PUBLIC HEALTH REPORTS

VOL. 45 MAY 23, 1930 NO. 21

AN ANEMIA OF DOGS PRODUCED BY FEEDING ONIONS[1]

By W. H. SEBRELL, *Assistant Surgeon, United States Public Health Service*

In the course of an experiment designed to test the blacktongue preventive value of onions, it was observed that the experimental animals were all suffering from a severe anemia. Since the basic diet was one which had been used in the Hygienic Laboratory for a number of years without producing any observed anemia, it appeared that the onions were probably responsible for the condition. A series of experiments was accordingly carried out in order to determine the anemia-producing potency, in the dog, of various quantities of mature onions, both cooked and raw.

Seven dogs were selected and offered our stock diet No. 326 (Table 1), which has been used in this laboratory for over a year as a reconditioning diet and which has proved adequate for maintaining, breeding, and raising dogs.

TABLE 1.—*Composition of stock diet No. 326* [1]

[Total calories, 2,400]

Articles of diet	Quantity	Nutrients		
		Protein	Fat	Carbohydrate
	Grams	*Grams*	*Grams*	*Grams*
Graham flour	380	47.1	8.0	279.0
Whole milk powder	120	31.0	35.0	45.0
Dried pork liver	60	40.6	6.4	5.8
Brewery yeast	20	8.6	0.2	7.8
Cod-liver oil	10		10.0	
Calcium carbonate	6			
Sodium chloride	6			
Total nutrients		127.3	59.6	337.6
Nutrients per 1,000 calories		53.0	24.8	140.6

[1] The graham flour and sodium chloride are stirred into water and cooked in a double boiler of enamel ware for about 1½ hours. Then the other ingredients are well stirred in, the total weight being brought to 2,400 grams with water (so that 1 gram represents 1 calorie), and this finished mixture is served to the dog ad libitum.

After varying lengths of time on this diet, during which hemoglobin determinations and red cell, white cell, and reticulated cell counts were made, quantities of onions, as shown in Table 2, were incorporated in the stock diet and offered daily to each animal.

[1] Submitted for publication Apr. 23, 1930.

TABLE 2.—*Quantity of onions incorporated in stock diet daily*

Dog No.	Date	Weight	Total amount of onions in diet	Quantity of onions per kilo of body weight	Method of preparation
		Kilograms	*Grams*	*Grams*	
167	Nov. 11, 1929	5.7	125	22	Cooked.
	Dec. 14, 1929	5.9	200	34	Do.
136	Jan. 7, 1930	9.0	50	6	Do.
	Feb. 26, 1930	9.2	150	16	Do.
129	Dec. 14, 1929	7.3	200	27	Do.
110	Jan. 17, 1930	9.8	100	10	Do.
	Feb. 28, 1930	9.6	200	21	Do.
191	Nov. 11, 1929	8.0	125	15	Do.
	Dec. 14, 1929	8.7	200	23	Do.
194	Feb. 8, 1930	6.2	95	15	Raw.
195	Feb. 7, 1930	6.5	130	20	Do.

The general methods of caring for and feeding the animals in this laboratory have already been described by Goldberger and his associates (1) (2) in connection with experiments on blacktongue. It is sufficient to repeat that each animal is kept in an individual kennel, having a concrete floor and containing a wooden bench. Food is served in a metal container once each day and any food remaining the next morning is collected and weighed. A supply of drinking water is constantly available. The stock diet is so designed that 1 gram represents 1 calorie. Each dog is given a daily amount of this diet which is intended to be only enough for the maintenance of normal body weight. In the experiments here reported no account has been taken of the extra calories added by the onion supplement, since the caloric intake of the animal does not appear to be pertinent in connection with these experiments. Most of the animals have been previously used in experiments on blacktongue, but such animals were not used in these experiments until after at least one month of reconditioning on the stock diet.

The cooked onions were prepared as follows: Sound, mature onions of the best quality for human consumption were selected, peeled, and run through a food chopper. They were then cooked in a double boiler for 1½ hours, and a quantity of cooked onions equivalent to the weight of the onions before cooking was then thoroughly mixed into the dog's daily ration of stock diet and served. In the case of the raw onions they were peeled, chopped, weighed, and mixed into the daily ration of stock diet.

The hemoglobin determinations were made by the Newcomer method and the result was expressed in grams per 100 cubic centimeter of blood. The red and white cell counts were made in the usual manner of making cell counts in clinical laboratories and were all done by one individual. The differential white cell counts were made on 200 cells. The reticulated red cell counts were made on the

dried smear, and in each instance at least 1,000 cells were counted in arriving at a percentage. Blood was obtained from the margin of the ear.

The significant details in regard to each of the experimental animals are as follows:

Dog 110.—On stock diet No. 326 from October 9, 1929, to January 17, 1930.
January 14, 1930: Weighs 9.8 kilos.
January 17: Begins daily supplement of 100 grams of onions.
February 25: Weighs 9.6 kilos.
February 28: Onion supplement increased to 200 grams daily.
March 25: Weighs 9.8 kilos.

TABLE 3.—*Blood examinations of dog 110*

Date	Hemoglobin, grams per 100 cubic centimeter	Red cell count	White cell count	Reticulated red cells per thousand
1929				
Nov. 19	13.6	6,700,000	13,300	4
Nov. 23	16.5	9,000,000	9,300	2
Nov. 27	16.3	7,600,000	9,200	3
Dec. 2	17.3	8,000,000	10,200	3
Dec. 5	16.7	8,000,000	9,600	3
Dec. 9	16.5	6,800,000	9,500	2
Dec. 12	16.2	6,600,000	11,200	4
Dec. 16	15.2	7,700,000	10,000	2
Dec. 19	16.6	7,700,000	11,900	6
Dec. 26	16.7	8,000,000	19,000	2
1930				
Jan. 2	16.6	7,400,000	11,200	6
Jan. 4	17.2	6,500,000	11,600	6
Jan. 9	17.3	6,700,000	10,300	2
Jan. 13	16.2	7,400,000	9,900	7
Jan. 16	16.6	6,600,000	9,400	3
Jan. 17 [1]	15.0	6,200,000	10,200	1
Jan. 20	16.1	6,000,000	11,000	2
Jan. 23	15.7	5,700,000	12,700	12
Jan. 27	14.5	5,300,000	16,400	4
Jan. 30	15.3	5,500,000	12,800	11
Feb. 3	15.6	5,600,000	9,100	16
Feb. 6	16.4	5,300,000	8,300	6
Feb. 10	13.1	5,000,000	10,200	5
Feb. 13	11.7	5,600,000	16,000	5
Feb. 17	12.7	4,700,000	10,000	7
Feb. 20	12.5	5,600,000	9,900	7
Feb. 24	14.3	5,800,000	10,900	8
Feb. 27	14.2	5,700,000	5,900	13
Feb. 28 [2]	15.4	6,000,000	9,100	9
Mar. 3	13.4	5,200,000	10,500	9
Mar. 6	12.7	5,200,000	11,400	25
Mar. 11	11.3	5,000,000	10,200	15
Mar. 14	11.5	4,500,000	11,300	19
Mar. 18	12.7	4,800,000	11,100	22
Mar. 21	12.4	5,500,000	9,400	29
Mar. 25	10.8	5,000,000	7,900	11
Mar. 28	11.8	4,300,000	12,300	12
Apr. 8				
Apr. 11				

[1] Began daily supplement of 10 grams of cooked onions per kilo of body weight.
[2] Onion supplement increased to 21 grams per kilo of body weight.

Dog 129.—On stock diet No. 326 from October 22 to December 14, 1929.
December 10, 1929: Weighs 7.3 kilos.
December 14: Begins daily supplement of 200 grams of cooked onions.
March 25, 1930: Weighs 8.2 kilos.

TABLE 4.—*Blood examination of dog 129*

Date	Hemoglobin, grams per 100 cubic centimeters	Red cell count	White cell count	Reticulated red cells per thousand
1929				
Nov. 19	14.5	8,400,000	9,400	3
Nov. 23	16.3	8,100,000	9,800	1
Nov. 27	16.1	7,000,000	11,700	2
Dec. 2	15.8	6,400,000	11,600	8
Dec. 5	16.4	6,900,000	13,700	8
Dec. 9	16.9	7,500,000	7,000	8
Dec. 12	18.2	7,500,000	8,100	7
Dec. 13	17.4	8,500,000	8,600	1
Dec. 14 [1]				
Dec. 16	18.2	7,900,000	10,100	15
Dec. 18	14.5	8,400,000	10,700	10
Dec. 19	13.5	5,500,000	12,600	2
Dec. 21	13.1	5,700,000	16,300	29
Dec. 23	8.6	4,100,000	20,500	92
Dec. 26	8.2	4,000,000	21,900	70
Dec. 28	8.7	3,200,000	13,200	132
1930				
Jan. 2	13.4	5,400,000	6,900	30
Jan. 6	13.4	5,500,000	6,200	24
Jan. 9	14.4	6,300,000	8,700	14
Jan. 13	13.8	6,400,000	8,300	31
Jan. 16	14.4	6,400,000	16,300	15
Jan. 20	13.4	5,700,000	15,400	26
Jan. 23	14.2	5,500,000	12,900	36
Jan. 27	13.5	4,200,000	22,300	36
Jan. 30	12.5	4,900,000	17,200	18
Feb. 3	12.8	4,600,000	13,900	34
Feb. 6	11.5	4,900,000	11,900	46
Feb. 10	14.2	4,900,000	13,700	74
Feb. 13	12.4	5,200,000	12,200	65
Feb. 18	11.4	5,000,000	12,200	37
Feb. 20	11.4	5,000,000	16,600	40
Feb. 24	10.2	5,000,000	15,800	32
Feb. 27	13.2	5,100,000	15,500	4
Mar. 3	12.8	5,500,000	11,600	38
Mar. 6	14.5	6,000,000	9,600	17
Mar. 11	14.7	5,700,000	9,800	28
Mar. 14	14.3	5,800,000	11,100	36
Mar. 18	14.5	5,300,000	12,900	16
Mar. 21	14.4	5,700,000	10,700	48
Mar. 25	15.5	6,000,000	10,500	17
Mar. 28	14.5	5,900,000	9,600	40
Apr. 8	10.6	4,900,000	17,900	56

[1] Began daily supplement of 27 grams of cooked onions per kilo of body weight.

Dog 136.—On stock diet No. 326 from October 22, 1929, to January 7, 1930.
January 7, 1930: Begins daily supplement of 50 grams of cooked onions. Weighs 9 kilos.
February 25: Weight 9.2 kilos.
February 26: Onion supplement increased to 150 grams daily.
March 25: Weighs 9.4 kilos.

TABLE 5.—*Blood examinations of dog 136*

Date	Hemoglobin, grams per 100 cubic centimeters	Red cell count	White cell count	Reticulated red cells per thousand
1929				
Nov. 20	14.5	6,900,000	10,300	1
Nov. 23	15.4	6,100,000	8,900	2
Nov. 27	16.0	6,000,000	13,000	1
Dec. 2	14.5	6,500,000	11,200	1
Dec. 5	15.7	6,600,000	12,400	2
Dec. 9	16.5	6,900,000	10,600	1
Dec. 12	16.3	6,200,000	11,400	2
Dec. 16	17.3	7,000,000	11,000	10
Dec. 19	14.6	6,200,000	13,800	3
Dec. 26	13.7	6,300,000	15,500	5
1930				
Jan. 2	16.5	5,900,000	13,000	3
Jan. 6	18.4	7,500,000	17,000	8
Jan. 7 [1]				
Jan. 9	16.6	6,400,000	12,200	4
Jan. 13	15.7	6,000,000	12,800	1
Jan. 16	16.5	6,600,000	11,000	2
Jan. 20	14.3	5,900,000	11,700	1
Jan. 23	14.6	5,400,000	13,100	7
Jan. 27	15.7	5,300,000	11,200	5
Jan. 30	15.6	5,000,000	11,000	4
Feb. 3	15.5	5,000,000	11,500	16
Feb. 6	13.5	5,600,000	12,300	5
Feb. 10	16.5	5,600,000	13,100	22
Feb. 13	11.6	4,900,000	11,400	24
Feb. 17	10.8	5,000,000	12,000	12
Feb. 20	12.5	4,800,000	16,100	8
Feb. 25	13.5	5,700,000	11,000	4
Feb. 26 [2]				
Feb. 27	15.1	5,400,000	12,200	63
Mar. 1	11.5	5,300,000	11,300	6
Mar. 3	12.4	5,400,000	11,400	5
Mar. 6	13.6	4,400,000	11,600	12
Mar. 12	12.3	4,000,000	11,300	9
Mar. 14	11.5	4,800,000	12,300	22
Mar. 18	10.6	4,200,000	13,700	17
Mar. 21	12.3	5,300,000	13,800	12
Mar. 25	13.5	4,900,000	13,500	3
Mar. 28	11.3	4,100,000	12,500	12
Apr. 9	10.3	3,700,000	15,800	9
Apr. 12	8.7	3,900,000	15,200	23

[1] Begins daily supplement of 6 grams of cooked onions per kilo of body weight.
[2] Onion supplement increased to 16 grams per kilo of body weight.

Dog 167.—On stock diet No. 326 from August 17 to November 11, 1929.
November 5, 1929: Weighs 5.7 kilos.
November 11: Begins daily supplement of 125 grams of cooked onions.
December 10: Weighs 5.9 kilos.
December 14: Onion supplement increased to 200 grams daily.
January 17, 1930: Onion supplement discontinued.
January 21: Weighs 6.1 kilos.

TABLE 6.—*Blood examinations of dog 167*

Date	Hemoglobin, grams per 100 cubic centimeters	Red cell count	White cell count	Reticulated red cells per thousand
1929				
Nov. 1	13.5	7,100,000	10,200	
Nov. 6	15.5	6,600,000	10,600	1
Nov. 8	16.5	7,000,000	9,200	2
Nov. 11 [1]	14.4	6,300,000	9,900	2
Nov. 14	8.2	4,100,000	21,400	40
Nov. 16	4.3	2,600,000	22,500	110
Nov. 18	3.5	1,800,000	16,600	100
Nov. 21	7.7	3,100,000	7,700	100
Nov. 25	9.7	3,700,000	7,900	40
Nov. 29	9.6	4,200,000	8,400	10
Dec. 3	10.2	4,200,000	13,700	30
Dec. 6	11.3	4,600,000	15,900	4
Dec. 10	11.5	4,500,000	13,000	10
Dec. 13	11.8	5,200,000	11,600	15
Dec. 14 [2]				
Dec. 17	11.3	5,000,000	12,600	40
Dec. 21	11.5	5,000,000	15,100	28
Dec. 24	10.5	5,000,000	14,800	20
Dec. 28	10.7	4,000,000	16,500	21
1930				
Jan. 4	13.4	5,100,000	11,600	40
Jan. 8	11.3	5,200,000	18,500	34
Jan. 11	10.4	4,700,000	17,800	31
Jan. 15	10.6	4,600,000	14,900	28
Jan. 17 [3]				
Jan. 18	10.3	3,800,000	14,600	42
Jan. 22	13.5	5,000,000	11,000	48
Jan. 25	13.5	5,000,000	10,400	8
Jan. 29	14.3	5,600,000	9,700	2
Feb. 1	15.5	5,600,000	8,100	2
Feb. 5	16.5	5,900,000	7,400	4
Feb. 8	17.4	5,300,000	7,000	2

[1] Began daily supplement of 22 grams of cooked onions per kilo of body weight.
[2] Onion supplement increased to 34 grams per kilo of body weight.
[3] Onion supplement discontinued.

Dog 191.—On stock diet No. 326 from June 27 to November 11,1929.
November 5, 1929: Weighs 8 kilos.
November 11: Begins daily supplement of 125 grams of cooked onions.
December 10: Weighs 8.7 kilos.
December 14: Onion supplement increased to 200 grams daily.
March 25, 1930: Weighs 9 kilos.

TABLE 7.—*Blood examinations of dog 191*

Date	Hemoglobin, grams per 100 cubic centimeters	Red cell count	White cell count	Reticulated red cells per thousand
1929				
Nov. 6	18.5	6,800,000	16,000	7
Nov. 8	18.4	8,000,000	12,800	3
Nov. 11 [1]	16.4	7,700,000	12,500	2
Nov. 14	12.4	6,000,000	13,100	6
Nov. 16	10.2	5,400,000	17,700	4
Nov. 18	9.2	4,300,000	19,200	14
Nov. 21	7.7	3,000,000	12,400	50
Nov. 25	8.7	3,600,000	14,900	100
Nov. 29	10.1	4,700,000	9,200	40
Dec. 3	11.2	5,700,000	12,600	20
Dec. 6	12.3	5,800,000	10,700	19
Dec. 10	14.7	5,200,000	13,300	6
Dec. 13	15.4	7,300,000	13,700	5
Dec. 14 [2]				
Dec. 17	13.4	7,600,000	14,300	15
Dec. 21	15.6	6,500,000	11,100	3
Dec. 24	13.5	6,900,000	19,000	9
Dec. 28	13.5	5,100,000	15,000	10
1930				
Jan. 4	12.5	5,000,000	17,100	5
Jan. 8	10.3	4,500,000	18,000	5
Jan. 11	10.3	4,700,000	14,500	13
Jan. 15	11.2	5,000,000	14,100	33
Jan. 18	9.7	4,100,000	10,000	11
Jan. 22	12.4	5,000,000	6,800	10
Jan. 25	10.6	4,000,000	10,300	11
Jan. 29	10.7	5,200,000	11,000	6
Feb. 1	12.8	5,000,000	11,300	12
Feb. 5	11.5	5,500,000	11,800	4
Feb. 8	11.4	4,900,000	12,600	8
Feb. 12	10.5	4,500,000	14,000	5
Feb. 15	10.3	4,800,000	11,700	14
Feb. 20	10.8	5,700,000	14,900	22
Feb. 26	14.3	5,300,000	12,600	6
Mar. 1	15.6	6,200,000	10,300	1
Mar. 5	15.7	6,300,000	8,700	10
Mar. 8	15.7	6,600,000	10,900	9
Mar. 12	16.3	7,000,000	13,500	11
Mar. 15	14.5	6,600,000	7,900	12
Mar. 19	17.4	7,000,000	16,700	17
Mar. 22	17.3	7,600,000	12,200	23

[1] Began daily supplement of 15 grams of cooked onions per kilo of body weight.
[2] Onion supplement increased to 23 grams per kilo of body weight.

Dog 194.—On stock diet No. 326 from December 31, 1929, to February 8, 1930.
February 4, 1930: Weighs 6.2 kilos.
February 8: Begins daily supplement of 95 grams of raw onions in stock diet.
February 17: Onion supplement discontinued.
February 18: Weighs 6.2 kilos.

