PELLAGRA-PREVENTIVE VALUE OF CANNED SPINACH, CANNED TURNIP GREENS, MATURE ONIONS, AND CANNED GREEN BEANS

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The studies in nutrition at the Milledgeville State Hospital (formerly the Georgia State Sanitarium), Milledgeville, Ga., have for some time centered largely on the determination, by feeding tests in the human being, of the relative pellagra-preventive potency of the individual staple foods and foodstuffs. The results of the studies of fresh beef (1), milk (2), butter (1), soy bean (3), expressed juice of canned tomatoes (4), carrots (4), rutabaga turnip (4), cowpea (5), canned salmon (6), commercial wheat germ (5), and dried yeast (1) (3), have already been reported. Of these, fresh beef, milk, canned salmon, wheat germ, tomato juice, and dried yeast have been found to furnish adequate protection against pellagra in the quantities used. The soybean and cowpea possess the preventive factor, but to a much less degree; while butter, the rutabaga turnip, and carrot are practically negligible in this respect. These substances have also been tested in the dog with essentially parallel results.

Similar studies, on the human being, of canned spinach, canned turnip greens, mature onions, and canned green beans are presented here.

Practicability has governed the selection of these foodstuffs. The most pressing need among many people of the pellagrous sections (rural cotton belt) is some simple but effective article or articles of food which may be produced at home and made available during the spring and early summer months when their diet is normally most restricted and pellagra most prevalent. This will also serve to safeguard the diet of this element of the population during periods of economic distress brought about by a sudden slump in the price of cotton or depression in the smaller rural industrial (textile manufacturing) communities. Cheapness, ease, and abundance of production, and early availability and general desirability for food purposes are also essential considerations.

The winter and early maturing spring vegetables most nearly meet these requirements, but a study of them in the fresh state is restricted, because of their seasonal nature which, as a rule, is too short to permit of a satisfactory test. However, the more recently demon-

strated high degree of resistance of the antipellagric vitamin to moist heat has paved the way for their study in the canned state. While the canned product may possibly be somewhat inferior to the fresh, as regards the abundance of the antipellagric vitamin, the results are rendered all the more conclusive where positive effects are secured. It may therefore be safely assumed that the fresh product is at least fully as efficacious as the canned.

As in similar previous studies, the value of these substances as pellagra preventives has been determined by their use as supplements to a basic diet which is believed to be adequate in all known respects, except for a deficiency of the antipellagric vitamin. On this basic diet alone, even when the energy values are increased to compensate fully for those of the supplements employed, all of any given number of persons may be expected to develop pellagra within about three to six months regardless of whether they have suffered previous attacks (7). Any notable prolongation of this period must, therefore, be attributed to the pellagra-preventive qualities of the substance with which it is supplemented. Maintenance of body weight throughout the period of the tests, or prior to the development of pellagra, indicates that the energy value of these experimental diets is adequate for the type of subject used—inactive females weighing around 50 to 55 kilograms.

Each experiment is allowed to run for a period of one year unless sooner terminated by the development of a significant number of cases of pellagra.

SPINACH

In the test of this substance a commercial brand of canned California spinach was used, and a daily allowance of 482 grams, including the can liquor, was permitted. The approximate composition of the spinach-supplemented diet is given in Table 1.

TABLE 1.—*Basic diet plus canned spinach*

Article of diet	Quantity	Nutrients			Calories
		Protein	Fat	Carbohydrate	
Basic	*Grams*	*Grams*	*Grams*	*Grams*	
Corn meal	269.3	24.8	5.1	203.1	962
Cowpeas (California blackeye)	42.5	9.1	.6	25.8	146
Wheat flour	21.3	2.8	.3	15.5	76
Lard	42.5		42.5		386
Cod-liver oil	14.0		14.0		127
Tomato juice	127.6	.9			4
Calcium carbonate (U. S. P.)	3.0				
	Drops				
Dilute hydrochloric acid (U. S. P.)	90				
Sirup iodid of iron (U. S. P.)	2				
Supplemental	*Grams*				
Canned spinach	482.0	11.6	1.9	28.0	185
Total nutrients and calories		49.2	64.4	272.4	1,886

The diet of Table 1 was given to a group of 16 colored female inmates of the State hospital, 14 of whom remained under observation for a period of one year. Of this number, one developed symptoms of pellagra near the end of the eleventh month.

Since the entire group would have developed pellagra within from three to six months (7) had not the spinach supplement been used, it seems safe to conclude that the protection of all for a period of more than 10 months, and all but one for a period of 12 months, was due to the quantity of the preventive factor contained in the spinach. It may therefore be stated that canned spinach supplies the pellagra-preventive vitamin; but since a rather liberal allowance failed to give complete protection, it can not be classed as a particularly rich source of this factor. However, in view of its availability in the early spring and its otherwise desirable nutrient properties, this food stuff might well be included in any program designed to bring about permanent control of pellagra. While it and other important articles of diet must be rated as inferior to fresh beef, salmon, yeast, etc., they possess a high contributory value, and in instances (which are doubtless many) where pellagra develops on a diet less restricted than the experimental basic diet used in these tests, may, as single supplements, prove quite adequate.

TURNIP GREENS

In this experiment a commercial brand of canned turnip greens was used. The quantity allowed (482 grams, including the can liquor) was the same as in the spinach test. The basic diet was the same for both. The approximate composition of the turnip greens-supplemented diet is given in Table 2.

TABLE 2.—*Basic diet plus canned turnip greens*

Article of diet	Quantity	Nutrients			Calories
		Protein	Fat	Carbohydrate	
Basic					
	Grams	*Grams*	*Grams*	*Grams*	
Corn meal	269.3	24.8	5.1	203.1	962
Cowpeas (California blackeye)	42.5	9.1	.6	25.8	146
Wheat flour	21.3	2.8	.3	15.5	76
Lard	42.5		42.5		386
Cod-liver oil	14.0		14.0		127
Tomato juice	127.6	.9			4
Calcium carbonate (U. S. P.)	3.0				
	Drops				
Dilute hydrochloric acid (U. S. P.)	90				
Sirup iodid of iron (U. S. P.)	2				
Supplemental					
	Grams				
Canned turnip greens	482.0	10.1	1.4	37.1	211
Total nutrients and calories		47.7	63.9	281.5	1,912

In this experiment 16 colored female inmates were used, 15 of whom continued under observation on the turnip greens-supplemented diet for a period of one year. No evidence of pellagra was observed. Therefore, in view of the previously determined fact that without the turnip greens practically all would have developed pellagra within about six months, it may be safely assumed that canned turnip greens contain the pellagra-preventive vitamin and, in the quantity used, at least, may be regarded as a suitable supplement for an otherwise pellagra-producing diet.

This result has much potential value in the practical control of pellagra. The growing of turnip greens is well adapted to all portions of the South. They can be produced easily and cheaply and, under ordinary seasonal conditions, may be made available in the fresh state at the very season when protective supplements are normally scarcest. The use of turnip greens as an article of diet is already well established throughout the South, and with a little well-directed effort on the part of local health agencies and others their production and consumption may be increased almost indefinitely.

MATURE ONIONS

In the test of onions, a medium-sized commercial variety of red onions was used. The dry outside skin was removed and the remainder chopped and steamed until done. Table salt sufficient to season was added. Each patient was allowed 525 grams per day. The basic diet was the same as in the spinach and turnip-greens tests with the exception that 28 grams of bakers' bread was included to compensate for the rather low nutritive value of the onions. The approximate composition of the onion-supplemented diet is given in Table 3.

TABLE 3.—*Basic diet plus mature onions*

Article of diet	Quantity	Nutrients			Calories
		Protein	Fat	Carbohydrate	
Basic	*Grams*	*Grams*	*Grams*	*Grams*	
Corn meal	269.3	24.8	5.1	203.1	962
Cowpeas (California blackeye)	42.5	9.1	.6	25.8	146
Wheat flour	21.3	2.8	.3	15.5	76
Bakers' bread	28.0	2.7	.3	14.9	73
Lard	42.5		42.5		386
Cod-liver oil	14.0		14.0		127
Tomato juice	127.6	.9			4
Calcium carbonate (U. S. P.)	3.0				
	Drops				
Dilute hydrochloric acid (U. S. P.)	90				
Sirup iodid of iron (U. S. P.)	2				
Supplemental	*Grams*				
Mature onions	525.0	8.4	1.6	52.0	255
Total nutrients and calories		48.7	64.4	311.3	2,029

In the test of onions 10 white female inmates were used. Five of these developed pellagra within three months. Following the appearance of the fifth case, the test was discontinued.

Inasmuch as the time required for the development of pellagra on the onion-supplemented diet did not appear to be appreciably longer than on the basic diet alone, it seems permissible to conclude that the mature onion is a very poor source of the pellagra-preventive vitamin.

GREEN BEANS

In this test a commercial brand of canned green stringless beans was used. The daily allowance, including the can liquor, was 550 grams. The basic diet was the same as that used in the preceding test. The approximate composition of the green beans-supplemented diet is given in Table 4.

TABLE 4.—*Basic diet plus canned green beans*

Article of diet	Quantity	Nutrients			Calories
		Protein	Fat	Carbohydrate	
Basic	*Grams*	*Grams*	*Grams*	*Grams*	
Corn meal	269.3	24.8	5.1	203.1	962
Cowpeas (California blackeye)	42.5	9.1	.6	25.8	146
Wheat flour	21.3	2.8	.3	15.5	76
Bakers' bread	28.0	2.7	.3	14.9	73
Lard	42.5		42.5		386
Cod-liver oil	14.0		14.0		127
Tomato juice	127.6	.9			4
Calcium carbonate (U. S. P.)	3.0				
	Drops				
Dilute hydrochloric acid (U. S. P.)	90				
Sirup iodid of iron	2				
Supplemental	*Grams*				
Canned green beans	550.0	7.7	.3	36.3	188
Total nutrients and calories		48.0	63.1	295.6	1,962

In the test of canned green beans, 14 white female inmates were used, 12 of whom continued under observation for a significant period. Of these, 2 developed pellagra during the seventh month, 1 during the eighth month, and 4 during the ninth month. The test was terminated at the end of the ninth month.

Though the time required for the development of pellagra was appreciably prolonged by the addition of canned green beans to the basic diet, the degree of protection was strikingly inadequate. Canned green beans may therefore be regarded as a relatively poor source of the pellagra-preventive vitamin and, in the quantity used, which is rather generous, should not be depended upon adequately to supplement an otherwise pellagra-producing diet.

SUMMARY AND CONCLUSIONS

1. Canned spinach, canned turnip greens, mature onions, and canned green beans have been tested for their relative pellagra-preventive potency.

2. Canned spinach supplies the pellagra-preventive vitamin, but can not be regarded as especially rich in it. It is, however, considered an important contributory source of this factor.

3. Canned turnip greens supply the pellagra-preventive vitamin and, at least in liberal quantity, adequately supplement an otherwise pellagra-producing diet. This substance meets many of the requirements of a practical and effective dietary supplement in the pellagrous sections.

4. The mature onion is a very poor source of the pellagra-preventive vitamin.

5. Canned green beans are, relatively, a poor source of the pellagra-preventive vitamin.

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A TECHNIQUE FOR ADJUSTMENT OF THE pH OF TISSUE CULTURES PLANTED IN CARREL FLASKS

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In a previous publication (1) the author described a method which had been found useful for adjusting and controlling the pH of tissue cultures planted in hanging drops on the usual type of hollow-ground slides. In the course of further work it was found necessary to adapt this technique to cultures planted in Carrel flasks. The adaptation worked out has been found to be very simple and quite satisfactory, and is here outlined for the benefit of those desiring to

use a controlled pressure of CO_2 as a means of adjusting the pH of such flask cultures.

Carrel D 3.5 cm. flasks were used. The cultures were planted in the usual manner, with either a solid medium or a solid medium bathed by a liquid medium. Upon completion of planting, each flask was stoppered with a size 00 one-hole rubber stopper, through the hole of which passed a glass-tube insert of the approximate shape and size shown in Figure 1. This glass-tube insert was made from capillary tubing of 3 mm. external diameter and 1 mm. bore. The tip of the insert was drawn down to about 1.5 mm. in diameter, and had a bore of about 0.5 mm.

Once stoppered, the flasks were set aside. When the complete series of flasks had been planted, the exposed part of the rubber stopper in each flask and the terminal part of the neck of each flask were brushed over with a hot solution of 4 per cent pure white crêpe rubber dissolved in paraffin. The flasks were then placed in racks.

