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## A COMPARISON OF FULL-TIME AND PART-TIME COUNTY HEALTH UNITS IN KANSAS

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It is impossible for any health department to prevent or control disease without knowledge of when, where, and under what conditions cases occur. The mere placarding and quarantine of the family for a communicable disease will not prevent the spread of the infection; the source from which the persons affected derived the infection must be located and proper measures must be taken to prevent the occurrence of additional cases.

A study of the part-time county health departments in Kansas indicates that through their activities they make very little impression upon the prevalence of communicable disease.

Under the Kansas law the county commissioners are the county board of health and appoint the county health officer. The salary allowed the part-time health officer in the great majority of counties is not sufficient for his living expenses. As a result he must engage in the practice of medicine in addition to his duties as health officer. Where the part-time plan obtains, practically no preventive measures are employed in the tracing of contacts or in locating the source of origin of the cases; and missed cases are one of the principal factors in the spreading of all communicable diseases. Statistics from counties having full-time health departments disclose the fact that approximately 50 per cent of all cases of communicable diseases are not seen by physicians in counties operating under the part-time health plan.

By way of illustrating the work of an organized whole-time county health department and its value to the community at large, consideration will be given to four communicable diseases: Typhoid fever, diphtheria, smallpox, and scarlet fever. Comparison will be made of Geary County operating for a five-year period under a part-time health department and for a five-year period under a full-time health department, with the average of three Kansas counties which have like populations and have operated for the past 10 years under a part-time health department. In order to deal with concrete figures, the value of a human life is placed at \$5,000; the cost of a case of typhoid fever at \$500; of diphtheria at \$100; of smallpox at \$100; of scarlet fever at \$100, and of a funeral at \$300.

Since the organization of the Geary County full-time health department on January 1, 1920, painstaking effort has been made to trace to its source of infection every case of each of the four above-mentioned diseases. Records show that no serious epidemic has occurred in Geary County since the institution of the full-time health unit.

As is shown in the accompanying chart, the estimated economic loss from these diseases in Geary County for the five-year period totals \$85,400. Of this loss, \$56,400 occurred in 1920 and 1921. The economic loss for the remaining three years, 1922, 1923, and 1924, amounted to \$29,000. In these three years not a school child had diphtheria in this county. No person died from any of the four diseases listed in the table.

### COMPARISON OF ECONOMIC LOSSES FROM FOUR INFECTIOUS DISEASES—CONTRASTING A FULL-TIME WITH PART-TIME HEALTH UNITS. KANSAS

GEARY COUNTY						
	1915-1919	PART TIME	1920-1924	FULL TIME	DECREASE	INCREASE
TYPHOID	██████████	\$2,4900	██████████	\$7,000	\$17,900	██████████
SMALLPOX	██████████	\$1,0200	██████████	\$2,100	\$8,100	██████████
DYPHTHERIA	██████████	\$83,700	██████████	\$35,700	\$48,000	██████████
SC. FEVER	██████████	\$76,500	██████████	\$40,600	\$35,900	██████████
POPULATION 13,244						

AVERAGE FOR THREE COUNTIES						
	1915-1919	PART TIME	1920-1924	PART TIME	DECREASE	INCREASE
TYPHOID	██████████	\$66,600	██████████	\$26,500	\$40,100	██████████
SMALLPOX	██████████	\$14,400	██████████	\$12,900	\$1,500	██████████
DYPHTHERIA	██████████	\$24,100	██████████	\$73,700	██████████	\$49,600
SC. FEVER	██████████	\$14,100	██████████	\$39,200	██████████	\$25,100
AVERAGE POPULATION 13,432						

The average economic loss per county in the three part-time counties for this three-year period, 1922, 1923, and 1924, was \$68,132, with a total of 26 deaths from the four diseases, typhoid fever, diphtheria, smallpox, and scarlet fever.

Statistics for the 10-year period for each county in the State give comparable results. Under the part-time plan, conditions remain essentially the same over each five-year period, while under the full-time plan marked improvement is shown in the prevention of cases and deaths.

On the whole, the part-time health officer is poorly financed by his board of county commissioners and has given better service than the public had any right to expect, considering the remuneration and

the handicaps under which he has worked. Much of the money thus spent has been wasted, since much of the work of the part-time health officer is not in prevention of disease, but in cleaning up outbreaks of diseases.

It is found also that wherever a full-time, active, competent county health officer is appointed he lowers the infant mortality promptly and speedily accelerates the diminution of the death rate from tuberculosis. He engages in effective measures for the education of the public in health matters and generally succeeds in a striking manner in increasing the span of life of those who reside in the community which he serves.

At the present time 10 Kansas counties are operating full-time health units.

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### THE INFLUENCE OF VITAMIN DEFICIENCIES ON SUSCEPTIBILITY TO CERTAIN POISONS

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In the course of some work on the relation of dietary deficiencies to tuberculosis resistance it was noted that vitamin A deficiency increased the susceptibility of the tubercle-infected white rat to the intraperitoneal injection of tuberculin (1). Briefly, it was found that while in the adequately nourished rat infected with the tubercle bacillus, tuberculin shock occurred only rarely following the intraperitoneal injection of old tuberculin, similar treatment of rats maintained on a diet deficient in vitamin A, though otherwise adequately constituted, resulted in a high percentage of fatal tuberculin shock. It was scarcely possible to offer an explanation for this phenomenon in view of our limited knowledge concerning the nature of the tuberculin reaction. In spite of the enormous amount of work on tuberculin hypersensitiveness in the experimentally infected animal, but little is as yet definitely known about its mechanism, beyond the fact that it is of a different order from general protein hypersensitiveness or anaphylaxis (2), (3), (4).

The suggestion had been made that the general tuberculin reaction in the tuberculous animal is due to the reaction of the hypersensitive tuberculous organism to toxic substances liberated within the tubercle, under the influence of parenterally introduced tuberculin. The experimental work of Rausa (5), Selter and Turner (6), Assermann (7), and others would seem to furnish a basis for such an hypothesis. If this view can be accepted as correct, we would be forced to conclude that the tissues of the tubercle-infected rat, which, under normal conditions of nutrition, are quite resistant to

tubercle toxin, are rendered susceptible to this toxin when deprived of the fat soluble A food accessory.

The relatively high degree of resistance of the adequately nourished rat is not alone limited to tubercle toxin. It has long been known that this animal is but little susceptible to anaphylactic shock, which has been recently pointed out anew by Parker and Parker (8). Coca, Russel, and Baughman (9) found a high resistance in the rat to diphtheria toxin, and Voegtlin and Dyer (10) have found the rat highly resistant to traumatic shock and to the shock-producing poison histamine. The influence of vitamin deficiencies upon the natural resistance of the rat in the conditions enumerated is unknown, beyond our observation with regard to an increased susceptibility to tuberculin (1) and the recent statement by Werkman, Baldwin, and Nelson (11) to the effect that vitamin deficiencies decrease its resistance to diphtheria toxin.

It seemed that further useful information upon our problem at hand would be gained from a study such as we have undertaken here, viz, the alteration of normal resistance of the rat to certain well-defined pharmacologic agents brought about by means of vitamin-deficient diets.

There is another aspect that presents itself in connection with these studies. We believe that information on the behavior of certain poisons in the avitaminous organism, if altered in some definite manner through the deficiency, should throw some light on the nature of avitaminosis. While considerable data have accumulated in recent years on the pathology of avitaminosis, the problem of altered physiologic function of organs and tissues in the avitaminous organism has only begun to receive attention, and but little is as yet known of the mode of action of the food accessory substances in the animal body. The obvious difficulty that such studies present is the fact that in our present state of imperfect knowledge of the chemistry of the vitamins, observations on their physiologic or pharmacologic action can be only of an indirect nature. Nevertheless, some important contributions in this field have already been made. Thus Baldwin, Cook, and Nelson's (12) studies on the blood pressure of avitaminous rats indicate a markedly disturbed function of the cardiovascular apparatus caused by vitamin B deficiency, and to a lesser extent by vitamin A deficiency. This altered function of the cardiovascular apparatus appears to be beyond recognition by histologic or even electrocardiographic examination of the myocardium, as is shown in the work of Baude and Deglaud (13).

Van Leeuwen and Verzar (14) examined the reactions to some of the autonomic drugs, of tissues and organs in avitaminosis, and found no deviation from the normal. Their work, however, was limited to vitamin B deficiency, the experiments having been carried out for

the most part upon pigeons subsisting on polished rice, a diet which is, of course, deficient in many ways other than in vitamins.

More recently, Alpern (15) perfused the isolated wing of pigeons subsisting on polished rice and obtained a much-reduced reaction to epinephrine and  $\text{BaCl}_2$ , as compared with the normal. He correlates some of his findings with McCarrison's observation of suprarenal hypertrophy in vitamin B deficiency.

#### EXPERIMENTAL

The work reported herein has been carried out exclusively upon the albino rat, bred and raised in the laboratory under standard and uniform conditions. The diets employed in this study were as follows:

Substance	Adequate	A-deficient	B-deficient <sup>1</sup>
Casein <sup>2</sup> .....	18.0	18.0	18.0
Salt mixture 185 <sup>3</sup> .....	4.0	4.0	4.0
Dried brewers' yeast .....	5.0	5.0	0.0
Olive oil .....	8.0	10.0	8.0
Cod-liver oil .....	2.0	0.0	2.0
Starch .....	63.0	63.0	68.0
	100.0	100.0	100.0

<sup>1</sup> From some work on the nutritive properties of brewers' yeast which will be published shortly (Pub. Health Rep. (1926), 41, 201.—Ed.) it appears that dried brewers' yeast furnishes besides vitamin B another heretofore unrecognized dietary factor essential in the nutrition of the rat when maintained on a synthetic diet as used herein. The ration referred to as "B-deficient" is therefore deficient in this unrecognized factor as well as in vitamin B. Nevertheless, the term "B-deficient" is employed in conformity with common usage.

<sup>2</sup> Purified by the method of McCollum (16).

<sup>3</sup> Formula as given by McCollum and Davis (17).

The general plan followed has been that of restricting the animals to the respective diets from the time of weaning, which was usually at the age of about three to four weeks, and at a body weight of about 30 to 40 grams. The animals on the adequate diet gained at the rate of about 15 grams per week, and were used for the toxicity tests after being on the diet for four to six weeks.

The animals on the A-deficient diet usually continued to gain at a variable rate for four to six weeks, then began to decline. The animals of this group were not used for the toxicity tests until there was definite and permanent cessation of growth, readily recognizable eye lesions, and other general manifestations of vitamin A deficiency.

Because of the rapid deterioration of young animals on the B-deficient diet it was found feasible to allow them to gain a certain degree of maturity on the adequate diet, and then to be restricted to the B-deficient diet. Within four to six weeks on the B-deficient diet considerable decline in weight occurred, and symptoms of the deficiency were clearly manifest, at which time the animals were subjected to toxicity tests.

The details of the plan pursued in this work are further illustrated by the three accompanying typical charts, which are self-explanatory and require no further comment.

The toxicity tests were carried out upon the three groups of animals with a variety of pharmacological agents the actions of which are more or less well known. All the tests were carried out under identical conditions. The substances were always administered in aqueous solution, the dilutions being such that the total volume injected did not exceed 1 c. c., and usually not more than 0.5 c. c. All the injections were made slowly into one of the saphenous veins, no anesthetic being employed. It was sought to determine the maximum tolerated dose and the minimum lethal dose of a variety of substances in the three groups of animals in order to ascertain whether a deficiency in one or the other of the well-known food accessories would manifest itself in an altered susceptibility to some one chemical substance or group of chemical substances.

The substances used to determine whether vitamin deficiency resulted in an alteration of susceptibility included—

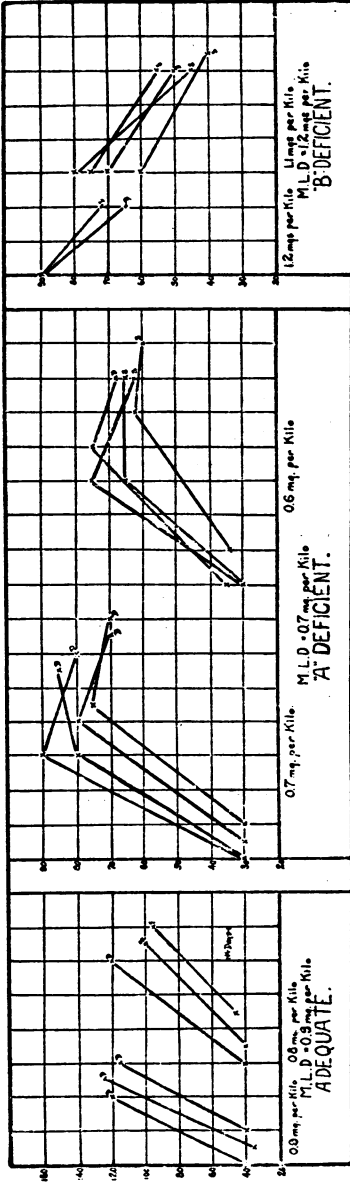
1. Central nervous system stimulants (strychnine, cocaine, atropine).
2. Central nervous system depressants (chloral hydrate, morphine).
3. Cardiac stimulants (crystalline strophanthin).
4. Autonomic drugs (atropine, pilocarpine, ergotoxine).
5. Capillary drugs and substances affecting cell permeability (histamine, pituitary principle, CaCl<sub>2</sub>).
6. General protoplasmic poisons (quinine).
7. Miscellaneous (apomorphine, apocodeine, arsenic).

The results of this study are given in the following series of tables. The minimum lethal dose (M. L. D.) is the lowest dose which kills at least 50 per cent of the animals.

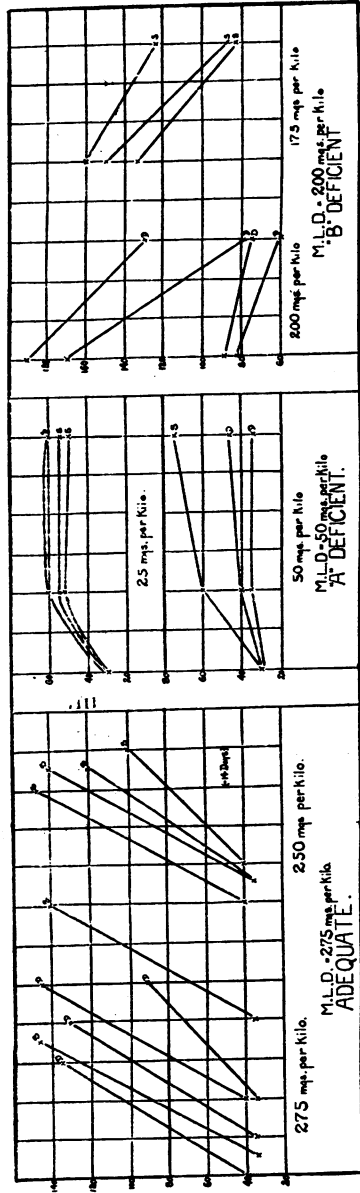
TABLE 1—*Toxicity of strychnine sulphate*

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result <sup>1</sup>	Number of animals used	Result <sup>1</sup>	Number of animals used	Result <sup>1</sup>
1.2			2	++		
1.1			3	---		
1.0	1	+	3	---		
0.9	3	+++			1	+
0.8	3	+-				
0.7					4	++++
0.6					4	+---
M. L. D.	0.9 mg. per kilo		1.2 mg. per kilo		0.7 mg. per kilo.	

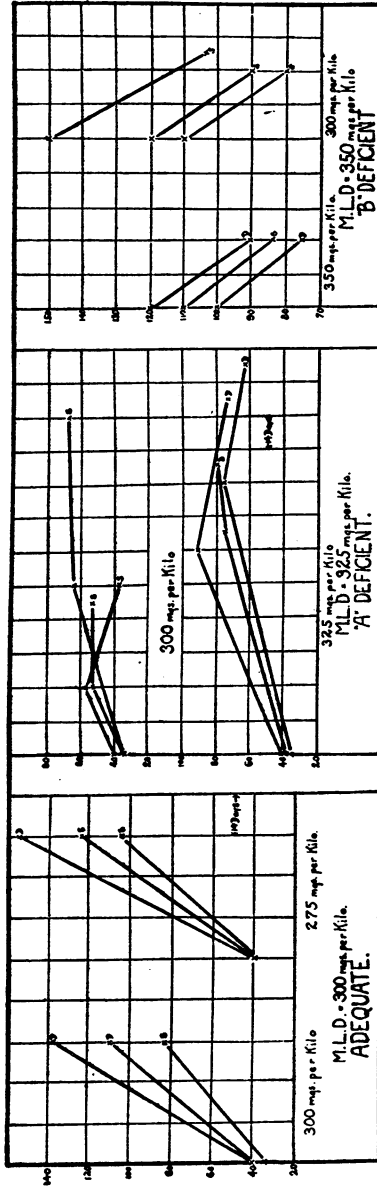
<sup>1</sup> + indicates death; - recovery.



TOXICITY OF STRYCHNINE SULPHATE IN AVITAMINOUS RATS.



TOXICITY OF MORPHINE SULPHATE IN AVITAMINOUS RATS.



TOXICITY OF CHLORAL HYDRATE IN AVITAMINOUS RATS.