TABLE 8.—*Blood examinations of dog 194*

Date	Hemoglobin, grams per 100 cubic centimeters	Red cell count	White cell count	Reticulated red cells per thousand
1930				
Jan. 24	15.7	6,600,000	11,900	8
Jan. 28	16.2	6,600,000	13,200	11
Jan. 31	13.7	6,600,000	15,300	2
Feb. 4	16.4	6,400,000	14,700	21
Feb. 7	16.5	6,400,000	14,000	7
Feb. 8 [1]				
Feb. 11	9.8	4,100,000	21,000	7
Feb. 13	5.6	3,200,000	25,400	27
Feb. 14	4.3	2,400,000	39,400	28
Feb. 15	3.9	2,000,000	40,400	95
Feb. 17 [2]	4.5	1,900,000	24,500	78
Feb. 18	5.8	1,900,000	15,700	108
Feb. 19	6.8	2,900,000	13,000	69
Feb. 21	8.1	5,000,000	16,000	73
Feb. 24	9.3	4,500,000	14,900	37
Feb. 26	11.2	4,600,000	14,700	21
Mar. 1	13.4	4,700,000	12,000	15
Mar. 5	13.7	5,200,000	12,800	4
Mar. 8	13.4	5,000,000	10,500	6
Mar. 12	14.5	5,000,000	10,700	3
Mar. 15	12.5	5,500,000	13,000	5
Mar. 19	13.6	5,700,000	15,300	2
Mar. 22	14.6	5,500,000	11,000	3
Mar. 26	15.2	5,700,000	11,400	3
Mar. 29	15.6	6,200,000	13,200	4

[1] Began daily supplement of 15 grams of raw onions per kilo of body weight.
[2] Onion supplement discontinued.

Dog 195.—On stock diet No. 326 from December 31, 1929, to February 7, 1930.
February 4, 1930: Weighs 6.5 kilos.
February 7: Begins daily supplement of 130 grams of raw onions.
March 25: Weighs 6.9 kilos.

TABLE 9.—*Blood examinations of dog 195*

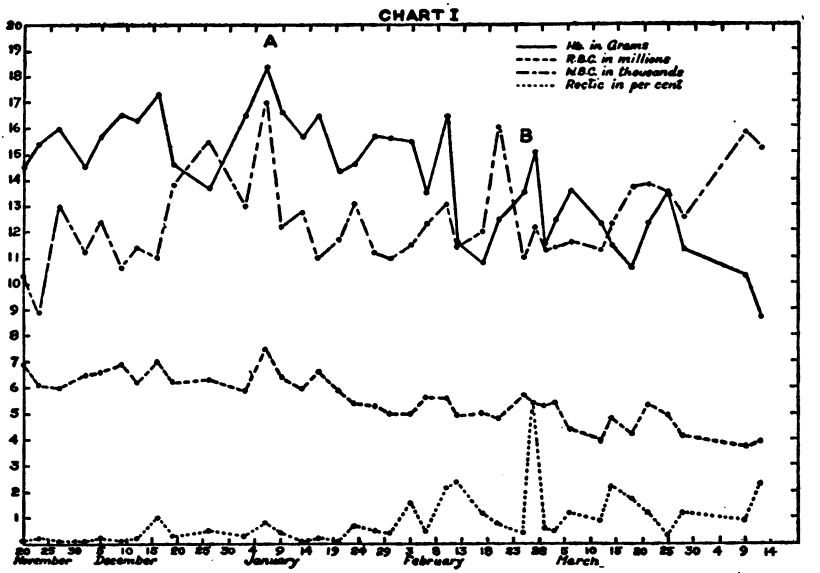
Date	Hemoglobin, grams per 100 cubic centimeter	Red cell count	White cell count	Reticulated red cells per thousand
1930				
Jan. 25	16.4	6,800,000	7,800	3
Jan. 29	14.5	6,400,000	8,800	26
Feb. 1	16.4	7,200,000	8,600	7
Feb. 5	16.1	6,900,000	8,600	1
Feb. 7 [1]				
Feb. 8	15.5	6,400,000	9,300	5
Feb. 12	6.4	3,500,000	12,700	34
Feb. 14	4.7	2,500,000	18,200	60
Feb. 15	4.0	2,100,000	16,600	86
Feb. 17	4.8	2,300,000	13,600	61
Feb. 18	5.3	1,900,000	10,000	74
Feb. 19	6.2	2,500,000	10,400	35
Feb. 21	6.3	3,000,000	11,500	107
Feb. 24	7.2	3,700,000	8,800	53
Feb. 26	8.6	5,000,000	15,000	25
Mar. 1	9.2	3,500,000	11,000	50
Mar. 5	9.1	3,500,000	7,000	66
Mar. 8	8.8	4,100,000	10,100	38
Mar. 12	9.5	4,000,000	8,400	60
Mar. 15	8.5	4,000,000	9,200	28
Mar. 19	8.8	4,000,000	7,300	49
Mar. 22	9.5	4,200,000	9,300	58

[1] Began daily supplement of 20 grams of raw onions per kilo of body weight.

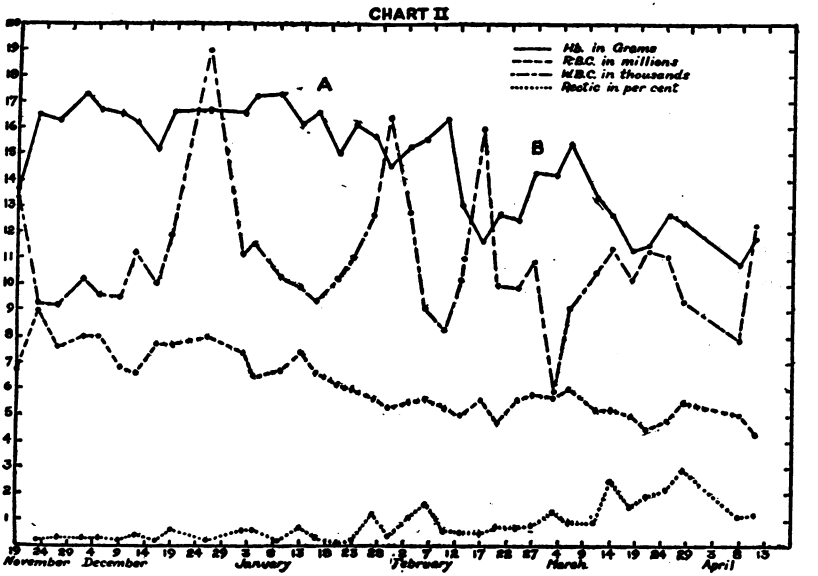
Differential leucocyte counts were made on the five animals that presented the marked increase in white cells simultaneously with the severe anemia. A differential count was made previous to the addition of the onions to the diet, at the height of the leucocytosis, and immediately following the leucocytosis. The results are given in Table 10.

TABLE 10.—*Differential leucocyte count*

Dog No.	Date	Total number of white cells	Pmn. neutrophilic leucocytes		Lymphocytes		Monocytes		Pmn. eosinophilic leucocytes	
			Per cent	Number per cubic millimeter	Per cent	Number per cubic millimeter	Per cent	Number per cubic millimeter	Per cent	Number per cubic millimeter
129	Dec. 9, 1929	7,000	70	4,900	19	1,330	6	420	5	350
	Dec. 26, 1929	21,900	63	13,797	21	4,599	11	2,409	5	1,095
	Jan. 6, 1930	6,200	61	3,782	26	1,612	9	558	4	248
167	Nov. 8, 1929	9,200	64	5,888	20	1,840	7	644	9	828
	Nov. 16, 1929	22,500	77	17,325	13	2,925	7	1,575	3	675
	Nov. 21, 1929	7,700	51	3,927	38	2,926	6	462	5	385
191	Nov. 8, 1929	12,800	51	6,528	23	2,944	5	640	21	2,688
	Nov. 18, 1929	19,200	70	13,440	16	3,072	2	384	12	2,304
	Nov. 29, 1929	9,200	49	4,508	17	1,564	5	460	29	2,668
194	Feb. 7, 1930	14,000	71	9,940	24	3,360	4	560	1	140
	Feb. 15, 1930	40,400	72	29,088	24	9,696	2	808	2	808
	Feb. 19, 1930	13,000	42	5,460	41	5,330	9	1,170	8	1,040
195	Feb. 5, 1930	8,600	70	6,020	21	1,806	7	602	2	172
	Feb. 14, 1930	18,200	70	12,740	22	4,004	6	1,092	2	364
	Feb. 24, 1930	8,800	63	5,544	28	2,464	5	440	4	352

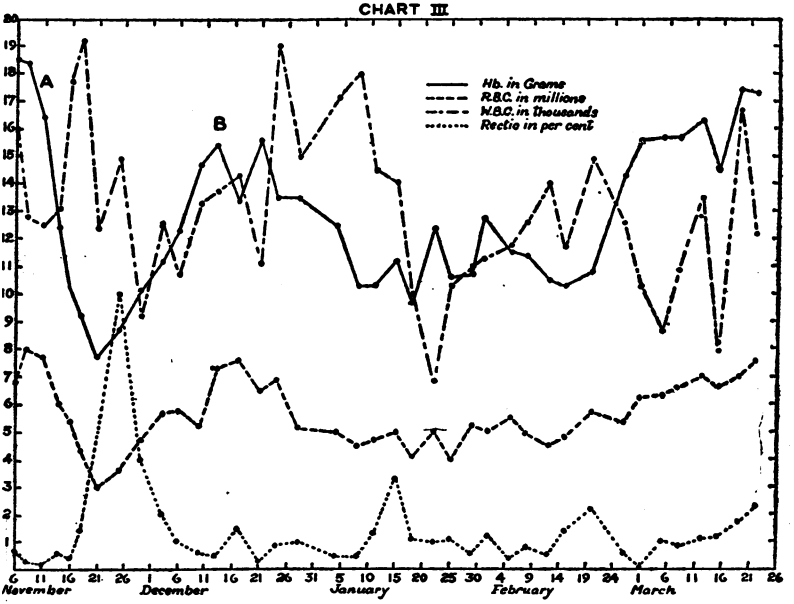


Dog 136.—Beginning at "A," 6 grams of cooked onions per kilo of body weight were mixed into the diet daily. At "B" the amount of onions was increased to 16 grams per kilo of body weight per day



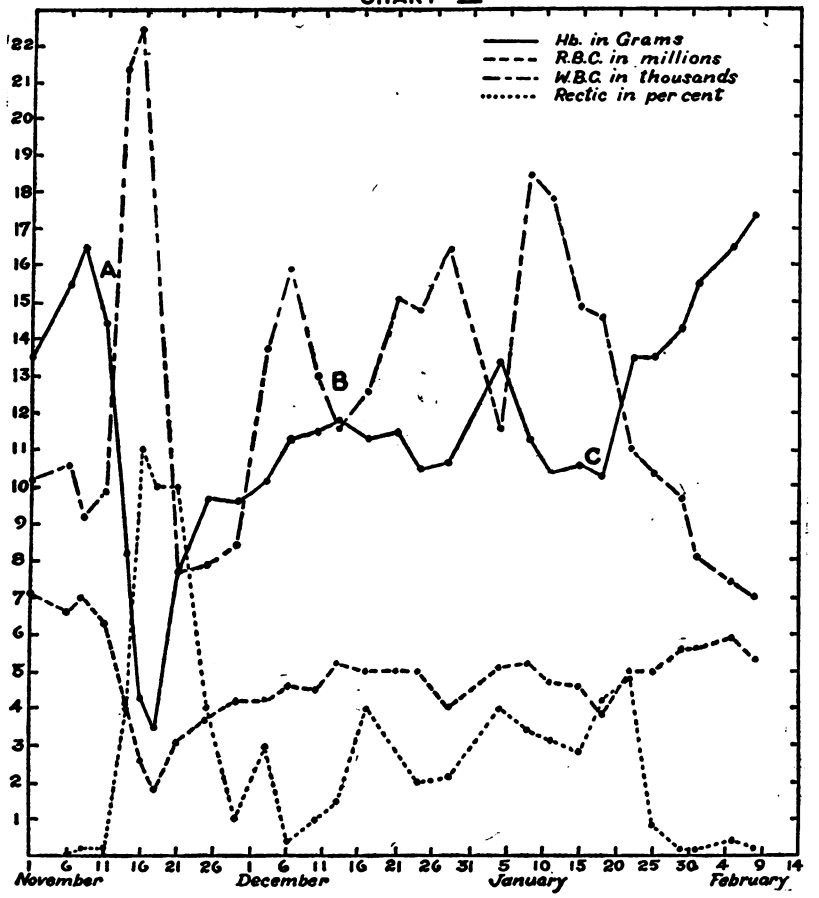
Dog 110.—Beginning at "A," 10 grams of cooked onions per kilo of body weight were mixed into the diet daily. At "B" the amount of onions was increased to 21 grams per kilo of body weight per day

CHART III

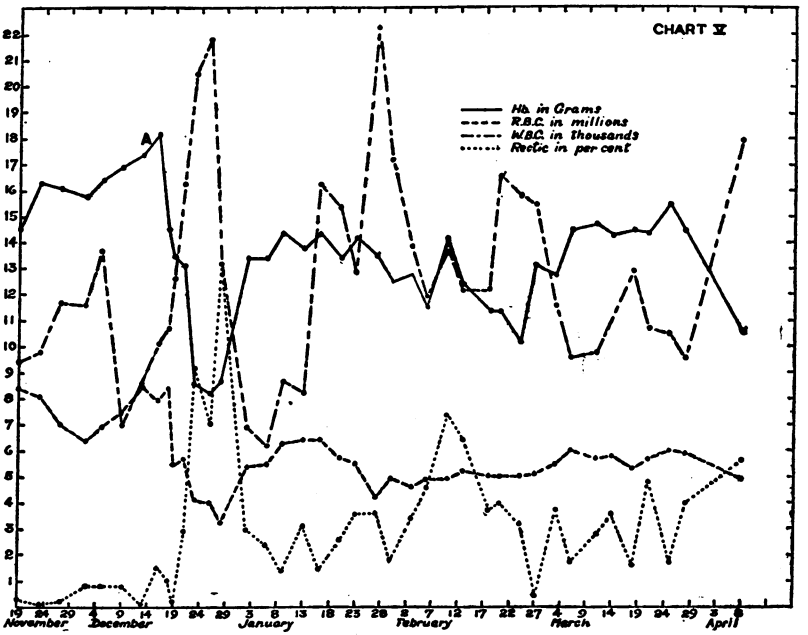


Dog 191.—Beginning at "A," 15 grams of cooked onions per kilo of body weight were mixed into the diet daily. At "B" the amount of onions was increased to 23 grams per kilo of body weight per day

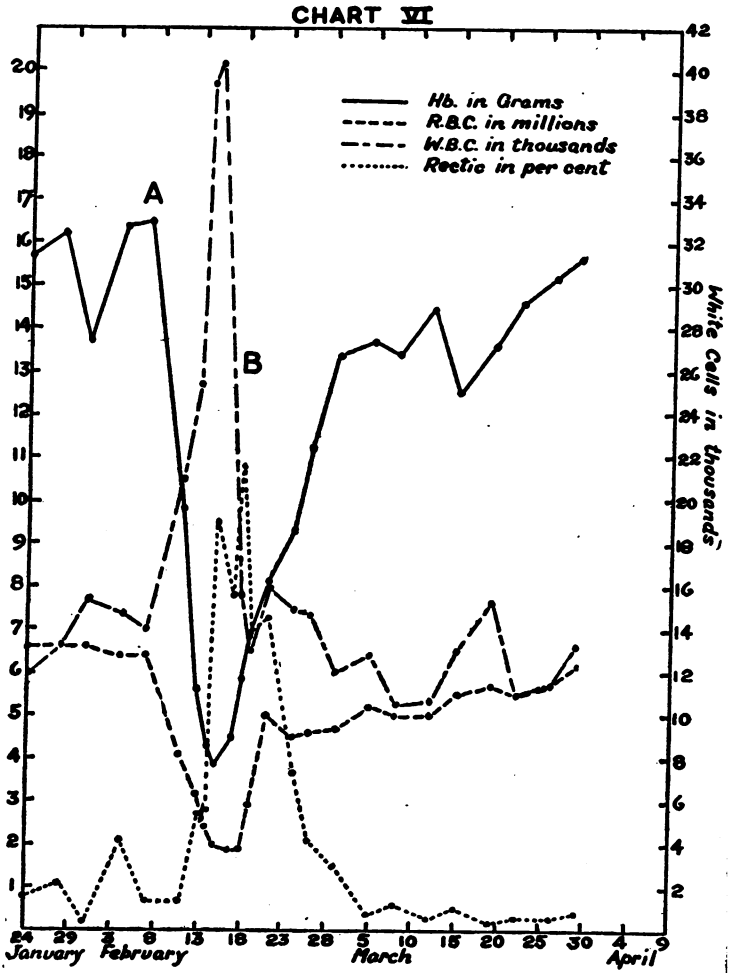
CHART IV



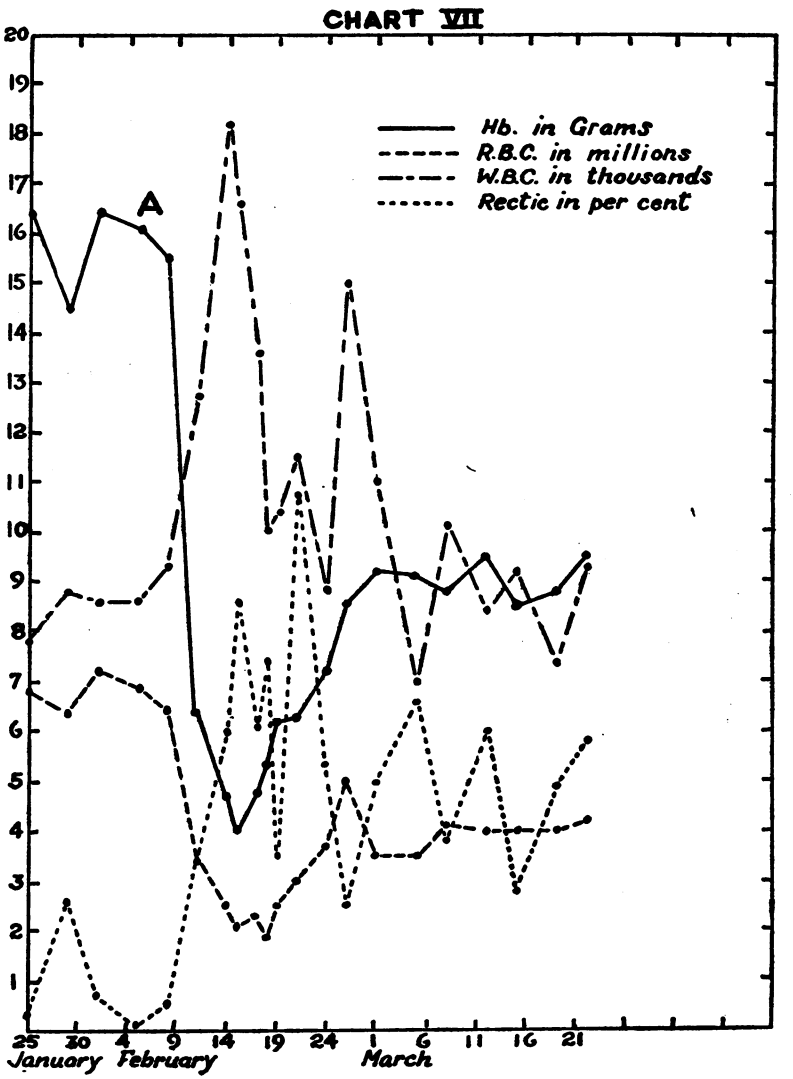
Dog 167.—Beginning at "A," 22 grams of cooked onions per kilo of body weight were mixed into the diet daily. At "B" the amount of onions was increased to 34 grams per kilo of body weight per day. At "C" the onion supplement was discontinued



Dog 129.—Beginning at "A," 27 grams of cooked onions per kilo of body weight were mixed into the diet daily



Dog 194.—Beginning at "A," 15 grams of raw onions per kilo of body weight were mixed into the diet daily. At "B" the onion supplement was discontinued



Dog 195.—Beginning at "A," 20 grams of raw onions per kilo of body weight were mixed into the diet daily

SUMMARY

Five dogs (Nos. 136, 110, 191, 167, and 129) were given daily supplements of cooked onions, in addition to the stock diet, in amounts of approximately 5, 10, 15, 20, and 25 grams per kilo of body weight. Two dogs (Nos. 194 and 195) were given daily supplements of raw onions in amounts of 15 and 20 grams per kilo of body weight, respectively.