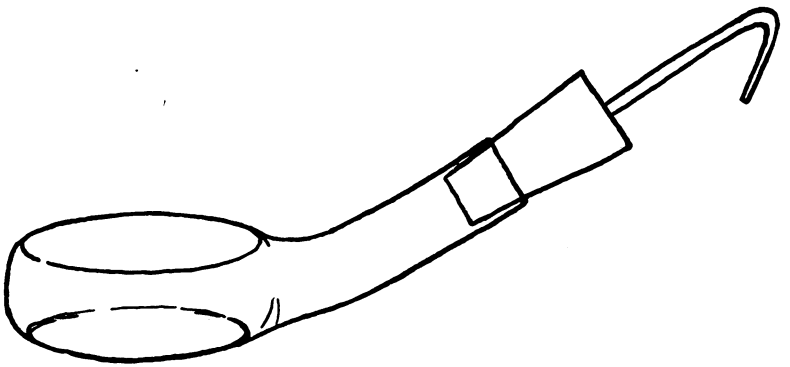

FIGURE 1.—Carrel D 3.5 cm. flask, with rubber stopper and glass insert, as described in the text

Each rack was of such a type as to hold four flasks in a vertical position. The racks were then transferred to the jar of the equilibration apparatus previously described [1] (1), where they were equilibrated in the same manner as was described for hanging-drop cultures on

[1] During the warm weather of the past summer some trouble has been experienced, due to the growth of bacteria in the jars of the "saturation trains" of this equilibration apparatus. This has been remedied by making the following changes in the apparatus:

The funnels and the cloth wadding were removed from all jars, and the funnel in each jar was replaced by a piece of plain glass tubing reaching to within about 1 cm. of the bottom of the jar. The jars were then filled with lump pumice, the lumps of which were approximately 8 mm. in diameter, and this pumice was saturated with 1/5,000 solution of mercurochrome dissolved in distilled water. This was run into the jars until a layer of solution 1 cm. deep collected in the bottom of each jar. This water solution served to saturate the gas with water vapor, while the mercurochrome served to retard bacterial growth. Mercurochrome was chosen because it is nonvolatile at room temperatures and because it is so highly colored that if any trace should leak over into the gas manifold its presence would be shown at once. Any nonvolatile antiseptic, such as mercuric chloride, probably might be used with equal satisfaction, particularly if used in conjunction with some nonvolatile dye to indicate if leakage occurred into the manifold.

In order to eliminate any chance that any of the mercurochrome solution might be sucked over into the manifold, an empty jar, similar to the jars used in the "saturation trains," and fitted with inlet and outlet tubes similar to those carried by the other jars, was inserted between the last jar of each "saturation train" and the manifold. This served as a trap to catch any of the mercurochrome solution which might conceivably leak over.

slides. Following equilibration, the tip of the glass insert in each flask was sealed by dipping the tip in a small crucible of very hot red sealing wax. The flasks were then incubated and examined as usual.

In instances where it was later desired to change the culture media in the flasks, the wax on the neck of the flask was melted by flaming, the flask was opened, the stopper, with its glass insert, was discarded, and the neck of the flask was covered by a small glass cap. After changing the fluids, the flask was resealed with a fresh stopper and insert and was then reequilibrated as described.

It was found that these flask cultures could be equilibrated and sealed even more easily and rapidly and with less chance of leakage than could the hanging-drop cultures on slides. Further, it was found that when the flasks were incubated for a number of days without opening, the pH drift was markedly less than for the cultures planted in hanging drops on slides. These seals were also much less fragile than were those on the hanging-drop preparations.

The change in the pH of the culture medium of any flask during the time required to seal a series of flasks was found to be very slight indeed. For example, a series of 25 flasks was made up, each containing 2 c. c. of Tyrode solution and 0.02 c. c. of phenol red solution. The preparations were then equilibrated and sealed as described above, the pCO_2 being approximately 60 mm. At the end of one hour the variation in pH between any two flasks in the series was found to be approximately 0.1 pH unit, the pH for the series being approximately 7.1. This pH was not perceptibly changed at the end of four days.

A word may be said as to the method of cleaning the apparatus used. The flasks were cleaned as usual and rinsed well with distilled water. Where new rubber stoppers were used, these were cleaned by boiling first in dilute sodium hydroxide solution, then in dilute hydrochloric acid solution, and finally, after washing with running tap water, in several changes of distilled water.

Where old stoppers, previously used on such cultures, were employed, after the glass inserts had been removed from them the stoppers were boiled out in a large volume of distilled water, then rinsed in several changes of distilled water. The glass-tube inserts, removed from the stoppers, were cleaned by gently heating the sealed end of the insert in a flame until the sealing wax was melted, and then blowing it out. The remainder of the wax was then dissolved off by soaking the insert for 24 hours in two changes of alcohol, after which the inserts were washed in the usual manner with water.

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EUROPEAN CONFERENCE ON RURAL HYGIENE, HELD AT GENEVA, SWITZERLAND, JUNE 29–JULY 7, 1931

The following account of the European Conference on Rural Hygiene, held at Geneva, Switzerland, June 29–July 7, 1931, is taken from a report by Surgeon J. G. Townsend, who was in attendance:

Upon the initiative of the Spanish Government, the health committee of the League of Nations approved a conference of representatives of European States for the purpose of a study of the common problems of rural hygiene. The International Institute of Agriculture at Rome was invited to cooperate in the project, and non-European governments were invited to send "observers" to hear the discussions and follow the work of the conference.

The health committee recommended the following agenda as a basis of study:

Item 1: Guiding principles and suitable methods for insuring effective medical assistance in rural districts.

Item 2: The most effective methods of organizing the health services in rural districts.

Item 3: The sanitation of rural districts; the most effective and economical methods.

The conference convened at Geneva June 29, 1931, with delegates present from 25 European countries and observers from 7 non-European countries. Introductory addresses were made by Mr. J. Avenal, acting secretary general of the League of Nations, and Prof. G. Pittaluga, president of the conference, director of the National School of Hygiene, Madrid.

The first few days were taken up in plenary sessions with the reading and discussion of the reports of the committees of experts on the first and second items of the agenda. The report on the third item was not read, as it was thought, since questions of sanitation in rural districts were so technical, it would be better to refer this item to a special commission of the conference.

Following the plenary sessions, the conference divided into three groups, or commissions, each commission discussing more in detail the reports of the three committees of experts on the three items of the agenda, and reporting back to the plenary session the recommendations relative to the adoption of the several reports. Each delegate and observer was privileged to elect which commission he chose to attend.

On the proposal of the president, the conference while in plenary session adopted the following resolution:

The conference decides to set up a fourth commission which, after examining the various proposals made by the delegations and in the report of the preparatory committee, will submit to the conference for approval the questions to be studied under the auspices of the League of Nations.

The conference also asks whether the League of Nations' health organization would convene a meeting of the directors of European schools of hygiene during the conference to consider to what extent these schools might undertake certain studies among those to be recommended by the conference and to make suggestions to the fourth committee on this subject.

At the close of these deliberations, which lasted several days, each commission, through its respective president, reported back to the plenary session its recommendations on the several items of the agenda as prepared by the committee of experts.

The last two days of the conference were plenary sessions, at which the reports of the four commissions were read and adopted.

Among the resolutions recommended for adoption by the Resolutions (Fourth) Commission, was the following:

The conference desires to emphasize the importance for rural hygiene of close collaboration between administrators of public health and assistants, agricultural experts, engineers, architects, medical officers and practitioners, representatives of health insurance institutions, agricultural associations, and private health agencies.

The conference adjourned July 7, 1931.

This was the first conference of its kind ever held, and much useful information was gained as to rural health problems abroad and the methods taken in different countries to meet situations as they arise, as well as routine procedures in the promotion of public health.

DEATHS DURING WEEK ENDED OCTOBER 17, 1931

Summary of information received by telegraph from industrial insurance companies for the week ended October 17, 1931, and corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

	Week ended Oct. 17, 1931	Corresponding week, 1930
Policies in force	74, 607, 364	75, 391, 169
Number of death claims	11, 041	12, 205
Death claims per 1,000 policies in force, annual rate	7. 7	8. 4
Death claims per 1,000 policies, first 42 weeks of year, annual rate	9. 7	9. 6

Deaths [1] from all causes in certain large cities of the United States during the week ended October 17, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

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

City	Week ended Oct. 17, 1931				Corresponding week, 1930		Death rate [2] for the first 42 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1931	1930
Total (82 cities)	6,864	10.0	625	[4] 49	10.9	729	12.0	11.9
Akron	23	4.6	3	30	7.5	5	7.8	7.9
Albany [5]	38	15.3	4	79	9.4	3	13.8	14.8
Atlanta	52	9.8	9	92	12.7	10	15.0	15.7
White	28		6	95		4		
Colored	24	(6)	3	86	(6)	6	(6)	(6)
Baltimore [5]	170	10.9	22	75	12.2	15	14.4	13.9
White	130		17	74		12		
Colored	40	(6)	5	78	(6)	3	(6)	(6)
Birmingham	40	7.7	2	20	13.0	14	13.4	13.7
White	16		2	34		0		
Colored	24	(6)	0	0	(6)	14	(6)	(6)
Boston	209	13.9	27	77	14.1	18	14.3	14.1
Bridgeport	28	9.9	4	66	11.0	4	11.1	11.1
Buffalo	121	10.9	10	41	11.7	12	13.0	13.0
Cambridge	27	12.3	1	20	14.7	3	12.1	11.9

See footnotes at end of table.

Deaths [1] from all causes in certain large cities of the United States during the week ended October 17, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930—Continued

City	Week ended Oct. 17, 1931				Corresponding week, 1930		Death rate [2] for the first 42 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1931	1930
Camden	23	10.1	4	70	11.9	6	14.2	13.4
Canton	17	8.3	4	91	10.9	3	10.1	10.0
Chicago [5]	566	8.5	45	40	8.9	53	10.7	10.4
Cincinnati	114	13.0	9	54	12.1	12	16.0	15.5
Cleveland	176	10.1	12	35	10.9	17	11.2	11.1
Columbus	62	10.9	7	68	11.6	8	13.5	15.6
Dallas	57	10.9	6	-------	8.3	7	11.2	11.3
White	44		5			4		
Colored	13	(6)	1	-------	(6)	3	(6)	(6)
Dayton	49	12.4	2	28	13.7	7	11.9	10.7
Denver	81	14.5	3	29	11.7	5	13.9	14.8
Des Moines	36	13.0	3	53	13.5	6	11.2	11.8
Detroit	249	7.9	31	49	7.8	37	8.3	9.3
Duluth	20	10.2	2	49	10.8	0	11.3	11.3
El Paso	21	10.4	3	-------	18.2	4	15.6	17.4
Erie	23	10.2	1	19	6.3	1	10.5	11.2
Fall River [5] [7]	23	10.4	4	91	10.9	4	11.2	11.9
Flint	24	7.6	2	26	8.9	6	6.9	9.2
Fort Worth	29	9.0	3	-------	8.6	0	10.8	10.9
White	23		3			0		
Colored	6	(6)	0	-------	(6)	0	(6)	(6)
Grand Rapids	34	10.3	0	0	8.6	4	9.1	10.3
Houston	47	7.9	8	-------	8.3	6	11.1	12.1
White	34		3			2		
Colored	13	(6)	5	-------	(6)	4	(6)	(6)
Indianapolis	69	9.7	5	41	11.0	4	13.8	14.7
White	57		5	47		3		
Colored	12	(6)	0	0	(6)	1	(6)	(6)
Jersey City	32	5.2	2	18	12.0	11	11.4	11.3
Kansas City, Kans	21	8.9	2	41	13.2	3	12.6	11.8
White	17		1	25		2		
Colored	4	(6)	1	127	(6)	1	(6)	(6)
Kansas City, Mo	103	13.1	10	76	12.6	14	13.1	13.3
Knoxville	22	10.5	4	85	18.6	4	12.4	13.7
White	20		3	71		3		
Colored	2	(6)	1	204	(6)	1	(6)	(6)
Long Beach	31	10.6	1	24	11.2	2	9.8	9.9
Los Angeles	247	9.8	11	32	10.6	15	10.7	11.0
Louisville	72	12.2	12	103	14.6	5	14.3	13.6
White	53		10	98		4		
Colored	19	(6)	2	133	(6)	1	(6)	(6)
Lowell [7]	33	17.1	2	51	15.5	5	12.8	13.4
Lynn	16	8.1	1	26	8.1	1	9.5	10.4
Memphis	69	13.9	12	127	17.0	11	16.6	17.1
White	43		9	150		6		
Colored	26	(6)	3	87	(6)	5	(6)	(6)
Miami	21	9.7	0	0	8.9	3	11.8	11.0
White	19		0	0		1		
Colored	2	(6)	0	0	(6)	2	(6)	(6)
Milwaukee	73	6.5	12	52	9.3	12	9.3	9.6
Minneapolis	102	11.2	5	32	10.0	3	11.2	10.6
Nashville	37	12.4	3	45	20.6	15	16.9	16.7
White	21		3	60		10		
Colored	16	(6)	0	0	(6)	5	(6)	(6)
New Bedford [7]	23	10.7	3	80	13.0	5	12.1	10.9
New Haven	37	11.9	3	57	8.7	2	12.4	12.7
New Orleans	140	15.6	10	55	17.8	18	16.9	17.4
White	74		4	33		8		
Colored	66	(6)	6	98	(6)	10	(6)	(6)
New York	1,201	8.8	96	40	9.6	112	11.2	10.8
Bronx Borough	172	6.7	7	16	6.4	13	8.2	7.9
Brooklyn Borough	416	8.3	33	35	8.8	55	10.3	9.9
Manhattan Borough	435	12.5	42	72	14.7	38	16.9	16.0
Queens Borough	150	6.8	12	33	6.6	5	7.2	7.1
Richmond Borough	28	8.9	2	36	11.1	1	13.8	14.3
Newark, N. J	78	9.1	7	37	10.6	9	11.6	12.0
Oakland	62	11.1	2	26	8.9	7	10.5	10.9
Oklahoma City	63	11.4	4	55	11.1	7	10.9	10.8
Omaha	49	11.8	1	11	12.2	2	13.8	13.6
Paterson	28	10.5	3	52	6.8	1	13.3	12.2

See footnotes at end of table.