TABLE 2.—*Toxicity of cocaine hydrochloride*

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
15.0	3	+++	4	++++		
10.0	3	++	3	---	2	++
8.0	4	---	3	---	3	++
6.0					3	---
4.0					3	---
M. L. D.	10.0 mg. per kilo		15.0 mg. per kilo		8.0 mg. per kilo	

TABLE 3.—*Toxicity of atropine sulphate*

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
125.0	2	++	3	+++	2	++
100.0	3	+--	3	+--	2	++
75.0	4	+---	4	+---	3	++
60.0					3	+--
40.0					2	--
M. L. D.	125 mg. per kilo		125 mg. per kilo		75 mg. per kilo	

TABLE 4.—*Toxicity of crystalline strophanthin (ouabain)*

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
25.0			5	++++		
20.0	2	++	6	++++		
18.0	6	++++	5	++++	3	+++
16.0	5	++++	5	---		
14.0	3	---			5	+++++
12.0					4	++++
10.0					6	++++
8.0					5	+---
M. L. D.	16.0 mg. per kilo		18.0 mg. per kilo		12.0 mg. per kilo	

TABLE 5.—*Toxicity of morphine sulphate*

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
300	3	+++	3	+++	3	+++
275	6	++++	3	++	3	+++
250	4	---	2	+++		
225	4	---			2	++
200			4	++++	3	+++
175			3	---	3	+++
150			3	---		
100					3	+++
75					3	++
50					3	+--
25					3	---
M. L. D.	275 mg. per kilo		200 mg. per kilo		50 mg. per kilo	

TABLE 6.—Toxicity of chloral hydrate

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
350.....			3	++-	1	+
325.....					3	+++
300.....	3	++-	3	---	3	---
275.....	3	+-	3	---	3	---+
250.....	3	++-				
225.....	3	---				
M. L. D.....	300 mg. per kilo		350 mg. per kilo		325 mg. per kilo	

TABLE 7.—Toxicity of pilocarpine hydrochloride

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
150.....	3	+++				
125.....	3	++-			3	+++
100.....	3	+-			3	+-
75.....	3	---	3	+++	3	---
50.....			5	++++-		
40.....			4	++++		
M. L. D.....	125 mg. per kilo		50 mg. per kilo		125 mg. per kilo	

TABLE 8.—Toxicity of ergotoxine phosphate

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Results	Number of animals used	Results	Number of animals used	Results
40.....	3	+++				
30.....	3	---	1	+		
20.....	4	+-	4	+++	3	+++
15.....	3	---	3	---	3	+++
10.....	4	----	4	---	3	+++
8.....					3	+++
6.....					3	+++
4.....					3	---+
M. L. D.....	40 mg. per kilo		20 mg. per kilo		6 mg. per kilo	

TABLE 9.—Toxicity of histamine phosphate

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Results	Number of animals used	Results	Number of animals used	Results
600.....	5	+++	3	+++		
500.....	7	+++	4	+++	4	+++
400.....	4	---	3	---	5	+++
300.....					4	+++
M. L. D.....	600 mg. per kilo		500 mg. per kilo		400 mg. per kilo	

TABLE 10.—*Toxicity of pituitary active principle (standard infundibular powder (18))*

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
200.....	3	+++	6	++++--	3	++-
175.....			4	+++		
150.....	3	---	6	+++---	4	++---
100.....	3	+-	4	-----	4	++---
80.....	6	++---			5	++---
M. L. D.....	200 mg. per kilo		200 mg. per kilo		200 mg. per kilo	

TABLE 11.—*Toxicity of calcium chloride*

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
150.....			3	+++	3	++-
125.....	2	++	3	+++	3	++-
100.....	3	---	4	++---	3	---
75.....	3	---	3	+--		
M. L. D.....	125 mg. per kilo		100 mg. per kilo		125 mg. per kilo	

TABLE 12.—*Toxicity of quinine dihydrochloride*

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
75.....	2	++				
50.....	3	++	4	++--	3	++-
40.....	3	+-	3	+-	3	
30.....	3	---	4	---		
M. L. D.....	50 mg. per kilo		50 mg. per kilo		50 mg. per kilo	

TABLE 13.—*Toxicity of arsenoxide*<sup>1</sup>

Dose, c. c. M/100 per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
10.0.....	7	+++++++	7	+++++++	6	++++--
7.5.....	8	+++++++	7	++++--	6	++++--
5.0.....						
M. L. D.....	7.5 c. c. per kilo <sup>1</sup>		7.5 c. c. per kilo		10.0 c. c. per kilo	

<sup>1</sup> This was a preparation made by Dr. J. M. Johnson in this laboratory. According to numerous experiments with this preparation by Miss H. Dyer of this laboratory, the M. L. D. for the normal rat is 7.5 to 10.0 c. c. M/100 per kilo.

TABLE 14.—*Toxicity of apomorphine hydrochloride*

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
50.....	3	++-	2	++	3	+++
40.....	2	+-				
30.....	3	+--	3	---	3	+---
20.....					3	---
M. I. D.....	50 mg. per kilo		50 mg. per kilo		50 mg. per kilo	

TABLE 15.—*Toxicity of apocodeine hydrochloride*

Dose, mg. per kilo	Adequate		-B		-A	
	Number of animals used	Result	Number of animals used	Result	Number of animals used	Result
20.....	2	++	3	+++	1	+
15.....	3	---	5	+----	2	++
10.....	3	---	5	+----	3	+---
8.....					3	---
M. I. D.....	20 mg. per kilo		20 mg. per kilo		15 mg. per kilo	

The results detailed in the foregoing tables may now be summarized so as to show the relative toxicity of the substances studied for the three groups of animals. If the susceptibility of the group of animals on the adequate diet to the several poisons examined be expressed as 100 per cent, then the relative susceptibilities of the two groups on the vitamin deficient diets may be expressed as follows:

Substance	Vitamin B deficient	Vitamin A deficient
Strychnine sulphate.....	75	130
Cocaine hydrochloride.....	66	125
Atropine sulphate.....	100	165
Ouabain.....	90	133
Morphine sulphate.....	137	550
Chloral hydrate.....	96	92
Pilocarpine hydrochloride.....	250	100
Ergotoline phosphate.....	200	666
Histamine.....	120	150
Pituitary principle.....	100	100
Calcium chloride.....	125	100
Quinine dihydrochloride.....	100	100
Arsenoxide.....	100	75
Apomorphine hydrochloride.....	100	100
Apocodeine hydrochloride.....	100	133

In discussing these results we are fully aware of the fact, that, in some instances, the number of animals used for the determination of the minimum lethal dose is inadequate for arriving at anything but approximate figures. However, the purpose of the work was to

establish gross differences and not slight deviations from the normal. Keeping this fact in mind we believe that these figures clearly indicate an enormously increased susceptibility of the vitamin A deficient group to the alkaloids morphine and ergotoxine, and a greatly increased susceptibility of the B-deficient group to pilocarpine and to ergotoxine. It will be noted that central nervous system stimulants generally, such as strychnine, cocaine, and atropine, as well as ouabain and apocodeine, which also appear to produce in the rat, symptoms predominantly referable to the central nervous system, are all appreciably more toxic to the vitamin A deficient animal than to the adequately nourished control. The resistance of the vitamin B deficient animal to these poisons, on the other hand, seems to be either unchanged or actually somewhat increased. The other substances examined, with the exception of histamine, appear to affect alike the adequately nourished and the vitamin-deficient animals, histamine being definitely more toxic to the vitamin A deficient animal than to the control. The susceptibility of vitamin-deficient animals to apomorphine is unchanged, in spite of its close resemblance chemically to morphine.

#### DISCUSSION

If we attempt to classify the results obtained in this study on the basis of pharmacological action as related to altered susceptibility induced by vitamin deficiencies, we find that no generalizations are possible. Thus the two central nervous system depressants, morphine and chloral hydrate, show a wide difference in effects, vitamin A deficiency increasing the susceptibility of the animal to the one more than fivefold, but not at all to the other. On the other hand, the susceptibility to morphine and ergotoxine, two substances of widely different pharmacological action, is altered in nearly the same manner by this deficiency.

Examination of the influence of vitamin deficiency upon the toxicity of substances for which the rat normally enjoys a natural immunity shows that here too there is lack of uniformity. Thus, both deficiencies, and more especially vitamin A deficiency, increase the susceptibility of the experimental animal to histamine; and they are without appreciable effect upon susceptibility to pituitary active principle,<sup>1</sup> while ouabain toxicity is somewhat increased by A deficiency and diminished by B deficiency.

Do these experiments throw any light on the nature of vitamin action in the animal organism? The lowered blood pressure in avitaminosis noted by Baldwin, Cook, and Nelson (12) is ascribed by them to a weakened myocardium. The fact that neither vitamin A nor

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<sup>1</sup> It should be added, however, that some recent observations on the toxicity of the active principle of pituitary on intravenous injection in laboratory animals indicate that the rabbit and cat are at least as tolerant as the rat (200 mgs. per kilo is tolerated by both species), and that the guinea pig apparently is the only animal showing a high susceptibility to this substance, 10 mg. per kilo being fatal.

vitamin B deficiency alters to any great extent the susceptibility of the experimental animal to either chloral hydrate or ouabain, the one a cardiac depressant, the other a stimulant of the myocardium, would indicate that the cause of the lowered blood pressure must be looked for elsewhere in the cardio-vascular apparatus. The greatly increased susceptibility to ergotoxine in the case of both deficiencies points to an altered function of the autonomic division of the central nervous system. The assumption that vitamin deficiencies damage the sympathetic mechanism controlling vascular tone would appear to explain the observed facts satisfactorily. The decreased resistance of the B-deficient animal to pilocarpine and that of the A-deficient animal to the several nerve poisons would indicate that the impairment of the nervous system, though perhaps most marked in the autonomic division, is more or less general. The greatly increased susceptibility of the A-deficient animal to morphine in particular suggests a much weakened respiratory center. Sluggish circulation and weakened respiratory center would account satisfactorily for the frequent occurrence of pulmonary congestion and lung disease in rats on vitamin A deficient diet.

If it were permissible to draw conclusions from reasoning by analogy we would venture to suggest that the action of tuberculin in the tuberculous organism is on the autonomic mechanism controlling cardio-vascular tone, and possibly to some extent also on the capillaries.

It is, of course, possible that the ability of the tissues of the vitamin-deficient animal to detoxify certain poisons may be reduced. This appears likely from a consideration of the relative toxicity of morphine and apomorphine in the avitaminous animal. Morphine is normally detoxified probably largely through oxidation. The indications are from some recent studies on the subject that cellular oxidation is reduced in avitaminosis (19), (20). We would reserve for future study the question of detoxification in avitaminosis.

#### SUMMARY AND CONCLUSIONS

A study was made of the toxicity of a number of pharmacologic agents in vitamin-deficient rats.

Increased susceptibility to pilocarpine and ergotoxine was observed in vitamin B deficient animals.

Rats on vitamin A deficient diet showed a much lowered resistance to ergotoxine and to morphine. Definite though slight, increase in susceptibility was also noted to histamine, ouabain, and to the alkaloids strychnine, atropine, cocaine, and apocodeine.

The bearing of these findings on the mechanism of vitamin action in the animal organism is discussed. A possible mode of action of tuberculin in the tuberculous animal is also pointed out.

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**PUBLIC HEALTH ENGINEERING ABSTRACTS**

**Progress in the Purification of Water Supplies.** Norman J. Howard, Bacteriologist in Charge of Water Purification, Toronto, Ontario. *Contract Record*, vol. 39, No. 52, December 30, 1925. Pages 133-138. (Abstracted by Rudolph E. Thompson.)

Progress in water purification during 1925 is reviewed, the phases of the subject dealt with being double filtration, slow sand and rapid sand filtration, sedimentation and coagulation, algal growths, pipe incrustation, softening, ultra-violet ray treatment, sodium iodide treatment and goiter, water standards, *B. coli* test, and removal of taste from chlorinated waters. The method of superchlorination and dechlorination has recently been experimented with at Toronto as a means of correcting the latter difficulty, and this process will be tried on a large scale in the near future. Employment of double filtration to cope with the ever increasing pollution is extending.

**Relation Between Stream Pollution and Extent of Sewage Treatment Required.** J. K. Hoskins. *American City*, vol. 34, No. 3, March, 1926. Pages 254-256. (Abstracted by H. N. Old.)

There is briefly discussed the relationship between stream pollution and sewage treatment in connection with public water supplies

and nuisance prevention, which are the two extremes in the matter of receiving-stream utilization.

In considering the matter of protection of water supplies downstream, there is given the result of studies of carefully collected data of a number of cities tending to show the *B. coli* concentration, the seasonal variation in concentration, the seasonal variation of bacterial decrease in streams, and demonstrating that, if these relationships hold good it is possible to predict the number of *B. coli* remaining in the stream after stated intervals of elapsed time of flow (and distance) from the sewer outlet, where the initial concentration is known, or where the sewered population and the volume of stream flow are obtainable. A formula for determining *B. coli* concentration is given, based on these observations.

Studies of efficiency of water treatment plants appear to point out that there are quite definite limits to permissible loading if safe effluents are to be produced, depending to a reasonable degree on type of treatment adopted.

In the matter of nuisance prevention there must be avoided the septic or putrefactive activity incident to the oxygen requirement of the contained organic matter exceeding the available dissolved oxygen supply of the stream. In order successfully to deal with such a condition it is essential to have some concrete knowledge of the oxygen demand of the sewage, the rate of oxidation of organic matter in the receiving stream, and of the rate of aeration or replenishment of dissolved oxygen. It is stated that observations thus far made indicate that time, temperature, degree of mixing or turbulence, concentration of organic matter, and, perhaps, various other factors must be taken into consideration for each specific case.

The average 10-day oxygen demand of domestic sewage is given as about 0.22 pound per day. By study of each individual case there may be determined with sufficient accuracy just what maximum limit of organic pollution may be countenanced, or on the other hand, the minimum dissolved oxygen supply which must be maintained.

One table is given showing seasonal (monthly) variation of *B. coli* per cubic centimeter per capita in one second-foot stream flow, ranging from 26 in January to 226 in June. Two tables (one each for summer and winter) giving number of *B. coli* per cubic centimeter remaining after stated times of flow from point of maximum concentration are included.

**The Installation of Ponds for Propagating *Gambusia* at Impounded Water Projects.** S. F. Hildebrand. Transactions of Fifth Conference of Malaria Field Workers, U. S. Public Health Service, *Public Health Bulletin No. 156*, 1925. Pages 98-102. (Abstracted by S. F. Hildebrand.)



A brief reference to the beneficial results to be gained through the presence of large numbers of *Gambusia* in impounded waters is made; then the problem of obtaining *Gambusia* in abundance is discussed. The only sure way to get these fish in most localities is to propagate them. In some localities old ponds can be used as they exist. It is, however, often necessary to destroy predatory fish before *Gambusia* can be grown in large numbers in such ponds. Where old ponds are not available, it is necessary to build new ones. Naturally swampy areas and areas below springs are generally the most desirable places for locating the ponds; for in such areas the ponds seldom go dry, and aquatic plants and small animals, constituting protection and food for the fish, ordinarily already are present or quickly become established. Where swampy areas and springs do not exist, ponds may be built in or adjacent to streams.

The fish ponds may be built on the area to be flooded, causing the fish to be liberated in the new lake as the water rises, or they may be built in suitable areas near the lake. In any event it is regarded as desirable to have one or more fish ponds adjacent to the lake, from which a supply of fish may be obtained, if needed, after flooding has been completed.

Artificial feeding of the brood stock and young fish on alternate days with finely chopped meat or fish, or with bread, generally stimulates reproduction and makes for rapid growth and is an aid in propagating large numbers of *Gambusia* in ponds.

**Railway Pioneers in Malarial Control in South.** H. W. Van Hovenberg. *The Nation's Health*, vol. 8, No. 2, February 15, 1926. Pages 88-89. (Abstracted by C. G. Gillespie.)

The malaria damage or bill to the country is placed at \$100,000,000 annually. Ten years ago the St. Louis Southwestern Railway Lines discovered that fully 10 per cent of their employees received hospital treatment for malaria yearly, and that many others were unfit for work because of the disease. The sanitary engineering department was provided in 1917. To-day a scant score of railroad patients are hospitalized for malaria, in place of fully 6,000 annually. The railroad cooperated with cities and towns in controlling breeding places, but bore most of the cost, sometimes in the ratio of 5 to 1. Now the cities assume full responsibility. The railroad developed comprehensive educational campaigns using the exhibition car "Anopheles," carrying models of mosquitoes which showed their characteristics; model stock ponds and the use of larvae-eating fish; proper and improper methods of screening houses; and means for protecting against the chimney road of entrance. Health models were set up in assembly halls in schools and lectures suited to the age of the children were given. In Arkansas a malaria essay contest was

started with cash prizes. The car was equipped with a moving-picture machine. Quinine has been used in sections where maintenance men can not benefit from eradication campaigns. The economic results have been marvelous.

**The Passage of North American Anopheles Through Screens of Various Sized Mesh.** Elliot H. Gage. *Public Health Bulletin No. 156*, 1925. Pages 44-45. (Abstracted by J. A. LePrince.)

These investigations indicate that under certain conditions *A. punctipennis* and *A. quadrimaculatus* do not pass through the 12-mesh or 14-mesh wire cloth used. It was shown that *A. crucians* could pass through 12-mesh wire occasionally, but not through 14-mesh wire cloth. *Stegomyia (Aedes argyentus)* passed through 12-mesh and 14-mesh wire cloth. The writer is of the opinion that for protection against *Anopheles* the workmanship of screen installation is of more importance than the question of the selection of size of 14 or 16 mesh wire.

These studies were made both with adult *Anopheles* captured in nature and with *Anopheles* bred from collected larvae, and inducements were offered to have them pass through the 12, 14, and 16 mesh wire cloth used.

**River Pollution with Special Reference to Present and Prospective Legislation.** Gilbert Thomson. *Journal Royal Sanitary Institute*, vol. 46, No. 8, January, 1926. Pages 355-363. (Abstracted by A. S. Bedell.)

The writer briefly discusses the defects of the existing rivers pollution prevention act of 1876, especially with reference to the provisions regarding trade wastes which tend to protect the industries. He feels that the time is ripe for revision, which should be based on the reports of the Royal Commission on Sewage Disposal, particularly the eighth report issued in 1912.

Among the various standards and criteria set up in the report, the following are noted: (1) The limit of permissible pollution is that the river must not be rendered offensive or incapable of supporting fish life; (2) 4 parts per million of biochemical oxygen demand is the "limiting figure" which a stream, after receiving a polluting discharge, should not exceed; (3) the general standard for effluents is that suspended solids should not exceed 30 parts per million and the biochemical oxygen demand should not exceed 20 parts per million.