In the dogs that received quantities of 5 and 10 grams of onions per kilo of body weight (Charts 1 and 2) there was a slight and gradual reduction in the number of red cells and in the amount of hemoglobin, which became more marked when the quantity of onions was increased. In the dogs receiving 15, 20, and 25 grams of cooked onions and 15 and 20 grams of raw onions per kilo of body weight, there was a sudden and marked decrease in the number of red cells and in the amount of hemoglobin, with a considerable increase in the number of leucocytes and reticulated red cells (Charts 3, 4, 5, 6, 7). This decrease in red cells and hemoglobin reached its maximum in from 7 to 12 days. There was then a rapid but slight increase, followed by a slow and gradual return toward the normal in spite of the continued administration of onions. In no case did the animal die in the course of the experiment. On the contrary, all of the animals remained in excellent condition. There was no loss of weight, nor of appetite, and the only evidence of abnormality seen on physical examination was an extreme paleness of the mucous membranes of the mouth, and an increased rate of respiration in some cases at the severest stage of the anemia.

In the case of dog 194 (Chart 6) the onion supplement was discontinued at the severest stage of the anemia and was followed by a more rapid and greater increase in red cells and hemoglobin than occurred in those animals in which the daily supplement of onions was continued.

In dog 167 (Chart 4) after 32 days on 22 grams of onions per kilo of body weight the daily supplement was increased to 34 grams per kilo of body weight without increasing the severity of the anemia. After 35 days on this quantity the onion supplement was discontinued and was followed by a return of the blood findings toward the normal.

In dog 191 (Chart 3) after 32 days on 15 grams of onions per kilo of body weight the daily supplement was increased to 23 grams per kilo of body weight with a resulting definite decrease in hemoglobin and red cells and an increase in leucocytes, followed by a slow return toward the normal in spite of the continued ingestion of the onions.

CONCLUSIONS

1. The evidence herein presented indicates that onions, either cooked or raw, when given in quantities of 15 grams, or over, per kilo of body weight per day, produce a severe anemia in dogs.

2. In amounts of 5 and 10 grams per kilo of body weight the cooked onions produced at the most a very slight anemia which became more severe on increasing the quantity of onions ingested to 15 and 20 grams per kilo of body weight, although there was no sharp and marked decrease in the red cells and hemoglobin such as occurred in the animals that had not previously received onions.

REFERENCES

(1) Goldberger and Wheeler: Experimental blacktongue of dogs and its relation to pellagra. Pub. Health Rep., vol. 43, No. 4 (Jan. 27, 1928), pp. 172–217. (Reprint No. 1205.)

(2) Goldberger, Wheeler, Lillie, and Rogers: A further study of experimental blacktongue with special reference to the blacktongue preventive in yeast. Pub. Health Rep., vol. 43, No. 12 (Mar. 23, 1928), pp. 657–694. (Reprint No. 1216.)

PUBLIC HEALTH ADMINISTRATION[1]

By ALLAN J. MCLAUGHLIN, *Surgeon, United States Public Health Service*

The difficulty in framing a concise and yet comprehensive definition of public health is clear evidence of the breadth and complexity of function involved in public health administration.

Two years ago the American Public Health Association submitted the question "What is public health?" to a number of outstanding leaders in public health administration. There were no short answers, but there was a remarkable uniformity in the ideas presented. Dr. E. L. Bishop, commissioner of the State Department of Public Health of Tennessee, gave this definition: "Public health practice is the organized effort of society to eliminate disease, elevate the standard of health and well-being, and increase the span of life. Its scope of activity deals not only with the causes and conditions of disease but with the causes and conditions of health as well." Another excellent definition by Prof. Ira V. Hiscock, of Yale, was as follows: "Public health is that which develops and conserves health and lengthens life by means of community activities organized to secure environmental sanitation, communicable-disease control, early discovery and preventive treatment of disease, and the education of the public in the principles of healthful living." These definitions are cited to emphasize the broad scope of public health and to show the

[1] Read before the Iowa State Public Health Conference, Des Moines, Iowa, Apr. 3, 1930.

complex machinery which must be devised to coordinate all the agencies which of necessity must participate in an effective and comprehensive program of public health.

It is obvious, therefore, that in an address on public health administration the time limitation will compel the speaker either to select some phase of public health work and discuss that phase in detail or confine himself to fundamentals in public health administration policy.

I deem it more profitable to consider the broad basic principles of public health administration rather than the details of procedure. This selection is made because the details of applied preventive medicine and hygiene are reasonably well known and to some extent standardized, while the policy which determines by whom these procedures are to be applied either does not exist or is not in operation.

The primary purpose of this address is to focus attention upon, and perhaps hasten in some degree, the solution of three problems, which, unsolved, present very great obstacles to public health administration:

(1) How can adequate medical, surgical, and preventive advice and treatment be made available to all citizens at a cost within their ability to pay?

(2) Can more adequate and effective teaching of applied preventive medicine and hygiene be included in the medical-school curriculum?

(3) Can more adequate and effective teaching of applied child hygiene be included in the curriculum of State teachers' colleges and normal schools?

The first is the greatest problem confronting the organized medical profession to-day, and is also one of the greatest sociologic problems for the Nation as a whole. It will be discussed under the heading of "The organized medical profession."

The second and third are problems of education and will be discussed under the heading of "Educational authorities."

First will be considered the four principal agencies which must be coordinated in public health administration and, second, some of the major problems which must be solved by these agencies individually or collectively. The four major factors in public health administration are as follows:

(1) Official health departments.
(2) Unofficial health agencies.
(3) The organized medical profession.
(4) Educational authorities.

Let us consider what rôle each should play and how the agencies are playing it.

Evolution.—The first quarantines at Ragusa, Marseille, and Venice in the fourteenth and fifteenth centuries were the result of the psychology of fear. They were efforts to prevent the introduction and spread of epidemic diseases. Our first boards of health were born of fear and hope. Fear of pestilence and hope that quarantine and isolation would prevent the spread of epidemic diseases. With this origin, it was natural that these boards of health should be given unusual police power and definite control of the individual for the good of the community. The early administrative health officers depended upon police power alone, and they were, in effect, policemen.

The epoch-making discoveries of Pasteur, Koch, and others from 1870 to 1890 gave a new impetus to the vigorous application of police power. The demonstration that disease was caused by fragile germs easily destroyed was responsible for the new vigor which marked the application of quarantine, isolation, and disinfection in the last decade of the last century. With the beginning of the twentieth century came the knowledge of the carrier. It was shown that even if doctors reported all cases under their care there would be as many more uncontrolled. Mild cases, atypical cases, and carriers who had no symptoms whatever could not be controlled by quarantine isolation or any other exhibition of police power. This new knowledge made health officers realize that control of the communicable diseases was possible only by the voluntary cooperation of the individual citizen and that this cooperation could be secured only by education in personal and family hygiene. Public health education became even more essential to the health officer as his field of work expanded to include noncommunicable disease and the improvement and conservation of health. Health officers gave up the idea that all public health work could be done by personnel on the pay roll of the health department. It was obvious that the education of individuals in personal hygiene and the securing of their voluntary help in preventing disease involved the participation of many agencies, official and unofficial, outside the health department.

In the first decade of this century unofficial voluntary agencies undertook public health activities of great importance and wide scope and boards of education developed plans and procedures in school hygiene. The responsibility for the health of the people was still squarely placed upon the shoulders of the health officer, yet a large part of the work necessary to discharge his obligation had to be done by personnel not under his direct control. The health officer, therefore, evolved from a policeman vainly striving to stamp out epidemic disease, into a constructive statesman, courteous and persuasive, who could weld together in one machine the forces engaged in public health activities.

The policy of a health officer to-day.—In discussing the simple fundamentals of public health administration, omitting details, it is possible to consider the health officer, Federal, State, and local, in general, because not only are the obligations and objectives similar, but the policy of administration in discharging these obligations and attaining these objectives is essentially the same for all health officers, whether their jurisdiction is over a county, a city, a State, or the United States as a whole. A health officer, therefore, regardless of his jurisdiction, must secure the active participation of the organized medical profession, the unofficial voluntary agencies, and the boards of education, and utilize them to carry out certain parts of his comprehensive program which would not otherwise be possible because of lack of funds and personnel in the health department.

The health officer should secure the active participation and support of the organized medical profession by means of a special advisory committee on public health appointed by the medical society. This committee would not conflict with an existing board of health. The official board of health, by law and ordinance, must pass upon all police measures and also upon questions of policy. An advisory public health committee would advise and approve measures to be carried out by the medical profession not depending upon law and ordinance. The health officer must be enough of a statesman to secure such advice from the medical society and to bring his board of health to approve of such measures.

The health officer can do much to encourage the local medical society to accept its collective obligation, to solve its greatest problem—scientific medical service, including preventive advice and treatment for all the people at a cost within their ability to pay. The furnishing of such facilities for treatment by the medical society will give early preventive and corrective treatment to the preschool child, a field in which at present the health officer is scarcely able to scratch the surface.

No health department now has, nor can it hope to have, sufficient funds to finance all health work. Voluntary health agencies simply add to the total health department budget large sums for public health work, which they are now doing, or which should be developed. It is the duty of the health officer to have a complete comprehensive plan for all health activity. He should include these voluntary health agencies in that plan, allotting to them work which he is unable to do and which they are ready and willing to do. It is the custom, where the best utilization of the voluntary agencies is secured, to have a committee of voluntary health agencies, with representatives of every agency engaged in any public health activity.

The health officer will find that in the promotion of the health of school children a considerable part of his work will be done for him

by the board of education. The amount of work done by boards of education in this field varies in the cities. In a survey of 98 largest cities of the United States, 23 had organized the work under the health department and 57 under the department of education, and 18 had some joint arrangement between the health and education departments. There is a third factor in cities, viz, the parochial schools. This complex situation calls for the qualities of statesmanship which a good health officer should possess. He must accept what is being done and dovetail it in with his own child hygiene program. The main objective is to get the work done, and the matter of who shall do it is of lesser importance.

THE ORGANIZED MEDICAL PROFESSION

The part that the organized medical profession should play in public health is scarcely second to that of health departments themselves. In the evolution of public health doctors have played the chief rôle, but always individually. These early pioneers in public health administration were doctors; but an artificial division between preventive and curative medicine separated them from their brothers. This gulf was widened by the activity, based on police power regarding compulsory reporting, quarantine, and disinfection, and on the restriction of health work to the communicable diseases. With the expansion of public health functions to prevention of all diseases and to the promotion and conservation of health, the artificial division was bound to disappear. To-day all practitioners of medicine must practice preventive medicine.

The county medical society should be willing to appoint an advisory public health committee to advise the health officer on all questions of preventive medicine, and especially those phases of preventive medicine which involve early diagnosis or treatment.

The layman has been educated and now knows that diseases can be prevented or their hazard minimized by early diagnosis and treatment. The average citizen, for financial reasons, does not consult a doctor until he is definitely ill, and very often postpones calling the doctor until he is confined to bed. It is not the cost itself but the lack of definite knowledge of what that cost may be. More important still, in smaller cities and towns there is an absolute lack of clinics and out-patient departments. Many careless statements and inaccurate generalizations are made in regard to the cost of medical care. In the larger cities clinics and out-patient departments have developed independent of the medical society as a unit. For this reason the trite statement is often heard that the poor in large cities and the rich anywhere can secure the best medical service, but that for the intervening classes such treatment is not available.

The cost of the best medical care, where available, is worth what is paid for it. The cost has not increased in greater proportion than the costs of other service; but medical and surgical diagnostic and treatment facilities have been elaborated to include many new procedures, worth their cost, which were not included years ago. The greatest problem is not the cost but the absence of facilities for modern diagnosis and treatment at a definite known cost.

It is the collective obligation of the organized medical profession to solve this great problem. The American Medical Association has recognized this collective obligation, and every county medical society is urged to accept its problem and discharge its obligation. In the large cities the problem is complicated by group clinics, industrial clinics, and other installations outside the control of the medical society. In the smaller cities the situation is less complex and solution less difficult. Difficult or easy, the solution should come from the medical society. The demand for these services is based upon sound public opinion and must be satisfied by some agency. Protracted delay in grappling with this problem, seizing the initiative, and establishing such facilities can result only in makeshift clinics established by institutions and agencies independent of the organized profession or by quacks and charlatans.

UNOFFICIAL HEALTH AGENCIES

The origin of unofficial voluntary health agencies and their development into great public health machines was due to two things: First, the restriction of official health work to an attempt to control communicable disease by police power alone, and, second, the demand of public opinion based upon new medical knowledge that new methods be tried, methods independent of police power and based largely upon education. The impatient desire to expand public health work to include all diseases and to attack the communicable diseases directly by education of the individual citizens was a response to the seeming unwillingness of official health departments to expand and utilize other methods than those based on police power. The health officers were not unwilling to expand, but it was impossible to secure funds from official sources for untried methods, the efficiency of which had yet to be demonstrated.

The greatest contribution of the unofficial voluntary agencies was the demonstration in the first decade of this century that educational methods were effective in the prevention of disease and the reduction of death rates and that such methods were legitimate weapons for the use of official health departments. Thus, as pioneers, voluntary health agencies have been of great help to official health departments in demonstrating the value of new procedures and in financing these demonstrations when funds for such purposes could not be secured by the official health department.

These two separate movements advancing side by side, the expansion of official health departments and the development of voluntary health agencies were bound to conflict, and at first there was misunderstanding, distrust, and antagonism. In the second decade much of this conflict had disappeared; and in the last decade the policy of unofficial health agencies in their relation to health departments is so clearly defined, understood, and accepted that there is to-day no reason for conflict. This clarification of policy was brought about by conferences of health officials with the heads of the great national unofficial health agencies. It is now clearly understood that an unofficial health agency is an auxiliary of the duly constituted health authorities, with freedom of action in untilled fields, and the obligation to turn over to the health department any legitimate public health activity whenever the health department can secure the funds to carry on the work. The voluntary health agency has another obligation; it is that when the health officer has a comprehensive program of public health activity it shall accept and agree to carry out such parts of that program as are within its power. And so to-day the proper utilization of the voluntary public health agencies depends upon the health officer himself. They increase enormously the total budget for public health far beyond the amount which the health officer can secure by official appropriations.

EDUCATIONAL AUTHORITIES

I desire to stress three activities having a direct bearing on public health:

(1) Medical colleges.
(2) State teachers colleges or normal schools.
(3) Public schools.

Medical colleges.—Medical colleges have one tremendously important duty and function in relation to public health administration. It is the establishment of an adequate and more effective system of teaching preventive medicine and hygiene to the undergraduate medical students. The present practice varies in different colleges. Harvard has introduced preventive medicine into nearly every subject taught. The Harvard faculty has recently published a book showing how the preventive idea is stressed by each professor. Most schools have either a professor of preventive medicine or some one delegated to give lectures on this subject. In regard to adequacy and effectiveness, the major defect is a lack of practical demonstration. Teaching consists of didactic lectures, the material for which is found in any textbook on hygiene. What is needed is a close affiliation with a health department where the student can see the preventive medicine in actual practice. The student will remember much from actual demonstrations, but lectures alone often are ideal

soporifics in view of the fact that they produce sleep and have little after effect.

The desirability and need for this more adequate teaching of preventive medicine is obvious, for many reasons. It is essential in his own interest to adjust the student to the change of accent in the practice of medicine from curative to preventive. But there are two very definite reasons why the public health administrator desires this improvement in teaching:

(1) There will be graduated to enter practice a body of young doctors who will understand the objectives and efforts of the health officer and will therefore be sympathetic and helpful.

(2) Health officers at present are recruited from the practicing medical profession by political appointment. Their only knowledge of preventive medicine upon their first appointment is the instruction they have received in medical college. This has either been entirely neglected or consisted of a few lectures with no actual demonstration of public health work. This man has to learn something entirely new, and in the process will make many costly mistakes.

Some years ago it was hoped that postgraduate schools of public health would cover the need of trained health officers. This dream has not been realized. Our new appointees are not postgraduates in public health; they are ordinary practicing physicians, and appointees will continue to be such under our political system of government. Their training must come from actual experience in a health department, and this is greatly facilitated by having a foundation acquired by an adequate undergraduate course in preventive medicine.

State teachers colleges.—State teachers colleges and normal schools have a wonderful opportunity for real service by more adequately teaching child hygiene to teachers. The lack of training in the practical application of child hygiene methods is a real handicap to public health work in the schools. The need is most apparent in teachers of the first to the sixth grades and in the schools of the small city or county. In these situations it is not uncommon for one public health nurse to be carrying an overload of 8,000 pupils. If the teachers are trained they understand and are helpful, and in spite of the overload a creditable result is often obtained. The teacher is a very intelligent possibility in public health. She teaches hygiene and health habits and has observation of the children through the entire school day. Her training in hygiene is, therefore, one of the vital essentials in the health of the school child. Presidents of teachers' colleges have made very creditable efforts in many States to give good courses in health education. They have good textbooks and excellent instruction of a didactic type. With one or two exceptions, the same defect occurs which was charged to the teaching of preventive medicine in medical colleges, viz, too little practical demonstration of applied child

hygiene. To correct this defect it is necessary to have a doctor and nurse trained in child hygiene on the faculty, and to have an arrangement with the city or town in which the college is located by which the city schools are used by the doctor and nurse to demonstrate to the students, in groups, the practical work of child hygiene.

Local boards of education.—These boards have a very real interest and duty in regard to the promotion of health in the school child. Health is so vitally necessary to success in school that it has been for years the concern of school authorities. So much of the results in health promotion and conservation depends upon teaching of hygiene and health habits that naturally the teaching of hygiene was incorporated in the school curriculum. Enthusiastic administrators in school work in some cities have built up practically complete health departments for the school age group, restricting the health department activity to a control of contagious diseases.

It is immaterial how far the school authorities went and these apparent invasions can not be called a calamity. It usually happened that the board of education had the funds which the health department lacked.