Deaths [1] from all causes in certain large cities of the United States during the week ended October 17, 1931, infant mortality, annual death rate, and comparison with corresponding week of 1930—Continued

City	Week ended Oct. 17, 1931				Corresponding week, 1930		Death rate [2] for the first 42 weeks	
	Total deaths	Death rate [2]	Deaths under 1 year	Infant mortality rate [3]	Death rate [2]	Deaths under 1 year	1931	1930
Peoria	23	11.1	6	158	10.9	2	12.6	12.3
Philadelphia	397	10.5	37	54	11.4	47	13.1	12.6
Pittsburgh	177	13.7	29	100	13.7	31	14.4	13.8
Portland, Oreg.	62	10.5	6	73	12.2	8	11.6	12.1
Providence	63	12.9	11	101	11.7	7	12.8	13.0
Richmond	54	15.3	4	58	15.9	7	15.5	14.8
White	35		3	66		3		
Colored	19	(6)	1	43	(6)	4	(6)	(6)
Rochester	61	9.6	4	36	11.1	9	11.9	11.6
St. Louis	170	10.7	10	34	12.2	12	15.1	14.2
St. Paul	47	8.9	4	41	10.3	2	10.6	10.1
Salt Lake City [5]	26	9.5	4	60	13.0	3	12.1	12.2
San Antonio	47	10.2	3		9.2	6	14.4	16.4
San Diego	30	10.0	1	20	13.6	1	13.5	14.3
San Francisco	132	10.6	5	33	11.3	2	13.0	13.0
Schenectady	15	8.1	0	0	11.4	1	10.5	11.3
Seattle	72	10.1	4	38	10.0	0	11.3	10.8
Somerville	8	4.0	0	0	8.0	2	8.8	9.8
South Bend	16	7.7	5	125	7.0	3	12.4	8.8
Spokane	25	11.2	0	0	11.7	4	11.7	12.3
Springfield, Mass.	31	10.6	3	46	11.8	1	11.6	12.2
Syracuse	50	12.2	6	71	12.2	4	12.2	11.6
Tacoma	29	14.0	4	103	13.2	0	11.9	12.3
Toledo	63	11.1	6	55	14.7	4	16.5	12.7
Trenton	36	15.2	5	87	16.9	5	14.0	16.7
Utica	26	13.2	2	52	14.3	0	15.7	14.8
Washington, D. C.	114	12.1	11	61	13.7	15	8.1	15.1
White	60		5	41		4		
Colored	54	(6)	6	103	(6)	11	(6)	(6)
Waterbury	18	9.3	2	60	5.7	1	9.7	9.6
Wilmington, Del. [7]	25	12.2	1	22	12.2	2	14.0	14.4
Worcester	38	10.0	3	41	11.5	7	12.0	12.8
Yonkers	19	7.1	6	157	8.1	0	8.4	8.0
Youngstown	22	6.6	1	14	8.3	2	10.1	10.3

[1] Deaths of nonresidents are included. Stillbirths are excluded.
[2] These rates represent annual rates per 1,000 population, as estimated for 1931 and 1930 by the arithmetical method.
[3] Deaths under 1 year of age per 1,000 live births. Cities left blank are not in the registration area for births.
[4] Data for 77 cities.
[5] Deaths for week ended Friday.
[6] For the cities for which deaths are shown by color, the percentage of colored population in 1920 was as follows: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Miami, 31; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.
[7] Population Apr. 1, 1930; decreased 1920 to 1930, no estimate made.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended October 24, 1931, and October 25, 1930

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended October 24, 1931, and October 25, 1930

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930
New England States:								
Maine	5	1	2		129	3	0	1
New Hampshire	3	1			1		0	0
Vermont		1			41		0	0
Massachusetts	48	81	11	1	30	113	3	3
Rhode Island	5	8			81		0	0
Connecticut	4	7	4	1	8	13	1	0
Middle Atlantic States:								
New York	67	63	[1] 7	[1] 4	67	75	8	12
New Jersey	32	65	6	7	11	25	0	0
Pennsylvania	106	120			116	133	10	0
East North Central States:								
Ohio	102	57	1	10	12	13	2	1
Indiana	68	45	8		42	15	2	1
Illinois	99	143	10	16	24	25	5	6
Michigan	35	80		6	29	50	2	8
Wisconsin	14	16	14	18	5	77	3	0
West North Central States:								
Minnesota	14	11			8	7	1	1
Iowa	22	11			7		0	1
Missouri	116	40	3	1	7	69	2	3
North Dakota	6				1		1	0
South Dakota	4	7			39	2	0	0
Nebraska	19	7	2		1	1	0	1
Kansas	42	15		2	11	7	1	0
South Atlantic States:								
Delaware	3	1	1		1		0	0
Maryland [2]	86	41	5	8	12	2	1	0
District of Columbia	24	7		1		2	0	0
Virginia								
West Virginia	104	43	20	8	28	24	0	0
North Carolina	186	192	8	6	24	3	0	1
South Carolina [3]	58	53	264	391			0	0
Georgia [3]	53	24	17	59	8	3	0	0
Florida	32	17			68	2	0	0

[1] New York City only.
[2] Week ended Friday.
[3] Typhus fever, 1931, 8 cases: 1 case in South Carolina; 3 cases in Georgia; and 4 cases in Alabama.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended October 24, 1931, and October 25, 1930—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930
East South Central States:								
Kentucky	171	24					0	2
Tennessee	177	64	11	17	6	12	6	2
Alabama [3]	107	89	5	25	3	15	0	3
Mississippi	165	61					0	1
West South Central States:								
Arkansas	66	9	1	6	5		1	0
Louisiana	61	16	9	6	3		1	2
Oklahoma [4]	76	91	10	15		8	0	0
Texas	65	30	9	33		4	3	0
Mountain States:								
Montana		1			25	1	0	0
Idaho		1			1	1	0	0
Wyoming			1				2	0
Colorado	9	17				51	0	0
New Mexico	24	5				8	0	1
Arizona	4	13		4	1	28	0	1
Utah [2]	1		7			3	0	2
Pacific States:								
Washington	7	27				3	1	2
Oregon	3	4	22	5	5	54	1	1
California	82	69	37	23	68	86	2	8

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930
New England States:								
Maine	11	11	10	17	0	0	8	14
New Hampshire	1	5	3	8	0	0	0	3
Vermont	3	0	7	10	0	0	0	0
Massachusetts	40	22	167	105	0	0	14	8
Rhode Island	2	1	11	11	0	0	3	5
Connecticut	39	3	30	16	0	0	7	7
Middle Atlantic States:								
New York	184	19	238	179	1	1	50	43
New Jersey	36	1	75	71	0	0	7	12
Pennsylvania	23	4	252	319	0	4	106	61
East North Central States:								
Ohio	2	49	278	230	1	14	29	41
Indiana	3	8	85	92	13	28	9	15
Illinois	32	28	201	207	2	28	45	39
Michigan	41	20	114	139	0	17	16	24
Wisconsin	37	8	51	59	0	6	5	2
West North Central States:								
Minnesota	37	13	46	36	0	6	2	4
Iowa	10	14	31	45	25	13	6	1
Missouri	2	13	69	38	8	20	31	22
North Dakota	2	1	8	13	2	7	12	2
South Dakota	0	8	17	4	2	7	2	1
Nebraska	1	14	15	26	2	2	3	0
Kansas	0	43	66	38	4	7	7	10
South Atlantic States:								
Delaware	0	0	7	3	0	0	2	9
Maryland [2]	4	4	78	48	0	0	35	47
District of Columbia	0	1	15	18	0	0	3	2
Virginia	1				1			
West Virginia	6	1	45	77	0	1	73	46
North Carolina	1	0	131	133	0	0	29	13
South Carolina [3]	0	1	35	27	0	2	18	32
Georgia [3]	0	1	27	49	2	0	33	22
Florida	1	0	9	5	0	2	5	3

[2] Week ended Friday.
[3] Typhus fever, 1931, 8 cases: 1 case in South Carolina; 3 cases in Georgia; and 4 cases in Alabama.
[4] Figures for 1931 are exclusive of Oklahoma City and Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended October 24, 1931, and October 25, 1930—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930	Week ended Oct. 24, 1931	Week ended Oct. 25, 1930
East South Central States:								
Kentucky	0	0	86	43	0	0	60	19
Tennessee	1	2	84	50	1	7	59	37
Alabama [3]	0	1	65	67	0	0	19	26
Mississippi	1	1	43	36	42	0	14	14
West South Central States:								
Arkansas	0	1	26	7	2	3	17	21
Louisiana	1	4	16	13	1	0	31	15
Oklahoma [4]	2	2	37	53	3	11	44	41
Texas	3	4	22	21	0	4	33	19
Mountain States:								
Montana	2	1	13	8	0	0	4	2
Idaho	2	3	6	1	2	0	4	2
Wyoming	0	1	6	7	1	0	0	2
Colorado	0	5	21	17	0	0	8	5
New Mexico	0	0	6	3	1	0	13	12
Arizona	1	2	5	9	0	5	1	3
Utah [2]	0	0	5	7	0	0	4	3
Pacific States:								
Washington	9	4	67	65	9	29	6	14
Oregon	2	2	15	14	7	14	2	4
California	6	72	226	66	7	11	6	14

[2] Week ended Friday.
[3] Typhus fever, 1931, 8 cases: 1 case in South Carolina; 3 cases in Georgia and 4 cases in Alabama.
[4] Figures for 1931 are exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
August, 1931										
Colorado	----	25	----	----	10	----	1	31	8	26
Hawaii Territory	6	20	----	----	38	----	1	1	0	2
New Hampshire	----	4	----	----	----	----	22	8	----	8
September, 1931										
Colorado	----	26	----	3	11	----	0	47	1	27
Idaho	3	14	1	----	13	----	6	32	9	30
Illinois	23	202	476	109	167	3	191	331	26	172
Louisiana	6	151	23	101	7	30	5	54	11	263
Minnesota	4	61	3	----	29	----	252	124	6	46
Missouri	10	211	9	42	18	31	13	86	26	136
New Hampshire	----	2	----	----	----	----	29	5	----	6
North Carolina	4	453	8	----	31	74	21	297	0	198
Pennsylvania	22	297	----	1	289	1	127	456	0	282
Rhode Island	2	16	1	----	36	----	62	51	0	13
Wisconsin	5	58	52	----	80	----	324	88	5	29

August, 1931

	Cases
Chicken pox:	
Colorado	29
Hawaii Territory	5
Conjunctivitis, follicular:	
Hawaii Territory	7
Dysentery:	
Hawaii Territory (bacillary)	2
German measles:	
Colorado	2
Hookworm disease:	
Hawaii Territory	28
Leprosy:	
Hawaii Territory	6
Mumps:	
Colorado	39
Hawaii Territory	6

Plague:	Cases
Hawaii Territory	1
Paratyphoid fever:	
Colorado	3
Tetanus:	
Hawaii Territory	4
Trachoma:	
Hawaii Territory	1
Undulant fever:	
Colorado	5
Vincent's angina:	
Colorado	12
Whooping cough:	
Colorado	79
Hawaii Territory	2