In considering the question of dilution the writer makes some pertinent suggestions regarding standards for sewage flow, river flow, and storm overflows. Domestic sewage being in strict proportion to population, sewage flow should be based on "standard sewage" (25-30 gallons per capita per day) and not on actual flow. Dry weather river flow may readily be calculated as one-third of the aver-

age flow based on drainage area and rainfall, with a deduction for evaporation. With regard to storm overflows, the present practice is to require that anything up to six times the dry weather flow must be taken to the disposal works, where three times the dry weather flow is to be fully treated and the remainder treated by simple settlement. If the dry weather flow is based on standard sewage calculations, this standard may require modification for very dilute sewages.

The writer suggests that, in addition to standards for effluents from various industries as discharged into stream, standards should be set up for effluents discharged into sewers, such discharges to be permitted only through accessible manholes.

**Good Technique Eliminates Germs from Dairy Utensils.** M. J. Prucha, Ph. D., Professor of Dairy Bacteriology, University of Illinois, Urbana, Ill. *The Nation's Health*, vol. 8, No. 2, February 15, 1926. Pages 98-100. (Abstracted by C. G. Gillespie.)

Market milk contains probably from 100,000 to over 1,000,000 bacteria per cubic centimeter, 80 per cent of which comes from utensils. Improvements in handling milk and in the number of containers has increased greatly in the past 30 years. A modern milk plant has vats, storage tanks, sanitary plumbing, clarifiers and filters, pasteurizers, coolers, bottle fillers, and much interconnecting piping. All these serve to open the way for bacterial contamination. Utensils must be washed visibly clean and sterilized. The paper discusses sterilization. The methods used include rinsing, sun drying, mechanical drying, chemical sterilization, and heat. Steam sterilization was studied by the division of dairy bacteriology, University of Illinois. In the case of steam sterilization, cans run as high as over 38,000,000,000 bacteria per can, and as low as almost zero. Two parts steam to one part of can capacity barely affected the bacterial content of the can; five to one would mean an increase in the milk of 1,000 bacteria per cubic centimeter; nine to one, 100 per cubic centimeter; and eleven to one less than 10 per cubic centimeter. The author recommends 9 to 12 cubic feet per 8-gallon can. The higher the pressure, the shorter the time required for sterilization. Most satisfactory results were obtained in from 15 to 30 seconds' steaming. The steaming of the exterior of utensils is very inefficient. Autoclaving is employed considerably and is effective. Each steam chamber must be studied by itself. Two quarts of boiling water are as effective in sterilizing as 10 cubic feet of steam in jet steaming. About 70 per cent of the bacteria are removed by rinsing with a quart or more of water per can. Even with sterilization, multiplication occurs in the shipping can. Drying, as an adjunct to sterilizing, is helpful. Inverting uncovered utensils is a good practice. Chemical sterilizers must impart no odor and must

be harmless. The chlorine group of disinfectants fulfill these conditions. Sodium hypochlorite is sold in liquid form; the chloramin-T is a dry crystal. Chloramin-T is slower to sterilize but retains its strength longer. Alkalies and organic matter retard the action.

**Protecting Milk at its Source.** Robert Balderston. From the Department of Public Health, Philadelphia, vol. 11, Nos. 1 and 2, January and February, 1926. Pages 7-10. (Abstracted by E. S. Tisdale.)

Throughout the Philadelphia milk shed a remarkable degree of protection of milk has been brought about by educational and cooperative means. The work of the quality control department of the Philadelphia Interstate Dairy Council was begun about five years ago and is a State and municipal cooperative effort to improve the Philadelphia milk supply. Year by year the educational work has gone on. The farmers have been gradually required to raise their standards of milk protection, since cooperating milk dealers would accept milk only from farms maintaining approved conditions. So effective has been the work of 13 farm-bred and college-trained young inspectors that the farmer now adheres closely to the sanitary regulations of the dairy council and produces a high quality of milk. The work of the quality control department of the dairy council safeguards the milk from cow to consumer, and this means safety and health to those living in the Philadelphia district.

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### DEATHS DURING WEEK ENDED APRIL 10, 1926

*Summary of information received by telegraph from industrial insurance companies for week ended April 10, 1926, and corresponding week of 1925. (From the Weekly Health Index, April 13, 1926, issued by the Bureau of the Census, Department of Commerce)*

	Week ended Apr. 10, 1926	Corresponding week, 1925
Policies in force.....	63, 969, 770	59, 365, 205
Number of death claims.....	17, 105	11, 270
Death claims per 1,000 policies in force, annual rate..	13. 9	9. 9

Deaths from all causes in certain large cities of the United States during the week ended April 10, 1926, infant mortality, annual death rate, and comparison with corresponding week of 1925. (From the Weekly Health Index, April 13, 1926, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Apr. 10, 1926		Annual death rate per 1,000 corresponding week, 1925	Deaths under 1 year		Infant mortality rate, week ended Apr. 10 1926 <sup>1</sup>
	Total deaths	Death rate <sup>1</sup>		Week ended Apr. 10, 1926	Corresponding week, 1925	
Total (68 cities).....	9,653	17.4	14.0	1,140	887	94
Akron.....	52			15	6	160
Albany <sup>4</sup> .....	55	24.3	16.8	3	5	63
Atlanta.....	78			12	8	
White.....	36			4		
Colored.....	42	( <sup>5</sup> )		8		
Baltimore <sup>4</sup> .....	264	17.3	14.9	28	25	82
White.....	204			18		64
Colored.....	60	( <sup>5</sup> )		10		162
Birmingham.....	88	22.3	20.8	13	6	
White.....	39			5		
Colored.....	49	( <sup>5</sup> )		8		
Boston.....	304	20.3	17.6	33	38	93
Bridgeport.....	62			6	4	102
Buffalo.....	212	20.5	16.8	34	28	142
Cambridge.....	44	19.2	18.7	6	3	100
Camden.....	33	13.4	12.2	3	2	51
Canton.....	24	11.8	15.2	7	1	156
Chicago <sup>4</sup> .....	819	14.3	12.4	97	107	86
Cincinnati.....	205	26.1	15.0	13	9	81
Cleveland.....	291	16.2	12.4	35	21	91
Columbus.....	102	19.0	15.5	3	8	28
Dallas.....	49	13.2	14.8	8	10	
White.....	40			8		
Colored.....	9	( <sup>5</sup> )		0		
Denver.....	74	13.7	18.9	11	10	
Des Moines.....	36	12.6	14.7	1	6	17
Detroit.....	450	18.8	10.7	103	41	165
Duluth.....	18	8.5	12.7	4	4	94
El Paso.....	32	15.9	15.9	6	5	
Erie.....	43			3	0	37
Fall River <sup>4</sup> .....	52	21.0	12.5	5	10	73
Flint.....	35	14.0	9.6	3	2	50
Fort Worth.....	23	7.9	9.2	1	2	
White.....	21			1		
Colored.....	2	( <sup>5</sup> )		0		
Grand Rapids.....	53	18.0	12.2	11	7	159
Houston.....	54	17.1	15.8	3	6	
White.....	41			2		
Colored.....	13	( <sup>5</sup> )		1		
Indianapolis.....	123	17.9	16.0	11	8	81
White.....	104			11		93
Colored.....	19			0		0
Jacksonville, Fla.....	45	22.4	14.9	6	3	125
White.....	19			3		98
Colored.....	26			3		172
Jersey City.....	101	16.7	12.4	13	9	92
Kansas City, Kans.....	38	17.1	15.7	4	3	69
White.....	29			4		64
Colored.....	9	( <sup>5</sup> )		0		0
Kansas City, Mo.....	129	18.3	17.7	13	12	
Los Angeles.....	270			22	27	61
Louisville.....	131	22.6	15.7	17	8	146
White.....	103			14		140
Colored.....	28	( <sup>5</sup> )		3		188
Lowell.....	44	20.8	15.1	8	4	149
Lynn.....	28	14.2	20.7	2	5	50
Memphis.....	85	25.4	22.7	10	11	
White.....	41			3		
Colored.....	44	( <sup>5</sup> )		7		
Milwaukee.....	161	16.7	14.6	28	12	130
Minneapolis.....	125	15.3	15.4	11	10	61
Nashville <sup>4</sup> .....	60	23.0	19.5	8	5	
White.....	33			3		
Colored.....	27	( <sup>5</sup> )		5		

Footnotes on p. 786.

Deaths from all causes in certain large cities of the United States during the week ended April 10, 1926, infant mortality, annual death rate, and comparison with corresponding week of 1925—Continued

City	Week ended Apr. 10, 1926		Annual death rate per 1,000 corresponding week, 1925	Deaths under 1 year		Infant mortality rate, week ended Apr. 10 1926 <sup>2</sup>
	Total deaths	Death rate <sup>1</sup>		Week ended Apr. 10, 1926	Corresponding week, 1925	
New Bedford	47	20.5	13.1	14	7	243
New Haven	40	11.7	12.5	1	4	14
New Orleans	154	19.4	19.0	17	13	
White	86			8		
Colored	68	( <sup>3</sup> )		9		
New York	1,934	17.2	13.3	229	203	95
Bronx Borough	234	14.0	9.4	25	17	33
Brooklyn Borough	661	15.6	12.5	80	73	81
Manhattan Borough	825	22.1	16.9	94	83	104
Queens Borough	163	11.9	9.7	23	19	104
Richmond Borough	51	19.2	17.3	7	6	123
Newark, N. J.	166	19.1	11.9	16	5	77
Norfolk	32			0	4	0
White	15			0	0	0
Colored	17	( <sup>3</sup> )		0	0	0
Oakland	52	10.7	12.3	6	4	69
Oklahoma City	26			4	2	
Omaha	67	16.5	16.0	6	7	68
Paterson	52	19.1	11.0	7	2	132
Philadelphia	683	18.0	13.5	85	53	113
Pittsburgh	298	24.6	15.4	30	20	100
Portland, Oreg.	79	14.6	14.0	7	6	72
Providence	104	20.2	11.3	9	6	76
Richmond	70	19.6	16.5	4	10	50
White	38			1		20
Colored	32	( <sup>3</sup> )		3		105
Rochester	100	16.5	15.0	11	9	88
St. Louis	295	18.7	15.6	28	13	
St. Paul	69	14.6	14.8	5	5	44
Salt Lake City <sup>4</sup>	44	17.5	11.9	2	2	26
San Antonio	66	17.4	15.3	6	9	
San Diego	35	17.2	16.7	4	4	84
San Francisco	185	17.3	13.3	7	7	42
Schenectady	33	18.5	14.0	3	1	67
Seattle	59			9	8	35
Somerville	28	14.7	17.4	2	7	52
Spokane	21	10.1	19.2	1	3	23
Springfield, Mass.	49	18.0	9.9	8	3	116
Syracuse	45	12.9	15.8	6	8	76
Tacoma	26	13.0	8.0	2	0	47
Toledo	102	18.5	13.8	11	5	107
Trenton	57	22.5	15.8	8	2	134
Washington, D. C.	157	16.4	14.9	21	10	119
White	100			10		83
Colored	57	( <sup>3</sup> )		11		201
Waterbury	30			5	1	107
Wilmington, Del.	39	16.7	9.8	3	2	70
Worcester	90	24.6	15.9	6	6	69
Yonkers	29	13.3	8.3	5	2	112
Youngstown	50	16.3	8.5	8	3	102

<sup>1</sup> Annual rate per 1,000 population.

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

<sup>3</sup> Data for 63 cities.

<sup>4</sup> Deaths for week ended Friday, Apr. 9, 1926.

<sup>5</sup> In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas, 15, Fort Worth 14, Houston 25, Kansas City, Kans., 14, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Norfolk 33, Richmond 32, and Washington, D. C., 25.



COLORADO	
	Cases
Chicken pox.....	28
Diphtheria.....	9
Influenza.....	1
Measles.....	20
Mumps.....	3
Pneumonia.....	8
Scarlet fever.....	24
Tuberculosis.....	24
Typhoid fever.....	1
Whooping cough.....	27

CONNECTICUT	
	Cases
Cerebrospinal meningitis.....	1
Chicken pox.....	44
Diphtheria.....	12
German measles.....	17
Influenza.....	48
Measles.....	460
Mumps.....	7
Paratyphoid fever.....	2
Pneumonia (broncho).....	84
Pneumonia (lobar).....	114
Scarlet fever.....	105
Tetanus.....	1
Tuberculosis (all forms).....	30
Whooping cough.....	91

DELAWARE	
	Cases
Chicken pox.....	3
Diphtheria.....	2
Influenza.....	1
Malaria.....	1
Measles.....	103
Pneumonia.....	3
Scarlet fever.....	13
Tuberculosis.....	5
Whooping cough.....	2

DISTRICT OF COLUMBIA	
	Cases
Chicken pox.....	24
Diphtheria.....	14
Influenza.....	2
Measles.....	615
Pellagra.....	1
Pneumonia.....	56
Scarlet fever.....	17
Tuberculosis.....	25
Typhoid fever.....	1
Whooping cough.....	41

FLORIDA	
	Cases
Cerebrospinal meningitis.....	1
Chicken pox.....	78
Dengue.....	2
Diphtheria.....	27
German measles.....	1
Influenza.....	43
Lethargic encephalitis.....	1
Malaria.....	12
Measles.....	82
Mumps.....	27
Pneumonia.....	150
Poliomyelitis.....	1
Scarlet fever.....	5
Smallpox.....	122
Tetanus.....	9

FLORIDA—continued	
	Cases
Tuberculosis.....	100
Typhoid fever.....	24
Whooping cough.....	47

GEORGIA	
	Cases
Chicken pox.....	74
Diphtheria.....	10
Dysentery.....	3
Hookworm disease.....	1
Influenza.....	253
Malaria.....	12
Measles.....	136
Mumps.....	51
Pellagra.....	6
Pneumonia.....	65
Scarlet fever.....	10
Septic sore throat.....	84
Smallpox.....	26
Tuberculosis.....	28
Typhoid fever.....	5
Whooping cough.....	27

IDAHO	
	Cases
Chicken pox.....	15
Diphtheria.....	1
Measles.....	11
Mumps.....	20
Scabies.....	4
Scarlet fever.....	6
Smallpox.....	3
Tuberculosis.....	4
Typhoid fever.....	1
Whooping cough.....	17

ILLINOIS	
	Cases
Cerebrospinal meningitis:	
Cook County.....	1
Moultrie County.....	1
Vermilion County.....	1
Diphtheria.....	71
Influenza.....	109
Lethargic encephalitis:	
Cook County.....	2
Macoupin County.....	1
Measles.....	975
Pneumonia.....	363
Scarlet fever.....	336
Smallpox:	
Hardin County.....	21
Scattering.....	27
Tuberculosis.....	379
Typhoid fever.....	8
Whooping cough.....	205

INDIANA	
	Cases
Chicken pox.....	81
Diphtheria.....	23
Influenza.....	89
Measles.....	1,241
Mumps.....	7
Pneumonia.....	26
Poliomyelitis.....	1
Scarlet fever.....	195
Smallpox.....	72
Trachoma.....	9
Tuberculosis.....	42
Typhoid fever.....	2
Whooping cough.....	128





MISSISSIPPI		NEW YORK	
	Cases	(Exclusive of New York City)	Cases
Diphtheria.....	4	Cerebrospinal meningitis.....	3
Influenza.....	60	Chicken pox.....	182
Scarlet fever.....	4	Diphtheria.....	73
Smallpox.....	9	Dysentery.....	1
Typhoid fever.....	3	German measles.....	293
MISSOURI		Influenza.....	549
Chicken pox.....	71	Lethargic encephalitis.....	5
Diphtheria.....	64	Measles.....	1,742
Influenza.....	32	Mumps.....	166
Measles.....	1,173	Paratyphoid fever.....	1
Mumps.....	64	Pneumonia.....	411
Pneumonia.....	4	Poliomyelitis.....	1
Rabies (in animals).....	1	Scarlet fever.....	255
Scarlet fever.....	303	Septic sore throat.....	1
Smallpox.....	9	Smallpox.....	12
Trachoma.....	7	Typhoid fever.....	3
Tuberculosis.....	32	Vincent's angina.....	6
Typhoid fever.....	2	Whooping cough.....	415
Whooping cough.....	97	OKLAHOMA	
MONTANA		(Exclusive of Oklahoma City and Tulsa)	
Chicken pox.....	29	Cerebrospinal meningitis—Tillman County.....	1
German measles.....	49	Chicken pox.....	34
Influenza.....	5	Diphtheria.....	15
Measles.....	36	Influenza.....	867
Mumps.....	8	Malaria.....	13
Scarlet fever.....	6	Measles.....	74
Tuberculosis.....	1	Mumps.....	6
Whooping cough.....	18	Pellagra.....	3
NEBRASKA		Pneumonia.....	121
Chicken pox.....	22	Scarlet fever.....	41
Diphtheria.....	3	Smallpox.....	18
Influenza.....	6	Typhoid fever.....	5
Measles.....	35	Whooping cough.....	53
Mumps.....	12	OREGON	
Pneumonia.....	3	Cerebrospinal meningitis.....	2
Scarlet fever.....	80	Chicken pox.....	35
Smallpox.....	26	Diphtheria.....	22
Tuberculosis.....	1	Influenza.....	31
Whooping cough.....	16	Measles.....	74
NEW JERSEY		Mumps.....	26
Cerebrospinal meningitis.....	2	Pneumonia.....	14
Chicken pox.....	145	Rocky Mountain spotted fever.....	4
Diphtheria.....	80	Scarlet fever.....	58
Influenza.....	80	Smallpox.....	11
Measles.....	2,912	Tuberculosis.....	8
Pneumonia.....	316	Typhoid fever.....	3
Scarlet fever.....	188	Whooping cough.....	53
Typhoid fever.....	16	PENNSYLVANIA	
Whooping cough.....	75	Actinomycosis—Springdale.....	1
NEW MEXICO		Cerebrospinal meningitis:	
Cerebrospinal meningitis.....	1	East Pittsburgh.....	2
Chicken pox.....	12	York.....	1
Conjunctivitis.....	5	Chicken pox.....	226
Diphtheria.....	4	Diphtheria.....	125
German measles.....	1	German measles.....	33
Measles.....	21	Impetigo contagiosa.....	5
Mumps.....	11	Lethargic encephalitis.....	2
Pneumonia.....	5	Measles.....	3,724
Puerperal septicaemia.....	1	Mumps.....	204
Scarlet fever.....	9	Ophthalmia neonatorum—Philadelphia.....	4
Tuberculosis.....	18	Pneumonia.....	58
Vincent's angina.....	4		
Whooping cough.....	47		