It is incumbent upon boards of education to remember that there is an official health department charged with the prevention of disease and the promotion of health of all age groups, and they should be willing to form a close partnership with the health department to insure that the maximum of result for the health promotion and conservation of the school child is being attained by their joint efforts.

The business of departments of education is teaching, and this legitimately includes the promotion of health by the teaching of hygiene to its teachers and pupils. The application of our medical knowledge in child hygiene to prevent disease, detect and correct defects, and to promote and conserve health in the school child is the duty of the health officer, and his responsibility therefor is the same for the school child as for all the other age groups in life's span.

The fact that promotion and conservation of health has been developed and is practised in nearly all schools relieves the health department of the expense of such education in one age group of the population, and in many ways the most important of all age groups.

There can never be too much teaching of hygiene any more than there can be too much popular public health education. Health departments can never expect, nor will they ever receive, sufficient funds for all the public health education necessary. Health departments should welcome, therefore, as a reinforcement of their own program, any public health education work on sound lines by educational authorities or by unofficial or voluntary agencies.

In conclusion it is desired to emphasize the importance of the major problem confronting the organized medical profession to-day. There

was no intention in writing this paper to discuss the complex question of the cost of medical care, but rather the need of establishing facilities for such care where they do not exist.

It is less a question of the cost of medical care and more a question of lack of facilities necessary to good medical care. Good medical care is worth all that is paid for it. The cost of modern medical care has not increased in proportion to other services or costs of living when one considers that up to date medical care includes many procedures in diagnosis and treatment which were not developed 30 years ago. No blanket rules can be formulated for solving this great problem which would apply to all the States or even to all the communities within a single State. The problem is more complex in cities, especially large cities where pay clinics, group diagnosis, treatment of industrial groups, and other steps in the socialization of medicine have already been taken. These steps may not be ideal nor even desirable, yet the installations exist and must be utilized in any general scheme devised by the medical society. In smaller cities, towns, and counties the problem is simpler, as these facilities either do not exist or are rudimentary. The county medical society can organize clinics, fix the scale of pay, and regulate the eligibility for treatment according to the income of the individual or head of a family in a manner satisfactory to the society and to its individual members.

The installation of pay clinics by the medical society, or with the seal of its approval, gives the individual citizen valuable aid in avoiding the so-called clinic of the quack and charlatan.

The pay clinic either with a fixed rate or a sliding scale is a response to the demand of public opinion. The organized medical profession has been reluctant to take any steps to respond to the demand. Such clinics have been established by individual or groups of doctors, in connection with hospitals or medical colleges, or by endowments or foundations. Unfortunately, this insistent public demand has been capitalized by quacks and fakers who often establish clinics with elaborate and very impressive equipment.

The development of facilities for early diagnosis and early treatment by the organized medical profession at a known cost is frankly socialization of the practice of medicine. Such socialization is inevitable. It rests with the profession whether it shall seize the initiative and satisfy this demand or stand passively by and be compelled to submit to the process while it is carried out by outsiders.

State medicine may not come as a result of inactivity of the organized profession, though it is always a menace; but a gradual evolution—a haphazard growth in which the organized profession is inactive and inarticulate will produce a chaotic condition, which may be even worse than State medicine.

CURRENT PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES[1]

March 30–April 26, 1930

The prevalence of certain important communicable diseases as indicated by weekly telegraphic reports from State health departments[2] to the Public Health Service is summarized below. This summary is prepared from the data published weekly in the PUBLIC HEALTH REPORTS under the section entitled "Prevalence of Disease."

Meningococcus meningitis.—The incidence of meningococcus meningitis was still high in relation to the norm, but has recently declined somewhat, particularly during the latter half of April. The reported cases numbered 1,011, as compared with 1,172 for the same period of last year. During the corresponding periods of 1928, 1927, and 1926 the reported cases numbered only 517, 257, and 190, respectively.

Smallpox.—Unlike diphtheria and typhoid fever, which are drifting steadily to lower levels, smallpox is apparently becoming more and more prevalent. During the 4-week period of this summary, 5,208 cases were reported, compared with 3,240 for the corresponding period of last year, an increase of 61 per cent.

The geographic distribution is strikingly uneven. While more than half of the Atlantic States north of Virginia have reported no cases since January 1 of this year, the States in the West and in the upper Mississippi River Basin show considerable numbers of cases. Table 1 shows that the reported rates in the latter regions are approximately sixty times as high as those in the upper Atlantic Coast. In some individual States the rates are considerably higher than the regional averages.

In the North Central and the Pacific States the numbers of reported cases are appreciably higher for the first 17 weeks of 1930 than for the same period of either of the preceding years. In the other regions there is little difference between the numbers of cases reported in 1930 and the numbers reported for the same periods of the two preceding years.

TABLE 1.—*Smallpox reported attack rates, by regions and States, during the 17-week period December 29, 1929, to April 26, 1930, with comparative data for preceding years*

Division and State	Reported cases			Case rate per 100,000 population		
	1928	1929	1930	1928	1929	1930
New England and Middle Atlantic	362	208	245	1.1	0.6	0.7
Maine	0	72	0	----------	9.1	----------
Vermont	0	66	66	----------	18.8	18.8
Massachusetts	3	8	0	.1	.2	----------
Rhode Island	0	0	0	----------	----------	----------
Connecticut	136	29	0	8.2	1.7	----------
New York	134	25	147	1.2	.2	1.3
New Jersey	76	1	0	2.0	.03	----------
Pennsylvania	16	7	32	.2	.1	.3

[1] From the Office of Statistical Investigations, United States Public Health Service.

[2] The numbers of States reporting for the various diseases are as follows: Typhoid fever, 41; poliomyelitis, 43; meningococcus meningitis, 42; smallpox, 42; measles, 38; diphtheria, 42, scarlet fever, 41; influenza, 31.

TABLE 1.—*Smallpox reported attack rates, by regions and States, during the 17-week period December 29, 1929, to April 26, 1930, with comparative data for preceding years*—Continued

Division and State	Reported cases			Case rate per 100,000 population		
	1928	1929	1930	1928	1929	1930
South Atlantic	2,817	714	781	19.8	5.0	5.5
Delaware	1	0	0	.4		
Maryland	11	8	0	.7	.5	
District of Columbia	17	0	0	3.1		
Virginia	0	12	9	.5	.4	
West Virginia	874	263	357	50.7	15.3	20.7
North Carolina	1,793	359	402	61.0	12.2	13.7
Georgia	15	55	0	.5	1.7	
Florida	106	17	13	7.5	1.2	.9
North Central	8,363	7,541	13,767	26.7	24.0	43.9
Indiana	2,166	1,054	3,167	68.2	33.2	99.7
Illinois	727	1,851	2,311	9.8	25.0	31.3
Michigan	577	758	1,257	12.6	16.5	27.4
Wisconsin	407	163	519	13.8	5.5	17.6
Minnesota	29	42	109	1.1	1.5	4.0
Iowa	1,128	652	1,702	46.5	26.9	70.1
Missouri	892	604	1,055	25.3	17.1	30.0
North Dakota	42	71	405	6.6	11.1	63.2
South Dakota	180	537	812	25.6	76.3	115.3
Nebraska	733	907	1,058	52.1	64.4	75.1
Kansas	1,482	902	1,372	80.8	49.2	74.8
South Central	3,758	1,533	2,388	28.5	11.6	18.1
Tennessee	429	46	253	17.2	1.8	10.1
Alabama	141	143	123	5.5	5.6	4.8
Mississippi	101	17	95	5.6	1.0	5.3
Arkansas	169	110	281	8.7	5.7	14.5
Louisiana	359	102	104	18.4	5.2	5.3
Oklahoma	2,559	1,115	1,532	105.5	46.0	63.2
Mountain	1,434	1,325	1,462	37.4	34.6	38.1
Montana	391	236	204	71.2	43.0	37.2
Idaho	92	346	168	16.9	63.4	30.8
Wyoming	95	81	143	38.5	32.8	57.9
Colorado	223	383	387	20.5	35.1	35.5
New Mexico	57	19	80	14.4	4.8	20.2
Arizona	310	172	465	65.4	36.3	98.1
Utah	266	88	15	50.1	16.6	2.8
Pacific	2,196	2,501	3,277	31.2	35.5	46.5
Washington	826	850	1,420	52.1	53.6	89.5
Oregon	832	682	398	92.2	75.6	44.1
California	538	969	1,459	11.8	21.3	32.0

Measles.—The incidence of measles during recent weeks has risen more sharply than is usual for this season of the year. There were reported 67,530 cases during the 4-week period considered, as compared with 50,637 during the preceding four weeks and with 47,863 during the corresponding period of last year. The rise seems rather general in all sections of the country.

Influenza.—The influenza incidence continued at a low level, with 2,545 cases reported, as compared with 2,571 for the corresponding period of last year.

Typhoid fever.—Typhoid fever continued at about the lowest incidence on record in relation to the seasonal expectancy. There were 611 cases reported, as compared with 731 for the corresponding period of last year.

Poliomyelitis.—The incidence of poliomyelitis continued below the average for the season. Fifty-six cases were reported, as compared with 62 for the same period of last year. Some seasonal rise may be expected within the next month or two.

Scarlet fever.—Scarlet fever was slightly below normal, with 17,365 cases reported. The seasonal decline is well under way.

Diphtheria.—The reports for recent weeks continue to keep 1930 as the year of the lowest diphtheria incidence on record. The reported number of cases for the 4-week period of this report numbered 4,203, as compared with 5,203 for the corresponding period of last year.

Mortality, all causes.—The mean death rate for the period, as reported in the Weekly Health Index of the Census Bureau, was 14.1 per thousand population (annual basis), as compared with 13.3 for the corresponding period of last year.

SICKNESS AMONG INDUSTRIAL EMPLOYEES DURING THE LAST THREE MONTHS OF 1929[1]

By DEAN K. BRUNDAGE, *Associate Statistician, United States Public Health Service*

It will be recalled that an influenza epidemic was in progress during the final month of 1928, affecting adversely the rate of sickness in the fourth quarter of that year. For this reason the disability rate for the last three months of 1929 among a group of about 110,000 industrial employees makes a favorable comparison with the rate for the corresponding period of the preceding year. The frequency of disability from sickness lasting more than one week was 27 per cent lower in the fourth quarter of 1929 than in the same quarter of 1928. The respiratory group of diseases shows the greatest decrease, of course; the rate was little more than one-half that experienced in the last three months of 1928. Influenza and grippe decreased 64 per cent, and pneumonia 26 per cent from the incidence experienced during the fourth quarter of 1928. In the last three months of 1929, however, bronchitis and diseases of the pharynx and tonsils increased 13 and 9 per cent, respectively, but the incidence of tuberculosis declined 20 per cent, and the rate for respiratory diseases other than those mentioned above dropped 5 per cent from the rate of the fourth quarter of 1928.

A decrease of 4 per cent is indicated for the nonrespiratory diseases as a whole. Within this group, diseases of the stomach, diarrhea and enteritis, and diseases of the skin showed the largest declines (14 per

[1] From the Office of Industrial Hygiene and Sanitation in cooperation with the Office of Statistical Investigations, United States Public Health Service.

cent in both instances) from the rates during the corresponding period of 1928. An increase of 14 per cent is indicated for the epidemic and endemic group of diseases (title numbers 1–10 and 12–25 in the International List of the Causes of Death, 3d revision, 1920), but little significance should be attached to this increase on account of the small number of cases involved. These generally favorable results both in the respiratory and the nonrespiratory disease groups mark the final quarter of 1929 as a period in which the rate of disabling sickness among industrial workers appears to have been comparatively low.

TABLE 1.—*Frequency of disabilities lasting eight consecutive days or longer in the final quarter of 1929, compared with the last quarter of 1928, among male employees of 13 industrial establishments which reported their cases to the United States Public Health Service during both years*

Diseases causing disability (numbers in parentheses are disease title numbers from the International List of the Causes of Death, third revision, 1920)	Annual number of disabilities per 1,000 men in last quarter of—		Per cent increase or decrease in rate in 1929	Number of disabilities in last quarter of—	
	1929	1928		1929	1928
Sickness and nonindustrial injuries	98.0	129.1	−24	2,717	3,410
Nonindustrial injuries	12.0	11.4	+5	333	301
Sickness	86.0	117.7	−27	2,384	3,109
Respiratory diseases	38.3	67.8	−44	1,063	1,791
Influenza and grippe (11)	16.3	45.6	−64	451	1,205
Bronchitis (99)	7.0	6.2	+13	195	164
Pneumonia—all forms (100, 101)	2.8	3.8	−26	78	101
Diseases of the pharynx and tonsils (109)	6.1	5.6	+9	170	148
Tuberculosis (31)	.8	1.0	−20	21	27
Other respiratory diseases (97, 98, 102–107)	5.3	5.6	−5	148	146
Nonrespiratory diseases	47.7	49.9	−4	1,321	1,318
Diseases of the stomach, diarrhea, and enteritis (111, 112, 114)	5.4	6.3	−14	148	167
Other diseases of the digestive system (108, 110, 115–127)	7.2	7.1	+1	200	187
Diseases of the circulatory and genito-urinary systems and annexa (87–96, 128–136)	7.8	8.1	−4	217	213
Diseases of the nervous system (70–84)	5.4	5.4	0	149	143
Diseases of the skin (151–154)	4.2	4.9	−14	116	129
Epidemic and endemic diseases, except influenza (1–10, 12–25)	1.6	1.4	+14	45	37
Rheumatism—acute and chronic (51, 52)	5.0	5.2	−4	139	138
Lumbago and other diseases of the organs of locomotion (158)	4.8	5.1	−6	133	134
Ill-defined and unknown causes (205)	2.1	2.1	0	58	56
All other diseases (26–30, 32–37, 41–50, 53–69, 85, 86, 155–157, 159, 164)	4.2	4.3	−2	116	114
Average number of males covered in the records				109,970	105,117

The data include only the more serious cases of illness and nonindustrial accidents, as those causing disability for one week or less are not reported. The sickness rates were computed from the reports of 13 large industrial establishments having a combined male working force of 109,970 (average number during the last three months of 1929). The sickness rates among female employees are not presented.

Only those establishments are included which reported in both years, so that as nearly the same population as is possible to obtain was under observation in the two periods. With but one exception, these reporting establishments are located in the region lying north of the Ohio and Potomac Rivers and east of the Mississippi.

It is quite possible that the recorded sickness presented above understates to some extent the real magnitude of the incidence rate of cases causing disability for more than one week, because a number of the reporting associations do not pay sick benefits for disability on account of the venereal diseases, for illness resulting from the violation of any civil law, for the results of willful or gross negligence, and for certain other causes; and some associations do not pay for chronic diseases contracted prior to the date of joining the organization, for disabilities caused by or growing out of specific physical defects, nor for illnesses not reported within specified time limits. Of more importance, perhaps, is the fact that the reports come from the larger companies having well-organized employment and medical departments which make a physical examination of applicants, so that a somewhat favorably selected group from a health standpoint may result. Workers in poor health who doubt their ability to pass the physical examinations may tend to drift into the smaller industrial establishments where the physical condition of the applicant is usually given less consideration. As offsetting factors a few cases of malingering may be included in the records, and the associations with the most liberal sick-benefit provisions may attract persons when their health begins to fail. On the whole, it seems that the statistics presented may tend more toward understatement than overstatement of the average frequency of disability which lasts longer than one week among industrial employees.

DEATH RATES IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death for March, 1930

The accompanying table, taken from the Statistical Bulletin for April, 1930, issued by the Metropolitan Life Insurance Co., presents the mortality record of the industrial insurance department of the company for March, as compared with the preceding month and with figures for the corresponding month of last year. It also gives the cumulative rates for the period January to March for the years 1929 and 1930. Death rates are given for the principal causes of death. These rates are based on a strength of approximately 19,000,000 persons in the United States and Canada.

The bulletin states:

The health record for March, 1930, was better than for any previous March. This is indicated by the low death rate of 9.4 per 1,000 among the approximately 19,000,000 policyholders. The figure is well below the previous low point (9.8) established in the same month of last year. There was a slight drop in March from the February mortality rate of 9.6 per 1,000.

Except for measles, scarlet fever, cancer, and heart disease every disease listed in the table registered a decline in March as compared with the corresponding month of 1929. The record for violent deaths was not so favorable, as suicides, homicides, and automobile fatalities recorded increases.

Death rates (annual basis) per 100,000 for principal causes of death, March, 1930

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death	Death rate per 100,000 lives exposed [1]				
	March, 1930	February, 1930	March, 1929	Cumulative January–March	
				1930	1929
Total, all causes	940.6	963.8	980.5	949.2	1,153.8
Typhoid fever	1.1	1.3	1.7	1.2	1.4
Measles	3.6	3.3	3.5	3.1	3.8
Scarlet fever	3.3	3.9	2.8	3.8	3.5
Whooping cough	4.2	5.5	5.1	4.8	7.3
Diphtheria	6.8	9.0	8.7	8.9	10.7
Influenza	25.3	27.3	53.1	27.4	122.3
Tuberculosis (all forms)	86.1	82.3	92.0	83.4	94.0
Tuberculosis of respiratory system	75.4	71.9	80.9	72.8	83.8
Cancer	74.2	73.1	72.3	74.8	76.4
Diabetes mellitus	19.6	20.2	20.6	20.8	23.8
Cerebral hemorrhage	62.9	68.2	[2] 57.3	63.0	[2] 65.2
Organic diseases of heart	159.5	169.0	154.2	163.2	179.6
Pneumonia (all forms)	119.0	117.2	128.7	114.2	164.6
Other respiratory diseases	14.0	11.8	20.3	13.2	16.9
Diarrhea and enteritis	11.1	11.1	12.8	11.5	13.7
Bright's disease (chronic nephritis)	70.7	71.0	72.0	70.7	79.3
Puerperal state	13.1	14.4	14.0	13.6	15.0
Suicides	9.8	7.5	8.5	8.8	8.4
Homicides	7.5	5.5	5.4	6.8	6.3
Other external causes (excluding suicides and homicides)	48.7	58.7	50.8	56.8	56.5
Traumatism by automobiles	13.9	16.4	13.3	17.1	15.1
All other causes	200.1	203.5	196.6	199.3	205.2

[1] All figures in this table include infants insured under 1 year of age and are subject to slight correction, as they are based on provisional estimates of lives exposed to risk.
[2] Rate not comparable with that for 1930.