September, 1931

Anthrax:	
Pennsylvania	1
Chicken pox:	
California	23
Idaho	21
Illinois	131
Louisiana	5
Minnesota	66
Missouri	10
North Carolina	47
Pennsylvania	167
Rhode Island	1
Wisconsin	156
Dysentery:	
Illinois	136
Illinois (amebic)	1
Illinois (bacillary)	15
Minnesota	1
Missouri	3
Pennsylvania	1
German measles:	
Colorado	2
Illinois	15
North Carolina	13
Pennsylvania	30
Rhode Island	2
Wisconsin	12
Hookworm disease:	
Louisiana	8
Impetigo contagiosa:	
Colorado	1
Lead poisoning:	
Illinois	12
Pennsylvania	2
Leprosy:	
Louisiana	1
Lethargic encephalitis:	
Illinois	13
Louisiana	4
Minnesota	1
Missouri	2
Pennsylvania	11
Wisconsin	2
Ludwig's angina:	
Illinois	3
Mumps:	
Colorado	29
Idaho	12
Illinois	102
Missouri	11
Pennsylvania	284
Rhode Island	25
Wisconsin	248
Ophthalmia neonatorum:	
Colorado	1
Illinois	6
Minnesota	1
North Carolina	1
Pennsylvania	16
Rhode Island	2
Wisconsin	1
Paratyphoid fever:	
Colorado	2
Illinois	5
Louisiana	2
North Carolina	4
Puerperal septicemia:	
Illinois	16
Pennsylvania	25
Rabies in animals:	
Illinois	6
Louisiana	6
Missouri	4
Rhode Island	1
Septic sore throat:	
Illinois	11
Missouri	21
North Carolina	13
Tetanus:	
Illinois	9
Louisiana	7
Missouri	1
Pennsylvania	6
Trachoma:	
Colorado	1
Illinois	2
Missouri	92
Pennsylvania	6
Wisconsin	2
Tularaemia:	
Minnesota	1
Wisconsin	1
Undulant fever:	
Idaho	1
Illinois	5
Louisiana	11
Minnesota	5
Missouri	13
Pennsylvania	6
Wisconsin	4
Vincent's angina:	
Colorado	3
Illinois	13
Whooping cough:	
Colorado	57
Idaho	3
Illinois	1,016
Louisiana	19
Minnesota	71
Missouri	413
North Carolina	363
Pennsylvania	1,541
Rhode Island	20
Wisconsin	559

Cases of Certain Communicable Diseases Reported for the Month of June, 1931, by State Health Officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid and paratyphoid fever	Whooping cough
Maine	107	14	115	148	92	0	52	12	54
New Hampshire		1			4	0		0	
Vermont	104	2	228	79	22	36	14	0	25
Massachusetts	1,076	191	2,360	597	899	0	513	18	505
Rhode Island	31	27	506	233	122	0	51	1	35
Connecticut	397	15	1,211	222	122	0	102	14	245
New York	2,490	546	9,950	1,471	2,418	210	1,828	100	2,032
New Jersey	1,253	153	3,066	277	813	1	431	20	1,370
Pennsylvania	1,801	289	9,061	1,533	1,839	1	806	52	1,107
Ohio	1,395	104	3,793	1,481	993	126	707	44	727
Indiana	194	105	1,321	67	354	350	541	15	265
Illinois	1,447	451	6,290	747	1,465	246	758	37	957
Michigan	1,399	149	1,366	658	1,634	82	491	22	1,286
Wisconsin	1,397	34	2,626	2,048	253	38	182	8	471
Minnesota	760	73	508		195	49	328	10	166
Iowa	163	13	125	83	237	106	33	10	168
Missouri	170	79	636	86	382	181	262	35	324
North Dakota	69	15	172	40	51	48	16	5	44
South Dakota	48	19	36	11	34	38	16	7	38
Nebraska	125	25	17	254	83	80	17	0	51
Kansas	208	31	365	394	82	224	123	23	221
Delaware	8	6	267	18	20	0	17	1	26
Maryland	219	55	1,868	201	152	0	268	29	352
District of Columbia	78	38	313		57	0	88	0	52
Virginia	336	61	1,159		83	9	199	82	546
West Virginia	163	28	771		74	11	41	27	250
North Carolina	193	56	2,307		98	6		98	1,091
South Carolina	177	110	550	73	6	18	133	126	250
Georgia	60	18	270	105	102	0	224	96	94
Florida	41	15	270	9	13	0	33	10	32
Kentucky [1]									
Tennessee	69	27	1,327	57	151	55	242	70	251
Alabama	57	32	241	59	39	46	467	69	90
Mississippi	319	22	134	162	29	143	163	101	444
Arkansas	54	5	146	18	26	113	[2] 24	53	41
Louisiana	24	87	15	12	49	75	[2] 203	104	21
Oklahoma [3]	63	29	58	7	39	196	51	50	53
Texas		61			98			61	
Montana	65	3	58	13	26	14	27	19	58
Idaho	6	11	15	8	39	30	21	10	22
Wyoming	30	5	52	35	32	3		0	29
Colorado	169	23	480	153	73	26	75	23	248
New Mexico	77	25	180	23	18	1	50	12	54
Arizona	20	8	148	5	5	4	82	20	23
Utah [1]									
Nevada	7		33		5		7	0	2
Washington	366	31	388	138	81	90	165	23	405
Oregon	147	14	160	128	47	52	36	12	95
California	936	244	2,671	612	362	76	932	64	817

[1] Reports received weekly. [2] Pulmonary. [3] Exclusive of Oklahoma City and Tulsa.

Case Rates per 100,000 Population (Annual Basis) for the Month of June, 1931

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid and paratyphoid fever	Whooping cough
Maine	163	21	175	225	140	0	79	18	82
New Hampshire		3			10	0		0	
Vermont	351	7	770	267	74	122	47	0	84
Massachusetts	305	54	668	169	254	0	145	5	143
Rhode Island	54	47	882	406	213	0	89	2	61
Connecticut	296	11	901	165	91	0	76	10	182
New York	236	52	942	139	229	20	173	9	192
New Jersey	367	45	899	81	238	0	126	6	402
Pennsylvania	225	36	1,132	191	230	0	101	6	138
Ohio	251	19	683	267	179	23	127	8	131
Indiana	72	39	491	25	131	130	201	6	98
Illinois	227	71	985	117	229	39	119	6	150
Michigan	341	36	333	161	399	20	120	5	314
Wisconsin	571	14	1,073	837	103	16	74	3	193
Minnesota	358	34	239		92	23	154	5	78
Iowa	80	6	61	41	116	52	16	5	82
Missouri	57	26	212	29	127	60	87	12	103
North Dakota	123	27	306	71	91	85	28	9	78
South Dakota	83	33	63	19	59	66	28	12	66
Nebraska	110	22	15	223	73	70	15	0	45
Kansas	134	20	234	253	53	144	79	15	142
Delaware	41	30	1,352	91	101	0	86	5	132
Maryland	161	40	1,374	148	112	0	197	21	259
District of Columbia	193	94	773		141	0	217	0	128
Virginia	168	30	579		41	4	99	41	273
West Virginia	113	19	533		51	8	23	19	173
North Carolina	72	21	865		37	2		37	409
South Carolina	123	77	383	51	4	13	93	88	174
Georgia	25	8	113	44	43	0	94	40	39
Florida	33	12	215	7	10	0	26	8	25
Kentucky [1]									
Tennessee	32	12	609	26	69	25	111	32	115
Alabama	26	15	109	27	18	21	212	31	41
Mississippi	191	13	80	97	17	85	97	60	265
Arkansas	35	3	95	12	17	74	[2] 16	35	27
Louisiana	14	49	9	7	28	43	[2] 115	59	12
Oklahoma [3]	37	17	34	4	23	114	30	29	31
Texas		12			20			12	
Montana	147	7	131	29	59	32	61	43	131
Idaho	16	30	41	22	106	82	57	27	60
Wyoming	159	27	276	186	170	16		0	154
Colorado	196	27	558	178	85	30	87	27	288
New Mexico	217	71	503	65	51	3	141	34	152
Arizona	54	22	402	14	14	11	223	54	63
Utah [1]									
Nevada	92		433		66		92	0	26
Washington	280	24	297	106	62	69	126	18	310
Oregon	184	17	200	160	59	65	45	15	119
California	191	50	546	125	74	16	191	13	167

[1] Reports received weekly. [2] Pulmonary. [3] Exclusive of Oklahoma City and Tulsa.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 97 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 33,455,000. The estimated population of the 90 cities reporting deaths is more than 31,915,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended October 17, 1931, and October 18, 1930

	1931	1930	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	2,277	1,563	
97 cities	448	441	753
Measles:			
45 States	682	876	
97 cities	167	220	
Meningococcus meningitis:			
46 States	55	86	
97 cities	24	36	
Poliomyelitis:			
46 States	562	569	
Scarlet fever:			
46 States	2,383	2,317	
97 cities	648	759	616
Smallpox:			
46 States	77	188	
97 cities	5	10	7
Typhoid fever:			
46 States	811	770	
97 cities	118	104	103
Deaths reported			
Influenza and pneumonia:			
90 cities	418	463	
Smallpox:			
90 cities	0	0	

City reports for week ended October 17, 1931

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

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1922 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND								
Maine:								
Portland	0	1	0		0	0	0	1
New Hampshire:								
Concord	0	0	0		0	0	0	0
Vermont:								
Barre	0	0	0		0	0	0	1
Massachusetts:								
Boston	6	19	10	1	1	5	2	19
Fall River	5	3	3	1	0	1	0	0
Springfield	0	4	1		0	0	1	0
Worcester	3	5	3		0	0	34	0
Rhode Island:								
Pawtucket	0	1	0		0	0	0	2
Providence	0	5	1		0	22	0	1
Connecticut:								
Bridgeport	0	3	1	1	0	0	0	4
Hartford	1	3	0		0	0	2	1
New Haven	0	1	0	1	0	1	0	2

City reports for week ended October 17, 1931—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
MIDDLE ATLANTIC								
New York:								
Buffalo	4	11	4		0	1	0	6
New York	17	102	51	11	10	15	15	83
Rochester	3	2	1		0	2	2	0
Syracuse	0	2	0		0	0	1	1
New Jersey:								
Camden	0	5	9		0	0	0	3
Newark	7	12	3	4	0	1	1	8
Trenton	0	1	0		0	0	0	1
Pennsylvania:								
Philadelphia	6	43	4		3	5	3	15
Pittsburgh	17	16	3		0	20	18	23
Reading	2	1	0		0	0	0	1
EAST NORTH CENTRAL								
Ohio:								
Cincinnati	7	9	9		0	0	0	5
Cleveland	13	37	3	8	1	7	18	16
Columbus	2	4	20	1	0	1	0	3
Toledo	11	6	3		0	1	0	6
Indiana:								
Fort Wayne	0	2	1		0	0	0	4
Indianapolis	6	12	1		0	3	8	3
South Bend	0	1	0		0	0	0	1
Terre Haute	1	1	2		0	0	0	1
Illinois:								
Chicago	15	80	46	4	2	5	3	25
Peoria	1	1	2		0	0	0	1
Springfield	1	0	1		0	0	0	1
Michigan:								
Detroit	3	51	13		0	4	2	8
Flint	6	3	0		0	0	7	4
Grand Rapids	0	2	2		0	0	0	2
Wisconsin:								
Kenosha	1	0	0		0	0	2	0
Madison	1	0	0			0	11	
Milwaukee	16	9	3	1	1	1	17	1
Racine	1	1	0		0	0	13	0
Superior	0	0	0		0	0	3	0
WEST NORTH CENTRAL								
Minnesota:								
Duluth	2	0	0		0	0	0	0
Minneapolis	17	26	13		0	0	13	6
St. Paul	9	9	2		0	1	0	4
Iowa:								
Davenport	0	0	0			0	0	
Des Moines	0	2	1			0	0	
Sioux City	1	2	5			0	1	
Waterloo	1	1	1			0	1	
Missouri:								
Kansas City	2	6	10		0	1	0	11
St. Joseph	0	0	5		0	0	0	5
St. Louis	9	32	14			0	2	1
North Dakota:								
Fargo	1	0	0		0	0	0	0
Grand Forks	0	0	0			0	0	
South Dakota:								
Aberdeen	13	0	0			14	0	
Sioux Falls	0	0	1			0	0	
Nebraska:								
Omaha	3	12	9		0	0	0	5
Kansas:								
Topeka	4	2	4		0	1	2	0
Wichita	4	2	4		0	2	1	2
SOUTH ATLANTIC								
Delaware:								
Wilmington	0	1	2		0	1	0	2
Maryland:								
Baltimore	8	20	7	1	0	0	5	16
Cumberland	0	1	0		0	0	0	1
Frederick	0	0	0		0	0	0	0