PENNSYLVANIA—continued		UTAH	
	Cases		Cases
Scabies.....	4	Chicken pox.....	23
Scarlet fever.....	483	Diphtheria.....	6
Smallpox.....	1	Measles.....	13
Tetanus—Reading.....	1	Mumps.....	34
Tuberculosis.....	135	Scarlet fever.....	1
Typhoid fever.....	22	Typhoid fever.....	1
Whooping cough.....	256	Whooping cough.....	190
RHODE ISLAND		VERMONT	
Chicken pox.....	1	Chicken pox.....	22
Diphtheria.....	2	Diphtheria.....	2
German measles.....	21	Measles.....	23
Influenza.....	7	Mumps.....	7
Measles.....	153	Scarlet fever.....	8
Mumps.....	1	Whooping cough.....	21
Ophthalmia neonatorum.....	2	WASHINGTON	
Scarlet fever.....	9	Cerebrospinal meningitis:	
Septic sore throat.....	1	Seattle.....	2
Tuberculosis.....	8	Spokane.....	2
Whooping cough.....	8	Chicken pox.....	65
SOUTH DAKOTA		Diphtheria.....	11
Chicken pox.....	8	German measles.....	118
Diphtheria.....	1	Measles.....	35
Measles.....	15	Mumps.....	41
Mumps.....	40	Pneumonia.....	1
Pneumonia.....	3	Scarlet fever.....	116
Scarlet fever.....	55	Smallpox.....	75
Smallpox.....	10	Tuberculosis.....	24
Tuberculosis.....	5	Typhoid fever.....	2
Whooping cough.....	7	Whooping cough.....	66
TENNESSEE		WEST VIRGINIA	
Cerebrospinal meningitis:		Chicken pox.....	12
Memphis.....	1	Diphtheria.....	21
Nashville.....	1	Influenza.....	280
Chicken pox.....	56	Measles.....	607
Diphtheria.....	11	Ophthalmia neonatorum.....	1
Influenza.....	296	Scarlet fever.....	19
Malaria.....	4	Smallpox.....	35
Measles.....	359	Tuberculosis.....	15
Mumps.....	10	Typhoid fever.....	1
Ophthalmia neonatorum.....	1	Whooping cough.....	22
Pellagra.....	9	WISCONSIN	
Pneumonia.....	75	Milwaukee:	
Scarlet fever.....	32	Chicken pox.....	99
Smallpox.....	10	Diphtheria.....	15
Tuberculosis.....	42	German measles.....	5
Typhoid fever.....	2	Influenza.....	18
Whooping cough.....	33	Measles.....	177
TEXAS		Mumps.....	40
Anthrax.....	2	Pneumonia.....	62
Chicken pox.....	62	Scarlet fever.....	10
Diphtheria.....	22	Tuberculosis.....	23
Influenza.....	353	Typhoid fever.....	1
Measles.....	11	Whooping cough.....	59
Mumps.....	48	Scattering:	
Paratyphoid fever.....	1	Cerebrospinal meningitis.....	2
Pellagra.....	7	Chicken pox.....	72
Pneumonia.....	20	Diphtheria.....	22
Scarlet fever.....	15	German measles.....	70
Smallpox.....	59	Influenza.....	656
Tuberculosis.....	21	Lethargic encephalitis.....	1
Typhoid fever.....	4		
Whooping cough.....	36		

WISCONSIN—continued		WYOMING	
Scattering—Continued.	Cases		Cases
Measles.....	765	Cerebrospinal meningitis—Sheridan.....	1
Mumps.....	106	Chicken pox.....	13
Ophthalmia neonatorum.....	1	Diphtheria.....	3
Pneumonia.....	39	German measles.....	8
Scarlet fever.....	127	Measles.....	1
Smallpox.....	1	Mumps.....	7
Trachoma.....	2	Pneumonia.....	2
Tuberculosis.....	23	Scarlet fever.....	34
Typhoid fever.....	1	Tuberculosis.....	1
Whooping cough.....	115	Vincent's angina.....	1
		Whooping cough.....	19

**Report for Week Ended April 10, 1926**

NORTH DAKOTA		NORTH DAKOTA—continued	
	Cases		Cases
Chicken pox.....	27	Pneumonia.....	12
Diphtheria.....	2	Scarlet fever.....	114
German measles.....	110	Smallpox.....	4
Influenza.....	33	Typhoid fever.....	3
Measles.....	72	Whooping cough.....	23
Mumps.....	45		

**SUMMARY OF MONTHLY REPORTS FROM STATES**

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

State	Cerebrospinal meningitis	Diphtheria	Influenza	Malaria	Measles	Pelagra	Polio-myelitis	Scarlet fever	Smallpox	Typhoid fever
<i>March, 1926</i>										
Georgia.....	2	34	4, 474	46	368	15	0	52	176	8
Indiana.....	4	101	1, 432				1	914	441	9
Tennessee.....	3	44	3, 137	17	1, 535	15	1	116	57	14

## PNEUMONIA (ALL FORMS) AND INFLUENZA

Deaths reported in large cities of the United States during three-week periods ended April 11, 1925, and April 10, 1926

## PNEUMONIA (ALL FORMS)

	Week ended—					
	Mar. 28, 1925	Mar. 27, 1926	Apr. 4, 1925	Apr. 3, 1926	Apr. 11, 1925	Apr. 10, 1926
Atlanta.....	12	14	9	12	11	14
Baltimore.....	48	56	49	46	47	41
Birmingham.....	13	10	17	12	13	11
Boston.....	26	77	39	70	38	52
Bridgeport.....	9	9	2	9	3	7
Buffalo.....	20	35	22	72	23	25
Cambridge, Mass.....	6	5	7	7	10	2
Camden.....	4	11	1	12	2	6
Canton.....	9	5	10	4	8	2
Chicago.....	96	205	93	165	80	98
Cincinnati.....	23	37	20	34	22	23
Cleveland.....	23	74	23	82	32	52
Columbus.....	22	7	18	7	12	13
Dallas.....	7	3	4	6	5	4
Denver.....	7	8	9	12	18	5
Detroit.....	48	112	41	85	36	92
Duluth.....	1	4	2	4	6	3
Elizabeth.....	4	4	4	4	2	4
El Paso.....	2	1	1	3	2	1
Erie.....	3	7	1	10	6	4
Fall River.....	7	1	8	4	3	3
Flint.....	4	14	2	11	5	7
Fort Worth.....	2	4	6	7	8	8
Grand Rapids.....	6	7	5	8	3	5
Hartford.....	6	12	6	23	7	14
Houston.....	3	6	4	4	2	7
Indianapolis.....	25	29	24	27	17	22
Kansas City, Mo.....	22	22	23	25	29	29
Los Angeles.....	25	20	17	7	18	22
Louisville.....	17	45	8	27	14	39
Lowell.....	6	6	8	9	5	12
Lynn.....	3	4	2	2	3	3
Memphis.....	9	8	11	6	13	9
Minneapolis.....	19	11	25	10	21	22
Nashville.....	6	16	7	15	6	10
New Bedford.....	6	15	8	25	1	21
New Haven.....	6	14	7	11	4	6
New Orleans.....	4	15	11	12	9	10
New York.....	210	630	230	538	219	415
Newark.....	17	32	17	37	18	26
Norfolk.....	4	4	3	10	5	3
Oakland.....	1	4	9	6	5	7
Oklahoma City.....	1	3	3	5	2	2
Omaha.....	18	14	10	19	18	12
Philadelphia.....	71	161	52	102	55	109
Pittsburgh.....	48	66	79	79	39	72
Portland, Oreg.....	10	6	8	6	12	6
Providence.....	16	26	10	32	5	19
Reading.....	1	13	2	7	1	9
Richmond.....	4	8	4	8	8	4
Rochester.....	9	14	14	10	7	5
St. Paul.....	10	10	12	10	15	10
Salt Lake City.....	2	3	3	2	2	6
San Antonio.....	9	5	5	8	5	8
San Diego.....	2	1	6	2	7	3
San Francisco.....	8	7	14	7	6	9
Schenectady.....	4	5	4	6	2	2
Somerville.....	3	9	3	4	5	7
Springfield, Mass.....	3	6	2	5	3	4
Syracuse.....	12	15	6	4	8	2
Tacoma.....	2	6	6	6	2	5
Toledo.....	5	8	6	13	2	11
Trenton.....	1	14	4	8	3	11
Washington.....	19	26	22	12	15	19
Waterbury.....	5	7	1	10	1	9
Wilmington, Del.....	5	9	1	11	9	9
Worcester.....	4	21	13	29	9	29
Youngstown.....	5	9	1	14	4	17

## Deaths reported in large cities of the United States during three-week periods ended April 11, 1925, and April 10, 1926—Continued

## INFLUENZA

	Week ended—					
	Mar. 28, 1925	Mar. 27, 1926	Apr. 4, 1925	Apr. 3, 1926	Apr. 11, 1925	Apr. 10, 1926
Atlanta		6		1	1	4
Baltimore	3	11	3	7	4	5
Birmingham	3	9	5	4	5	17
Boston	3	6	4	6	4	9
Bridgeport	2	5	1	11	1	11
Buffalo		11		10	2	18
Cambridge, Mass.		3		2	1	1
Camden		4		3		1
Canton	1		2	1	3	1
Chicago	18	65	16	51	14	29
Cincinnati	9	13	11	23	7	24
Cleveland	2	33	5	37	2	28
Columbus	12		9		5	1
Dallas	1	5	4	2	2	2
Denver	2	4	18	3	7	5
Detroit	4	24	4	24	2	12
Duluth						
Elizabeth						
El Paso		1	2	6	1	1
Erie	1	5		6	1	11
Fall River		3	2	1	2	4
Flint	1	1		4		2
Fort Worth	1	4	1	5		1
Grand Rapids	2	3	1	4	1	5
Hartford		2	1	4	1	1
Houston		3	1	2		
Indianapolis	4	2	4		3	1
Kansas City, Mo.	17	11	8	10	8	11
Los Angeles	8	1	4	2	2	2
Louisville	1	12		1	1	6
Lowell						
Lynn		1	2	2		
Memphis	3	9	1	4	2	7
Minneapolis	1		8	1	4	
Nashville	4	17	6	9	4	11
New Bedford		2				2
New Haven		2		1		
New Orleans	1	8	2	14	6	7
New York	25	133	23	113	19	72
Newark	1	4		2		4
Norfolk						
Oakland	2	1	1		3	
Oklahoma City		1		4		
Omaha						
Philadelphia	6	43	3	34		16
Pittsburgh	7	11		33	8	35
Portland, Oreg.	4				2	2
Providence	4	7	2	20	3	4
Reading		2	3			
Richmond		4	3			2
Rochester		9		3	1	3
St. Paul		2				1
Salt Lake City		1				
San Antonio	2	6		4	1	4
San Diego		1	2			
San Francisco	5	3	2	2		1
Schenectady	2	4	1	5	1	
Somerville		1		7		3
Springfield, Mass.	3	3	4		1	2
Syracuse	2	2	1	1		1
Tacoma		1	1		1	
Toledo	6	6	2	7	3	3
Trenton		5	1	1		3
Washington			1	4		1
Waterbury		2	1	2		5
Wilmington, Del.						
Worcester		1		2	1	3
Youngstown	4	3	1	3		7

**PLAGUE ERADICATIVE MEASURES IN LOS ANGELES, CALIF.**

The following items were taken from the report of plague eradication measures from Los Angeles, Calif.:

Week ended Apr. 3, 1926:

Number of rats trapped.....	1, 414
Number of rats found to be plague infected.....	0
Number of squirrels examined.....	897
Number of squirrels found to be plague infected.....	0
Number of mice trapped.....	1, 557
Number of mice found to be plague infected.....	0

Date of discovery of last plague-infected rodent, Nov. 6, 1925.

Date of last human case, Jan. 15, 1925.

**GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES**

*Diphtheria.*—For the week ended April 3, 1926, 36 States reported 1,090 cases of diphtheria. For the week ended April 4, 1925, the same States reported 1,483 cases of this disease. One hundred cities, situated in all parts of the country and having an aggregate population of more than 30,000,000, reported 706 cases of diphtheria for the week ended April 3, 1926. Last year for the corresponding week they reported 965 cases. The estimated expectancy for these cities was 946 cases. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

*Measles.*—Thirty-three States reported 15,886 cases of measles for the week ended April 3, 1926, and 4,699 cases of this disease for the week ended April 4, 1925. One hundred cities reported 9,735 cases of measles for the week this year and 3,042 cases last year.

*Poliomyelitis.*—The health officers of 36 States reported 15 cases of poliomyelitis for the week ended April 3, 1926. The same States reported 7 cases for the week ended April 4, 1925.

*Scarlet fever.*—Scarlet fever was reported for the week as follows: Thirty-six States—this year, 3,666 cases; last year, 4,338 cases; 100 cities—this year, 1,706 cases; last year, 2,181 cases; estimated expectancy, 1,184 cases.

*Smallpox.*—For the week ended April 3, 1926, 36 States reported 806 cases of smallpox. Last year for the corresponding week they reported 902 cases. One hundred cities reported smallpox for the week as follows: 1926, 245 cases; 1925, 316; estimated expectancy 134 cases. Ten deaths from smallpox were reported by these cities for the week this year—at Los Angeles, Calif.

*Typhoid fever.*—One hundred and seventeen cases of typhoid fever were reported for the week ended April 3, 1926, by 35 States. For the corresponding week of 1925, the same States reported 208 cases of this disease. One hundred cities reported 58 cases of typhoid fever for the week this year and 48 cases for the corresponding week last year. The estimated expectancy for these cities was 45 cases.

*Influenza and pneumonia.*—Deaths from influenza and pneumonia were reported for the week by 95 cities, with a population of more than 29,700,000, as follows: 1926, 2,416 deaths; 1925, 1,291.

*City reports for week ended April 3, 1926*

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence how many cases of the disease under consideration 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 week 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 reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1917 is included. In obtaining the estimated expectancy the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chick-en pox, cases re-ported	Diphtheria		Influenza		Meas-les, cases re-ported	Mumps, cases re-ported	Pneu-monia, deaths re-ported
			Cases, esti-mated expect-ancy	Cases re-ported	Cases re-ported	Deaths re-ported			
<b>NEW ENGLAND</b>									
<b>Maine:</b>									
Portland.....	75,333	4	1	0	14	1	149	5	3
<b>New Hampshire:</b>									
Concord.....	22,546	0	0	0	0	0	1	0	1
Nashua.....	29,723	0	0	0	0	0	0	0	1
<b>Vermont:</b>									
Barre.....	10,008	0	0	0	0	0	0	0	0
<b>Massachusetts:</b>									
Boston.....	779,620	28	57	17	72	6	161	35	70
Fall River.....	128,993	0	3	2	14	1	7	1	4
Springfield.....	142,065	5	4	0	3	0	92	1	5
Worcester.....	190,757	2	5	1	26	2	0	1	20
<b>Rhode Island:</b>									
Pawtucket.....	69,760	0	1	1	0	0	25	0	11
Providence.....	267,918	0	9	8	19	20	98	0	32
<b>Connecticut:</b>									
Bridgeport.....	(1)	0	7	1	30	11	1	0	9
Hartford.....	160,197	1	7	4	10	4	31	0	23
New Haven.....	178,927	8	3	0	2	1	54	1	11
<b>MIDDLE ATLANTIC</b>									
<b>New York:</b>									
Buffalo.....	538,016	17	12	7	15	10	11	0	72
New York.....	5,873,356	98	245	156	502	113	2,214	52	538
Rochester.....	316,786	8	8	0	0	0	0	0	10
Syracuse.....	182,003	4	6	10	6	1	93	20	4
<b>New Jersey:</b>									
Camden.....	128,642	9	5	1	2	3	32	0	12
Newark.....	452,513	20	18	9	27	2	401	8	37
Trenton.....	132,020	1	4	0	2	1	8	0	8
<b>Pennsylvania:</b>									
Philadelphia.....	1,979,364	57	79	68	0	34	744	10	102
Pittsburgh.....	631,563	25	19	11	0	33	58	1	79
Reading.....	112,707	6	3	0	0	0	14	0	7
<b>EAST NORTH CENTRAL</b>									
<b>Ohio:</b>									
Cincinnati.....	409,333	5	9	1	4	23	50	5	34
Cleveland.....	936,485	30	22	36	240	37	277	2	82
Columbus.....	279,836	12	4	3	7	0	548	1	7
Toledo.....	287,380	22	4	4	2	7	199	0	13
<b>Indiana:</b>									
Fort Wayne.....	97,846	11	2	1	0	0	14	0	5
Indianapolis.....	358,819	12	7	4	0	0	555	0	27
South Bend.....	80,091	4	1	2	0	0	16	0	2
Terre Haute.....	71,071	0	1	1	0	2	7	0	3

<sup>1</sup> No estimate made.