DEATHS DURING WEEK ENDED MAY 10, 1930

Summary of information received by telegraph from industrial insurance companies for the week ended May 10, 1930, and corresponding week of 1929. (From the Weekly Health Index, May 14, 1930, issued by the Bureau of the Census, Department of Commerce)

	Week ended May 10, 1930	Corresponding week, 1929
Policies in force	75, 798, 638	74, 121, 111
Number of death claims	14, 459	14, 325
Death claims per 1,000 policies in force, annual rate	9. 9	10. 1

Deaths from all causes in certain large cities of the United States during the week ended May 10, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929. (From the Weekly Health Index, May 14, 1930, issued by the Bureau of the Census, Department of Commerce)

City	Week ended May 10, 1930		Annual death rate per 1,000, corresponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended May 10, 1930 [2]
	Total deaths	Death rate [1]		Week ended May 10, 1930	Corresponding week, 1929	
Total (64 cities)	7,856	13.8	12.9	716	694	[3] 63
Akron	43			8	7	73
Albany [4]	34	14.7	13.4	1	3	22
Atlanta	81	16.6	16.1	7	6	74
White	41			4	3	127
Colored	40	(5)	(5)	3	3	48
Baltimore [4]	239	15.0	12.7	13	19	44
White	187			9	14	39
Colored	52	(5)	(5)	4	5	65
Birmingham	80	18.8	13.1	7	6	65
White	35			4	4	62
Colored	45	(5)	(5)	3	2	71
Boston	253	16.5	13.6	36	22	101
Bridgeport	28			1	2	17
Buffalo	160	15.0	13.0	18	19	80
Cambridge	31	12.8	10.4	1	2	19
Camden	39	15.0	13.1	7	5	612
Chicago [4]	731	12.1	11.8	68	75	07
Cincinnati	154			12	7	71
Cleveland	196	10.1	10.2	25	16	75
Columbus	107	18.7	15.5	5	9	49
Dallas	64	15.3	10.1	8	2	----
White	47			5	2	----
Colored	17	(5)	(5)	3	0	----
Dayton	44	12.4	12.4	5	4	74
Denver	69	12.2	15.2	9	4	94
Des Moines	40	13.7	11.7	3	4	52
Detroit	313	11.8	13.3	38	42	59
Duluth	16	7.1	9.4	1	1	27
El Paso	36	15.9	17.3	6	8	----
Erie	30			4	3	85
Fall River [4]	29	11.3	14.4	6	4	137
Flint	34	11.9	18.6	2	7	23
Fort Worth	43	13.1	14.1	4	3	----
White	32			4	3	----
Colored	11	(5)	(5)	0	0	----
Grand Rapids	23	7.3	12.4	0	8	0
Houston	75			11	2	----
White	41			6	2	----
Colored	34	(5)	(5)	5	0	----
Indianapolis	101	13.8	13.5	0	9	0
White	83			0	7	0
Colored	18	(5)	(5)	0	2	0
Jersey City	101	16.2	9.8	17	5	148
Kansas City, Kans	31	13.7	11.9	4	4	95
White	27			3	4	80
Colored	4	(5)	(5)	1	0	217
Kansas City, Mo	105	14.0	11.5	6	4	47
Knoxville	26	12.9	14.8	5	3	117
White	20			4	3	104
Colored	6	(5)	(5)	1	0	247
Los Angeles	253			21	20	64
Louisville	93	14.7	13.8	3	8	26
White	71			3	4	30
Colored	22	(5)	(5)	0	4	0
Lowell	29			3	2	71
Lynn	26	12.9	11.9	4	1	101
Memphis	100	27.4	20.8	6	6	71
White	43			3	3	55
Colored	57	(5)	(5)	3	3	101
Milwaukee	126	12.1	10.5	18	13	91
Minneapolis	107	12.2	10.0	4	8	26
Nashville	35	13.1	16.8	0	4	0
White	22			0	2	0
Colored	13	(5)	(5)	0	2	0

Footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended May 10, 1930, infant mortality, annual death rate, and comparison with corresponding week of 1929—Continued

City	Week ended May 10, 1930		Annual death rate per 1,000, corresponding week, 1929	Deaths under 1 year		Infant mortality rate, week ended May 10, 1930 [2]
	Total deaths	Death rate [1]		Week ended May 10, 1930	Corresponding week, 1929	
New Bedford	23			1	5	26
New Haven	45	12.5	13.6	1	1	19
New Orleans	137	16.6	18.8	17	15	98
White	78			10	6	88
Colored	59	([3])	([3])	7	9	118
New York	1,714	14.9	13.1	165	148	69
Bronx Borough	209	11.4	11.2	11	14	26
Brooklyn Borough	582	13.1	11.6	72	62	77
Manhattan Borough	658	19.6	17.7	56	57	92
Queens Borough	214	13.1	9.6	18	15	52
Richmond Borough	51	17.6	14.5	149	0	59
Newark, N. J	122	13.4	10.9	11	10	58
Oakland	47	8.9	11.0	1	1	12
Oklahoma City	30			4	1	79
Omaha	63	14.7	13.8	4	8	45
Paterson	41	14.8	11.5	5	8	87
Philadelphia	544	13.7	12.4	58	36	86
Pittsburgh	184	14.2	13.9	28	19	103
Portland, Oreg	59			2	4	25
Providence	76	13.8	13.3	5	6	46
Richmond	53	14.2	18.0	5	2	74
White	36			5	0	112
Colored	17	([3])	([3])	0	2	0
Rochester	78	12.4	13.8	2	9	18
St. Louis	225	13.8	12.1	10	7	32
St. Paul	62			4	3	41
Salt Lake City [4]	35	13.2	9.4	2	2	31
San Antonio	78	18.6	23.0	10	25	
San Diego	35			3	3	63
San Francisco	165	14.7	12.6	8	11	55
Schenectady	31	17.3	14.5	3	3	94
Seattle	58	7.9	12.9	2	2	20
Somerville	18	9.1	8.6	1	1	33
Spokane	35	16.7	13.9	1	2	26
Springfield, Mass	35	12.2	14.3	2	7	32
Syracuse	56	14.7	14.1	3	6	37
Tacoma	27	12.7	9.9	2	2	51
Toledo	87	14.5	11.8	4	5	37
Trenton	45	16.9	11.6	7	0	130
Utica	35	17.5	15.0	2	0	57
Washington, D. C	167	15.8	11.2	11	8	64
White	104			6	5	52
Colored	63	([3])	([3])	5	3	89
Waterbury	19			2	2	51
Wilmington, Del	32	13.0	13.0	3	3	68
Worcester	51	13.5	15.3	5	7	65
Yonkers	18	7.7	12.5	0	1	0
Youngstown	41	12.3	12.0	1	5	16

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 72 cities.
[4] Deaths for week ended Friday.
[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knoxville, 15; Louisville, 17; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended May 10, 1930, and May 11, 1929

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 10, 1930, and May 11, 1929

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929
New England States:								
Maine	1	----	2	7	101	83	0	0
New Hampshire	1	1	----	----	22	61	0	1
Vermont	1	----	----	----	42	9	0	0
Massachusetts	45	78	2	8	1,678	744	5	3
Rhode Island	9	6	----	----	6	93	1	1
Connecticut	11	14	10	7	61	400	1	2
Middle Atlantic States:								
New York	119	356	[1] 20	[1] 18	2,398	1,324	16	24
New Jersey	91	136	14	5	1,319	288	11	6
Pennsylvania	171	146	----	----	1,784	1,799	19	8
East North Central States:								
Ohio	20	53	11	36	491	2,211	6	22
Indiana	12	16	----	9	210	563	11	0
Illinois	128	196	56	94	728	1,965	19	28
Michigan	62	80	3	4	1,366	1,045	21	85
Wisconsin	15	11	11	33	569	1,491	4	10
West North Central States:								
Minnesota	7	20	----	2	208	620	2	2
Iowa	2	10	----	----	196	85	7	1
Missouri	92	37	----	3	164	185	1	16
North Dakota	1	10	----	----	21	45	1	1
South Dakota	3	3	2	----	63	55	0	1
Nebraska	10	13	----	----	330	182	1	3
Kansas	8	8	1	1	863	566	2	3
South Atlantic States:								
Delaware	3	2	----	----	28	26	0	0
Maryland [2]	10	20	13	13	119	58	2	1
District of Columbia	14	5	1	1	60	31	1	1
West Virginia	14	6	32	1	100	358	0	0
North Carolina	26	12	16	----	22	23	7	4
South Carolina	7	11	313	235	----	13	2	0
Georgia	5	10	51	18	143	27	2	5
Florida	5	7	----	4	313	68	0	0

[1] New York City only.

[2] Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 10, 1930, and May 11, 1929—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929
East South Central States:								
Kentucky	----	----	----	----	50	20	2	1
Tennessee	7	3	30	30	246	124	37	0
Alabama	6	5	26	23	131	89	1	0
Mississippi	4	2	----	----	----	----	5	0
West South Central States:								
Arkansas	4	4	23	22	63	10	5	3
Louisiana	11	17	42	30	20	51	2	4
Oklahoma [3]	7	5	22	11	235	48	1	3
Texas	28	32	35	49	301	246	2	1
Mountain States:								
Montana	3	3	----	1	29	192	0	7
Idaho	----	2	----	----	7	11	2	5
Wyoming	1	3	----	----	22	56	0	2
Colorado	11	8	----	----	884	18	0	4
New Mexico	6	9	----	----	47	43	3	5
Arizona	3	4	13	----	212	55	3	2
Utah [2]	----	2	4	6	382	9	1	4
Pacific States:								
Washington	7	7	4	3	518	191	6	9
Oregon	5	6	16	----	111	263	1	0
California	55	43	22	30	2,114	121	3	22

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929
New England States:								
Maine	0	0	33	36	0	0	2	3
New Hampshire	1	0	27	7	0	1	0	1
Vermont	0	0	6	10	3	2	0	0
Massachusetts	0	1	191	198	0	13	1	9
Rhode Island	0	0	22	15	0	0	0	1
Connecticut	0	0	88	59	0	10	1	0
Middle Atlantic States:								
New York	6	3	582	499	2	2	17	12
New Jersey	0	1	232	139	1	0	0	2
Pennsylvania	0	2	517	390	0	----	20	17
East North Central States:								
Ohio	1	1	185	226	95	45	3	7
Indiana	0	0	139	181	105	81	2	5
Illinois	0	1	397	429	86	91	7	6
Michigan	0	0	252	409	54	44	3	7
Wisconsin	0	1	165	129	21	1	0	2
West North Central States:								
Minnesota	1	0	102	80	3	3	2	2
Iowa	0	0	44	115	91	37	0	3
Missouri	0	0	94	63	47	29	17	64
North Dakota	0	1	9	21	4	6	1	2
South Dakota	0	0	25	7	36	34	0	1
Nebraska	0	0	49	159	53	41	0	1
Kansas	1	0	34	102	56	70	0	0
South Atlantic States:								
Delaware	0	0	6	4	0	0	0	1
Maryland [2]	1	0	124	122	0	0	2	4
District of Columbia	0	0	14	19	0	0	2	0
West Virginia	0	0	35	23	28	6	21	9
North Carolina	0	0	38	34	5	10	2	7
South Carolina	1	0	5	9	3	2	11	17
Georgia	0	0	10	9	0	0	7	9
Florida	0	1	4	5	4	2	1	3

[3] Week ended Friday.
[2] Figures for 1930 are exclusive of Oklahoma City and Tulsa and 1929 are exclusive of Oklahoma City only.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended May 10, 1930, and May 11, 1929—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929	Week ended May 10, 1930	Week ended May 11, 1929
East South Central States:								
Kentucky	0	0	34	25	6	21	1	6
Tennessee	0	0	62	31	12	58	9	7
Alabama	0	0	15	13	2	2	14	10
Mississippi	0	0	4	15	6	1	7	16
West South Central States:								
Arkansas	0	1	11	8	4	1	1	6
Louisiana	0	0	18	67	13	37	16	20
Oklahoma [3]	0	0	24	27	110	53	7	8
Texas	0	2	42	80	152	112	4	9
Mountain States:								
Montana	0	0	34	9	9	12	0	1
Idaho	0	0	9	10	2	5	0	0
Wyoming	0	1	5	2	19	28	0	1
Colorado	0	0	28	28	21	19	4	0
New Mexico	0	0	4	7	15	3	1	1
Arizona	1	0	13	13	15	7	1	8
Utah [3]	0	0	9	10	0	6	0	0
Pacific States:								
Washington	0	0	33	23	85	39	3	4
Oregon	0	0	16	23	34	39	2	1
California	11	2	127	414	55	69	11	13

[3] Figures for 1930 are exclusive of Oklahoma City and Tulsa and for 1929 are exclusive of Oklahoma City only.

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	Meningococcus meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
April, 1930										
Arizona	22	19	15	-------	268	1	0	61	94	9
Arkansas	22	19	308	264	345	88	0	41	39	26
Connecticut	12	57	28	1	172	-------	0	420	0	5
Dist. of Columbia	2	51	28	-------	86	1	0	90	0	1
Maine	-------	3	26	-------	199	-------	1	152	0	5
New Mexico	12	34	1	1	280	1	0	54	27	9
North Dakota	11	20	11	-------	103	-------	0	118	83	3
Tennessee	107	30	273	107	1,141	29	2	264	48	44
Vermont	-------	4	-------	-------	381	-------	0	45	18	2
Wyoming	2	4	2	-------	179	-------	1	16	34	0

April, 1930

	Cases
Anthrax:	
Connecticut	2
Chicken pox:	
Arizona	81
Arkansas	118
Connecticut	459
District of Columbia	111
Maine	181
New Mexico	175
North Dakota	52
Tennessee	150
Vermont	85
Wyoming	38
Conjunctivitis:	
Connecticut	14
Maine	3
New Mexico	4
Dysentery:	
Arizona	1
Connecticut (amebic)	1
Tennessee	4
German measles:	
Connecticut	241
Maine	53
New Mexico	2
Hookworm disease:	
Arkansas	1

Lethargic encephalitis:	Cases
Connecticut	1
Maine	1
Mumps:	
Arizona	183
Arkansas	92
Connecticut	146
Maine	321
New Mexico	288
North Dakota	202
Tennessee	102
Vermont	29
Wyoming	77
Ophthalmia neonatorum:	
Connecticut	1
Tennessee	3
Paratyphoid fever:	
Maine	5
New Mexico	1
Rabies in animals:	
Connecticut	6
Rocky Mountain spotted or tick fever:	
Wyoming	8
Septic sore throat:	
Connecticut	13
Maine	1
New Mexico	3
Tennessee	5

Trachoma:	Cases
Arizona	22
Arkansas	5
Tennessee	4
Trichinosis:	
Connecticut	1
Undulant fever:	
Arizona	1
Connecticut	1
Maine	1
Tennessee	1
Vincent's angina:	
Maine	4
North Dakota	28
Tennessee	10
Wyoming	2
Whooping cough:	
Arizona	37
Arkansas	189
Connecticut	181
District of Columbia	28
Maine	113
New Mexico	11
North Dakota	46
Tennessee	148
Vermont	18
Wyoming	14

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 95 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,725,000. The estimated population of the 88 cities reporting deaths is more than 30,135,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended May 3, 1930, and May 4, 1929

	1930	1929	Estimated expectancy
Cases reported			
Diphtheria:			
46 States	985	1,476	
95 cities	522	820	828
Measles:			
45 States	20,019	16,037	
95 cities	8,099	5,613	
Meningococcus meningitis:			
46 States	193	280	
95 cities	101	129	
Poliomyelitis:			
47 States	18	21	
Scarlet fever:			
46 States	4,169	5,007	
95 cities	1,835	1,806	1,311
Smallpox:			
46 States	1,393	967	
95 cities	171	73	72
Typhoid fever:			
46 States	179	214	
95 cities	41	47	39
Deaths reported			
Influenza and pneumonia:			
88 cities	851	748	
Smallpox:			
88 cities	0	0	

City reports for week ended May 3, 1930

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

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

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND								
Maine:								
Portland	4	1	0		0	1	16	1
New Hampshire:								
Concord	0	0	0		0	0	0	0
Manchester	0	1	0		1	1	0	2
Nashua	0	0	0		0	1	0	0
Vermont:								
Barre	0	0	0		0	4	0	2
Burlington	0	0	0		0	0	0	0
Massachusetts:								
Boston	52	35	23		1	505	79	38
Fall River	1	3	2	1	1	4	1	5
Springfield	8	2	3		0	0	1	0
Worcester	16	4	2		0	272	0	2
Rhode Island:								
Pawtucket	13	1	1		0	4	0	2
Providence	5	6	2		0	1	0	4
Connecticut:								
Bridgeport	2	4	1		0	0	0	5
Hartford	8	5	0		0	2	0	4
New Haven	16	2	0		0	10	15	5
MIDDLE ATLANTIC								
New York::								
Buffalo	20	10	8		0	23	17	21
New York	316	258	80	37	11	1,729	207	221
Rochester	29	8	4		0	58	2	0
Syracuse	21	3	0	1	0	11	73	7
New Jersey:								
Camden	3	8	0	1	2	0	0	1
Newark	50	14	31	2	0	444	29	13
Trenton	3	2	2	1	0	7	0	6
Pennsylvania:								
Philadelphia	79	63	19		3	263	87	45
Pittsburgh	46	16	12		4	294	13	42
Reading	11	2	3		0	2	4	3
Scranton	0	3	0		0	0	0	0
EAST NORTH CENTRAL								
Ohio:								
Cincinnati	12	6	2		0	70	10	12
Cleveland	126	23	26	1	1	6	36	25
Columbus	8	3	3		0	116	4	8
Toledo	34	3	2	1	1	52	15	7
Indiana:								
Fort Wayne	1	2	0		1	0	0	0
Indianapolis	21	3	2		0	11	7	13
South Bend		1						
Terre Haute	3	0	0		0	32	0	0
Illinois:								
Chicago	105	83	129	8	2	35	58	67
Springfield	5	0	0	1	1	1	0	2

City reports for week ended May 3, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued								
Michigan:								
Detroit	95	44	42	3	4	1,175	96	28
Flint	15	3	0		1	151	4	3
Grand Rapids	10	2	0		1	2	3	2
Wisconsin:								
Kenosha	13	0	0		0	1	0	0
Madison	9	0	0		0	26	0	4
Milwaukee	122	11	5		0	13	100	8
Racine	0	2	0		0	4	0	3
Superior	2	0	0		0	3	0	0
WEST NORTH CENTRAL								
Minnesota:								
Duluth	8	0	0		0	36	0	1
Minneapolis	79	13	0		2	36	34	6
St. Paul	31	9	1		0	5	18	5
Iowa:								
Davenport	0	0	0			18	0	
Des Moines	1	1	0			6	0	
Sioux City	2	0	0			161	10	
Waterloo	35	0	0			4	0	
Missouri:								
Kansas City	14	4	2		0	18	9	6
St. Joseph	0	1	0		0	1	0	7
St. Louis	43	36	27	1	1	19	30	
North Dakota:								
Fargo	1	0	0		0	0	21	0
Grand Forks	0	0	0			0	0	
South Dakota:								
Aberdeen	20	1	0			4	8	
Sioux Falls	0	0	0			9	0	
Nebraska:								
Omaha	5	2	5		0	47	1	5
Kansas:								
Topeka	6	1	0		0	191	15	2
Wichita	4	1	0		0	0	3	6
SOUTH ATLANTIC								
Delaware:								
Wilmington	3	1	0		0	3	0	2
Maryland:								
Baltimore	156	21	12	5	2	28	9	37
Cumberland	0	0	1		0	0	0	1
Frederick	1	0	0		0	0	0	1
District of Columbia:								
Washington	22	11	7		0	25	0	17
Virginia:								
Lynchburg	1	0	1		1	42	4	2
Norfolk	3	0	1		0	2	12	8
Richmond	7	2	0		1	2	3	5
Roanoke	2	0	0		0	288	2	5
West Virginia:								
Charleston	5	0	0		0	1	1	1
Wheeling	9	1	0		0	4	1	4
North Carolina:								
Raleigh	1	0	0		0	0	0	2
Wilmington	4	0	0		0	0	0	1
Winston-Salem	2	0	0	3	0	13	10	3
South Carolina:								
Charleston	4	0	1	20	0	0	1	2
Columbia	4	0	0		0	0	11	2
Georgia:								
Atlanta		1						
Brunswick	0	0	0		0	4	0	1
Savannah	3	0	0	4	2	3	0	2
Florida:								
Miami	5	1	1		0	10	3	2
St. Petersburg		0			0			3
Tampa	9	0	1		0	131	7	2