City reports for week ended October 17, 1931—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
SOUTH ATLANTIC—con.								
District of Columbia:								
Washington	0	13	9	----	0	1	0	9
Virginia:								
Lynchburg	0	3	3	----	0	2	0	2
Norfolk	8	3	5	----	0	0	0	0
Richmond	0	20	17	----	0	0	0	1
Roanoke	0	4	7	----	0	0	0	2
West Virginia:								
Charleston	1	1	7	----	0	0	0	0
Wheeling	2	0	0	----	0	0	0	0
North Carolina:								
Raleigh	0	4	1	----	0	1	0	3
Wilmington	0	2	3	----	0	0	0	2
Winston-Salem	5	5	7	----	0	0	2	1
South Carolina:								
Charleston	0	2	6	2	0	0	0	2
Columbia	0	1	2	----	0	0	0	1
Greenville	0	1	3	----	0	0	0	0
Georgia:								
Atlanta	1	9	2	3	0	0	0	1
Brunswick	0	0	0	----	0	0	0	0
Savannah	0	2	4	----	0	0	1	0
Florida:								
Miami	0	2	1	----	0	14	0	0
Tampa	0	1	9	----	0	2	0	1
EAST SOUTH CENTRAL								
Kentucky:								
Covington	0	1	1	----	0	0	0	0
Tennessee:								
Memphis	0	7	16	----	0	0	2	4
Nashville	0	3	7	----	0	0	0	3
Alabama:								
Birmingham	0	5	10	----	0	0	0	2
Mobile	0	1	1	----	1	0	0	2
Montgomery	0	3	5	----	----	0	4	----
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith	1	2	4	----	----	0	0	----
Little Rock	1	1	4	----	0	0	0	2
Louisiana:								
New Orleans	0	10	6	2	3	1	0	6
Shreveport	0	1	1	----	0	2	0	2
Oklahoma:								
Muskogee	0	5	6	----	0	0	2	0
Tulsa	0	4	43	----	----	0	0	----
Texas:								
Dallas	1	15	10	1	1	0	0	0
Fort Worth	0	2	1	----	0	0	0	0
Galveston	0	0	0	----	0	0	0	1
Houston	0	7	5	----	0	0	0	4
San Antonio	0	3	0	----	0	0	0	2
MOUNTAIN								
Montana:								
Billings	0	0	0	----	0	1	0	0
Great Falls	1	0	0	----	0	0	0	2
Helena	0	0	0	----	0	5	0	0
Missoula	0	0	0	----	0	0	0	1
Idaho:								
Boise	----	0	----	----	----	----	----	----
Colorado:								
Denver	12	7	6	----	1	3	2	6
Pueblo	2	0	0	----	0	0	0	0
New Mexico:								
Albuquerque	2	1	3	----	0	0	0	0
Arizona:								
Phoenix	0	0	0	----	0	0	0	2
Utah:								
Salt Lake City	9	2	0	----	3	0	1	0
Nevada:								
Reno	0	0	0	----	0	0	0	1

City reports for week ended October 17, 1931—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
PACIFIC								
Washington:								
Seattle	33	5	0	----	----	10	2	----
Spokane	2	2	0	----	----	0	0	----
Tacoma	3	4	2	----	0	0	5	2
Oregon:								
Portland	17	6	0	----	1	1	12	4
Salem	0	0	1	4	0	0	0	0
California:								
Los Angeles	4	27	19	40	2	7	4	13
Sacramento	1	2	3	----	0	19	0	7
San Francisco	15	12	0	2	0	13	2	5

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	2	1	0	0	0	0	0	1	0	0	28
New Hampshire:											
Concord	0	1	0	0	0	1	0	0	0	0	10
Vermont:											
Barre	0	0	0	0	0	0	0	0	0	0	2
Massachusetts:											
Boston	32	25	0	0	0	8	2	1	0	10	209
Fall River	2	6	0	0	0	0	1	0	0	1	23
Springfield	3	0	0	0	0	2	1	0	0	2	24
Worcester	7	8	0	0	0	0	1	0	0	10	38
Rhode Island:											
Pawtucket	1	0	0	0	0	0	0	0	0	0	10
Providence	4	9	0	0	0	5	1	0	0	1	63
Connecticut:											
Bridgeport	3	1	0	0	0	0	0	1	0	0	28
Hartford	2	4	0	0	0	2	1	1	0	9	32
New Haven	2	2	0	0	0	0	1	0	0	3	37
MIDDLE ATLANTIC											
New York:											
Buffalo	12	12	0	0	0	7	1	4	0	12	119
New York	49	42	0	0	0	100	27	18	5	114	1,201
Rochester	3	13	0	0	0	3	0	0	0	3	59
Syracuse	3	7	0	0	0	1	1	0	0	4	50
New Jersey:											
Camden	1	3	0	0	0	0	0	0	0	1	23
Newark	5	5	0	0	0	3	1	0	0	44	79
Trenton	1	8	0	0	0	8	0	0	0	1	36
Pennsylvania:											
Philadelphia	35	54	0	0	0	26	8	11	2	115	397
Pittsburgh	25	21	0	0	0	8	1	2	0	22	177
Reading	1	0	0	0	0	2	0	0	0	1	5
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	12	25	0	0	0	7	1	0	0	2	114
Cleveland	17	26	0	0	0	12	1	2	0	82	176
Columbus	7	6	0	0	0	3	1	1	0	2	62
Toledo	8	8	0	0	0	3	1	0	0	14	63
Indiana:											
Fort Wayne	1	0	0	0	0	0	1	1	0	0	----
Indianapolis	10	6	1	0	0	4	2	1	0	12	----
South Bend	2	0	0	0	0	0	0	0	0	1	16
Terre Haute	2	1	0	0	0	2	0	1	0	0	25

City reports for week ended October 17, 1931—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
EAST NORTH CENTRAL—continued											
Illinois:											
Chicago	58	87	0	0	0	35	5	2	1	107	566
Peoria	6	3	0	0	0	0	0	0	0	5	23
Springfield	2	2	0	0	0	0	0	0	0	0	14
Michigan:											
Detroit	48	41	1	0	0	22	3	4	0	85	249
Flint	9	6	0	0	0	2	0	0	0	5	24
Grand Rapids	7	9	0	0	0	2	0	0	0	3	34
Wisconsin:											
Kenosha	1	2	0	0	0	0	0	0	0	0	11
Madison	2	1	0	0	----	----	0	0	----	1	----
Milwaukee	13	11	0	0	0	4	1	1	0	51	73
Racine	2	7	0	0	0	1	0	0	0	1	7
Superior	2	0	0	0	0	0	0	0	0	0	7
WEST NORTH CENTRAL											
Minnesota:											
Duluth	5	2	0	0	0	1	0	3	0	0	20
Minneapolis	27	14	0	0	0	0	1	3	0	11	102
St. Paul	14	6	0	0	0	0	0	2	0	1	49
Iowa:											
Davenport	1	0	0	0	----	----	0	0	----	1	----
Des Moines	5	2	0	1	----	----	0	0	----	0	36
Sioux City	2	1	0	2	----	----	0	2	----	1	----
Waterloo	1	0	0	0	----	----	0	1	----	2	----
Missouri:											
Kansas City	8	4	0	0	0	9	1	1	1	16	103
St. Joseph	2	1	0	0	0	1	0	0	0	0	30
St. Louis	24	13	1	0	0	10	4	4	1	34	170
North Dakota:											
Fargo	1	3	0	0	0	0	0	0	0	5	4
Grand Forks	1	0	0	0	----	----	0	0	----	3	----
South Dakota:											
Aberdeen	0	2	0	0	----	----	0	0	----	0	----
Sioux Falls	0	0	0	0	----	----	0	0	----	0	6
Nebraska:											
Omaha	3	2	0	1	0	1	0	0	0	0	49
Kansas:											
Topeka	4	0	0	0	0	0	0	0	0	1	15
Wichita	3	3	0	0	0	1	0	1	0	0	28
SOUTH ATLANTIC											
Delaware:											
Wilmington	1	0	0	0	0	0	0	0	0	2	25
Maryland:											
Baltimore	10	10	0	0	0	12	6	7	0	118	170
Cumberland	0	1	0	0	0	0	0	2	0	3	9
Frederick	0	0	0	0	0	0	0	0	0	0	2
District of Col.:											
Washington	12	11	0	0	0	12	2	0	0	7	114
Virginia:											
Lynchburg	1	0	0	0	0	1	0	3	0	0	11
Norfolk	1	6	0	0	0	2	0	0	0	2	----
Richmond	7	19	0	0	0	4	1	0	0	1	43
Roanoke	3	2	0	0	0	0	1	0	0	1	13
West Virginia:											
Charleston	2	1	0	0	0	0	1	[1]4	1	5	14
Wheeling	2	1	0	0	0	2	0	1	1	0	17
North Carolina:											
Raleigh	1	4	0	0	0	0	0	0	0	3	9
Wilmington	1	0	0	0	0	0	0	0	0	1	13
Winston-Salem	3	6	0	0	0	0	1	0	0	5	13
South Carolina:											
Charleston	1	1	0	0	0	3	1	1	0	0	18
Columbia	1	2	0	0	0	0	1	1	0	0	9
Greenville	1	0	0	0	0	0	0	0	0	0	----

[1] 3 cases in nonresidents.

City reports for week ended October 17, 1931—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
SOUTH ATLANTIC—continued											
Georgia:											
Atlanta	8	3	0	0	0	4	1	3	1	1	52
Brunswick	0	0	0	0	0	0	0	0	0	0	3
Savannah	1	2	0	0	0	0	0	1	0	1	18
Florida:											
Miami	1	1	0	0	0	1	0	0	0	0	21
Tampa	1	0	0	0	0	1	0	2	0	0	13
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	3	0	0	0	0	0	0	0	0	9
Tennessee:											
Memphis	4	2	0	1	0	4	3	3	1	16	69
Nashville	3	0	0	0	0	4	2	1	0	5	37
Alabama:											
Birmingham	5	4	0	0	0	3	2	3	0	0	40
Mobile	1	1	0	0	0	2	0	2	0	0	26
Montgomery	1	2	0	0	----	----	0	0	----	0	----
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	1	0	0	----	----	0	0	----	1	----
Little Rock	2	0	0	0	0	0	0	0	0	0	2
Louisiana:											
New Orleans	3	4	0	0	0	16	3	7	3	1	140
Shreveport	0	1	0	0	0	1	0	0	0	4	31
Oklahoma:											
Muskogee	1	1	0	0	0	0	0	1	0	0	----
Tulsa	3	4	0	0	----	----	1	0	----	0	----
Texas:											
Dallas	5	3	0	0	0	4	2	4	0	2	57
Forth Worth	2	5	0	0	0	0	1	2	0	0	----
Galveston	0	2	0	0	0	1	0	0	0	0	7
Houston	1	0	0	0	0	3	1	1	0	0	47
San Antonio	0	1	0	0	0	9	1	0	0	0	47
MOUNTAIN											
Montana:											
Billings	0	0	0	0	0	0	1	0	0	0	13
Great Falls	1	0	0	0	0	0	0	0	0	0	8
Helena	1	0	0	0	0	0	0	0	0	3	5
Missoula	0	1	0	0	0	0	0	0	0	0	8
Idaho:											
Boise	0	----	0	----	----	----	0	----	----	----	----
Colorado:											
Denver	8	4	0	0	0	5	1	1	2	4	78
Peublo	1	0	0	0	0	0	0	0	0	0	1
New Mexico:											
Albuquerque	1	0	0	0	0	3	1	0	0	1	8
Arizona:											
Phoenix	0	0	0	0	0	0	0	0	0	0	----
Utah:											
Salt Lake City	2	0	1	0	0	0	3	0	0	0	26
Nevada:											
Reno	0	0	0	0	0	0	0	0	0	0	9
PACIFIC											
Washington:											
Seattle	7	9	0	0	----	----	2	1	----	1	----
Spokane	4	2	1	0	----	----	0	0	----	2	----
Tacoma	2	1	1	0	0	0	0	0	0	0	29
Oregon:											
Portland	5	0	2	1	0	1	1	1	0	0	62
Salem	0	0	0	0	0	0	2	0	0	0	----
California:											
Los Angeles	15	39	0	0	0	18	2	1	0	20	247
Sacramento	3	1	0	0	0	3	1	0	0	2	29
San Francisco	9	4	1	1	0	12	1	0	0	10	----