## City reports for week ended April 3, 1926—Continued

Division, State, and city	Population July 1, 1925, estimated	Chick-en pox, cases re-ported	Diphtheria		Influenza		Mea-sles, cases re-ported	Mumps, cases re-ported	Pneu-monia, deaths re-ported
			Cases, esti-mated expect-ancy	Cases re-ported	Cases re-ported	Deaths re-ported			
<b>EAST NORTH CENTRAL—continued</b>									
<b>Illinois:</b>									
Chicago	2,995,239	66	95	55	157	51	107	8	165
Peoria	81,564	2	2	2	0	0	0	5	7
Springfield	63,923	8	1	0	3	3	24	8	3
<b>Michigan:</b>									
Detroit	1,245,824	27	48	39	22	24	427	5	85
Flint	130,316	5	4	3	3	4	15	1	11
Grand Rapids	153,698	7	3	0	0	4	25	1	8
<b>Wisconsin:</b>									
Kenosha	50,891	12	2	2	11		0	1	
Madison	46,385		1						
Milwaukee	509,192	72	14	17	13	10	112	43	35
Racine	67,707	7	2	2	3	2	2	7	0
Superior	39,671	0	1	0	0	0	13	0	2
<b>WEST NORTH CENTRAL</b>									
<b>Minnesota:</b>									
Duluth	110,502	0	1	0	0	0	7	0	4
Minneapolis	425,435	44	15	9	0	1	229	6	10
St. Paul	246,001	4	15	8	0	0	15	5	10
<b>Iowa:</b>									
Davenport	52,469	1	0	0	0		2	0	
Des Moines	141,441	0	2	1	20		319	10	
Sioux City	76,411	4	1	1	0		2	1	
Waterloo	36,771	4	0	0	0		5	0	
<b>Missouri:</b>									
Kansas City	367,481	15	7	2	10	10	341	4	25
St. Joseph	78,342	2	1	1	4	4	8	0	3
St. Louis	821,543	30	38	57	3	1	413	7	
<b>North Dakota:</b>									
Fargo	26,403	3	1	0	0	0	0	19	0
Grand Forks	14,811	0	0	0			1	0	
<b>South Dakota:</b>									
Aberdeen	15,036	6	0	1	0		7	42	
Sioux Falls	30,127	3	0	0	0	0	3	0	0
<b>Nebraska:</b>									
Lincoln	60,941	4	2	1	0	3	0	2	2
Omaha	211,768	4	3	0	0	0	23	0	19
<b>Kansas:</b>									
Topeka	55,411	10	1	1	0	2	23	2	2
Wichita	88,367	10	1	0	0	0	138	0	3
<b>SOUTH ATLANTIC</b>									
<b>Delaware:</b>									
Wilmington	122,049	1	2	5	0	0	20	0	11
<b>Maryland:</b>									
Baltimore	796,296	73	26	13	22	7	463	144	46
Cumberland	33,741	1	0	3	1	2	41	0	1
Frederick	12,035	0	0	0	0	0	55	2	1
<b>District of Columbia:</b>									
Washington	497,906	34	10	18	5	4	431	0	12
<b>Virginia:</b>									
Lynchburg	30,395	18	1	0	0	0	94	0	2
Norfolk	(1)	31	1	1	0	0	5	3	10
Richmond	186,403	5	2	0	0	0	18	9	8
Roanoke	58,208	1	0	0	0	1	141	0	8
<b>West Virginia:</b>									
Charleston	49,019	11	1	0	5	1	19	0	1
Huntington	63,485	0	0	1	0	0	1	0	
Wheeling	56,208	8	1	1	0	0	95	0	13
<b>North Carolina:</b>									
Raleigh	30,371	1	0	1	0	3	0	0	1
Wilmington	37,061	7	0	0	0	1	1	1	3
Winston-Salem	69,031	8	0	1	0	3	20	2	3
<b>South Carolina:</b>									
Charleston	73,125	2	0	0	0	0	0	1	5
Columbia	41,225	7	0	0	0	0	0	5	0
Greenville	27,311	7	0	1	0	0	0	7	3

1 No estimate made.

City reports for week ended April 8, 1928—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
<b>SOUTH ATLANTIC—con.</b>									
<b>Georgia:</b>									
Atlanta.....	(1)	7	2	5	41	1	10	4	12
Brunswick.....	16,809	2	0	0	0	0	0	0	0
Savannah.....	93,134	9	1	1	15	5	8	0	6
<b>Florida:</b>									
St. Petersburg.....	26,847		0			0			2
Tampa.....	94,743	2	1	1	0	3	1	1	8
<b>EAST SOUTH CENTRAL</b>									
<b>Kentucky:</b>									
Covington.....	58,309		0			0			7
Louisville.....	305,935	9	6	2	19	1	897	0	27
<b>Tennessee:</b>									
Memphis.....	174,533	30	5	4	0	4	52	9	6
Nashville.....	130,220	3	0	2	0	9	43	0	15
<b>Alabama:</b>									
Birmingham.....	205,670	9	2	3	60	4	59	4	12
Mobile.....	65,955	1	1	0	0	1	1	1	2
Montgomery.....	46,481	0	0	0	1	0	4	22	0
<b>WEST SOUTH CENTRAL</b>									
<b>Arkansas:</b>									
Fort Smith.....	31,643	6	0	0	0		0	1	
Little Rock.....	74,216	1	1	0	2	0	9	0	5
<b>Louisiana:</b>									
New Orleans.....	414,493	1	7	6	11	14	0	0	12
Shreveport.....	57,857	0	0	0	0	1	0	0	6
<b>Oklahoma:</b>									
Oklahoma City.....	(1)	0	1	1	43	4	15	0	5
<b>Texas:</b>									
Dallas.....	194,450	27	3	2	4	2	1	0	6
Galveston.....	48,375	0	0	0	0	0	0	0	1
Houston.....	164,954	2	2	6	6	2	0	0	4
San Antonio.....	198,069	0	1	0	0	4	0	0	8
<b>MOUNTAIN</b>									
<b>Montana:</b>									
Billings.....	17,971	2	0	0	0	0	0	0	1
Great Falls.....	29,883	4	0	0	0	0	6	0	0
Helena.....	12,037	0	0	1	0	0	0	0	0
Missoula.....	12,668	0	1	0	0	0	0	2	0
<b>Idaho:</b>									
Boise.....	23,042	2	0	0	0	0	0	0	0
<b>Colorado:</b>									
Denver.....	280,911	42	9	9		3	34	2	12
Pueblo.....	43,787	9	1	1	0	0	17	1	1
<b>Arizona:</b>									
Phoenix.....	38,669	0	1	1	0	0	0	1	5
<b>Utah:</b>									
Salt Lake City.....	130,948	13	3	5	0	0	4	18	2
<b>Nevada:</b>									
Reno.....	12,665	0	0	0	0	0	0	0	1
<b>PACIFIC</b>									
<b>Washington:</b>									
Seattle.....	(1)	20	5	1	0		33	23	
Spokane.....	108,897	10	3	0	0		0	0	
Tacoma.....	104,455	0	1	1	0	0	3	0	0
<b>Oregon:</b>									
Portland.....	282,383	9	4	11	1	0	17	10	6
<b>California:</b>									
Los Angeles.....	(1)	50	39	56	13	2	7	17	7
Sacramento.....	72,260	5	1	2	2	2	0	5	2
San Francisco.....	557,530	38	21	15	3	2	49	17	7

(1) No estimate made.

## City reports for week ended April 3, 1926—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		
<b>NEW ENGLAND</b>											
<b>Maine:</b>											
Portland.....	3	2	0	0	0	4	0	0	0	3	21
<b>New Hampshire:</b>											
Concord.....	0	2	0	0	0	0	0	0	0	0	9
Nashua.....	0	0	0	0	0	1	0	0	0	0	6
<b>Vermont:</b>											
Barre.....	0	0	0	0	0	3	0	0	0	1	6
<b>Massachusetts:</b>											
Boston.....	64	98	0	0	0	20	1	1	0	107	325
Fall River.....	3	5	0	0	0	2	0	0	0	0	37
Springfield.....	6	3	0	0	0	1	0	0	0	15	44
Worcester.....	10	3	0	0	0	6	0	0	0	3	103
<b>Rhode Island:</b>											
Pawtucket.....	1	2	1	0	0	1	0	0	0	0	32
Providence.....	8	8	1	0	0	3	0	0	0	2	156
<b>Connecticut:</b>											
Bridgeport.....	8	21	0	0	0	1	0	0	0	3	64
Hartford.....	6	3	0	0	0	4	0	1	0	5	63
Hew Haven.....	10	19	0	0	0	2	1	1	0	5	82
<b>MIDDLE ATLANTIC</b>											
<b>New York:</b>											
Buffalo.....	21	15	0	0	0	9	0	0	0	37	249
New York.....	264	200	1	0	0	114	8	11	1	67	2,026
Rochester.....	17	0	0	0	0	4	0	0	0	0	89
Syracuse.....	15	1	0	0	0	1	0	0	0	26	46
<b>New Jersey:</b>											
Camden.....	4	8	0	0	0	0	1	0	0	7	44
Newark.....	25	25	0	0	0	10	0	1	0	21	154
Trenton.....	3	6	0	0	0	4	1	1	0	1	53
<b>Pennsylvania:</b>											
Philadelphia.....	76	84	0	0	0	31	3	2	0	31	569
Pittsburgh.....	22	59	0	0	0	17	1	1	0	49	367
Reading.....	4	4	0	0	0	0	0	0	0	2	28
<b>EAST NORTH CENTRAL</b>											
<b>Ohio:</b>											
Cincinnati.....	13	15	2	0	0	6	0	0	0	32	188
Cleveland.....	25	87	1	0	0	20	1	1	0	151	357
Columbus.....	9	18	2	0	0	4	0	0	1	4	90
Toledo.....	15	6	5	0	0	0	1	0	1	16	80
<b>Indiana:</b>											
Fort Wayne.....	3	7	2	0	0	3	0	0	0	1	32
Indianapolis.....	9	8	4	21	0	5	1	0	0	24	123
South Bend.....	4	4	1	0	0	3	0	0	0	2	15
Terre Haute.....	3	1	1	3	0	0	0	0	0	1	23
<b>Illinois:</b>											
Chicago.....	120	138	3	1	0	64	2	1	0	38	920
Peoria.....	3	7	0	0	0	1	0	0	0	7	27
Springfield.....	1	1	1	0	0	1	0	1	0	18	33
<b>Michigan:</b>											
Detroit.....	88	113	2	0	0	21	1	1	0	69	455
Flint.....	6	23	1	0	0	0	0	0	0	9	27
Grand Rapids.....	8	25	2	0	0	3	0	0	0	41	46
<b>Wisconsin:</b>											
Kenosha.....	3	1	1	0	0	0	0	0	0	1	---
Madison.....	4	1	1	0	0	0	0	0	0	0	---
Milwaukee.....	29	31	5	0	0	5	1	0	0	40	139
Racine.....	4	1	1	0	0	1	0	0	0	34	18
Superior.....	3	11	3	0	0	0	0	0	0	0	14
<b>WEST NORTH CENTRAL</b>											
<b>Minnesota:</b>											
Duluth.....	5	20	2	0	0	2	0	0	0	6	19
Minneapolis.....	30	47	8	0	0	8	1	1	0	10	105
St. Paul.....	31	41	6	0	0	8	1	0	0	23	77

1 Pulmonary tuberculosis only.



## City reports for week ended April 3, 1926—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		
<b>WEST SOUTH CENTRAL</b>											
<b>Arkansas:</b>											
Fort Smith.....	1	1	0	0	0	0	0	0	0	7	
Little Rock.....	1	2	1	0	0	4	0	0	0	0	
<b>Louisiana:</b>											
New Orleans.....	5	6	4	2	0	16	2	6	0	0	167
Shreveport.....	0	0	2	0	0	4	1	0	0	0	31
<b>Oklahoma:</b>											
Oklahoma City.....	2	2	5	0	0	0	0	0	0	0	26
<b>Texas:</b>											
Dallas.....	2	7	3	2	0	4	0	0	0	21	54
Galveston.....	0	2	0	4	0	0	0	0	0	0	15
Houston.....	1	1	0	12	0	4	0	2	0	0	56
San Antonio.....	1	1	0	1	0	11	0	0	0	0	60
<b>MOUNTAIN</b>											
<b>Montana:</b>											
Billings.....	1	0	0	0	0	0	0	0	0	0	8
Great Falls.....	1	0	1	0	0	1	0	0	0	3	7
Helena.....	0	1	0	0	0	0	0	0	0	2	2
Missoula.....	1	0	1	0	0	1	0	0	0	2	9
<b>Idaho:</b>											
Boise.....	1	0	0	3	0	0	0	0	0	1	5
<b>Colorado:</b>											
Denver.....	13	13	3	0	0	11	0	3	0	97	86
Pueblo.....	1	2	0	0	0	0	0	1	0	0	13
<b>Arizona:</b>											
Phoenix.....	0	1	0	1	0	12	0	0	0	0	34
<b>Utah:</b>											
Salt Lake City.....	3	0	1	3	0	1	0	0	0	51	24
<b>Nevada:</b>											
Reno.....	1	0	1	0	0	0	0	0	0	0	4
<b>PACIFIC</b>											
<b>Washington:</b>											
Seattle.....	9	23	3	5	0	0	1	0	0	9	
Spokane.....	4	26	7	0	0	0	0	0	0	3	
Tacoma.....	2	2	2	20	0	1	0	0	1	9	15
<b>Oregon:</b>											
Portland.....	7	15	10	2	0	3	0	0	0	3	59
<b>California:</b>											
Los Angeles.....	22	23	4	93	10	29	2	1	0	14	223
Sacramento.....	2	0	0	3	0	3	1	0	0	0	33
San Francisco.....	15	19	4	8	0	9	2	2	1	1	186

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
<b>NEW ENGLAND</b>									
<b>New Hampshire:</b>									
Concord.....	0	0	0	0	0	0	0	1	0
<b>Massachusetts:</b>									
Boston.....	2	1	0	0	0	0	1	0	0
Worcester.....	1	0	0	0	0	0	0	0	0
<b>MIDDLE ATLANTIC</b>									
<b>New York:</b>									
New York.....	8	2	17	6	0	0	0	1	1
<b>New Jersey:</b>									
Newark.....	0	0	1	0	0	0	0	0	0
<b>Pennsylvania:</b>									
Philadelphia.....	0	0	2	1	0	0	0	1	0

City reports for week ended April 3, 1926—Continued

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Polioomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
<b>EAST NORTH CENTRAL</b>									
Ohio:									
Columbus.....	0	0	0	1	0	0	0	0	0
Illinois:									
Chicago.....	3	2	0	0	0	0	0	1	0
Michigan:									
Detroit.....	1	0	2	1	0	0	0	0	0
Wisconsin:									
Racine.....	2	1	0	0	0	0	0	0	0
<b>WEST NORTH CENTRAL</b>									
Iowa:									
Sioux City.....	1	0	0	0	0	0	0	0	0
Missouri:									
St. Louis.....	1	0	0	0	0	0	0	0	0
<b>SOUTH ATLANTIC</b>									
Maryland:									
Baltimore.....	1	0	2	0	0	0	0	0	0
West Virginia:									
Wheeling.....	0	0	1	1	0	0	0	0	0
Georgia:									
Atlanta.....	1	1	0	0	0	0	0	0	0
<b>EAST SOUTH CENTRAL</b>									
Kentucky:									
Louisville.....	1	0	0	0	0	0	0	0	0
Tennessee:									
Memphis.....	0	0	0	0	0	3	0	0	0
Alabama:									
Birmingham.....	0	0	0	0	2	0	0	0	0
Mobile.....	1	1	0	0	0	1	0	0	0
<b>MOUNTAIN</b>									
Montana:									
Missoula.....	1	0	0	0	0	0	0	0	0
Colorado:									
Denver.....	0	0	0	1	0	0	0	0	0
<b>PACIFIC</b>									
Washington:									
Seattle.....	2	0	0	0	0	0	0	0	0
Spokane.....	5	0	0	0	0	0	0	0	0
Tacoma.....	1	1	0	0	0	0	0	0	0
Oregon:									
Portland.....	1	0	0	0	0	0	0	0	0
California:									
Los Angeles.....	0	0	0	0	0	1	0	0	0
Sacramento.....	1	0	0	0	0	0	0	0	0
San Francisco.....	1	0	1	1	0	0	0	0	0

The following table gives the rates per 100,000 population for 103 cities for the five-week period ended April 3, 1926, compared with those for a like period ended April 4, 1925. The population figures used in computing the rates are approximate estimates as of July 1, 1925 and 1926, respectively, authoritative figures for many of the cities not being available. The 103 cities reporting cases had an estimated aggregate population of nearly 30,000,000 in 1925 and nearly 30,500,000 in 1926. The 96 cities reporting deaths had more than 29,250,000 estimated population in 1925 and more than 29,750,000 in 1926. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, February 28 to April 3, 1926—Annual rates per 100,000 population—Compared with rates for the corresponding period of 1925<sup>1</sup>

## DIPHTHERIA CASE RATES

	Week ended—									
	Mar. 7, 1925	Mar. 6, 1926	Mar. 14, 1925	Mar. 13, 1926	Mar. 21, 1925	Mar. 20, 1926	Mar. 28, 1925	Mar. 27, 1926	Apr. 4, 1925	Apr. 3, 1926
103 cities.....	156	<sup>2</sup> 124	162	<sup>3</sup> 114	161	<sup>4</sup> 120	<sup>5</sup> 162	<sup>6</sup> 131	170	<sup>7</sup> 123
New England.....	225	95	170	78	141	128	115	139	165	80
Middle Atlantic.....	166	111	213	112	196	125	230	142	240	<sup>8</sup> 135
East North Central.....	107	123	120	<sup>9</sup> 107	125	98	104	101	86	<sup>10</sup> 112
West North Central.....	273	<sup>2</sup> 235	195	214	193	144	239	146	213	156
South Atlantic.....	98	109	86	86	129	69	90	<sup>10</sup> 62	77	96
East South Central.....	58	47	37	<sup>2</sup> 28	63	<sup>2</sup> 28	53	<sup>4</sup> 39	21	<sup>6</sup> 61
West South Central.....	137	103	150	103	92	103	114	155	79	60
Mountain.....	83	73	102	109	139	73	129	255	120	146
Pacific.....	224	189	188	148	237	283	<sup>5</sup> 170	240	356	202