City reports for week ended May 3, 1930—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL								
Kentucky:								
Covington	0	1	0	----	0	2	0	0
Tennessee:								
Memphis	8	2	0	----	0	0	11	5
Nashville	1	1	0	----	0	14	0	0
Alabama:								
Birmingham	4	2	0	9	1	6	11	13
Mobile	0	0	0	----	2	3	0	1
Montgomery	6	0	0	----	----	6	0	----
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith	0	0	0	----	----	51	0	----
Little Rock	----	0	----	----	----	----	----	----
Louisiana:								
New Orleans	1	7	15	6	3	10	0	9
Shreveport	5	0	0	----	0	2	4	3
Oklahoma:								
Oklahoma City	3	1	1	----	1	29	2	5
Tulsa	27	0	1	----	----	76	0	----
Texas:								
Dallas	13	3	7	----	1	134	3	1
Fort Worth	4	2	2	----	0	20	0	0
Galveston	0	0	0	----	0	0	0	4
Houston	3	3	5	----	0	4	0	5
San Antonio	1	2	0	----	2	4	1	7
MOUNTAIN								
Montana:								
Billings	0	1	0	----	0	0	5	0
Great Falls	2	0	0	----	0	0	17	0
Helena	0	0	0	----	0	1	1	0
Missoula	0	0	0	----	0	1	0	0
Idaho:								
Boise	0	0	0	----	0	1	0	0
Colorado:								
Denver	35	10	3	----	0	480	19	6
Pueblo	10	1	0	----	0	7	91	1
New Mexico:								
Albuquerque	9	0	0	----	0	15	14	0
Arizona:								
Phoenix	0	0	0	----	0	20	0	1
Utah:								
Salt Lake City	12	3	2	----	0	181	4	0
Nevada:								
Reno	0	0	0	----	0	0	0	0
PACIFIC								
Washington:								
Seattle	41	3	0	8	----	278	84	----
Spokane	13	2	0	2	----	13	0	----
Tacoma	6	1	3	----	0	119	0	2
Oregon:								
Portland	17	6	3	----	0	33	2	6
Salem	4	0	0	----	0	4	3	0
California:								
Los Angeles	68	36	16	10	0	295	46	11
Sacramento	4	2	0	----	0	14	23	0
San Francisco	57	16	11	----	2	157	77	4

City reports for week ended May 3, 1930—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		
NEW ENGLAND											
Maine:											
Portland	3	4	0	0	0	1	0	0	0	2	28
New Hampshire:											
Concord	0	3	0	0	0	0	0	0	0	0	8
Manchester	4	1	0	0	0	1	0	0	0	0	19
Nashua	0	0	0	0	0	0	0	0	0	0	----
Vermont:											
Barre	0	0	0	0	0	1	0	0	0	0	4
Burlington	0	0	0	0	0	1	0	0	0	2	9
Massachusetts:											
Boston		62	0	0	0	16	1	0	0	64	259
Fall River		4	0	0	0	1	1	0	0	1	27
Springfield	5	5	0	0	0	4	0	0	0	6	37
Worcester	7	8	0	0	0	3	0	0	0	9	61
Rhode Island:											
Pawtucket	1	1	0	0	0	1	0	0	0	8	26
Providence	10	13	0	0	0	3	0	0	1	2	76
Connecticut:											
Bridgeport	11	3	0	0	0	1	0	0	0	1	34
Hartford	5	3	0	0	0	1	0	0	0	0	40
New Haven	6	5	0	0	0	2	0	1	0	4	68
MIDDLE ATLANTIC											
New York:											
Buffalo	24	27	0	1	0	12	0	0	1	8	165
New York	295	278	0	1	0	105	9	5	0	59	1,659
Rochester	13	19	0	0	0	2	0	1	0	5	63
Syracuse	9	28	0	0	0	2	0	0	0	38	58
New Jersey:											
Camden	5	2	0	0	0	0	0	0	0	0	23
Newark	30	30	0	0	0	7	0	0	0	21	132
Trenton	3	8	0	0	0	4	0	0	0	0	45
Pennsylvania:											
Philadelphia	93	184	0	0	0	36	3	0	0	13	496
Pittsburgh	30	49	0	0	0	17	0	1	0	36	218
Reading	5	3	0	0	0	0	0	0	0	7	27
Scranton	2	2	0	0	0	0	0	0	0	3	----
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	16	29	2	4	0	9	1	0	0	1	152
Cleveland	37	52	0	0	0	20	1	1	0	39	250
Columbus	8	8	1	4	0	6	0	0	0	3	83
Toledo	12	12	1	3	0	4	0	0	0	4	78
Indiana:											
Fort Wayne	4	8	1	4	0	1	1	0	0	0	40
Indianapolis	12	33	8	4	0	3	0	1	0	8	----
South Bend	4	----	1	----	----	----	0	----	----	----	----
Terre Haute	2	2	0	2	0	1	0	0	0	0	14
Illinois:											
Chicago	117	298	2	13	0	52	2	2	0	53	719
Springfield	4	3	0	0	0	0	0	1	0	6	31
Michigan:											
Detroit	112	105	1	2	0	23	2	2	1	59	322
Flint	7	22	2	0	0	3	0	1	0	7	82
Grand Rapids	9	18	1	0	0	1	1	0	0	3	46
Wisconsin:											
Kenosha	2	5	0	0	0	1	0	0	0	10	8
Madison	2	7	1	1	0	1	0	0	0	11	26
Milwaukee	5	33	1	0	0	6	0	1	1	48	108
Racine	30	4	0	0	0	0	0	0	0	2	23
Superior	2	1	0	0	0	0	0	0	0	0	6

City reports for week ended May 3, 1930—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		
WEST NORTH CENTRAL											
Minnesota:											
Duluth	7	8	0	0	0	1	0	0	0	17	20
Minneapolis	43	14	2	0	0	2	0	1	0	5	100
St. Paul	24	20	0	0	0	1	0	0	0	11	53
Iowa:											
Davenport	2	0	1	9	----	----	0	0	----	0	----
Des Moines	5	17	1	20	----	----	0	0	----	0	36
Sioux City	1	3	1	4	----	----	0	0	----	4	----
Waterloo	2	2	0	48	----	----	0	0	----	0	----
Missouri:											
Kansas City	13	23	1	0	0	3	0	1	0	4	87
St. Joseph	3	7	1	1	0	1	0	0	0	0	36
St. Louis	31	96	3	2	0	8	1	0	0	11	201
North Dakota:											
Fargo	1	2	0	0	0	0	0	0	0	11	----
Grand Forks	0	0	0	3	----	----	0	0	----	0	----
South Dakota:											
Aberdeen	1	0	0	34	----	----	0	0	----	25	----
Sioux Falls	2	0	0	0	----	----	0	0	----	0	----
Nebraska:											
Omaha	3	8	4	11	0	0	0	0	0	0	61
Kansas:											
Topeka	3	1	1	2	0	0	0	0	0	15	14
Wichita	3	14	1	0	0	0	0	0	0	4	38
SOUTH ATLANTIC											
Delaware:											
Wilmington	5	2	0	0	0	0	0	0	0	2	26
Maryland:											
Baltimore	33	86	0	0	0	24	2	0	0	16	251
Cumberland	1	0	0	0	0	0	0	0	0	0	8
Frederick	0	0	0	0	0	0	0	0	0	0	5
District of Columbia:											
Washington	24	23	1	0	0	12	1	0	0	5	154
Virginia:											
Lynchburg	1	0	0	0	0	0	0	0	0	10	13
Norfolk	2	1	0	0	0	2	0	0	0	0	----
Richmond	3	7	0	0	0	2	0	0	0	0	52
Roanoke	0	0	0	0	0	4	0	1	0	3	33
West Virginia:											
Charleston	1	1	0	0	0	0	0	1	0	2	14
Wheeling	2	0	0	0	0	1	1	0	0	3	21
North Carolina:											
Raleigh	0	0	0	0	0	1	0	0	0	0	20
Wilmington	0	0	0	0	0	0	0	0	0	19	6
Winston-Salem	1	2	2	0	0	1	0	1	0	10	18
South Carolina:											
Charleston	0	1	1	0	0	2	1	0	0	1	30
Columbia	0	0	0	0	0	0	0	0	0	0	18
Georgia:											
Atlanta	4	----	4	----	----	----	0	----	----	----	----
Brunswick	0	0	0	0	0	0	0	0	0	0	4
Savannah	0	4	1	0	0	1	1	0	1	0	31
Florida:											
Miami	0	0	1	0	0	2	1	0	0	7	27
St. Petersburg	0	----	0	----	0	0	0	----	0	----	12
Tampa	1	2	0	0	0	4	1	0	0	0	18
EAST SOUTH CENTRAL											
Kentucky:											
Covington	2	3	0	0	0	0	0	0	0	0	14
Tennessee:											
Memphis	7	17	1	0	0	9	1	1	0	4	94
Nashville	2	0	1	6	0	4	0	1	0	1	35
Alabama:											
Birmingham	1	2	3	0	0	5	1	2	0	12	82
Mobile	0	0	0	0	0	1	0	0	0	1	30
Montgomery	0	0	0	0	----	----	0	0	----	0	----

City reports for week ended May 3, 1930—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		
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	0	0	0	0	----	----	0	0	----	2	----
Little Rock	0	----	0	----	----	----	1	----	----	----	----
Louisiana:											
New Orleans	7	15	0	0	0	15	2	5	0	5	154
Shreveport	0	2	1	0	0	2	0	0	0	2	33
Oklahoma:											
Oklahoma City	2	21	2	21	0	0	0	0	0	0	32
Tulsa	0	2	2	4	----	----	0	0	----	14	----
Texas:											
Dallas	3	14	2	1	0	3	0	1	0	0	53
Fort Worth	2	3	3	0	0	0	0	0	0	0	33
Galveston	0	1	0	0	0	2	1	0	0	0	18
Houston	1	0	1	8	0	2	1	0	1	0	62
San Antonio	1	----	0	0	0	7	0	0	0	0	78
MOUNTAIN											
Montana:											
Billings	0	1	0	0	0	1	0	0	0	0	7
Great Falls	1	18	1	0	0	0	0	5	1	0	9
Helena	0	0	0	0	0	0	0	0	0	3	2
Missoula	1	0	1	5	0	0	0	0	0	0	5
Idaho:											
Boise	0	0	0	3	0	0	0	0	0	0	9
Colorado:											
Denver	12	13	0	0	0	9	0	0	0	58	80
Pueblo	1	1	0	0	0	1	0	1	0	0	17
New Mexico:											
Albuquerque	1	0	0	0	0	6	0	0	0	0	15
Arizona:											
Phoenix	1	0	0	2	0	4	0	0	0	0	14
Utah:											
Salt Lake City	2	4	2	0	0	2	0	0	0	35	33
Nevada:											
Reno	0	4	0	9	0	1	0	0	0	0	5
PACIFIC											
Washington:											
Seattle	8	11	4	1	----	----	0	1	----	15	----
Spokane	5	1	7	21	----	----	0	0	----	22	----
Tacoma	2	0	3	2	0	1	0	0	0	11	22
Oregon:											
Portland	5	0	8	15	0	4	0	3	0	29	65
Salem	0	0	0	0	0	0	0	0	0	4	----
California:											
Los Angeles	29	40	5	9	0	12	1	0	1	25	189
Sacramento	2	2	1	3	0	4	0	1	0	0	35
San Francisco	20	0	1	0	0	9	1	1	0	2	161

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Springfield	0	0	1	1	0	0	0	0	0
Worcester	1	0	0	0	0	0	0	0	0
Connecticut:									
Hartford	0	1	0	0	0	0	0	0	0

City reports for week ended May 3, 1930—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MIDDLE ATLANTIC									
New York:									
Buffalo	2	2	0	0	0	0	0	0	0
New York	16	10	4	4	0	0	1	0	0
New Jersey:									
Newark	2	1	0	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	1	1	1	0	0	0	0	1	0
Pittsburgh	3	1	1	1	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland	3	2	1	1	0	0	0	1	0
Toledo	1	0	0	0	0	0	0	0	0
Indiana:									
Fort Wayne	1	0	0	0	0	0	0	0	0
Indianapolis	5	2	0	0	0	0	0	0	0
Terre Haute	1	0	0	0	0	0	0	0	0
Illinois:									
Chicago	6	3	1	0	0	0	0	0	0
Michigan:									
Detroit	15	5	1	0	0	0	1	0	0
Flint	1	1	0	0	0	0	0	0	0
Wisconsin:									
Milwaukee	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
St. Paul	1	1	0	0	0	0	0	0	0
Iowa:									
Sioux City	2	-------	0	-------	0	-------	0	0	-------
Waterloo	3	2	0	-------	0	-------	0	0	-------
Missouri:									
St. Louis	6	3	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore	4	2	0	1	0	0	0	0	0
District of Columbia:									
Washington	1	1	0	0	0	0	0	0	0
North Carolina:									
Raleigh	0	0	0	0	0	1	0	0	0
Winston-Salem	0	0	0	0	1	1	0	0	0
South Carolina:									
Charleston [1]	0	0	0	0	5	2	0	0	0
Columbia	0	0	0	0	0	1	0	0	0
Georgia:									
Savannah	0	0	1	1	3	2	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Memphis	11	12	0	0	1	0	0	0	0
Nashville	2	2	0	0	0	0	0	0	0
Alabama:									
Birmingham	1	0	1	0	1	0	0	0	0
Mobile	0	0	0	0	2	1	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	1	0	0	0	0	0	0	0	0
Louisiana:									
New Orleans	2	2	0	0	0	0	0	0	0
Shreveport	0	0	0	0	0	1	0	0	0
Oklahoma:									
Oklahoma City	1	0	0	0	0	0	0	0	0
Texas:									
Dallas	0	0	0	0	1	1	0	0	0
Houston	0	0	0	0	0	1	0	0	0

[1] Dengue; 4 cases at Charleston, S. C.

City reports for week ended May 3, 1930—Continued

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
MOUNTAIN									
Colorado:									
Denver	1	1	0	0	0	0	0	0	0
Arizona:									
Phoenix	1	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City	5	2	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	1	0	0	0	0	0	0	0	0
California:									
Los Angeles	1	0	0	0	0	0	0	3	1
Sacramento	1	1	0	0	0	0	0	0	0
San Francisco	0	0	0	0	1	0	0	0	0

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended May 3, 1930, compared with those for a like period ended May 4, 1929. The population figures used in computing the rates are approximate estimates, authoritative figures for many of the cities not being available. The 98 cities reporting cases have an estimated aggregate population of more than 32,000,000. The 91 cities reporting deaths have more than 30,500,000 estimated population.

Summary of weekly reports from cities, March 30 to May 3, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929 [1]

DIPHTHERIA CASE RATES

	Week ended									
	Apr. 5, 1930	Apr. 6, 1929	Apr. 12, 1930	Apr. 13, 1929	Apr. 19, 1930	Apr. 20, 1929	Apr. 26, 1930	Apr. 27, 1929	May 3, 1930	May 4, 1929
98 cities	80	131	95	124	88	135	[3] 93	136	[4] 86	135
New England	62	135	75	117	109	141	78	110	75	81
Middle Atlantic	78	190	97	166	87	198	104	194	76	190
East North Central	108	125	115	126	96	122	[5] 116	143	[6] 132	160
West North Central	51	75	87	83	85	112	[7] 68	85	66	77
South Atlantic	59	82	73	71	59	66	59	58	[8] 46	69
East South Central	34	27	7	75	20	7	54	55	0	21
West South Central	149	114	164	122	220	99	108	126	[9] 107	99
Mountain	26	44	77	61	9	70	86	78	43	61
Pacific	59	58	59	65	43	58	57	58	71	72

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1930 and 1929, respectively.
[3] Fort Wayne, Ind., and Sioux City, Iowa, not included.
[4] South Bend, Ind., Atlanta, Ga., and Little Rock, Ark., not included.
[5] Fort Wayne, Ind., not included.
[6] South Bend, Ind., not included.
[7] Sioux City, Iowa, not included.
[8] Atlanta, Ga., not included.
[9] Little Rock, Ark., not included.

Summary of weekly reports from cities, March 30 to May 3, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929—Continued

MEASLES CASE RATES

	Week ended									
	Apr. 5, 1930	Apr. 6, 1929	Apr. 12, 1930	Apr. 13, 1929	Apr. 19, 1930	Apr. 20, 1929	Apr. 26, 1930	Apr. 27, 1929	May 3, 1930	May 4, 1930
98 cities	1,026	839	1,222	824	1,255	896	[3] 1,362	838	[4] 1,331	928
New England	1,327	521	1,431	638	1,491	498	1,566	561	1,779	496
Middle Atlantic	832	174	1,019	160	1,156	146	1,256	153	1,353	165
East North Central	807	1,836	913	1,946	1,084	2,028	[5] 1,023	1,964	[6] 1,026	2,322
West North Central	842	1,963	1,174	1,657	988	2,124	[7] 968	1,713	983	1,776
South Atlantic	793	650	976	464	996	760	1,194	536	[8] 1,098	434
East South Central	594	89	371	130	337	55	459	21	209	130
West South Central	785	248	773	232	538	175	635	278	[9] 814	343
Mountain	4,608	618	7,475	192	6,617	209	8,573	366	5,758	444
Pacific	2,343	273	2,402	319	2,100	377	2,412	377	2,069	287

SCARLET FEVER CASE RATES

98 cities	308	290	327	270	305	268	[3] 269	295	[4] 302	299
New England	423	341	321	317	368	242	319	292	246	278
Middle Atlantic	308	244	296	224	276	224	252	246	300	245
East North Central	381	426	423	372	395	418	[5] 366	451	[6] 393	467
West North Central	266	275	391	242	359	216	[7] 248	281	376	262
South Atlantic	253	94	282	122	277	90	227	97	[8] 258	114
East South Central	162	212	148	185	162	144	142	109	148	226
West South Central	165	270	116	229	123	225	64	217	[9] 127	274
Mountain	232	104	326	165	343	70	223	122	352	78
Pacific	196	314	253	374	168	372	205	394	128	345

SMALLPOX CASE RATES

98 cities	24	11	29	12	28	9	[3] 30	13	[4] 28	12
New England	0	2	2	2	2	0	0	0	0	0
Middle Atlantic	0	0	0	0	0	0	0	0	1	0
East North Central	30	15	23	20	23	11	[5] 17	17	[6] 21	15
West North Central	85	17	146	8	137	10	[7] 143	13	129	13
South Atlantic	2	4	9	4	4	2	0	2	[8] 0	0
East South Central	0	7	13	7	20	0	47	0	40	21
West South Central	19	76	30	76	75	11	41	23	[9] 36	42
Mountain	103	26	60	78	26	44	94	26	146	122
Pacific	83	17	104	10	83	60	128	80	85	39

TYPHOID FEVER CASE RATES

98 cities	5	5	5	12	6	10	[3] 6	8	[4] 7	8
New England	4	4	0	9	7	7	4	4	2	7
Middle Atlantic	3	2	1	7	2	8	5	4	3	5
East North Central	2	7	1	11	3	4	[5] 6	4	[6] 6	3
West North Central	2	4	4	25	8	10	[7] 4	12	4	10
South Atlantic	4	4	20	13	20	24	11	17	[8] 6	11
East South Central	34	7	20	21	7	7	0	21	27	27
West South Central	11	8	7	42	7	42	26	34	[9] 24	30
Mountain	17	0	43	0	17	0	0	0	51	9
Pacific	7	7	5	7	9	10	5	7	7	10

[3] Fort Wayne, Ind., and Sioux City, Iowa, not included.
[4] South Bend, Ind., Atlanta, Ga., and Little Rock, Ark., not included.
[5] Fort Wayne, Ind., not included.
[6] South Bend, Ind., not included.
[7] Sioux City, Iowa, not included.
[8] Atlanta, Ga., not included.
[9] Little Rock, Ark., not included.