City reports for week ended October 17, 1931—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Maine:									
Portland	0	0	0	0	0	0	0	1	0
Massachusetts:									
Boston	0	1	0	0	0	0	3	8	7
Springfield	0	0	0	0	0	0	0	4	1
Worcester	0	0	0	0	0	0	0	7	1
Rhode Island:									
Providence	0	0	0	0	0	0	0	1	0
Connecticut:									
Bridgeport	0	0	1	0	0	0	0	2	0
Hartford	0	0	0	0	0	0	1	8	0
MIDDLE ATLANTIC									
New York:									
Buffalo	0	0	0	0	0	0	1	0	1
New York	3	4	2	0	0	0	12	59	11
Rochester	0	0	0	0	0	0	1	4	0
New Jersey:									
Newark	0	0	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	2	1	0	0	0	0	0	5	1
Pittsburgh	3	2	0	0	0	0	0	1	0
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	1	1	0	0	0	0	1	0	0
Cleveland	1	0	0	0	0	1	2	2	1
Toledo	0	0	1	1	0	0	0	0	0
Indiana:									
Fort Wayne	1	0	0	0	0	0	0	1	0
Indianapolis	1	1	0	0	0	0	1	1	0
Illinois:									
Chicago	6	2	0	0	0	0	4	9	2
Peoria	0	0	0	0	0	0	0	1	0
Michigan:									
Detroit	1	1	0	0	0	0	3	4	2
Flint	1	0	0	0	0	0	0	1	0
Grand Rapids	0	1	0	0	0	0	0	0	1
Wisconsin:									
Kenosha	0	0	0	0	0	0	0	1	0
Madison	0	0	0	0	0	0	0	4	0
Milwaukee	0	0	1	1	0	0	1	4	0
Racine	0	0	0	0	0	0	0	1	0
Superior	0	0	0	0	0	0	0	2	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	0	0	0	0	0	0	0	1	0
Minneapolis	0	0	0	0	0	0	0	11	1
St. Paul	0	0	0	0	0	0	0	25	1
Iowa:									
Des Moines	0	0	0	0	0	0	1	2	0
Waterloo	0	0	0	0	0	0	0	1	0
Missouri:									
St. Louis	0	0	0	0	0	0	0	1	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	1	0	0	0	0	0	1	1	0
West Virginia:									
Charleston	0	0	0	0	0	0	0	[1]2	0
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston	0	0	0	0	2	0	0	0	0
Georgia:									
Savannah [2]	0	0	0	0	1	0	0	0	0

[1] 1 case in nonresident.
[2] Typhus fever: 2 cases at Savannah, Ga.

City reports for week ended October 17, 1931—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
EAST SOUTH CENTRAL									
Tennessee:									
Nashville	1	0	0	0	0	0	0	0	0
Alabama:									
Birmingham	0	0	0	0	0	1	1	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans	1	0	0	0	3	0	1	0	1
Texas:									
Dallas	0	0	0	0	0	0	0	1	0
Fort Worth	0	0	0	0	0	0	0	1	0
PACIFIC									
Washington:									
Seattle	1	0	0	0	0	0	0	1	0
Oregon:									
Portland	1	0	0	0	0	0	1	0	0
California:									
Los Angeles	0	0	0	0	0	0	1	1	1
Sacramento	0	0	0	0	0	0	1	1	0
San Francisco	0	1	0	0	1	0	0	0	0

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended October 17, 1931, compared with those for a like period ended October 18, 1930. The population figures used in computing the rates are estimated mid-year populations for 1930 and 1931, respectively, derived from the 1930 census. The 98 cities reporting cases have an estimated aggregate population of more than 33,000,000. The 91 cities reporting deaths have more than 31,500,000 estimated population.

Summary of weekly reports from cities, September 13 to October 17, 1931.—Annual rates per 100,000 population compared with rates for the corresponding period of 1930 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Sept. 19, 1931	Sept. 20, 1930	Sept. 26, 1931	Sept. 27, 1930	Oct. 3, 1931	Oct. 4, 1930	Oct. 10, 1931	Oct. 11, 1930	Oct. 17, 1931	Oct. 18, 1930
98 cities	34	46	45	56	56	60	[2] 65	70	[3] 70	70
New England	36	34	38	56	50	53	72	58	46	70
Middle Atlantic	22	36	25	31	25	40	40	40	34	33
East North Central	29	74	42	74	44	79	[4] 54	99	61	91
West North Central	42	48	71	58	90	60	99	68	128	76
South Atlantic	73	46	67	100	150	68	132	116	170	100
East South Central	93	24	128	30	140	102	221	96	233	143
West South Central	57	63	101	136	108	104	[5] 75	59	101	118
Mountain	17	26	52	62	78	9	[3] 36	44	[3] 54	18
Pacific	29	12	41	26	41	51	47	81	47	87

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1931 and 1930, respectively.
[2] South Bend, Ind., Shreveport, La., and Boise, Idaho, not included.
[3] Boise, Idaho, not included.
[4] South Bend, Ind., not included.
[5] Shreveport, La., not included.

Summary of weekly reports from cities, September 13 to October 17, 1931.—Annual rates per 100,000 population compared with rates for the corresponding period of 1930—Continued

MEASLES CASE RATES

	Week ended—									
	Sept. 19, 1931	Sept. 20, 1930	Sept. 26, 1931	Sept. 27, 1930	Oct. 3, 1931	Oct. 4, 1930	Oct. 10, 1931	Oct. 11, 1930	Oct. 17, 1931	Oct. 18, 1930
98 cities	22	16	15	18	18	19	[2] 28	22	[3] 26	35
New England	31	19	31	46	24	36	137	34	70	48
Middle Atlantic	18	16	9	13	12	12	15	15	20	22
East North Central	17	14	16	13	12	5	[4] 13	11	13	14
West North Central	13	19	4	29	10	70	2	77	10	143
South Atlantic	14	22	8	10	2	22	6	12	14	8
East South Central	0	0	0	66	29	0	0	18	0	6
West South Central	17	0	3	10	17	7	[5] 4	0	10	3
Mountain	122	44	44	26	35	70	[3] 54	115	[3] 81	194
Pacific	53	18	51	16	78	22	106	20	96	57

SCARLET FEVER CASE RATES

98 cities	57	61	57	71	65	71	[2] 100	95	[3] 101	120
New England	87	77	53	87	132	80	144	116	137	162
Middle Atlantic	43	45	45	32	51	46	76	51	74	85
East North Central	62	90	62	117	62	106	[4] 113	135	139	177
West North Central	59	45	65	77	94	72	86	93	94	116
South Atlantic	71	44	67	62	59	76	142	126	124	126
East South Central	81	36	93	114	70	66	233	161	70	132
West South Central	47	52	34	52	37	35	[5] 57	35	41	73
Mountain	87	70	122	97	96	115	[3] 135	291	[3] 45	238
Pacific	55	67	71	75	72	73	67	75	110	51

SMALLPOX CASE RATES

98 cities	1	4	0	3	0	1	[2] 1	2	[3] 1	2
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	0	0
East North Central	1	9	0	2	0	1	[4] 0	2	0	4
West North Central	0	21	6	14	2	0	2	6	6	0
South Atlantic	0	0	0	0	0	2	4	0	0	0
East South Central	0	0	0	0	0	0	0	0	6	0
West South Central	0	0	0	3	0	3	[5] 0	3	0	3
Mountain	0	0	0	0	0	0	[3] 0	0	[3] 0	26
Pacific	4	4	0	16	0	0	10	6	2	0

TYPHOID FEVER CASE RATES

98 cities	42	22	21	17	21	20	[2] 20	20	[3] 18	16
New England	22	12	5	12	17	12	19	22	10	10
Middle Atlantic	16	15	16	13	21	14	15	14	16	10
East North Central	91	11	15	9	9	9	[4] 6	9	8	7
West North Central	38	29	36	15	13	14	11	10	33	15
South Atlantic	26	68	43	56	65	42	53	70	49	62
East South Central	47	48	47	18	52	60	64	42	52	42
West South Central	44	63	47	35	24	52	[5] 82	49	41	21
Mountain	26	0	26	44	26	115	[3] 36	44	[3] 9	35
Pacific	35	14	10	12	16	16	10	16	4	22

[2] South Bend, Ind., Shreveport, La., and Boise, Idaho, not included.
[3] Boise, Idaho, not included.
[4] South Bend, Ind., not included.
[5] Shreveport, La., not included.

Summary of weekly reports from cities, September 13 to October 17, 1931.—Annual rates per 100,000 population compared with rates for the corresponding period of 1930—Continued

INFLUENZA DEATH RATES

	Week ended—									
	Sept. 19, 1931	Sept. 20, 1930	Sept. 26, 1931	Sept. 27, 1930	Oct. 3, 1931	Oct. 4, 1930	Oct. 10, 1931	Oct. 11, 1930	Oct. 17, 1931	Oct. 18, 1930
91 cities	3	3	2	2	3	2	[2] 3	5	[3] 5	5
New England	2	2	0	2	2	0	2	5	2	7
Middle Atlantic	3	2	1	2	3	2	4	6	6	4
East North Central	3	2	3	2	2	1	[4] 2	3	2	4
West North Central	6	0	0	0	12	0	0	6	0	3
South Atlantic	4	0	4	4	0	2	0	2	0	6
East South Central	0	26	6	13	6	13	6	0	6	0
West South Central	0	7	0	4	0	11	[5] 7	11	14	7
Mountain	0	18	0	0	0	18	[3] 18	9	[3] 36	9
Pacific	2	0	0	5	0	2	5	0	5	7

PNEUMONIA DEATH RATES

91 cities	60	57	52	57	53	58	[2] 55	71	[3] 64	72
New England	50	56	67	39	58	44	77	70	75	87
Middle Atlantic	66	65	55	72	60	59	56	74	63	70
East North Central	45	42	38	47	35	53	[4] 36	55	45	50
West North Central	44	75	44	36	59	69	56	87	100	54
South Atlantic	57	56	51	56	61	52	79	86	87	96
East South Central	57	71	32	65	63	104	69	123	69	162
West South Central	93	46	52	71	66	71	[5] 77	110	59	89
Mountain	78	115	70	53	61	132	[3] 36	97	[3] 90	194
Pacific	84	40	86	40	53	40	55	40	65	65

[2] South Bend, Ind., Shreveport, La., and Boise, Idaho, not included.
[3] Boise, Idaho, not included.
[4] South Bend, Ind., not included.
[5] Shreveport, La., not included.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended October 10, 1931.—The Department of Pensions and National Health of Canada reports cases of certain communicable diseases for the week ended October 10, 1931, as follows:

Province	Cerebro-spinal fever	Dysentery	Lethargic encephalitis	Poliomyelitis	Smallpox	Typhoid fever
Prince Edward Island [1]						
Nova Scotia				2		2
New Brunswick	1			2		1
Quebec	2			140		
Ontario	2		1	8	1	30
Manitoba	1					5
Saskatchewan				1	3	5
Alberta						3
British Columbia		1		1		7
Total	6	1	1	154	4	53

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

Quebec Province—Communicable diseases—Week ended October 17, 1931.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended October 17, 1931, as follows:

Disease	Cases	Disease	Cases
Chicken pox	50	Ophthalmia neonatorum	1
Diphtheria	33	Poliomyelitis	126
Erysipelas	4	Scarlet fever	49
German measles	2	Tuberculosis	28
Measles	57	Typhoid fever	30
Mumps	5	Whooping cough	26

CZECHOSLOVAKIA

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

Disease	Cases	Deaths	Disease	Cases	Deaths
Anthrax	17		Paratyphoid fever	39	4
Cerebrospinal meningitis	12	4	Puerperal fever	34	16
Diphtheria	1,258	96	Scarlet fever	1,061	20
Dysentery	149	18	Trachoma	129	
Malaria	54		Typhoid fever	750	47

JAMAICA

Communicable diseases—Four weeks ended October 10, 1931.—During the four weeks ended October 10, 1931, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island of Jamaica, outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Cerebrospinal meningitis		1	Scarlet fever		3
Chicken pox		1	Puerperal fever		4
Diphtheria		2	Tuberculosis	24	80
Dysentery		4	Typhoid fever	9	85
Leprosy		4			

MEXICO

Tampico—Communicable diseases—September, 1931.—During the month of September, 1931, certain communicable diseases were reported in Tampico, Mexico, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chicken pox	1		Paratyphoid fever	1	3
Diphtheria	2		Tuberculosis	54	25
Enteritis (various)		37	Typhoid fever	4	3
Malaria	206	17	Whooping cough	19	
Measles	1	1			

PERSIA

Measures against cholera.—On October 23, 1931, a case of cholera was reported at Mohammerah, Persia, a new focus. On the same date 1 case was reported at Abadan and 12 cases with 7 deaths were reported at Ahwaz.

In connection with the occurrence of cholera in Persia, the American minister at Teheran states that the Persian Government is enforcing quarantine regulations on all travelers from Barra, Mesopotamia, and the Persian Gulf ports, and that anticholera inoculation was being carried on at Ahwaz. It was further reported that the Pasteur Institute at Teheran had been instructed to prepare an adequate supply of cholera vaccine, of which over 40,000 doses had already been dispatched to Khouzistan.