## MEASLES CASE RATES

103 cities.....	403	<sup>1</sup> 883	433	<sup>2</sup> 1,693	487	<sup>3</sup> 1,786	<sup>4</sup> 489	<sup>5</sup> 1,837	537	<sup>7</sup> 1,689
New England.....	633	2,446	522	1,969	700	1,725	728	1,347	923	1,463
Middle Atlantic.....	426	1,840	516	1,713	595	1,855	630	1,835	731	<sup>8</sup> 1,835
East North Central.....	738	2,691	695	<sup>2</sup> 1,332	726	1,991	747	2,088	685	<sup>10</sup> 1,503
West North Central.....	66	<sup>2</sup> 845	72	1,637	90	1,872	86	2,306	74	2,391
South Atlantic.....	94	2,697	138	2,267	179	2,795	129	<sup>10</sup> 750	198	2,671
East South Central.....	79	1,323	11	<sup>4</sup> 1,499	63	<sup>2</sup> 408	32	<sup>3</sup> 096	63	<sup>3</sup> 063
West South Central.....	22	17	84	39	40	43	9	125	84	43
Mountain.....	28	209	740	337	555	328	37	310	213	555
Pacific.....	102	278	105	326	180	321	<sup>4</sup> 144	453	199	248

## SCARLET FEVER CASE RATES

103 cities.....	381	<sup>2</sup> 290	415	<sup>3</sup> 303	411	<sup>4</sup> 301	<sup>5</sup> 403	<sup>6</sup> 325	394	<sup>7</sup> 296
New England.....	563	347	515	333	525	404	582	355	515	392
Middle Atlantic.....	370	185	437	192	416	202	404	210	434	<sup>8</sup> 206
East North Central.....	403	345	460	<sup>9</sup> 370	460	340	449	407	412	<sup>10</sup> 331
West North Central.....	752	<sup>2</sup> 815	697	893	768	800	731	889	713	774
South Atlantic.....	161	163	207	150	138	158	157	<sup>10</sup> 156	165	175
East South Central.....	179	187	326	<sup>4</sup> 149	263	<sup>4</sup> 154	263	<sup>4</sup> 149	242	<sup>4</sup> 231
West South Central.....	176	90	101	112	128	138	97	146	48	88
Mountain.....	277	337	194	218	416	246	240	209	268	146
Pacific.....	207	313	218	251	207	280	<sup>5</sup> 211	288	182	251

## SMALLPOX CASE RATES

103 cities.....	60	<sup>2</sup> 50	59	<sup>3</sup> 40	61	<sup>4</sup> 36	<sup>5</sup> 56	<sup>6</sup> 38	55	<sup>7</sup> 43
New England.....	0	0	0	0	0	0	0	0	12	0
Middle Atlantic.....	1	0	5	0	8	0	7	0	21	<sup>8</sup> 0
East North Central.....	40	23	37	<sup>9</sup> 19	30	26	31	10	22	<sup>10</sup> 17
West North Central.....	111	<sup>2</sup> 62	121	67	98	49	131	57	84	46
South Atlantic.....	48	100	56	49	54	60	63	<sup>10</sup> 96	46	41
East South Central.....	599	67	410	<sup>4</sup> 72	593	<sup>8</sup> 88	389	<sup>4</sup> 61	378	<sup>4</sup> 105
West South Central.....	70	194	70	142	101	138	101	142	44	90
Mountain.....	46	36	92	18	65	64	18	27	18	55
Pacific.....	196	302	235	262	202	164	<sup>5</sup> 182	210	243	348

<sup>1</sup> 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, 1925 and 1926, respectively.

<sup>2</sup> Kansas City, Mo., not included.

<sup>3</sup> Madison, Wis., and Covington, Ky., not included.

<sup>4</sup> Covington, Ky., not included.

<sup>5</sup> Spokane, Wash., not included.

<sup>6</sup> Norfolk, Va., and Covington, Ky., not included.

<sup>7</sup> Rochester, N. Y., Madison, Wis., and Covington, Ky., not included.

<sup>8</sup> Rochester, N. Y., not included.

<sup>9</sup> Madison, Wis., not included.

<sup>10</sup> Norfolk, Va., not included.

Summary of weekly reports from cities, February 23 to April 3, 1926—Annual rates per 100,000 population—Compared with rates for the corresponding period of 1925—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Mar. 7, 1925	Mar. 8, 1926	Mar. 14, 1925	Mar. 13, 1926	Mar. 21, 1925	Mar. 20, 1926	Mar. 28, 1925	Mar. 27, 1926	Apr. 4, 1925	Apr. 3, 1926
	100 cities.....	10	10	9	8	11	6	10	8	8
New England.....	7	12	5	5	29	0	12	0	5	7
Middle Atlantic.....	10	4	5	7	8	4	7	10	4	48
East North Central.....	8	5	3	4	6	3	3	4	3	3
West North Central.....	6	10	10	4	8	2	6	2	2	8
South Atlantic.....	8	6	23	8	21	21	12	16	29	17
East South Central.....	32	10	32	6	42	22	53	17	16	53
West South Central.....	26	39	26	4	22	9	40	9	31	24
Mountain.....	9	146	18	146	0	9	0	27	0	36
Pacific.....	14	16	14	0	0	5	26	13	19	11

INFLUENZA DEATH RATES

90 cities.....	30	21	33	71	40	76	31	97	33	89
New England.....	17	12	34	24	29	45	29	69	34	109
Middle Atlantic.....	15	68	24	105	29	95	22	111	21	180
East North Central.....	25	14	31	32	46	65	38	104	36	110
West North Central.....	34	5	32	35	40	31	44	38	38	26
South Atlantic.....	50	47	31	77	50	51	12	82	27	58
East South Central.....	95	239	84	197	110	223	79	254	63	99
West South Central.....	135	132	102	104	73	156	34	123	34	169
Mountain.....	18	109	46	146	46	46	37	64	176	27
Pacific.....	25	32	15	21	11	18	47	14	25	21

PNEUMONIA DEATH RATES

96 cities.....	196	269	214	325	208	372	197	372	197	335
New England.....	218	187	220	217	204	357	211	430	242	468
Middle Atlantic.....	200	357	213	460	216	503	198	493	214	432
East North Central.....	182	206	226	289	208	355	201	351	171	321
West North Central.....	196	96	169	146	167	144	161	159	186	169
South Atlantic.....	251	340	232	361	275	349	232	330	219	269
East South Central.....	247	311	396	389	263	460	247	477	247	356
West South Central.....	218	387	169	285	189	279	160	175	160	196
Mountain.....	129	237	203	300	166	200	194	191	157	155
Pacific.....	124	117	136	92	116	99	142	117	142	87

<sup>1</sup> Kansas City, Mo., not included.

<sup>2</sup> Madison, Wis., and Covington, Ky., not included.

<sup>3</sup> Covington, Ky., not included.

<sup>4</sup> Spokane, Wash., not included.

<sup>5</sup> Norfolk, Va., and Covington, Ky., not included.

<sup>7</sup> Rochester, N. Y., Madison, Wis., and Covington, Ky., not included.

<sup>8</sup> Rochester, N. Y., not included.

<sup>9</sup> Madison, Wis., not included.

<sup>10</sup> Norfolk, Va., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1925 and 1926, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1925	1926	1925	1926
			Total.....	108	96	29,944,906
New England.....	12	12	2,176,124	2,206,124	2,176,124	2,206,124
Middle Atlantic.....	10	10	10,346,970	10,476,970	10,346,970	10,476,970
East North Central.....	16	16	7,481,656	7,655,436	7,481,656	7,655,436
West North Central.....	14	11	2,594,962	2,634,662	2,461,380	2,499,086
South Atlantic.....	21	21	2,716,070	2,776,070	2,716,070	2,776,070
East South Central.....	7	7	993,103	1,004,053	993,103	1,004,053
West South Central.....	8	6	1,184,057	1,212,057	1,078,198	1,103,695
Mountain.....	9	9	563,912	572,773	563,912	572,773
Pacific.....	6	4	1,888,142	1,934,084	1,434,245	1,469,144



# FOREIGN AND INSULAR

## THE FAR EAST

*Reports for the weeks ended March 20 and March 27, 1926.*—The following reports for the weeks ended March 20 and March 27, 1926, were transmitted by the far eastern bureau of the health section of the League of Nations' secretariat, located at Singapore, to the headquarters at Geneva:

WEEK ENDED MARCH 20, 1926

Port	Plague		Cholera		Small-pox		Port	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
Calcutta	0	0	45	47	32	0	Kobe	0	0	0	0	0	0
Bombay	0	0	0	27	9	0	Osaka	0	0	0	0	0	0
Madras	0	0	4	21	2	0	Nilgata	0	0	0	0	0	0
Rangoon	10	2	2	6	2	0	Tsuruga	0	0	0	0	0	0
Karachi	0	0	4	2	2	0	Hakodate	0	0	0	0	0	0
Negapatam	0	0	0	2	2	0	Keelung (Formosa)	0	0	0	0	0	0
Colombo	1	0	0	0	0	0	Fusan	0	0	0	0	0	0
Basra	0	0	0	9	6	0	Chemulpo	0	0	0	0	0	0
Singapore	1	1	0	0	0	0	Dairen	0	0	0	0	0	0
Port Swettenham	0	0	0	0	0	0	Adelaide	0	0	0	0	0	0
Penang	0	0	0	0	0	0	Brisbane	0	0	0	0	0	0
Batavia	0	0	0	0	0	0	Fremantle	0	0	0	0	0	0
Surabaya	1	1	0	0	0	0	Melbourne	0	0	0	0	0	0
Samarang	0	0	0	0	0	0	Sydney	0	0	0	0	0	0
Cheribon	1	1	0	0	0	0	Rockhampton	0	0	0	0	0	0
Belawan Deli	0	0	0	0	0	0	Townsville	0	0	0	0	0	0
Padembang	0	0	0	0	0	0	Port Darwin	0	0	0	0	0	0
Padang (Sumatra)	0	0	0	0	0	0	Broome	0	0	0	0	0	0
Sabang (Rho)	0	0	0	0	0	0	Port Moresby	0	0	0	0	0	0
Makassar	0	0	0	0	0	0	Auckland	0	0	0	0	0	0
Menada	0	0	0	0	0	0	Wellington	0	0	0	0	0	0
Banjermassin	0	0	0	0	0	0	Christchurch	0	0	0	0	0	0
Balik-Papan	0	0	0	0	0	0	Invercargill	0	0	0	0	0	0
Pontianak (Borneo)	0	0	0	0	0	0	Noumea (New Caledonia)	0	0	0	0	0	0
Sandakan (North Borneo)	0	0	0	0	0	0	Honolulu	0	0	0	0	0	0
Kuching (Sarawak)	0	0	0	4	0	0	Suez	0	0	0	0	0	0
Timor Dilly	0	0	0	0	0	0	Tor Quarantine Station	0	0	0	0	0	0
Manila	0	0	0	0	0	0	Alexandria	0	0	0	0	0	0
Iloilo	0	0	0	0	0	0	Port Said	0	0	0	0	0	0
Jolo	0	0	0	0	0	0	Monbassa (Kenya)	0	0	0	0	1	0
Cebu	0	0	0	0	0	0	Zanzibar	0	0	0	0	0	0
Zamboanga	0	0	0	0	0	0	Masawah	0	0	0	0	0	0
Bangkok	3	2	84	61	8	7	Djibuti	0	0	0	0	0	0
Saigon and Cholon	0	0	0	1	1	0	Berbera	0	0	0	0	0	0
Hai Phong	0	0	0	0	0	0	Mozambique	0	0	0	0	0	0
Tourane	0	0	0	0	0	0	Lourenco Marques	0	0	0	0	0	0
Hongkong	0	0	0	1	0	0	Durban	0	0	0	0	0	0
Shanghai	0	0	0	8	8	0	East London	0	0	0	0	0	0
Amoy	0	0	0	5	3	0	Port Elizabeth	0	0	0	0	0	0
Nagasaki	0	0	0	0	0	0	Cape Town	0	0	0	0	0	0
Yokohama	0	0	0	40	0	0	Port Louis (Mauritius)	0	0	0	0	0	0
Simonoseki	0	0	0	0	0	0	Seychelles	0	0	0	0	0	0
Moji	0	0	0	2	0	0							

WEEK ENDED MARCH 27, 1926

Port	Plague		Cholera		Small-pox		Port	Plague		Cholera		Small-pox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths		Cases	Deaths	Cases	Deaths	Cases	Deaths
Calcutta	0	0	48	44	26	0	Kobe	0	0	0	0	0	0
Bombay	0	0	0	57	13	0	Osaka	0	0	0	0	0	0
Madras	0	0	9	7	1	0	Niigata	0	0	0	0	0	0
Rangoon	14	1	1	7	2	0	Tsuruga	0	0	0	0	0	0
Karachi	0	0	0	10	1	0	Hakodate	0	0	0	0	0	0
Negapatam	0	0	0	3	3	0	Keelung (Formosa)	0	0	0	0	0	0
Colombo	0	0	0	0	0	0	Fusan	0	0	0	0	0	0
Basra	0	0	0	1	1	0	Chemulpo	0	0	0	0	0	0
Singapore	0	0	0	1	1	0	Dairen	0	0	0	0	0	0
Port Swettenham	0	0	0	0	0	0	Adelaide	0	0	0	0	0	0
Penang	0	0	0	0	0	0	Brisbane	0	0	0	0	0	0
Batavia	0	0	0	0	0	0	Fremantle	0	0	0	0	0	0
Surabaya	2	2	0	0	0	0	Melbourne	0	0	0	0	0	0
Samarang	0	0	0	0	0	0	Sydney	0	0	0	0	0	0
Cheribon	3	3	0	0	0	0	Rockhampton	0	0	0	0	0	0
Belawan Deli	0	0	0	0	0	0	Townsville	0	0	0	0	0	0
Palembang	0	0	0	0	0	0	Port Darwin	0	0	0	0	0	0
Padang (Sumatra)	0	0	0	0	0	0	Broome	0	0	0	0	0	0
Sabang (Rhio)	0	0	0	0	0	0	Port Moresby	0	0	0	0	0	0
Makassar	0	0	0	0	0	0	Auckland	0	0	0	0	0	0
Menada	0	0	0	0	0	0	Wellington	0	0	0	0	0	0
Banjermassin	0	0	0	0	0	0	Christchurch	0	0	0	0	0	0
Balik-Papan	0	0	0	0	0	0	Invercargill	0	0	0	0	0	0
Tarakon	0	0	0	0	0	0	Noumea (New Caledonia)	0	0	0	0	0	0
Pontianak (Borneo)	0	0	0	0	0	0	Honolulu	0	0	0	0	0	0
Sandakan (North Borneo)	0	0	0	0	0	0	Suez	1	1	0	0	0	4
Kuching (Sarawak)	0	0	0	0	2	0	Tor Quarantine Station	0	0	0	0	0	0
Timor Dilly	0	0	0	0	0	0	Alexandria	0	0	0	0	0	0
Manila	0	0	0	0	0	0	Port Said	0	0	0	0	0	0
Iloilo	0	0	0	0	0	0	Port Sudan	0	0	0	0	0	0
Jolo	0	0	0	0	0	0	Mombasa (Kenya)	0	0	0	0	0	0
Cebu	0	0	0	0	0	0	Zanzibar	0	0	0	0	0	0
Zamboanga	0	0	0	0	0	0	Massowah	0	0	0	0	0	0
Bangkok	3	3	90	52	6	5	Djibuti	0	0	0	0	0	0
Saigon and Cholon	0	0	2	1	2	0	Berbera	0	0	0	0	0	0
Haiphong	0	0	0	0	0	0	Mozambique	0	0	0	0	0	0
Tourane	0	0	0	0	0	0	Lourenco Marques	0	0	0	0	0	0
Hongkong	0	0	0	0	0	0	Durban	0	0	0	0	0	0
Shanghai	0	0	0	0	8	4	East London	0	0	0	0	0	0
Amoy	0	0	0	0	6	4	Port Elizabeth	0	0	0	0	0	0
Nagasaki	0	0	0	0	0	0	Cape Town	0	0	0	0	0	0
Yokohama	0	0	0	0	3	0	Port Louis (Mauritius)	0	0	0	0	0	0
Simonoseki	0	0	0	0	0	0	Seychelles	0	0	0	0	0	0
Moji	0	0	0	0	1	0							

CANADA

Communicable diseases—March 28–April 3, 1926.—The following table shows the number of certain communicable diseases reported in seven Provinces of Canada during the week ended April 3, 1926. The information was supplied by the Canadian Ministry of Health.

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever				1				1
Influenza	43				1			44
Smallpox				6	4	1	1	12
Typhoid fever			4	2	4			10

## CUBA

*Communicable diseases—Provinces—January 1-31, 1926.*—Cases of disease were notified in the Provinces of Cuba for the month of January, 1925, as follows:

Disease	Pinar del rio	Habana	Matanzas	Santa Clara	Camagüey	Oriente	Total
Cerebrospinal meningitis			1		2	2	5
Chicken pox	8	50	7	11	1	7	84
Diphtheria	1	14	3	9	1	1	29
Malaria	1	72	4	4	43	680	804
Measles	2	103	149	14	4	72	344
Paratyphoid fever		3	19	6			28
Scarlet fever	2	16		7			25
Tetanus (infantile)	1		1			1	3
Typhoid fever	10	30	16	22	2	15	95

## HAWAII TERRITORY

*Plague*—A fatal case of plague was reported at Kakuihaele, Island of Hawaii, March 19, 1926.