Summary of weekly reports from cities, March 30 to May 3, 1930—Annual rates per 100,000 population, compared with rates for the corresponding period of 1929—Continued

INFLUENZA DEATH RATES

	Week ended									
	Apr. 5, 1930	Apr. 6, 1929	Apr. 12, 1930	Apr. 13 1929	Apr. 19, 1930	Apr. 20, 1929	Apr. 26, 1930	Apr. 27, 1929	May 3, 1930	May 4, 1930
91 cities	13	20	17	15	15	15	[5] 12	13	[4] 9	8
New England	7	11	7	7	7	9	11	7	4	2
Middle Atlantic	15	16	21	14	15	10	9	12	10	6
East North Central	10	18	8	15	13	14	[5] 13	6	[6] 7	5
West North Central	9	27	9	6	18	18	9	12	9	18
South Atlantic	7	17	52	17	20	21	11	13	[8] 12	11
East South Central	44	75	24	30	66	15	44	30	22	30
West South Central	38	47	27	31	27	51	27	43	[9] 24	8
Mountain	26	44	26	17	9	9	17	52	0	17
Pacific	0	19	15	22	3	13	0	13	6	16

PNEUMONIA DEATH RATES

91 cities	165	149	169	139	153	127	[5] 144	117	[4] 138	123
New England	166	101	171	126	146	114	173	144	151	106
Middle Atlantic	194	178	195	161	190	134	168	130	172	136
East North Central	146	135	126	126	115	119	[5] 109	99	[6] 108	125
West North Central	115	147	148	114	154	108	80	111	112	126
South Atlantic	179	144	211	165	185	146	192	127	[8] 182	109
East South Central	177	142	228	164	236	157	258	97	140	172
West South Central	176	137	195	90	130	78	142	90	[9] 118	90
Mountain	180	122	180	113	163	122	146	87	60	165
Pacific	77	126	89	94	46	151	61	119	52	72

[4] South Bend, Ind., Atlanta, Ga., and Little Rock, Ark., not included.
[5] Fort Wayne, Ind., not included.
[6] South Bend, Ind., not included.
[8] Atlanta, Ga., not included.
[9] Little Rock, Ark., not included.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended April 26, 1930.—The Department of Pensions and National Health reports cases of certain communicable diseases in Canada for the week ended April 26, 1930, as follows:

Province	Cerebro-spinal fever	Influ-enza	Dysen-tery	Small-pox	Typhoid fever
Prince Edward Island [1]					
Nova Scotia		5			
New Brunswick [1]					
Quebec	6				22
Ontario	2	6		18	1
Manitoba	1				1
Saskatchewan				7	2
Alberta	3				
British Columbia			1	5	
Total	12	11	1	30	26

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

Quebec Province—Communicable diseases—Week ended May 3, 1930.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended May 3, 1930, as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	3	Ophthalmia neonatorum	2
Chicken pox	95	Puerperal septicemia	2
Diphtheria	33	Scarlet fever	111
Erysipelas	7	Tuberculosis	74
Influenza	7	Typhoid fever	35
Measles	158	Whooping cough	48
Mumps	96		

Ontario Province—Communicable diseases (comparative)—Four weeks ended April 26, 1930.—The following table shows the number of cases of certain communicable diseases, with deaths therefrom, reported in the Province of Ontario, Canada, for the four weeks ended April 26, 1930, as compared with the corresponding period of 1929.

Disease	Four weeks 1929		Four weeks 1930	
	Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis	13	1	12	5
Chicken pox	593		836	
Conjunctivitis	4			
Diphtheria	212	13	167	7
Dysentery	1			
Erysipelas			1	
German measles	18		791	
Goiter	4	1	2	
Gonorrhea	207		189	
Influenza	153	16	43	10
Lethargic encephalitis	2		2	1
Measles	2,387	1	2,785	4
Mumps	758		152	
Paratyphoid fever	1			
Pneumonia		147		224
Puerperal septicemia		2	1	
Scarlet fever	455	4	1,049	5
Septic sore throat	21		21	1
Smallpox [1]	83		74	
Syphilis	216		204	
Tuberculosis	116	51	131	70
Typhoid fever	85	2	5	
Undulant fever			7	
Whooping cough	621	4	281	1

[1] Cases of smallpox for this period were distributed as follows: Sudbury, 20; Ottawa, 19; Neebing, 11; Chelsey, 3; Shelburne, 3; Besanquet, 2; Thedford, 2; Himsworth N., 2; Hamer, 2. 1 case each in the following places: Iroquois Falls, S. Plantagenet, Fonthill, Nepean, Chelmsford, Englehart, North Bay, Waters, Wheatley, and Lanark Tp.

CUBA

Provinces—Communicable diseases—Four weeks ended April 12, 1930.—During the four weeks ended April 12, 1930, cases of certain communicable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer		2	1				3
Chicken pox		52		15	4	13	84
Diphtheria		12		2	4	1	19
Malaria	1	6			12	27	46
Measles	3	4		6	1	2	16
Paratyphoid fever		2	1	5	1	3	12
Scarlet fever		20	1				21
Typhoid fever	6	15	9	16	9	34	89

MEXICO

Tampico—Communicable diseases—April, 1930.—During the month of April, 1930, certain communicable diseases were reported in Tampico, Mexico, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Chicken pox	4		Measles	6	1
Diphtheria	1	1	Poliomyelitis		1
Enteritis (various)	16	33	Smallpox	7	4
Influenza	36	1	Tuberculosis	60	30
Leprosy	1		Typhoid fever	7	1
Malaria	68	9	Whooping cough	11	3

PORTO RICO

San Juan—Communicable diseases—Five weeks ended April 26, 1930.—During the five weeks ended April 26, 1930, cases of certain communicable diseases were reported in San Juan, P. R., as follows:

Disease	Cases	Disease	Cases
Diphtheria	5	Tetanus	2
Filariasis	1	Tuberculosis	81
Malaria	2	Typhoid fever	2
Measles	2	Whooping cough	2

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

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

CHOLERA

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

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Jan. 12–Feb. 8, 1930	Week ended— February, 1930		March, 1930					April, 1930			
						15	22	1	8	15	22	29	5	12	19	26
China:																
Canton	C		2													
Hankow	C	2														
Manchuria—Dairen	C								1							
Nanking	C	P														
Swatow	D	12	2													
India	C	17,340	19,582	12,350	6,461	1,577	1,258	1,515	1,564	1,834	2,278					
	D	10,680	10,903	6,507	3,606	877	765	900	829	929	1,225					
Bassein	C													3	1	
	D													2	1	1
Bombay	C												4			
Calcutta	C	252	265	138	202	65	46	53	105	97	53	110	119			165
	D	129	114	90	110	45	27	25	56	73	25	51	71			118
Madras	C	3	2													
	D	2	2													
Negapatam	C	2		1	12											
	D			1	4											
Rangoon	C	2	1	6	8		1	1	1	1	1					
	D	2	1	5	8		1			1	1					
Tuticorin	C	5	23	35	8											
	D	3	6	9	1											
India (French):																
Chandernagor	C	5	14	1		1	2	1		1						
	D	5	12	1				1	1		1					
Karikal	C			1			2	1	1			1	11		1	
	D							1				1	8		1	
Pondicherry Province	C		4													
	D		3													
Indo-China (see also table below):																
Pnompenh	C	43	4	3	11		2	5	2							2
	D	37	3	3	8	1	2	3	1	1	2	1	2			

Saigon and Cholon	C	1	2	1	2				5	1	6	1	6	17	12	19
	D			1	2				4	1	5			10	10	13
Siam	C		7	11	3	1	3		3				1	8		
	D		3	2			1		3					6		
Bangkok	C		5	9	3	1	1				1		1	1	5	4
	D		1	1									1	1	2	1
Nagara Pathom	C								1							4
	D								1							2
On vessel:																
S. S. at Suva, Fiji Islands	C							1								
S. S. Sutley, at Batavia, from Calcutta	C					1										

Place		October, 1929	November, 1929	December, 1929	January, 1930			February, 1930			March, 1930			April, 1930	
					1-10	11-20	21-31	1-10	11-20	21-28	1-10	11-20	21-31	1-10	11-20
Indo-China (French) (see also table above):															
Annam [1]	C		2		1			2	2						
Cambodia [1]	C	221	43	41	71		76	41	3	46	49	32		18	6
Cochin-China [1]	C	3	15	46	67		110	64	39	21	5	22	55	48	

PLAGUE

Place		Oct. 20-Nov. 16, 1929	Nov. 17-Dec. 14, 1929	Dec. 15, 1929-Jan. 11, 1930	Jan. 12-Feb. 8, 1930	Week ended—										
						February, 1930		March, 1930					April, 1930				May 3, 1930
						15	22	1	8	15	22	29	5	12	19	26	
Argentina:																	
Andalgala.[2]																	
Rosario	C	2			P												
Plague-infected rats		3															
Santa Fe	C	1			6												
Tucuman	C	1															
Villa Lia	D							2									
Azores: Ponta Delgada	C			P													
Belgian Congo: Djugu	D		2														

[1] Reports incomplete.
[2] On Mar. 11, 3 deaths from bubonic plague were reported in Andalgala, Catamarca Province, Argentina, since Feb. 5, 1930.

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

PLAGUE—Continued

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

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Jan. 12–Feb. 8, 1930	Week ended— February, 1930		March, 1930					April, 1930				May 3, 1930
						15	22	1	8	15	22	29	5	12	19	26	
Brazil:																	
Rio de Janeiro	C	------	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------
	D	------	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------
Sao Paulo.[3]																	
British East Africa (see also table below):																	
Tanganyika	C	------	------	------	------	------	------	------	7	------	------	------	------	------	11	------	------
	D	------	------	------	------	------	------	------	------	------	------	------	------	------	10	------	------
Uganda	C	336	281	127	82	------	------	23	24	30	40	------	------	------	------	------	------
	D	310	262	112	70	------	------	22	21	26	33	------	------	------	------	------	------
Ceylon:																	
Colombo	C	------	5	2	4	2	------	------	1	------	1	1	2	1	------	1	------
	D	------	4	1	4	2	------	------	1	------	1	1	2	1	------	1	------
Plague-infected rats		------	1	------	1	1	------	1	1	------	2	------	------	2	------	------	------
Chile: Antofagasta	C	------	------	------	1	1	------	------	------	------	------	------	1	------	------	------	------
	D	------	------	------	------	------	------	------	------	------	------	------	2	------	------	------	------
Dutch East Indies:																	
Batavia and West Java	C	266	340	286	167	31	38	38	46	34	41	23	------	------	------	------	------
	D	262	335	280	164	30	37	37	46	33	42	23	------	------	------	------	------
Plague-infected rats		1	8	------	3	------	2	1	------	------	2	------	1	------	6	2	------
Celebes—Makassar	C	------	1	------	1	------	------	------	------	------	------	------	------	------	------	------	------
	D	------	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------
Plague-infected rodents		------	1	4	------	------	------	------	------	------	------	------	------	------	------	------	------
East Java and Madura	C	41	29	2	------	------	------	------	------	------	------	------	------	------	------	------	------
	D	43	29	2	------	------	------	------	------	------	------	------	------	------	------	------	------
Java and Madura	D	475	537	458	317	64	69	105	58	59	------	------	------	------	------	------	------
Surabaya	C	------	4	------	------	------	------	------	------	------	------	------	------	------	------	------	------
	D	------	4	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Ecuador (see table below).																	
Egypt:																	
Alexandria	C	11	6	2	4	------	------	1	------	1	1	1	1	------	------	1	2
	D	4	3	3	1	------	------	------	------	------	1	------	------	------	------	1	------
Assiout	C	------	1	4	------	------	------	------	------	------	------	------	------	------	------	7	7
	D	------	1	2	------	------	------	------	------	------	------	------	------	------	------	3	2
Assuan	C	------	------	2	------	------	------	------	------	------	------	------	------	------	------	------	------

Beheira	C		1		2					3	1						
Beni Suef	C	2								3		1					
Dakahlieh	C		1	1		3	2	1	2	4		1		2		1	2
	D			1						1							
Gharbieh	C	6	3	2	1											1	
	D		2	1												1	
Girga	C													1			
Greece (see also table below):																	
Messenia	C	2															
Patras	C	2									P	1					
Piraeus	C		1		1												
Pyrgos	C	6	2														
India	C	8,265	6,016	4,713	4,814	1,670	1,255	1,324	1,390	1,090	1,187		1				
	D	4,374	3,457	3,093	3,308	875	913	1,046	1,106	838	911						
Bassein	C				1					2	1						
	D				1					1							
Bombay	C				1			1			2		3		4		
	D				1			1			2		1	1	3	4	
Plague-infected rats		31	36	29	28		13	5	13	21	7	33	25	20	28	25	
Madras Presidency	C	152	236	336	27	11	13	88	119	119	67	14	6	5			
	D	130	108	174	13	10	10	52	68	68	32	6	4	3			
Rangoon	C	2	1	3	3	1	3	1	2		1	2			3		
	D	2	1	4	2		3	1	2		1	2			2	1	
Plague-infected rats		6	2		1		5	1	1			2	1	1	2		
Indo-China (see also table below):																	
Pnompenh	C	2	5		1												
	D	2	5		2	1	7		5	7	2	2	2	2	1	1	
Saigon and Cholon	C			1	2							1					
	D			1	2							1					
Iraq:																	
Baghdad	C	4	3	2	6		2	2	2	2	1	1	3				4
	D	2	1	1	2				1	1			3				2
Basra	C			1													
Naudham	C	1		1													
Japan: Osaka (vicinity of)—Plague-infected rats				1	7		1	3	2	2		1	1	1	1		
Kwang-Chow-Wan	C				25		11	6	8				7				
Madagascar (see also table below):																	
Tamatave	C	3		4											1		
	D	3		3													
Morocco	C	3	9	12	4	19	6	14	9	8	5	26	16	14	41	34	
	D							7	6	4	1	7	6	6	26	12	
Nigeria: Lagos	C	58	10	15	6	3	1	2	1	4	1	7	1				
	D	49	10	15	6	3	1	2	1	4			1				
Plague-infected rats		33	21	18	44	15	8	8	13	7	12	3					
Peru (see table below).																	
Senegal (see table below).																	
Siam	C	1	3	11	8	4	5	5	3	1	4	8					
	D	1	3	9	6	4	4	3	2	1	3	8					
Bangkok	C			1					1	1	1	2	1				
	D			1					1	1	1	2					

[1] 21 cases of plague with 8 deaths were reported Jan. 29, 1930, in the State of Sao Paulo, Brazil; 15 of these cases were in the city of Sao Paulo.

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

PLAGUE—Continued

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

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Jan. 12–Feb. 8, 1930	Week ended— February, 1930		March, 1930					April, 1930				May 3, 1930
						15	22	1	8	15	22	29	5	12	19	26	
Siam—Continued.																	
Nagara Pathom	C	-------	1	6	7	3	1	-------	1	-------	-------	-------	1	4	3	2	-------
	D	-------	1	5	7	4	1	-------	1	-------	-------	-------	1	4	3	1	-------
Nagara Rajsima	C	-------	-------	2	2	1	1	-------	-------	-------	-------	-------	1	-------	1	-------	-------
	D	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	1	-------	-------
Syria: Beirut	C	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Tunisia:																	
Sfax district	C	34	20	14	18	19	-------	3	-------	-------	-------	-------	-------	-------	-------	1	-------
Tunis	C	41	-------	42	6	-------	-------	5	-------	1	-------	-------	-------	-------	-------	-------	-------
	D	-------	-------	21	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Union of Socialist Soviet Republics: Kazaks	C	-------	-------	P	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Union of South Africa:																	
Cape Province	C	13	4	-------	1	-------	2	-------	-------	-------	1	-------	-------	-------	-------	-------	-------
	D	5	-------	7	-------	-------	1	-------	-------	-------	1	-------	-------	-------	-------	-------	-------
Orange Free State	C	7	6	5	15	4	2	3	2	3	1	-------	-------	-------	-------	-------	-------
	D	4	3	1	9	1	1	-------	1	2	1	-------	-------	-------	-------	-------	-------
Transvaal	C	-------	-------	-------	8	-------	1	1	-------	-------	1	-------	-------	-------	-------	-------	-------
	D	-------	-------	-------	3	-------	-------	-------	-------	-------	1	-------	-------	-------	-------	-------	-------
On vessel:																	
At Rio de Janeiro, Brazil, from Argentina	C	-------	-------	-------	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

Place		October, 1929	November, 1929	December, 1929	January, 1930	February, 1930	March, 1930
British East Africa (see also table above):							
Kenya	C	146	157	54	34	-------	-------
Uganda	C	384	179	216	87	-------	-------
	D	351	164	199	75	-------	-------

Place		October, 1929	November, 1929	December, 1929	January, 1930	February, 1930	March, 1930
Madagascar (see also table above)—Con							
Moramanga Province	C	27	4	12	7	-------	-------
	D	27	8	12	7	-------	-------
Tamatave Province	C	5	-------	2	3	-------	-------

Ecuador: Guayaquil	C	12	14	17	8	2	2
	D	4	3	6	4	2	
Plague-infected rats			9	13	4	2	2
Greece (see also table above)	C	5	2	1			
	D	2	1				
Indo-China (see also table above)	C			10	10	30	27
Madagascar (see also table above)	C	203	152	264	282		
	D	193	163	248	258		
Amboaitra Province	C	2	42	111	128		
	D	2	33	96	111		
Antisirabe Province	C	17	5	16	26		
	D	17	5	16	25		
Itasy Province	C		10	19	31		
	D		10	16	31		
Miarinarivo	C	12	5	8			
	D	11	5	8			
Tananarive Province	D	4		2	1		
	C	141	103	97	88		
	D	132	93	98	83		
Peru	C	1					
Senegal:							
Baol [1]	C	45	23	5			18
	D	13	16	2			8
Dakar [1]	C	3	17	8			
	D	2	5	1			
Louga [1]	C	41				2	
	D	24	1				
Thies [1]	C	3			3		3
	D	3					2
Tivaouane [1]	C	41	8		1		11
	D	21	4				8

SMALLPOX

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Jan. 12–Feb. 8, 1930	Week ended— February, 1930		March, 1930					April, 1930				May 3, 1930
						15	22	1	8	15	22	29	5	12	19	26	
Algeria:																	
Algiers	C	2	3		6			1		2	2	1		1			
Constantine	C				1												
Oran	C		3		5					1							
Arabia: Aden	C	2	4	1	1	1		1			1	1	1			1	
	D		1														
Bolivia: La Paz (see table below).																	
Brazil:																	
Porto Alegre	C	5															
Rio de Janeiro	C			1													
British Borneo: Sarawak	C				4	2	15	2									
British East Africa (see table below):																	
Tanganyika	C	41	50	27	5			13	36	17	32	53	1				
	D	4	10	5				1	7	3	1	3					
British South Africa:																	
Northern Rhodesia	C	907	54														
Southern Rhodesia	C	6	58	33	1	6											
	D		4	6													

[1] Incomplete reports.

