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# SOME TENDENCIES INDICATED BY THE NEW LIFE TABLES<sup>1</sup>

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The United States Census Bureau has recently issued its third volume of life tables.<sup>2</sup> This publication is abridged in the sense that the data are given for every fifth year of life (after age 2) instead of for each year of life. The tables differ from previous ones also in that they are not specific for native and foreign-born stock or for urban and rural districts. On the other hand, they will be of special interest to health officers because data for the white population are furnished separately for 23 States and 14 large cities. The tables give, for the combined years 1919 and 1920, the smoothed annual rate of mortality, the number surviving and the number dying out of 100,000 born alive, and the expectation, for every fifth year of life, for males and females of each color.

The bulletin confirms certain conclusions which had already been arrived at by various writers relative to the changes in mortality between 1910 and 1920. It will be of interest to examine the material in the report in this light.

It must be recalled that, the data being based on the years 1919-20, the results are influenced by the recrudescence of influenza in the spring of 1919 and the further wave of the epidemic in the spring of 1920.

As some readers may not be familiar with life table construction, a simple explanation of the principles may be desirable. It is assumed that 100,000 individuals are born at a certain instant of time. During the first day of their life a certain number will die, leaving less than the original 100,000 to commence the second day; similar diminutions of the original group will occur on successive days (or other interval of time), until, after somewhat more than 100 hypothetical years have passed, all will have died. The rate of loss from day to day, or year to year, may be determined from the specific mortality rates of any city or State for which a life table is desired.

<sup>&</sup>lt;sup>1</sup> From the Statistical Office, United States Public Health Service.

<sup>&</sup>lt;sup>2</sup> The United States Abridged Life Tables, 1919-1920, prepared by Elbertie Foudray, under the direction of Dr. William H. Davis. Bureau of the Census, Department of Commerce, Washington.

In other words, these rates (when smoothed by rather complicated mathematical procedures) may be applied to the 100,000 or any part thereof alive at the beginning of any age interval to determine the number dying during that interval. The following table will clarify this:

Age interval (days).	Population at beginning of age interval.	Specific mortality rate per 1,000 for State or city.	Hypothetical deaths out of orig- inal 100,000 in the age interval.
0-30	100,000	7	700
30-60	99,300	4	397
60-90	98,903	2	198
90-120	98,705	And so on.	And so on.

In this way is obtained an age distribution of the population which is unique in that it is unaffected by immigration or emigration or by excess of births over deaths. The expectation of life (or average length of life) is obtained by weighting the age at death by the number of individuals dying at that age. Expectations are obtained for any particular age by eliminating all ages younger than the one in question.

Other values are included in the usual life table, but need not concern us. The life table mortality rates used in this paper refer to the smoothed specific rates for the actual population.

## IMPROVEMENT IN EXPECTATION AT BIRTH.

Figure 1 presents the expectation at birth (mean after-lifetime) for white and colored persons of each sex, during the years 1900–1902, 1909–11, and 1919–20, for the group of "original registration States."<sup>3</sup> It is evident that, so far as expectation at birth is concerned, the decade 1910–1920 has witnessed the same general progress as the previous decade. The females still have a better expectation than the males, in both white and colored populations. The colored show even more improvement than the white in expectation at birth in the past 10 years. In general it may be said that they have about the expectation at birth which the white had 30 or 40 years ago. Since the 1919–20 data cover years in which influenza was epidemic, the real gains are presumably greater for both white and colored than those indicated in the graph.

## TREND OF EXPECTATION AT EACH AGE.

But we must not forget that expectation at birth tells only part of the story. It is necessary to consider the expectation at each age. Table 1 gives the data.

<sup>&</sup>lt;sup>3</sup> These States are as follows: The New England States, and New York, New Jersey, the District of Columbia, Indiana, and Michigan.



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 TABLE 1.—Expectation of life in the original registration States at certain exact ages, by color and sex, 1900–1902, 1909–1911, and 1919–20.1

	Ň		Wł	nite.					Cole	ored.		
E xact age in years.	<u>·</u>	Male.			Female.		Male.			Female.		
	1900 - 1902	1909- 1911	1919- 20	1900- 1902	1909- 1911	1919- 20	1900 1902	1909- 1911	1919 - 20	1900 - 1902	190 <del>9</del> - 1911	1919- 20
0	48.2	50.2	54.1	51.1	53.6	56.4	32.5	34.1	40.5	35.0	37.7	42.
1	54.6	56.3	58.5 50.0	55.4	58.7	59.9	42.5	42.5	40.2	43.5	45.1	47.
2	53 0	53.0	55.0	54 6	09.2 56.1	- 09. 9 - 56 - 1	40.0	44.0	47.0	40.5	45 1	45
12	48.9	49.6	51.0	50.4	51.8	52.0	40.4	39.1	41.0	41.7	41.3	41.
7	44.6	45.2	46.7	46.1	47.4	47.6	36.9	35.4	37.4	38.6	37.9	38.
2	40.7	41.1	42.7	42.3	43.3	43.6	33.9	32.3	34.6	35.7	34.9	35.
27	37.1	37.2	38.8	38.6	39.3	39.8	31.1	29.2	31.7	32.6	31.6	32.
32	33.4	33.3	34.9	35.0	35.4	36.1	28.0	26.2	23.5	29.4	28.3	28.
37	29.9	29.6	31.1	31.4	31.6	32.3	24.9	23.3	25.4	26.3	25.2	25.
12	26.3	26.0	27.3	27.7	27.7	28.4	21.9	20.5	22.3	23.1	22.2	22.
17	22.8	22.5	23.6	24.1	24.0	24.5	19.0	17.7	19.3	20.3	19.3	19.
<u>52</u>	19.4	19.0	19.9	20.5	20.3	20.3	16.2	15.2	16.5	17.5	16.5	16.
97	16.2	10.8	16.5	11.1	16.8	11.3	13.9	12.9	13.8	14.9	14.1	14.
2	13.2	12.9	13.4	14.0	13.7	14.0	11.1	10.9	11.4	12. (	12.0	12.
01	10.5	10.3	10.0	11.1	10.9	1.1	9.0	9.0	9.3	10.7	10.2	10.1
4	6.1	6.0	6.2	6.0	5.5	0.1	6.0	6 1	5.0	7.9	6.0	Č C. (
1	4.5	4.6	4.5	4.0	4.9	5.0	1.7	5 1	2.0	5.0	5.6	0.1
	3.1	3.5	3.0	3.6	3.6	3.0	3 7	1 2	2.3	1.9	1.0	0.1