## PANAMA CANAL

*Communicable diseases—February, 1926.*—During the month of February, 1926, communicable diseases were reported in the Canal Zone, Colon, and Panama, as follows:

Disease	Canal Zone		Colon		Panama		Infected in other localities		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Chicken pox	1				2		1		4	
Diphtheria	3		1		9		1	1	14	1
Dysentery	1		1	1	6	1	6		14	2
Hook worm disease			5		43		32		82	
Malaria	55	2	1			1	30		86	3
Measles							6		10	
Meningitis	1	1							1	1
Mumps	6				2		4		12	
Pneumonia				2		16		3		21
Tuberculosis		11		10		2		2		25
Typhoid fever			1	1					1	1
Whooping cough	7		1						8	

## PERU

*Plague—February, 1926.*—During the month of February, 1926, cases and deaths from plague were reported in Peru as follows:

Place	Cases	Deaths	Place	Cases	Deaths
Ayabaca	4	0	Huacho	5	4
Baranca y Supe	4	0	Huancabamba	10	5
Callao	1	0	Huaral (country)	2	0
Canete	0	1	Jayanca	5	0
Chiclayo	5	4	Lima (city)	7	5
Chimbote (country)	3	3	Lima (country)	15	8
Chincha	5	1	Mollendo	1	1
Chota	2	2	Pacasmayo	6	2
Contumanza	6	3	Pisco	2	1
Cutervo	0	0	Salaverry	2	0
Guadalupe	1	0	Trujillo	7	4

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

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

**Reports Received During Week Ended April 23, 1926 <sup>1</sup>**

**CHOLERA**

Place	Date	Cases	Deaths	Remarks
India.....	Jan. 31-Feb. 6.....	2,952	1,733	
Philippine Islands:				
Manila.....	Feb. 21-Mar. 6.....	3	1	
Province—				
Batangas.....	Feb. 7-13.....	4	4	
Bohol.....	Jan. 23-30.....	1	1	
Laguna.....	Jan. 31-Feb. 6.....	1	2	
Leyte.....	Jan. 3-9.....	2	2	
Mindoro.....	Dec. 20-31.....	35	30	
Nueva Ecija.....	Dec. 6-12.....	1	3	
Pampanga.....	Feb. 7-20.....	11	9	
Rizal.....	Jan. 3-16.....	76	26	

**PLAGUE**

Azores:				
St. Michaels.....	Feb. 7-13.....	1		In outskirts of city of Ponta Delgada.
China:				
Nanking.....	Feb. 14-Mar. 6.....			Present.
Ecuador:				
Guayquil.....	Mar. 1-15.....	9	4	Rats destroyed, 10,135; found infected, 71.
Hawaii Territory.....				Feb. 2, 1926: One plague-infected rodent found near Hamakua Mill Co.
Kakuihaele.....	Mar. 19.....		1	
India.....	Jan. 31-Feb. 6.....	4,603	3,121	
Madagascar:				
Province—				
Moramanga.....	Jan. 16-31.....	20	19	
Tananarive.....	do.....	147	127	
Town—				
Fort Dauphin.....	do.....	1	1	
Tananarive.....	do.....	5	5	
Mauritius Island:				
Moka.....	Dec. 1-31.....	2	2	
Port Lewis.....	do.....	9	8	
Peru.....	Feb. 1-28.....	94	44	
Union of South Africa:				
Winburg District.....	Feb. 21-27.....	1		

**SMALLPOX**

Canada:				
Alberta.....				Mar. 28-Apr. 3, 1926: One case.
Manitoba.....				Mar. 28-Apr. 3, 1926: Cases, 4.
Winnipeg.....	Mar. 28-Apr. 3.....	3		
Ontario.....				Mar. 28-Apr. 3, 1926: Cases, 6.
Saskatchewan.....				Mar. 28-Apr. 3, 1926: One case.
China:				
Amoy.....	Feb. 28-Mar. 6.....		2	
Changsha.....	Feb. 21-27.....			Present.
Chungking.....	do.....			Do.
Foochow.....	Feb. 21-Mar. 6.....			Do.
Hangkow.....	Feb. 28-Mar. 6.....	1	1	
Hongkong.....	Feb. 14-27.....	1	1	
Liao-yang.....	Mar. 7-13.....	1		
Manchuria—				
Dairen.....	Feb. 15-Mar. 7.....	20	9	
Harbin.....	Feb. 26-Mar. 4.....	1		
Shanghai.....	Feb. 28-Mar. 13.....	5	28	Cases, foreign only.
Swatow.....	Feb. 21-Mar. 13.....			Prevalent.
Egypt:				
Alexandria.....	Feb. 19-Mar. 4.....	12	5	
Port Said.....	Feb. 26-Mar. 4.....	1		

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

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

Reports Received During Week Ended April 23, 1926—Continued

### SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
<b>Great Britain:</b>				
England and Wales.....	Mar. 21-27.....	178		
Hull.....	do.....	1		
Newcastle-on-Tyne.....	do.....	3		
<b>Greece:</b>				
Saloniki.....	Mar. 9-15.....		1	
<b>India:</b>				
Jan. 31-Feb. 6.....		6,503	1,422	
<b>Indo-China:</b>				
Saigon.....	Mar. 1-7.....	2	1	Including 100 square kilometers of surrounding territory. Reported as alastrim.
<b>Jamaica:</b>				
Kingston.....	Mar. 21-27.....	59		Do.
do.....	do.....	5		
<b>Japan:</b>				
Yokohama.....	Mar. 8-14.....	17	1	
<b>Mexico:</b>				
Guadalajara.....	Mar. 31-Apr. 6.....		1	
Mexico City.....	Mar. 21-27.....	2		Including municipalities in Federal District.
Vera Cruz.....	Mar. 29-Apr. 4.....		1	
<b>Portugal:</b>				
Lisbon.....	Feb. 14-Mar. 27.....	42		
<b>Sumatra:</b>				
Medan.....	Feb. 21-27.....	1		
<b>Trinidad:</b>				
do.....	Feb. 28-Mar. 20.....	5		Reported as alastrim.

### TYPHUS FEVER

<b>Canary Islands:</b>				
Santa Cruz de Teneriffe.....	Mar. 8-14.....	1		
<b>China:</b>				
Antung.....	Feb. 22-Mar. 7.....	6		
<b>Egypt:</b>				
Alexandria.....	Feb. 17-25.....	1		
Port Said.....	Mar. 12-18.....	1		
<b>Mexico:</b>				
Mexico City.....	Mar. 14-20.....	5		Including municipalities in Federal District.
<b>Palestine:</b>				
Tel-Aviv.....	Mar. 9-15.....	1		
Tiberias.....	do.....	2		
<b>Rumania:</b>				
Constantza.....	Feb. 21-Mar. 10.....	1		
<b>Union of South Africa:</b>				
Cape Province.....	Feb. 14-27.....			Outbreaks.
Natal—				
Durban.....	do.....	1		
Orange Free State.....	do.....			Do.
Transvaal.....	do.....			Do.

Reports Received from December 26, 1925, to April 16, 1926<sup>1</sup>

### CHOLERA

Place	Date	Cases	Deaths	Remarks
Chosen.....	October - November, 1925.....	12	5	
French Settlements in India...	Dec. 1-31.....	880	712	
<b>India:</b>				
Calcutta.....	Nov. 1-28.....	101	89	Oct. 18, 1925, to Jan. 2, 1926: Cases, 21,316; deaths, 12,371.
Do.....	Dec. 6-26.....		54	Jan. 3-30, 1926: Cases, 14,906; deaths, 8,327.
Do.....	Dec. 27-Jan. 18.....		41	
Do.....	Jan. 24-Mar. 6.....	207	179	
Madras.....	Nov. 15-Jan. 2.....	174	70	
Do.....	Jan. 3-Mar. 6.....	93	60	
Rangoon.....	Nov. 8-Dec. 5.....	4	4	
Do.....	Jan. 24-Feb. 13.....	5	3	

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

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

Reports Received from December 26, 1925, to April 16, 1926—Continued

### CHOLERA—Continued

Place	Date	Cases	Deaths	Remarks
Indo-China				September, 1925: Cases, 9; deaths, 5. September, 1924: Cases, 7; deaths, 4. (European cases, 2.)
Province—				
Annam	Sept. 1-30	2	2	
Cochin China	do.	5	3	
Saigon	Jan. 4-17	2	2	
Tonkin	September, 1925	2		Including 100 square kilometers of surrounding country.
Japan	Aug. 30-Oct. 17	409		
Do.	Oct. 25-Dec. 26	113		
Philippine Islands:				
Manila	Nov. 9-Jan. 3	15	10	
Do.	Jan. 4-Feb. 13		26	
Province—				
Bataan	Nov. 30-Dec. 26	29	25	
Do.	Jan. 2-16	1	1	
Batangas	Jan. 24-30	3	3	
Bulacan	Oct. 18-Nov. 7	92	64	
Do.	Nov. 23-Dec. 31	200	88	
Do.	Jan. 2-30	6	6	
Laguna	Nov. 23-Dec. 26	18	14	
Do.	Jan. 24-30	4	4	
Nueva Ecija	do.	6	2	
Pampanga	Nov. 1-7	1	1	
Do.	Nov. 23-Dec. 31	113	85	
Do.	Jan. 2-30	27	25	
Rizal	Sept. 27-Nov. 21	75	21	
Do.	Dec. 21-30	14	11	
Romblon	Dec. 7-13	23	12	
Russia	May-June	7		
Do.	July-August	4		
Siam:				
Bangkok	Oct. 4-Nov. 14	108	68	
Do.	Nov. 22-Dec. 26	270	149	
Do.	Dec. 27-Feb. 13	187	125	
On vessel:				
Steamship	Oct. 3	9		Arrived at Bangkok, Siam: Cases in coolie passengers.

### PLAGUE

Argentina				Jan. 24-30, 1926: 6 cases, occurring in interior Provinces of Salta and Santa Fe.
Buenos Aires	Jan. 24-30	1		
Azores:				
St. Michaels	Jan. 17-30	4	2	
Brazil:				
Bahia	Nov. 8-Dec. 28	3	1	
Do.	Dec. 27-Jan. 30	4	2	
Santos	Dec. 8-21	2	2	
Sao Paulo	Reported Mar. 25	4	1	
British East Africa:				
Kenya—				
Kisumu	Nov. 22-Dec. 5	1	2	
Do.	Jan. 31-Feb. 27	4	3	
Uganda Protectorate	Sept. 1-Dec. 31	468	426	
Canary Islands:				
La Laguna	Dec. 24	3	2	
Las Palmas	do.	1		
Do.	Jan. 7	1	1	
Santa Cruz de Teneriffe	Dec. 18-27	3		
Do.	Dec. 28-Feb. 1	3		
Celebes:				
Makassar	Dec. 29-Feb. 2	12	12	Netherlands East Indies.
Ceylon:				
Colombo	Nov. 15-Dec. 5	3	3	1 plague rodent.
Do.	Dec. 27-Jan. 16	2		
Do.	Jan. 24-Feb. 27	4	3	Feb. 14-20, 1926: Two plague rodents.
China:				
Nanking	Nov. 15-Jan. 23			Prevalent.
Ecuador:				
Eloy Alfaro	Jan. 1-15	1		
Guayaquil	Nov. 1-Dec. 31	31	12	
Do.	Jan. 1-31	34	14	
Recreo (country estate)	do.	1		Rats taken, Nov. 1-Dec. 31, 1925, 49,370; rats found infected, 281. Rats taken, Jan. 1-Feb. 28, 1926, 44,258; rats found infected, 406.

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

Reports Received from December 26, 1925, to April 16, 1926—Continued

### PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
<b>Egypt</b>				Jan. 1-Dec. 9, 1925: Cases, 138.
Alexandria	Mar. 10	1		
Beni Suef	Nov. 18	1	1	
Fayoum Province	Dec. 3-9	1	1	
Gharbia Province	Mar. 9	1	1	
Minia Province	Mar. 4	1	1	
<b>Greece:</b>				
Athens	Nov. 1-30	18	4	Including Piræus.
Do	Jan. 1-31	14	3	
Herakleion	Feb. 4	1		On island of Crete.
Patras	Nov. 13-Dec. 12	4	1	
<b>Hawaii Territory:</b>				
Honakaa	Mar. 16	2		1 death suspected plague.
Paaulo				Jan. 29, 1926: Plague-infected rat found in vicinity.
<b>India</b>				Oct. 18, 1925, to Jan. 2, 1926: Cases, 15,135; deaths, 10,677. Jan. 3-30, 1926: Cases, 10,468; deaths, 7,339.
Bombay	Dec. 6-12	1	1	
Do	Jan. 3-Feb. 20		9	
Calcutta	Dec. 6-12		1	
Karachi	Nov. 1-Dec. 19	4	3	
Do	Feb. 21-Mar. 6	3	3	
Madras Presidency	Oct. 25-Nov. 7	75	41	
Do	Nov. 15-21	35	22	
Do	Dec. 20-26	108	64	
Do	Jan. 3-9	135	83	
Do	Jan. 17-Feb. 13	579	348	
Rangoon	Oct. 25-Dec. 26	23	15	
Do	Dec. 27-Feb. 27	57	49	
<b>Indo-China</b>				September, October, 1925: Cases, 25; deaths, 23.
<b>Province—</b>				
Cambodia	Sept. 1-30	11	11	
Cochin China	September-October	14	12	
<b>Iraq:</b>				
Bagdad	Dec. 13-Jan. 2	7	3	
Do	Jan. 10-Feb. 20	43	26	
<b>Java:</b>				
Batavia	Oct. 24-Nov. 6	94	89	Province.
Do	Nov. 14-Jan. 1	315	297	
Do	Jan. 2-Feb. 19	369	357	
Cheribon	Sept. 27-Oct. 17		166	
Do	Nov. 15-Dec. 26		198	
Do	Jan. 3-Feb. 6		8	
Djakakarta	Oct. 20-Nov. 9			Epidemic in 1 locality.
Kediri	Dec. 7			Do.
Koeningan	Dec. 27-Jan. 16		114	
Pekalongan	Sept. 27-Oct. 17		42	
Do	Nov. 8-Dec. 26		172	
Rembang	Oct. 20			Do.
Surabaya	Oct. 11-Dec. 26	59	59	
Do	Dec. 27-Jan. 9	16	16	
Do	Jan. 17-Feb. 13	12	12	
Tegal	Sept. 27-Oct. 17	6	6	
Do	Nov. 8-Dec. 26		31	
<b>Madagascar</b>				Nov. 1-Dec. 31, 1925: Cases, 632; deaths, 593. Jan. 1-15, 1926: Cases, 161; deaths, 151. Bubonic, pneumonic, and septemic.
<b>Province—</b>				
Ambositra	Dec. 16-31	9	7	
Do	Jan. 1-15	2	2	
Itasy	Sept. 16-Oct. 31	20	20	
Do	Nov. 16-Dec. 16	34	34	
Do	Jan. 1-15	29	29	
Moramanga	Sept. 16-Dec. 31	49	48	
Do	Jan. 1-15	15	15	
Tananarive	Sept. 16-Nov. 30	368	341	
Do	Dec. 16-31	152	143	
Do	Jan. 1-15	111	100	
<b>Town—</b>				
Fort Dauphin	Sept. 16-Nov. 30	6	3	
Tamatave (port)	Sept. 16-30	3	2	
Do	Oct. 16-Nov. 30		9	
Tananarive	Sept. 16-30	2	2	
Do	Nov. 1-30	11	11	
Do	Jan. 1-15	4	4	
<b>Mauritius Island</b>	Sept. 20-Dec. 26	21	18	
Pamplemousses	Oct. 1-Nov. 30	3	2	
Port Louis	do	4	1	
Rivière du Rempart	October	2		

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

**Reports Received from December 26, 1925, to April 16, 1926—Continued**

**PLAGUE—Continued**

Place	Date	Cases	Deaths	Remarks
Persia:				
Teheran	Oct. 21-Nov. 21		12	
Peru				January, 1926: Cases, 196; deaths, 67. Reported in 26 localities. Port 60 miles north of Callao. In hospital. Some cases in Province.
Huacho	Jan. 26	15		
Lima	Jan. 1-31	20		
Mollendo	do			12 or 15 cases reported unofficially.
Russia	May-June	67		
Do	July-October	166		
Senegal	September-October	45	25	
Siam	Aug. 23-Dec. 26	65	53	
Bangkok	Nov. 15-23	3	3	
Do	Jan. 3-30	38	33	
Do	Feb. 7-13	5	4	
Straits Settlements:				
Singapore	Nov. 1-Dec. 5	8	8	
Do	Jan. 3-9	2	2	
Syria:				
Beirut	Nov. 11-20	1		
Do	Jan. 21-31	1		
Union of South Africa:				
Cape Province—				
Kimberley district	Dec. 13-19	1		European.
Middleburg district	Dec. 6-12	1		Native. On farm.
Steynsburg district	Nov. 15-21	1		
Orange Free State—				
Boshof district	Nov. 29-Dec. 5	1	1	In native.
Bothaville district	Dec. 6-12	1	1	Native. On farm.
On vessel:				
Steamship Cid				Jan. 29, 1926. At Buenaventura, Colombia. Rat was killed while jumping ashore from vessel.