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

From medical officers of the Public Health Service, American consuls, International Office of Public Hygiene, Pan American Sanitary Bureau, health section of the League of Nations, and other sources. The reports contained in the following tables must not be considered as complete or final as regards either the list of countries included or the figures for the particular countries for which reports are given.

CHOLERA

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

Place		Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	June 28–July 25, 1931	Week ended— August, 1931 1	8	15	22	29	September, 1931 5	12	19	26	October, 1931 3	10	17	24
Ceylon: Colombo	C		1	1		1	1	1										
	D		1	1		1	1	1										
China:																		
Canton	C	1	2	1						1	1							
	D		1															
Shanghai	C				1		1	5	1	1	58	30	36	35	29	17		
	D										3	4	2	5	8			
Swatow	C			10	7													
Tientsin	C		1	10														
	D		1	1														
India	C	11,462	13,604	18,001	22,074	7,357	9,848	9,817	9,492	10,734								
	D	5,767	7,270	10,337	12,093	4,029	5,584	5,411	5,252	6,044								
Bombay	C	2			23	9	18	6	11	27	5	5	5	1	1	2		
	D	1			16	4	9	7	5	9	5	2	1		1	2		
Calcutta	C	310	265	292	237	42	27	20	21	10	3	15	18	18	23	3		
	D	176	149	168	155	10	7	7	6	4	2	3	6	6	12			
Chittagong	C																1	
Karikal	C	19	12					1		1			1					
	D	14	7					1		1			1					
Madras	C	26	52	9	4	1		2	3	3	1	1						
	D	13	17	4														
Moulmein	C				1													
	D				1													
Negapatam	C									1								
Rangoon	C		2	4	4		1	1						1				
	D		1	2	1		1	1						1				
Vizagapatam	C			1														
India (French):																		
Chandernagor	C	6	4	3	5	1	4	2			1	1						
	D	5	4	3	1	1	4	2			1	1						
Pondicherry	C	24	17	3	3	1	1	1		2			2					
	D	4	7	3	3	1		1		1			1					

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

CHOLERA—Continued

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

Place		Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	June 28–July 25, 1931	Week ended— August, 1931					September, 1931				October, 1931			
						1	8	15	22	29	5	12	19	26	3	10	17	24
India (Portuguese)	C			1	2		1											
	D				1		1											
Indo-China (see also table below):																		
Cochin-China—Rachgia	C					P												
Pnompenh	C	2		1	5		1		1			1	1		1			
	D	1	2	1	2		1					1	1		1			
Saigon and Cholon	C	27	104	61	14											1		
	D	22	76	41	7											1		
Iraq:																		
Abulkhasib	C									6								
	D									5								
Amara	C								2	22	35	8	1			2	2	2
	D								1	21	30	7	1				1	1
Amara Province	C									6	11	106	73	32	21	15	27	13
	D									5	4	67	44	29	24	14	17	10
Basra	C					3	9	263	272	148		54	91	77	19	29	32	38
	D					2	8	140	137	76		20	48	34	11	13	23	7
Basra Province	C								5	14	6	10	23	26	14	1	1	3
	D								2	10	3	7	10	9	8	1	1	1
Dinwaniyah	C													1				
Dinwaniyah Province	C													15	8	14	24	22
	D													11	6	5	22	10
Iwaniyah	C													22				
	D													15				
Muntafiq Province	C									10	21	66	128	55	54	45	55	17
	D									8	20	42	75	38	57	28	37	10
Nasiriyah	C										22	50	16	4	4	18	7	4
	D										15	40	20	3	4	18	3	3
Suqelshuyukh	C									2								
	D									2								
Persia:																		
Abadan	C																	1
Ahwaz	C																	12
	D																	7

Mohammerah	C																		1
Rafsanjan [1]	C		36																
	D		14																
Philippine Islands: [2] Provinces—																			
Capiz	C	29	17	4							9	9	17	49	21	5	4		
	D	24	15	4							5	6	5	35	16	5	3		
Cebu	C					1	1	1											
	D					1	1	1											
Iloilo	C			26	27														
	D			21	25														
Negros, Occidental	C			2															
	D			1															
Pampanga	C		1																
Siam	C	16	14	4	3			1	1										
	D	4	5	2	1				1										
Bangkok	C	3	3	1	4			1	1										
	D	2	1	1	2														
On vessel:																			
S. S. Arankola, at Rangoon from Calcutta	C		1																
S. S. City of Eastborne, at Calcutta from Cocanada	C			1															
S. S. Tairea, at Penang, from Calcutta	C			1															
S. S. Bandar Shalpour, at Bushire, Persia, from Basra	C				1														
	D				1														
S. S. Kohistan, at Basra from Bushire, Persia	C				2														
S. S. Cathay, at Kobe, Japan, from Shanghai	C							4											
	D							1											
S. S. Kasagi Maru, at Moji, from Shanghai	C										1								
S. S. Ankoo, at Nagasaki, from Shanghai	C											2							
	D											1							

Place		February, 1931	March, 1931	April, 1931	May, 1931			June, 1931			July, 1931			Aug. 1–10, 1931
					1–10	11–20	21–31	1–10	11–20	21–30	1–10	11–20	21–31	
Indo-China (French) (see also table above):														
Cambodia [3]	C	125	100	113	33	44	40	83	96	129	72	82	87	12
	D	80	29	70	20	22	21	45	64				60	2
Cochin-China [3]	C	29	105	107	47	52	75	71	69		66	30	47	39
	D	18	73	74	36	40	57	52	54				42	32

[1] From May 8 to 25, 1931, 152 cases of cholera with 75 deaths were reported in Rafsanjan and vicinity, Karman district, Persia.
[2] Figures for cholera in the Philippine Islands are subject to correction.
Reports incomplete.

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

PLAGUE

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

Place		Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	June 28–July 25, 1931	Week ended— August, 1931 1	8	15	22	29	September, 1931 5	12	19	26	October, 1931 3	10	17	24
Algeria:																		
Algiers	C					2												
Bone	C			1														
Philippeville	C				1			1	1									
	D				1			1										
Argentina: San Juan Province	C				P													
Belgian Congo	C			1														
	D			1														
British East Africa (see also table below):																		
Tanganyika	C	18	46	17	6			8										
	D	21	30	10	6			2										
Uganda	C	35	138	298	418	71	93	69	52	59								
	D	32	126	286	400	71	93	68	49	61								
Ceylon: Colombo	C	4	3	2	1	4	1	1			1	1	1		1	2		
	D	3	3	2	1	4	1	1			1	1	1		1	1		
Plague-infected rats		1	5			1	3	4										
China: [1] Amoy	C		1															
	D		1															
Dutch East Indies:																		
Batavia and West Java	C	74	59	116	75	12	11	20	15	19								
	D	71	59	66	75	12	11	20	15	19								
East Java and Madura	C	1	1															
	D	1	1															
Java and Madura	D	243	176	192	212	38	53	67	47	58	68	51						
Egypt:																		
Alexandria	C			4	18	4	3	1	1	2	2		1	1				1
	D			4	5	1	2			1	1							
Assiout	C	32	18	11														
	D	17	7	1														
Beni-Suef	C	12	5															
	D	3	3															
Behcira	C					1		1			2							
Dakahlia	C				1		2											
Deirout	C	3	10	3														
	D	1	4	1														

Gharbieh	C			1															
	D			1															
Girga	C	44	7		1														
	D	22	2																
Kena	C	3	1																
	D	1	1																
Minieh	C	1	6	3	12														
	D		3	1	4														1
Port Said	C			3	5	2													
	D		1	2	1														
Tanta	C							2			1		1						
Hawaii Territory:																			
Hawaii—Hamakua—Plague-infected rats			1					1											
Maui Island—																			
Haliimaile—Plague-infected rats													1						
Kula District	C						1												
	D						1												
Makawao—Plague-infected rats													1						
Paia—Plague-infected rats[2]														1					
India	C	6,142	752	88	221	164	175	130	215	282									
	D	5,199	692	51	128	94	117	92	137	146									
Bassein	C	1	1		4		1		1		1	2	1	1					
	D	1	1		3		1		1		1	2	1	1					
Bombay	C	11	8		12												1		
	D	11	6		6												1		
Plague-infected rats		137	94	37	48	8	13	17	9	23	17	7	10	9	9	12			
Burma	C				16														
	D				10														
Calcutta	C	2																	
	D	2																	
Madras Presidency	C	3	2	6	21					9	75	39					3		
	D	2	1	1	9					4	51	20					1		
Moulmein	C				9					P	5								
	D				1						4	3	2	2					
Rangoon	C	1	2	1	2	1				2	1								
	D	1	2	1	1	1				1	1								
Plague-infected rats		4	7	3	6	1		1	1	1	1	1	1	1	1	1			
Indo-China (see also table below): Pnompenh	C			3															
	D	4		2															
Iraq:																			
Baghdad	C	23	23	23	3			1			2	1							
	D	8	9	9	2						1								
Maudhan	C		3																
Madagascar (see also table below): Tamatave	C					1						2		1					
Morocco	C													10					

[1] On July 27, 1931, 1,250 cases of plague were reported in Chiobe and Changchow, China, since April. On September 19, 1931, 18 deaths were reported in Changchuanpu and new cases in Kaitung and Fengtien. On October 17, 1931, plague epidemic was reported in western Shansi Province, with 2,000 deaths at Hsinghsien.

[2] The report of 1 case of plague at Paia for the week ended September 26, 1931, published in Public Health Reports for October 30, 1931 (p. 2651), was an error. This should have been recorded as 1 plague-infected rat.

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

PLAGUE—Continued

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

Place		Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	June 28–July 25, 1931	Week ended— August, 1931 1	8	15	22	29	September, 1931 5	12	19	26	October, 1931 3	10	17	24
Nigeria: Lagos	C	5																
	D	5																
Plague-infected rats		6																
Peru (see table below).																		
Senegal (see table below).																		
Siam	C	1	2	1											1	1		
	D	1	2	1											1			
Spain: Hospitalet—Barcelona Province	C								5	1			1	1	1			
	D								2				1		1			
Syria: Beirut	C				2			1				1			2			
Tunisia: Tunis	C	16	16	11												1		
	D	8	3	1														
Union of South Africa:																		
Cape Province	C	3																
	D	3																
Plague-infected rats								1										
Orange Free State	C	2	2															
	D	2	2															

Place		April, 1931	May, 1931	June, 1931	July, 1931	August, 1931	September, 1931
British East Africa (see also table above):							
Kenya	C	345	245	154	494	211	10
Indo-China (see also table above)	C	11	-------	2	1	-------	1
	D	2	-------	2	1	-------	-------
Madagascar (see also table above):							
Ambositra Province	C	30	19	15	1	-------	-------
	D	29	18	15	1	-------	-------
Antisirabe Province	C	48	7	12	13	-------	-------
	D	47	7	12	12	-------	-------
Miarinarivo Province	C	6	2	-------	8	-------	-------
	D	6	2	-------	7	-------	-------
Moramanga Province	C	-------	2	1	1	-------	-------
	D	-------	2	-------	-------	-------	-------
Tananarive Province	C	41	18	10	5	-------	-------
	D	40	18	9	5	-------	-------

Place		April, 1931	May, 1931	June, 1931	July, 1931	August, 1931	September, 1931
Peru	C	8	2	5	2	-------	-------
	D	1	-------	1	-------	-------	-------
Senegal:							
Baol [1]	C	-------	4	-------	27	101	13
	D	-------	3	-------	13	58	8
Dakar [1]	C	2	63	64	95	194	38
	D	1	49	56	73	106	24
Diourbel [1]	C	-------	-------	-------	-------	-------	9
	D	-------	-------	-------	-------	-------	3
Louga [1]	C	1	5	4	3	2	4
	D	-------	2	2	1	1	1
Rufisque [1]	C	-------	1	2	34	2	1
Thies [1]	C	-------	-------	12	16	26	12
	D	-------	-------	3	7	16	8
Tivaouane [1]	C	4	19	3	3	-------	-------
	D	-------	11	2	2	-------	-------

[1] Reports incomplete.