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

SMALLPOX—Continued

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

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Jan. 12–Feb. 8, 1930	Week ended— February, 1930 15	22	March, 1930 1	8	15	22	29	April, 1930 5	12	19	26	May 3, 1930
Canada:																	
Alberta	C	12	22	16	22	------	1	3	------	2	5	2	1	3	1	------	------
Edmonton	C	12	11	15	19	------	1	------	------	1	------	1	2	3	------	------	------
British Columbia—Vancouver	C	9	14	17	16	5	4	1	6	1	7	3	9	8	1	5	------
Manitoba	C	2	6	8	6	2	------	------	------	2	1	1	------	2	------	------	------
Ontario	C	17	63	51	63	------	28	8	50	38	27	26	9	17	30	18	------
Fort William	C	------	------	------	4	------	------	------	------	------	------	------	------	------	------	------	------
London	C	4	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Niagara Falls	C	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
North Bay	C	5	2	------	2	------	------	1	------	------	------	------	------	------	------	------	------
Ottawa	C	1	4	7	10	1	2	2	6	9	------	6	4	8	4	7	2
Sarnia	C	1	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Toronto	C	2	------	------	2	------	------	------	------	------	------	------	------	------	------	------	------
Windsor	C	2	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Quebec	C	22	10	3	11	------	------	------	------	------	------	------	------	------	------	------	------
Montreal	C	------	------	------	1	------	------	------	------	------	------	------	------	------	------	------	------
Saskatchewan	C	11	40	61	86	2	64	------	10	9	11	15	12	3	10	7	------
Regina	C	------	------	31	------	------	------	------	------	------	------	------	------	------	------	------	------
Saskatoon	C	13	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Ceylon:																	
Angoda, Western Province	C	------	------	------	------	------	10	------	------	------	------	------	------	------	------	------	------
	D	------	------	------	------	------	1	------	------	------	------	------	------	------	------	------	------
Colombo	C	------	------	1	1	2	1	------	------	------	------	------	------	------	------	------	------
	D	------	------	------	------	2	------	------	------	------	------	------	------	------	------	------	------
China:																	
Canton	C	------	4	5	7	4	4	1	2	1	1	4	------	------	2	1	------
	D	------	------	------	2	2	1	------	------	------	1	------	1	1	1	------	------
Chungking	C	P	P	P	P	P	------	P	P	P	P	P	------	------	------	------	------
Foochow	C	P	P	P	P	P	------	P	------	P	------	------	P	------	------	------	------
Hong Kong	C	15	62	102	118	18	18	16	10	12	10	5	11	20	7	------	------
	D	13	55	73	109	15	15	11	10	6	10	4	5	11	9	3	------
Manchuria—																	
Harbin	C	1	2	1	3	------	------	------	------	------	------	------	------	------	------	------	------
Kwantung—Dairen	C	1	------	1	6	------	4	------	1	------	------	------	------	------	1	------	------
Nanking	C	P	------	P	P	P	------	------	------	P	------	------	------	P	------	------	------
Shanghai—																	
Foreigners only	C	4	5	7	5	------	------	2	2	1	------	1	------	2	------	------	------
Including natives	D	1	2	6	8	1	3	2	1	4	1	3	2	4	3	2	------

Swatow	D			2	3	3	1	2			3	2	1	2			
Tientsin	C	1	4	2	1		1				2						
Chosen (see table below).																	
Colombia:																	
Barranquilla	C			1		100	1	1									
Buenaventura	C	50	56	13		1				1	1			7	5		
	D		1														
Costa Rica:																	
Port Limon	C															1	2
San Jose [1]	C											10		7			
Curacao (alastrim)	C									10	3						
Dutch East Indies:																	
Belawan Deli	C	4	1	1													
Borneo—Samarinda	C	8															
Java—																	
Batavia and West Java	C	11	37	17	14	2	3	4	3			1		2		1	
	D	7	8	10	7	1	1	2	3					2			
East Java and Madura	C	13	13														
	D	10															
Sanggi Islands	C		105	17	25	12					5						
	D		6	3							1						
Sumatra	C	4	1	1	2					48							
	D									5							
Egypt:																	
Alexandria	C		5														
Port Said	C				2									1			
Great Britain:																	
England and Wales	C	643	994	1,005	1,455	322	376	439	393	433	361	449	457	423	345	353	
Aston under Lyne	C	1	6	3	4	3	8	7	11	5	4	2	4	9	3	4	
Bradford	C	13	20	8	5	2								1			
Cardiff	C	1	1									2		1	2		
Leeds	C				6	2	1		8	6	3	4	3	1	1		
London	C	174	321	480	597	135	193	183	185	210	124	195	181	169	129		
London and Great Towns	C	442	783	799	1,101	255	312	292	207	323	243	350	332	308	264	265	
	D		1		2	1		4		1		1	1	2			
Newcastle on Tyne	C		1														
Sheffield	C											5	3	1	1		
Stoke-on-Trent	C	9	1	12	12	2	10	20	9	18	23	40	41	17	23	33	
Greece: Patras	C			1													
Hedjaz	C	7	6	11	11												
India	C	3,337	7,644	12,789	26,524	9,100	9,061	8,084	9,791	9,269	10,122						
	D	730	1,963	3,730	6,186	1,922	2,068	1,762	1,958	1,826	2,128						
Bombay	C	12	42	119	342	112	155	173	198	283	187	114				89	
	D	8	14	57	164	57	74	95	117	123	114	78				64	
Calcutta	C	6	54	88	185	96	73	70	160	106	155		100			122	
	D	4	39	62	130	63	52	56	116	77	138		90			103	
Cochin	C	96	387	284	234	62	17	31	74	87	71	72	61	56	49	55	
	D	11	72	20	27	8	5	8	8	14	11	3	7	3	4	6	
Karachi	C	2	7	17	30	5	11		22	14	13	12	8	10	9	7	
	D	1	2	11	9	4	4		8	5	3	3	4	10	3	2	

[1] 5 cases of smallpox were reported Apr. 14 in Costa Rica outside of city of San Jose.

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

SMALLPOX—Continued

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

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Jan. 12–Feb. 8, 1930	Week ended— February, 1930 15	February, 1930 22	March, 1930 1	March, 1930 8	March, 1930 15	March, 1930 22	March, 1930 29	April, 1930 5	April, 1930 12	April, 1930 19	April, 1930 26	May 3, 1930
India—Continued.																	
Madras	C	58	64	85	105	39	47	25	48	38	53	43	39	55	------	27	------
	D	11	11	16	16	5	4	12	8	8	9	12	7	6	------	5	------
Moulmein	C	3	6	18	65	26	37	51	29	39	43	40	25	10	------	33	------
	D	2	3	9	18	10	7	11	12	15	9	8	9	4	------	3	------
Negapatam	C	1	1	------	------	1	------	------	------	------	------	------	------	------	------	------	------
Rangoon	C	------	1	2	7	1	1	4	1	5	1	3	1	------	1	1	------
	D	------	------	------	4	1	1	------	------	2	1	2	------	------	------	------	------
Tuticorin	C	------	------	------	3	------	------	------	------	------	------	------	------	------	------	------	------
Vizagapatam	C	------	------	2	5	5	2	------	2	4	8	53	4	1	------	2	------
	D	------	------	------	------	1	------	------	------	1	1	14	2	1	------	------	------
India (French):																	
Chandernagor	C	------	------	------	3	5	------	2	4	------	4	2	------	------	------	2	------
	D	------	------	------	------	2	2	------	1	------	------	2	------	------	------	------	------
Karikal	C	4	1	------	3	4	------	4	4	------	10	12	2	------	------	2	------
	D	2	1	------	3	2	------	4	2	------	5	2	------	------	------	2	------
Pondicherry Province	C	19	7	20	22	9	17	12	14	------	9	12	------	------	1	11	------
	D	16	7	19	19	9	14	11	5	------	7	6	------	------	1	8	------
India (Portuguese)	C	------	1	------	16	10	12	17	11	5	21	------	------	5	------	------	------
	D	------	------	------	------	------	2	1	3	------	1	------	------	------	------	------	------
Indo-China (see also table below):																	
Pnompenh	C	2	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
	D	------	------	------	1	------	------	------	------	------	------	------	------	------	1	1	------
Saigon and Cholon	C	------	------	4	3	2	1	1	------	------	2	------	1	------	------	4	------
	D	------	------	2	3	1	------	1	------	------	1	------	------	------	------	3	------
Iraq:																	
Baghdad	C	9	20	16	7	2	1	------	------	------	------	------	------	1	2	------	2
	D	3	10	5	3	1	------	------	------	------	------	------	------	------	------	------	1
Basra	C	------	5	------	------	------	1	------	------	------	------	------	------	------	------	------	1
Diyalah Liwa	C	63	46	------	------	------	------	------	------	------	------	------	------	------	------	------	------
	D	18	7	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Kirkuk Liwa	C	90	70	------	------	------	------	------	------	------	------	------	------	------	------	------	------
	D	26	19	------	------	------	------	------	------	------	------	------	------	------	------	------	------
Mossoul	C	152	48	80	26	------	8	4	------	------	------	------	------	------	22	------	------
	D	99	17	3	7	------	1	1	------	------	------	------	------	------	3	------	------
Ivory Coast (see table below).																	
Macao	D	------	------	------	------	------	------	------	2	1	2	------	------	1	------	------	------

Mexico (see also table below):																	
Aguascalientes	D	1															
Coahuila	D	1															
Jalisco (State): Guadalajara	D	1	6	9	9	1	3	6	4	3	7	5	7	6	4	8	2
Juarez	C	6	11	3	2			3				2					
	D	2	2	2	1			1									
Mexico City and surrounding territory [1]	C	9	19	25	30	16	13	9		26	13						
	D	4	9	4	7	5	2	14		3	9						
Morelos State.[2]																	
San Luis Potosi	C							1									
	D							1									
Morocco (see table below).																	
Netherlands: Rotterdam	C	18	5	1													
	D	1	1														
Nigeria: Lagos	C			2	5	2											
	D			1	2												
Panama	C	11															
Persia (see table below).																	
Philippine Islands: Sarangani and Balut Islands [3]	D			40	18	3											
Poland	C	2	4	2		2										2	
Portugal:																	
Lisbon	C	2	3	6	4	7					4	1	2	2	3	3	
Oporto	C		1														
Rumania	C				1				1								
Siam	C	7	3	42					2					2	2		
	D	2	1	9	1										2		
Somaliland, British: Boales	C	25	24	5	35		12	7			2						
	D	10	9	9	8		2			2	3	1					
Straits Settlements	C				2							2	3	1	1		
	D				1							1					
Sudan (Anglo-Egyptian)	C	91	254	290	230	19	1	59		8	5	22	25	2	9	31	
	D	12	45	65	34	2		4			2		3	1		3	
Sudan (French) (see table below).																	
Syria (see table below).																	
Tunisia: Tunis	C	23	47	20	7			3				2	1			1	
Turkey (see table below).																	
Union of South Africa:																	
Cape Province	C	P	P	P	P	P	P	P	P	P							
Natal	C		P														
Orange Free State	C	P	P	P	P	P	P	P	P	P	P						
Transvaal	C	P	P	P	P	P	P	P	P	P							
Upper Volta	C					17			9	1	1	2					
Zanzibar	C									9	2		2				
On vessel:																	
S. S. Tairoa, at Liverpool, from London	C							1									
S. S. Karagola, at Zanzibar, from India	C				4												
S. S. Karoa, at Zanzibar	C	1															
S. S. Taipikn, at Manila, from Australia	C	1															
S. S. Karagola, at Lorenzo Marques, from India	C						1										

[1] During the month of March, 1930, 100 cases of smallpox were reported in Mexico City, Mexico, and surrounding territory.
[2] Newspaper reports of Feb. 4 show an epidemic of smallpox in Ionacatepec, Morelos State, Mexico, and vicinity, giving 600 deaths in preceding 2 weeks.
[3] On Feb. 1, 1930, 317 cases of smallpox with 102 deaths were reported to that date in the Sarangani and Balut Islands.

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

SMALLPOX—Continued

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

Place		October, 1929	November, 1929	December, 1929			January, 1930			February, 1930			March, 1930			Apr. 1-10, 1930
				1-10	11-20	21-31	1-10	11-20	21-31	1-10	11-20	21-28	1-10	11-20	21-31	
Belgian Congo	C		42	41	33											
	D		2	4												
Dahomey	C	4	19	19												
Indo-China (see also table above)	C	128	245		142		136	140	184	148	286				26	261
Ivory Coast	C													7		
Sudan (French)	C		P		17			4	225	12	P	201		258	409	371
	D								25	1		10		18	31	30
Syria: Beirut	C	28	60	10	9	6	18	6	46	4	7	7	4	8	5	10
	D	1	6													
Taiwan: Taihoku	C										31	12	31			

Place		October, 1929	November, 1929	December, 1929	January, 1930	February, 1930	March, 1930
Bolivia: La Paz	C	120	22				
British East Africa (see also table above):							
Kenya	C		278	168	12	12	6
Chosen	C		2		1	4	
Mexico: Durango (see also table above)	D	2	2	4	12	6	5
Morocco	C	12	41	84	29	74	

Place		October, 1929	November, 1929	December, 1929	January, 1930	February, 1930	March, 1930
Nigeria	C	233	228	293			
	D	47	45	70			
Persia	C	57		P			
	D	158	37				
Turkey	C	100	136	883	215	114	
	D	29	12	457	66	42	

TYPHUS FEVER

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Week ended— January, 1930: 18	25	February, 1930: 1	8	15	22	March, 1930: 1	8	15	22	29	April, 1930: 5	12	19	26
Algeria:																			
Algiers	C	2	1	14			2	1	3		1		2	1		3	2	3	2
Constantine Department	C	1	3	2	1	2		1	3	2			2	3			4	9	
Oran	C		1		1	1													
Bolivia: La Paz	C	13	14																
Brazil: Sao Paulo.[1]																			
Bulgaria	C		9	41								13	9				15		
	D		1	2								1							
Sofia	C	1						1											
	D	1																	
Chile:																			
Talcahuano	D						1												
Valparaiso	C				1														
China: Tientsin	C			1			1												
Chosen (see table below).																			
Czechoslovakia (see table below).																			
Egypt:																			
Assuan	C			9															
	D			1															
Beheira Province	C	2		7	6	8			5	13									
	D	1								5									
Cairo	C		1							5									
	D		1																
Dakahlieh	C			11															
	D			2															
Port Said	C					1		1			1								
Suez	C	1																	
Greece (see table below).																			
Iraq: Baghdad Liwa	C			1												2			
	D			1															
Ireland:																			
Irish Free State	C			1															
Dingle—Kerry County	C																		3
Northern Ireland—Cookstown	C											3							
Latvia (see table below).																			
Lithuania (see table below).																			
Mexico: Mexico City, including municipalities in Federal district	C	3	5	6	3	3	2	4	4	2	3			2					
	D	1		2	2	1	1												

[1] Press reports show that 10 deaths from typhus fever occurred in Sao Paulo, Brazil, from Nov. 3 to 30, 1929.

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

TYPHUS FEVER—Continued

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

Place		Oct. 20–Nov. 16, 1929	Nov. 17–Dec. 14, 1929	Dec. 15, 1929–Jan. 11, 1930	Week ended— January, 1930		February, 1930				March, 1930					April, 1930			
					18	25	1	8	15	22	1	8	15	22	29	5	12	19	26
Morocco	C	4	2	6	7	2	7	7	.....	2	8	11	4	7	14	13	6	5	2 3
	D	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4	3	2	1	.....
Palestine	C	2	1	1	.....	.....	.....	.....	.....	1	.....	.....	1	1	2	2	.....	1	.....
Peru: Arequipa (see table below).																			
Poland	C	62	74	61	67	96	52	81	.....	72	55	56	[illegible]	54	43	61	59	64	.....
	D	.....	10	4	5	7	8	1	.....	3	2	3	[illegible]	2	2	4	4	2	.....
Portugal: Oporto	C	3	3	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	2	.....	.....	1	.....	.....
Rumania	C	19	103	82	41	48	96	56	88	58	54	93	90	.....	.....	.....	.....	.....	.....
	D	2	10	5	8	2	7	8	11	2	5	5	7	.....	.....	.....	.....	.....	.....
Tunisia	C	1	3	2	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
Turkey (see table below).																			
Union of South Africa:																			
Cape Province	C	P	P	P	P	P	.....	P	P	P	P	P	P	P	.....	.....	.....	.....	.....
Natal	C	P	P	P	P	.....	1	.....	P	.....	.....	3	.....	.....	.....	.....	.....	.....	.....
Orange Free State	C	P	P	P	P	P	P	P	P	P	P	P	P	P	.....	.....	.....	.....	.....
Transvaal	C	P	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yugoslavia (see table below).																			

Place		October, 1929	November, 1929	December, 1929	January, 1930	February, 1930	March, 1930
Chosen: Seoul	C	.....	.....	1	.....	17	.....
Czechoslovakia	C	.....	3	.....	10	.....	.....
France	C	.....	.....	1	.....	.....	.....
Greece: Athens	C	7	.....	6	12	6	3
Latvia	C	.....	.....	2	18	.....	.....
Lithuania	C	6	4	5	2	70	62
	D	1	1	1	.....	5	4

Place		October, 1929	November, 1929	December, 1929	January, 1930	February, 1930	March, 1930
Peru: Arequipa	D	1	.....	.....	.....	.....	.....
Turkey	C	10	2	4	2	3	1
Yugoslavia	C	1	.....	6	26	33	46
	D	.....	.....	1	3	5	2

YELLOW FEVER

On April 22, 1930, 2 cases of yellow fever were reported at Mage, Brazil. Mage is on the Leopoldina Railway, between Rio de Janeiro and Nichtheroy.

×