**SMALLPOX**

Algeria:				
Algiers	Nov. 21-Dec. 31	177		
Do	Jan. 1-10	64		
Do	Jan. 21-Mar. 10	64		
Arabia:				
Aden	Nov. 29-Dec. 5	1		Imported
Do	Jan. 10-Mar. 6	10	1	
Argentina:				
Rosario	October		1	
Australia:				
Queensland—				
Brisbane	Dec. 9-15	1		
Bahamas	Feb. 23			In Nassau district. Stated to have been imported.
Brazil:				
Manaos	Dec. 1-31		12	
Do	Jan. 31-Feb. 20		6	
Para	Jan. 10-Mar. 6	28	6	
Rio de Janeiro	Nov. 1-28	134	72	
Do	Dec. 6-26	65	26	
Do	Dec. 27-Feb. 20	195	131	
British East Africa:				
Kenya—				
Mombasa	Nov. 15-Dec. 19	14	6	
Do	Dec. 27-Jan. 2	1		From mainland.
Uganda Protectorate	Sept. 1-Oct. 31	8	4	
British South Africa:				
Northern Rhodesia	Jan. 5-11	2		
Southern Rhodesia	Nov. 13-Dec. 23	3		



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

**Reports Received from December 26, 1925, to April 16, 1926—Continued**

**SMALLPOX—Continued**

Place	Date	Cases	Deaths	Remarks
Canada				Sept. 13-Jan. 2: In 7 Provinces, 185 cases. Jan. 3-Feb. 27, 1926: Cases, 277.
Alberta				Jan. 3-Mar. 27, 1926: Cases, 54.
Calgary	Dec. 13-19	1		From Drumheller, vicinity of Calgary.
British Columbia—				
Vancouver	Jan. 4-Mar. 27	2		
Victoria	Mar. 21-27	2		
Manitoba				Jan. 3-Mar. 27, 1926: Cases, 40.
Winnipeg	Dec. 13-19	2		
Do	Jan. 3-Mar. 27	12		
New Brunswick—				
Northumberland	Dec. 6-13	1		
Ontario				Dec. 1-31, 1925: Cases, 32. Jan. 3-Mar. 27, 1926: Cases, 198.
Admaston	Jan. 1-Feb. 1	16		Township.
Alice and Fraser	Feb. 1-28	6		Do.
King	do	7		Do.
Wilnot	do	6		Do.
Belleville	do	4		
Kingston	Mar. 8-14	1		
Kitchener	do	26		
North Bay	Feb. 14-Mar. 14	7		
Ottawa	Dec. 6-12	2		
Do	Jan. 3-Feb. 6	2		
Sarnia	Mar. 14-20	1		
Toronto	Dec. 27-Jan. 2	1		
Do	Jan. 3-Mar. 20	26		
Trenton	do	15		
Saskatchewan				Jan. 3-Mar. 27, 1926: Cases, 72.
Moose Jaw	do	2		
Regina	Jan. 24-Mar. 13	3		
Saskatoon	Feb. 14-20	1		
Ceylon:				
Colombo	Dec. 6-12	1		Port case.
Do	Jan. 3-Feb. 6	5		
Chile:				
Punta Arenas	Dec. 13-26		8	
Do	Dec. 27-Jan. 2		4	
China:				
Amoy	Oct. 25-Dec. 19		1	
Do	Jan. 10-Feb. 13		9	
Antung	Dec. 7-20	2		
Chungking	Nov. 15-Feb. 20			Present.
Foochow	Nov. 1-Feb. 13			Do.
Hankow	Nov. 14-Dec. 26	4		
Do	Jan. 10-Feb. 20	2		
Hongkong	Nov. 22-Dec. 26	4		
Do	Jan. 3-Feb. 13	8	3	
Manchuria—				
An-shan	Dec. 6-12	1		
Do	Jan. 10-Feb. 13	6		South Manchurian Railway.
Changchun	Jan. 10-Feb. 27	20		Do.
Dairen	Oct. 19-Dec. 27	73	15	
Do	Dec. 28-Feb. 14	57	15	
Fushun	Jan. 17-23	1		Do.
Harbin	Jan. 1-Feb. 18	2		
Kai-yuan	Jan. 10-30	4		Do.
Kungchuling	Jan. 31-Feb. 20	2		
Lio-yang	Jan. 17-23	1		Do.
Mukden	Oct. 24-Nov. 15	1		Do.
Do	Jan. 24-Feb. 27	4		Do.
Tieh-ling	do	2		
Nanking	Nov. 21-Dec. 26			Present.
Do	Dec. 27-Feb. 13			Do.
Shanghai	Oct. 25-Jan. 2	37	36	
Do	Jan. 3-Feb. 27	51	103	Cases, foreign only
Swatow	Nov. 22-Feb. 20			Prevalent.
Tientsin	Nov. 1-Dec. 19	2		
Do	Jan. 23-30	1		
Chosen:				
Seishin	Jan. 1-31	5	2	

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

Reports Received from December 26, 1925, to April 16, 1926—Continued

### SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
<b>Egypt:</b>				
Alexandria	Dec. 3-31	5	2	
Do	Jan. 8-14	2	1	
Do	Jan. 29-Feb. 13	10	1	
<b>Esthonia</b>				November, 1925: Cases, 3.
<b>France</b>				September-December, 1925: Cases, 253.
Havre	Jan. 25-31		9	
Paris	Mar. 1-10	5	1	
<b>Gold Coast</b>	September, December.	58	6	
<b>Great Britain:</b>				
England and Wales				Nov. 15-Dec. 26, 1925: Cases, 700.
Hull	Dec. 27-Jan. 23	29		Dec. 27-Mar. 20, 1926: Cases, 2,302.
Do	Feb. 7-Mar. 13	8		
Leeds	Jan. 14-Feb. 6	4		
London	Jan. 31-Feb. 6		1	
Newcastle-on-Tyne	Nov. 29-Dec. 19	6		
Do	Dec. 27-Mar. 13	32	1	
Nottingham	Nov. 22-Dec. 26	9		
Do	Dec. 27-Feb. 27	3		
Sheffield	Nov. 22-Dec. 12	7		
Do	Dec. 20-26	3		
Do	Dec. 27-Mar. 20	18		
South Shields	Feb. 9			Reported present in severe form
<b>Greece</b>				Oct. 1-31, 1925: Cases, 16.
Athens	Nov. 1-Dec. 31	18	1	
Do	Jan. 1-Feb. 28	50	3	
Kalamata	Mar. 1-7	1		From Patras.
Saloniki	Feb. 16-22		1	
<b>India</b>				Oct. 18-Dec. 26, 1925: Cases, 19,472; deaths, 4,440. Dec. 27, 1925-Jan. 30, 1926: Cases, 29,832; deaths, 10,069.
Bombay	Nov. 8-Dec. 26	26	20	
Do	Dec. 27-Feb. 20	113	58	
Calcutta	Nov. 29-Dec. 26	48	25	
Do	Dec. 27-Feb. 27	370	225	
Karachi	Nov. 1-21	23		
Do	Nov. 29-Dec. 5	4	2	
Do	Dec. 13-19	3		
Do	Dec. 29-Mar. 6	79	24	
Madras	Jan. 24-Mar. 6	34	6	
Rangoon	Oct. 25-Nov. 28	3		
Do	Dec. 6-26	4	1	
Do	Dec. 27-Jan. 16	13	1	
Do	Jan. 24-30	6		
Do	Jan. 31-Feb. 27	56	9	
<b>Indo-China</b>				September-October, 1925: Cases, 204; deaths, 62.
Province—				
Annam	Sept. 1-Oct. 31	90	23	
Cambodia	do.	72	30	
Cochin China	do.	61	30	
Saigon	Dec. 21-27	2	1	
Do	Jan. 1-Feb. 7	6		Including 100 kilometers of surrounding country.
Tonkin	Dec. 2-Jan. 2	22		
<b>Iraq:</b>				
Bagdad	Nov. 1-Dec. 26	19	15	Sept. 6-Oct. 17, 1925: Cases, 81; deaths, 40.
Do	Dec. 27-Feb. 20	15	7	
Basra	Dec. 27-Feb. 13	40	32	
<b>Italy</b>				Aug. 2, 1925; Jan. 2, 1926: Cases, 52. Jan. 3-16, 1926: Cases, 12.
Catania	Feb. 15-28	1	1	
Genoa	Jan. 21-Feb. 10	4		
Rome	Oct. 12-25	1		
<b>Jamaica</b>				Nov. 29-Dec. 26, 1925: Cases, 95. Dec. 27, 1925-Feb. 27, 1926: Cases, 260. Reported as alastrim.
Kingston	Nov. 29-Dec. 26	43		Reported as alastrim.
Do	Dec. 27-Jan. 30	48		Do.
<b>Japan:</b>				
Nagasaki	Feb. 15-21	1		
Taiwan	Nov. 11-Dec. 10	3		
Yokohama	Dec. 14-20	1		
Do	Feb. 23-Mar. 7	21	4	

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

**Reports Received from December 26, 1925, to April 16, 1926—Continued**

**SMALLPOX—Continued**

Place	Date	Cases	Deaths	Remarks
<b>Java:</b>				
Batavia	Oct. 24-30	1		
Do	Nov. 14-Dec. 25	7		
Buitenzorg	Nov. 29-Dec. 5	1		
Cheribon	Nov. 8-Dec. 12	2		
Do	Jan. 31-Feb. 6		1	
Kraksaan	Oct. 11-17	11		
Malang	Oct. 11-Jan. 16	13		
North Bantam	Oct. 4-17	4		
Pekalongan	Oct. 25-31	1		
Pontianak	Jan. 31-Feb. 6		1	
Probolingo	Oct. 11-17	1		
South Bantam	Oct. 11-17	1		
Surabaya	Oct. 11-Dec. 26	633	104	
Do	Dec. 27-Feb. 13	131	40	
Tegal	Oct. 4-10	9	1	
Latvia				December, 1925: Cases, 3.
Malta	Nov. 1-Dec. 21	21	3	
Do	Jan. 1-Feb. 28	20		
<b>Mexico</b>				
Aguascalientes	Dec. 13-Jan. 2	4	3	July-September, 1925: Deaths, 1,157.  Including municipalities in Federal District. Do.
Do	Jan. 3-30		7	
Do	Feb. 14-Mar. 27		12	
Durango	Dec. 1-31		1	
Do	Jan. 1-31		2	
Guadalajara	Dec. 27-Mar. 29		15	
Mexico City	Nov. 28-Dec. 5	1		
Do	Jan. 3-Mar. 13	5		
San Luis Potosi	Jan. 17-Mar. 20		53	
Tampico	Dec. 21-Jan. 2	1	1	
Do	Jan. 2-Mar. 10	8		
Torreon	Nov. 1-Dec. 31		51	
Do	Jan. 1-Feb. 28		54	
<b>Netherlands:</b>				
The Hague	Jan. 30-Mar. 6	2	1	
<b>Nigeria</b>				
				August-November, 1925: Cases, 347; deaths, 6.
<b>Palestine:</b>				
Hebron	Jan. 26-Feb. 1	2		
Tiberias	Feb. 9-15	1		
<b>Persia:</b>				
Teheran	July 23-Dec. 22		775	
<b>Peru:</b>				
Arequipa	Oct. 1-Dec. 31		2	
<b>Poland</b>				
<b>Portugal:</b>				
Lisbon	Oct. 4-31	124		
Do	Nov. 16-Dec. 27		60	
Do	Nov. 14-Dec. 26	187		
Do	Dec. 27-Feb. 28	87	29	
Oporto	Nov. 22-Dec. 19	2	3	
Do	Dec. 27-Mar. 6	3	1	
Rumania	August-October	3		
<b>Russia</b>				
Do				May-June, 1925: Cases, 2,333. July 1-Oct. 31, 1926: Cases, 1,563. July 12-Sept. 5, 1925: Cases, 21; deaths, 6.
<b>Siam</b>				
Bangkok	Dec. 20-25	3	1	
Do	Dec. 26-Feb. 13	51	17	
<b>Sierra Leone:</b>				
Konno district	Dec. 16-31	5		
<b>Spain:</b>				
Madrid	Year 1925		18	
Do	Jan. 1-31		1	
Malaga	Nov. 29-Dec. 5		2	
Do	Dec. 27-Jan. 2		1	
Valencia	Dec. 20-26	1		
Do	Dec. 27-Jan. 2	1		
Do	Jan. 10-Feb. 6	9		
Do	Feb. 14-Mar. 12	7		
<b>Straits Settlements:</b>				
Singapore	Dec. 20-26	1		
Do	Jan. 10-16	2	1	
<b>Switzerland</b>				
Lecurue	Oct. 1-Nov. 30	8		June 28-Nov. 21, 1925: Cases, 62; Dec. 27, 1925-Jan. 30, 1926: Cases, 37.
Do	Jan. 1-31	5		
Zurich	Dec. 27-Jan. 2	1		

**CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued**
**Reports Received from December 26, 1925, to April 16, 1926—Continued**
**SMALLPOX—Continued**

Place	Date	Cases	Deaths	Remarks
Trinidad (West Indies):				
Port of Spain	Jan. 1-Feb. 20	3		
Tunisia:				
Tunis	Nov. 21-30	2		
Do	Dec. 11-31	10	1	
Do	Jan. 1-Feb. 20	6		
Union of South Africa:				
Cape Province	Jan. 17-23			Outbreaks.
Orange Free State—				
Kuruman district	Jan. 10-16			Do.
Ladybrand district	Dec. 27-Jan. 2			Do.
Transvaal—				
Belfast district	do			Do.
Germiston district	Jan. 2-9			Do.
Pretoria district	Dec. 6-12			Outbreaks. In native compound.
On vessel	Feb. 21	2		Mexican steamer Morteziama, at Port of Ensenada, Mexico.

**TYPHUS FEVER**

Algeria:				
Algiers	Nov. 1-Dec. 20	2		
Do	Jan. 1-Feb. 28	9		
Argentina:				
Rosario	Oct. 13-Dec. 31	2		
Bulgaria:				
Sofia	Sept. 1-Dec. 31	50	3	
Do	Dec. 25-31	1		
Do	Jan. 8-14	2		
Chile				Dec. 15-31, 1925: Cases, 46.
Achao	Dec. 15-31	1		
Bulnes	do	1		
Chillan	do	24		
Concepcion	do	6		
Linares	do	1		
Los Angeles	do	5		
Penco	do	2		
San Carlos	do	1		
Talca	do	1		
Valparaiso	do	4		
Do	Nov. 29-Jan. 2		2	
China:				
Antung	Nov. 29-Dec. 27	5	1	
Do	Jan. 4-10	1		
Hongkong	Dec. 27-Jan. 2	1		
Manchuria—				
Harbin	Dec. 17-Feb. 4	3		
Czechoslovakia	October-December	145	1	
Egypt:				
Alexandria	Jan. 8-14	1		
Cairo	Nov. 5-Dec. 16	3	2	
Port Said	Nov. 19-25	1		
Esthonia	Jan. 1-31	6		
Finland				October, 1925: 1 case.
France	July-October	4		
Germany	Oct. 25-31	1		
Greece				December, 1925: Cases, 12.
Athens	Nov. 1-30	11	2	
Do	Jan. 1-Feb. 23	38	7	
Saloniki	Dec. 29-Jan. 4	1		
Do	Feb. 2-8	1		
Hungary				November-December, 1925: Cases, 16.
Ireland:				
Cork County—				
Cork	Dec. 26-Jan. 1	2		
Do	Jan. 2-8	5		
Dumanway	Nov. 14	1		
Galway County	Oct. 17	1		
Kerry County—				
Listowel	Mar. 7-13	1		Rural district.
Wexford County—				
Gorey	do	1		Do.
Latvia	October-December	4		
Lithuania				September-October, 1925: Cases, 9; deaths, 1.

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

**Reports Received from December 26, 1925, to April 16, 1926—Continued**

**TYPHUS FEVER—Continued**

Place	Date	Cases	Deaths	Remarks
Mexico.....				July-September, 1925: Deaths, 90.
Aguascalientes.....	Dec. 14-19.....	1		
Durango.....	Dec. 1-31.....		1	
Do.....	Jan. 1-31.....		1	
Guadalajara.....	Dec. 8-28.....		2	
Do.....	Dec. 29-Jan. 4.....		1	
Mexico City.....	Nov. 22-Dec. 26.....	145		Including municipalities in Federal District.
Do.....	Dec. 27-Mar. 5.....	79		Do.
San Luis Potosi.....	Feb. 6-13.....		1	
Tampico.....	Dec. 21-Jan. 10.....	1	1	
Torreón.....	November, 1925.....		1	
Vera Cruz.....	Feb. 12.....		1	
Morocco.....	August-December.....	93		
Norway.....				November-December, 1925: Cases, 2.
Palestine:				
Gaza.....	Dec. 18.....	1		
Jaffa.....	Dec. 17.....	1		
Do.....	Feb. 23-Mar. 1.....	1		
Nazareth.....	Nov. 3-9.....	1		
Safad.....	Nov. 24-30.....	1		
Tel-Aviv.....	do.....	1		
Peru:				
Arequipa.....	October-December.....		3	
Poland.....	Oct. 11-Nov. 18.....	215	26	
Do.....	Nov. 29-Jan. 2.....	247	18	
Do.....	Jan. 3-16.....	190	14	
Rumania.....				July-October, 1925: Cases, 181; deaths, 22.
Constantza.....	Feb. 1-10.....	1		
Russia.....				May-June, 1925: Cases, 10,680.
Do.....				July-October, 1925: Cases, 6,035.
Turkey:				
Constantinople.....	Jan. 24-30.....	3		
Do.....	Feb. 9-22.....	5	3	From unofficial sources (press).
Union of South Africa.....				October, 1925: Cases, 88; deaths, 7 (colored). Cases, European, 7. December, 1925: Cases, 78; deaths, 9. Colored: Cases, 73; deaths, 9. January, 1926: Cases, 94; deaths, 18. European cases, 5.
Cape Province.....	Oct. 1-31.....	63	5	Colored.
Do.....	Nov. 8-Dec. 31.....	47	8	
Do.....	Jan. 1-31.....	74	14	Do.
Grahamstown.....	Jan. 24-30.....	2		
Middleburg district.....	Dec. 6-12.....	1		European. On farm.
Natal.....	Oct. 1-Dec. 5.....	1		
Do.....	Jan. 1-31.....	9	1	Colored.
Durban.....	Jan. 3-Feb. 27.....	3		
Orange Free State.....	Nov. 26-Dec. 5.....	23	1	
Do.....	Dec. 1-31.....	8	1	
Do.....	Jan. 1-31.....	6	3	Do.
Bethulia district.....	Dec. 6-12.....			Outbreaks.
Bothaville district.....	do.....	1		Native. On farm.
Transvaal.....	Oct. 1-31.....	1	1	
Do.....	Dec. 1-31.....	18		
Bloemhof district.....	Dec. 27-Jan. 2.....			Outbreaks. On farm.
Johannesburg.....	Mar. 1-6.....	2		
Yugoslavia.....				Jan. 1-Feb. 21, 1926: Cases, 81; deaths, 12.

**YELLOW FEVER**

Gold Coast.....	Sept. 1-Dec. 31.....	4	3
Nigeria.....	August-October.....	3	2
Senegal.....	November, 1925.....	3	2