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

SMALLPOX

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

Place		Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	June 28–July 25, 1931	Week ended— August, 1931					September, 1931,				October, 1931		
						1	8	15	22	29	5	12	19	26	3	10	17
Algeria:																	
Algiers	C	2	1	8	1												
Constantine	C		1		1						1						
Belgian Congo	C		47	42													
Bolivia.[1]																	
Brazil: Porto Alegre (alastrim)	C	53	19	5	41	11	6	17		7	13	12					
	D				1	1				2		2					
British East Africa: Tanganyika	C		13	7	149	1	18			31							
	D				17												
British South Africa:																	
Northern Rhodesia	C				21			26									
Southern Rhodesia	C			1	2						1						
Canada:																	
Alberta	C				1		1							12			
British Columbia	C				2	2			3		1	1					
Manitoba	C			4									1				
Winnipeg	C											1					
Nova Scotia	C	1															
Ontario	C	9	17	32	35	1		2	2	4		2		5	2		9
Kingston	C	5									1						
Ottawa	C			1								1		5	2		1
Sault Ste. Marie	C	4	1														
Toronto	C	4	1	1													
Quebec	C				1												
Saskatchewan	C	46	48	54	42		10	6	10	8	8	12	5	1	6	3	1
Regina	C	2	2											1			
Chile:																	
Antofagasta	C				1												
Chanaral	C		1														
China:																	
Amoy	C	2	6	4	2	1						1		1			
	D	1	3	3	2	1						1		1			
Canton	C	4	3	1	2					1							
Foochow	C	P	P	P	P		P		P		P		P				
Hankow	C	3	5	4	3	1		1	1								
Hong Kong	C	3	1														
	D	1	2														

Manchuria—																		
Harbin (see also table below)	C		3															
Kwantung—Dairen	C	2	2	1														
Nanking	C	P	P				1											
Shanghai—																		
Foreigners only	C	17	7	11	3										1		1	
Including natives	D	18	7	13	6				1	1			1					
Swatow	D	2																
Tientsin	C		2		3													
Chosen (see table below).																		
Colombia:																		
Cali	D		1															
Santa Marta	D																	
Dutch East Indies:																		
Batavia and West Java	C		2									1						
East Java and Madura	C		1															
Eritrea	C		3		2					10								
	D									2								
Finland	C	1																
France (see table below)																		
Great Britain:																		
England and Wales	C	744	570	287	187	26	25	19	21	33		19	45	45	41			
Bradford	C	6	8	5														
Leeds	C	2	2															
London	C	227	183	122	54	6	12	4	4	3	9	5	15	5	17			
London and Great Towns	C	558	403	228	152	22	20	17	10	13	30	11	34	35	31			
	D	2		1	1													
Sheffield	C	7										1	1					
Greece (see table below).																		
Honduras:																		
Puerto Castilla	C														1			
Tegucigalpa	C	1																
Tela	C	1																
India	C	14,265	11,403	7,313	5,359	978	904	645	400	481								
	D	2,923	1,849	1,704	1,352	234	213	179	120	144								
Bassein	C		1															
Bombay	C	8	9	6	6	1		1				1	2					
	D	5	4	5	6	1						1						
Calcutta	C	287	89	47	21	4	4		5	2	1	2		1				
	D	224	75	41	18		4		5	2	1	2		1				
Cochin	C	39	3				1	1	1					1	1	2		
Karachi	C	6		2		1												
	D			1														
Madras	C	19	8	2	2	1						1		1	5	6		
	D	5	6	1												2		
Negapatam	C	3		3	1		2			3		1			1			
Rangoon	C	11	13	6	3	2		1	1	1		1			2			
	D	1	5	2	1	1			1			1			1	1		
Vizagapatam	C	10	6	6	5		3		2	3	1	1	1	2	4			
	D	2	1	2	1		3		1	3	1	1	1					

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

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

SMALLPOX—Continued

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

Place		Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	June 28–July 25, 1931	Week ended— August, 1931 1	8	15	22	29	September, 1931 5	12	19	26	October, 1931 3	10	17
India (French):																	
Chandernagor	C	10	7	1	3												
	D	7	5		2												
Karikal	C	4	4	6	4	1	1	3	2		2	5			5		
	D	3	4	6	4	1	1	2	2		2	1			1		
Pondicherry Province	C	6	11	7	28	11			3	1	6	1					
	D	9	11	7	28	11			3	1	6	1					
India (Portuguese)	C	21	3														
	D	6	1														
Indo-China (see also table below):																	
Pnompenh	C		1	2													
	D		1														
Saigon and Cholon	C	1	2		3	1	1			1		3	2	1	4	1	
	D	1	1		1	1				1		2		1	2		
Iraq:																	
Baghdad	C	2	3	1								1					
	D		2														
Basra	C		2	1													
Mosul Liwa	C				1				1					5			
Ivory Coast (see table below).																	
Japan: Nagoya	C				1												
Mexico (see also table below).																	
Jalisco (State)—Guadalajara	D	1	2	1	3			2						1	1	2	
Mexico City and surrounding territory	C	43	45	25	22	8	2			2	2	1		2			
	D	14	11	13	8	1	1					1	1	1			
Monterrey	C			1													
Torreon	C	1	1	3							1	1			1		
	D	2		2								1					
Vera Cruz	C	2	1														
Morocco (see table below).																	
Poland	C		3	3	18								1				
Portugal: Lisbon	C	56	67	48	45	17	12	8		10	21	18	17	16			
Rumania (see table below).																	
Siam	C	1	6	5	1							3					
	D		1	1	1												

Spain	C				7												
Straits Settlements	C	10	2				1										
	D	5	2														
Sudan (Anglo-Egyptian)	C	3	6	1								32					
	D		2									6					
Sudan (French) (see table below).																	
Syria (see table below).																	
Turkey (see table below).																	
Union of Socialist Soviet Republics (see table below).																	
Union of South Africa:																	
Cape Province	C	P	P							P							
Natal	C											P					
Orange Free State	C	P	P	P	P			P	P	P	P						
Transvaal	C			P	P												
Upper Volta	C	3	89	12	2												
	D		1														
On vessel:																	
S. S. Clan McTavish at Manila from Chittagong	C	1															
S. S. Taif (pilgrim ship) at Saukin from Jeddah	C	1								1							
S. S. Talodi at Suakin	C		1														

Place		February, 1931	March, 1931	April, 1931	May, 1931			June, 1931			July, 1931			August, 1931		
					1-10	11-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31	1-10	11-20	21-31
Indo-China (see also table above)	C	168	264	142		17	41	30	16	1	1		7	29		
	D	35	82								1		4	11		
Ivory Coast	C															7
Sudan (French)	C		4													
Syria: Beirut	C								1							

Place		Jan., 1931	Feb., 1931	Mar., 1931	Apr., 1931	May, 1931	June, 1931	July, 1931
China: Harbin (see also table above)	C			7		13	10	
Chosen	C	1		11		1	4	2
	D	1		3				1
France	C	4	16	15	6	54	9	20
Greece	C		4			3	1	
Mexico (see also table above)	D		3		1	1	2	
Morocco	C		4	6	7	49	48	28
Rumania	C			1		1		

Place		Jan., 1931	Feb., 1931	Mar., 1931	Apr., 1931	May, 1931	June, 1931	July, 1931
Turkey	C	63	37	1		9	1	
	D	7	6					
Union of Socialist Soviet Republics	C				1,516	1,345		
Territories in Asia	C	194	532					
Ukraine	C	44	23					
Other territories in Europe	C	896	1,577					
Railroads, etc	C	43	77					

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

TYPHUS FEVER

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

Place		Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	Week ended— July, 1931 4	11	18	25	August, 1931 1	8	15	22	29	September, 1931 5	12	19	26	October, 1931 3	10	17
Algeria:																				
Algiers	C	3	7	9			2				1	1								
Bone	C																			
Constantine Department	C	9	22	26	2		1		1							2		1		
Oran	C	1	2	2						1				1						
Australia, Western	C	1	1																	
Bulgaria	C	30	16	30									1							
	D	3	4	6																
China:																				
Manchuria—Harbin	C	8		16																
Shanghai	C						1	2			1									
Tientsin	C	2																		
Chosen (see table below).																				
Colombia: Cali	D													1						
Czechoslovakia (see table below).																				
Egypt:																				
Alexandria	C	1		3											1	1				
Beheira Province	C	4																		
	D	2																		
Cairo	C												1							
Great Britain: Scotland—Fife County	C		1																	
Greece (see table below).																				
Guatemala (see table below).																				
Iraq: Baghdad	C		2																	
	D		2																	
Irish Free State.																				
Cork County—																				
Schull	C					1														
Skibbereen	C			2	1															
Kerry County—																				
Dingle	C		1																	
Listowel	C			1																
Kildare County—Naas	C																1			

Limerick County—																				
Croom	C																	1		
Glin	C														2					
Limerick	C				2				1											
Michelstown	C				1															
Rathkeale	C																	1		
Mayo County—																				
Belmullet	C		1																	
Castlebar	C											1								
Westport	C											1								
Japan	C			1																
Lithuania (see table below).																				
Mexico (see also table below):																				
Durango	D							1												
Mexico City, including municipalities in Federal District	C	170	75	46	28	9	7	9	7	6		5	5	1	2	2	4			
	D	56	33	19	4	3	2	3	5	3		2	1	1		2	2			
San Luis Potosi	C	3	2			1	3					1								
Torreon	C							1											1	
	D							1											1	
Morocco	C	13	42	101	37	20	24	21		2	1	5						1		
	D	1	4	6	4	4														
Palestine	C	5	4	5	2				3	3	1	4				4	4	1	1	2
Panama Canal Zone—Balboa	C		2																	
Poland	C	538	298	97	9	17	13	14	10	4	10	7	6	2	1	2	2	8		
	D	28	18	4	2	1	1	1	1		1							1		
Rumania	C	70	169	80	2	2	7		7	9	4	3		4	6					
	D	8	18	13	2	2	1			1		1								
Syria	C		4																	
Tunisia:																				
Sbeitla, vicinity of	C	12																		
Tunis	C	13	29	73	1			1					1		1	1				
	D		3	4																
Turkey (see table below).																				
Union of Socialist Soviet Republics (see table below).																				
Union of South Africa:																				
Cape Province	C	P	P	P	P	P	P	P		P	P	P	P	P	P					
Municipality of East London	C			1					1											
Natal	C	P	P	P			P	P		P										
Orange Free State	C	P	P	P	P	P	12	P												
Transvaal	C	P	P	P	P	P	P	P		P	P	P	P	P	P					
Yugoslavia (see table below).																				

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

TYPHUS FEVER—Continued

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

Place		March, 1931	April, 1931	May, 1931	June, 1931	July, 1931	August, 1931	September, 1931
Chosen: Seoul	C	3	4	-------	6	1	-------	-------
	D	-------	1	-------	1	1	-------	-------
Czechoslovakia	C	-------	5	11	2	-------	-------	-------
Greece	C	8	22	6	9	2	13	5
	D	1	3	-------	-------	-------	2	-------
Guatemala	C	-------	-------	-------	33	34	3	-------
	D	-------	-------	-------	15	5	-------	-------
Lithuania	C	99	34	10	13	8	2	-------
	D	3	5	-------	2	-------	-------	-------
Mexico (see also table above)	D	238	-------	-------	-------	-------	-------	-------
Turkey	C	15	32	13	11	9	-------	-------
Union of Socialist Soviet Republics	C	-------	1,513	1,324	-------	-------	-------	-------
Yugoslavia	C	10	43	14	2	3	1	-------
	D	1	5	-------	-------	-------	-------	-------

YELLOW FEVER

Place		Apr. 5–May 2, 1931	May 3–30, 1931	May 31–June 27, 1931	June 28–July 25, 1931	Week ended— August, 1931: 1	8	15	22	29	September, 1931: 5	12	19	26	October, 1931: 3	10	17
Brazil:																	
Alagoas State	C	-------	-------	-------	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	-------	-------	-------	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------
Ceara State	C	2	1	1	-------	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------
	D	2	1	-------	-------	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------
Minas Geraes State	C	5	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	2	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Rio de Janeiro State	C	-------	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Sergipe State	C	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
British Cameroons: Mamfe	C	-------	3	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
	D	-------	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Colombia—Magdalena Province—Near Cienaga	C	-------	-------	-------	4	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Gold Coast:																		
Akuse	C				2													
	D				1													
Dagomba District	C					2												1
Kete Krachi	C				1													
Kintampo	C				1													
	D												1					
Oda	C												1		2			
Tamale	C				2										2			
	D				2	1												
Wale Wale	C					1												
	D																	
Ivory Coast:																		
Bobo Dioulasso	C				1													
	D				1													
Grand Bassam	C					4							1					
	D					2							1					
Kong Circle	C				4													
Seguela	C								P									
Nigeria: Abakaliki	C							1										
	D							1										
Senegal:																		
Podor (Hinterland)	C								1									
	D								1									
St. Louis	C														1			
Thies	C														1			
	D														1			
Sudan (French)	C				4													
Togo: Seva	C												1					
Upper Volta:																		
Banfora	C				2										2			
	D				1										1			
Diarabakoko	C														2			
	D														1			
Ouagadougou	C								1						1			1