<sup>1</sup> Data for 1900-1902 and 1909-1911 from 1890-1910 United States Life Tables: data for 1919-1920 from United States Abridged Life Tables.

All the figures in this table are from the 1919-20 Life Tables of the Census Bureau, except those for 1900-1902 which come from a previous volume of life tables.<sup>4</sup> So far as the males (white and colored) are concerned, the gains indicated by the crude data are maintained. As Figure 2 shows, up to extreme old age the white and colored males have made a steady gain in expectancy. In old age the data must be regarded as quite unreliable. Their appearance of regularity is, of course, due to the smoothing process. The two upper graphs in Figure 2 compare the three periods for each sex, and the two lower

repeat the curves in order to compare the two sexes directly. From 1900 to 1910, although the colored males gained in expectation at birth, they lost heavily in expectation at nearly every other age. These losses have now been more than made good. In fact, the colored gains are greater than the white.

## IMPROVEMENT IN LONGEVITY AT MATURE AGES.

In the case of both sexes and colors the decline in expectation in middle life noted in 1910 has disappeared. This fact was pointed out in the Public Health Reports of March 3, 1922, on the basis of data for the expanding registration area,<sup>5</sup> and attention has been called to it by a number of writers, who have dealt with the results in certain States. Special attention may be called to an article by Gladden W. Baker.<sup>6</sup>

This improvement in longevity at mature ages is the first significant fact to which it is desired to call attention. The decline in expectation in 1910 over 1900 at these ages created a great deal of comment and speculation as to whether such a tendency would continue. Newsholme,<sup>7</sup> in commenting on this matter before life tables for 1919–20 were available, suggested that the United States might anticipate an early extension of the reduced death rate to all ages, paralleling changes which had previously taken place in England and one or two States in this country. This situation seems to have already been realized. Figure 3 indicates that the improvement at mature ages is consistently maintained by the male populations of all important States and cities for which data for the two periods have been worked up into life tables.

<sup>4</sup> United States Life Tables, 1890, 1901, 1910, and 1901-1910. Prepared by James W. Glover. United States Bureau of the Census, 1921.

<sup>&</sup>lt;sup>5</sup> Death rate in every age group lower in 1920 than in 1910. Pub. Health Rep., Mar. 3, 1922, p. 487.

<sup>&</sup>lt;sup>6</sup> The trend of adult mortality in the United States. By Gladden W. Baker. Jour. of Am. Statistical Assoc., September, 1923, p. 852.

<sup>&</sup>lt;sup>7</sup> National changes in health and longevity. Sir Arthur Newsholme. Quarterly Pub. of the Am. Statistical Assoc., June, 1921, p. 689.



### MORE RAPID DECLINE IN MORTALITY IN URBAN DISTRICTS.

From 1900 to 1910 there was a tendency for the urban mortality rates to fall more rapidly than the rural. This is well indicated in Table 2, giving the life table mortality rates 8 for white persons in urban and rural districts, by sex and age.

TABLE 2.—Urban and rural life table specific mortality rates for white persons in the original registration States, at certain exact ages, 1900-1902 and 1909-1911.1

Age.	Urban an per	nual rates 1,000.	Rural an per	nual rates 1,000.	Ratio of rate for period 1909-1911 to that for years 1900- 1902 (100=1900- 1902 rate).		
	1900-1902	1909-1911	1900-1932	1901–1911	Urban.	Rural.	
	MAI	JE.					
c.	151. 0 3. 0 6. 3 9. 5 13. 5 20. 3 38. 1 73. 1	133. 8 2. 6 4. 9 7. 2 12. 1 19. 2 38. 5 74. 2	109. 0 2. 3 5. 0 5. 8 7. 1 10. 7 21. 7 51. 5	103. 3 2. 1 4. 8 5. 4 7. 1 10. 7 22. 9 52. 9	89 87 78 76 90 95 101 102	95 91 96 93 100 100 105 103	
	FEMA	LE.					
0	125. 5 2. 5 5. 4 8. 3 10. 7 16. 3 31. 3 63. 1	111. 2 2. 2 4. 1 6. 3 8. 8 14. 4 30. 7 63. 5	89.8 2.1 5.5 6.8 7.5 10.4 20.1 46.3	85.0 1.8 4.4 5.5 6.7 9.9 20.1 49.9	89 88 76 76 82 83 98 101	95 86 80 81 89 95 100 108	

Figure 3 suggests that the greater decline in mortality in cities has continued during the past ten years; in other words, that there has been a greater increase in expectation of life in the cities. Chicago, Philadelphia, New York City, and Boston all show a greater increase in expectancy than any of the five States. Since urban and rural districts are not tabulated separately in the present volume of life tables, no direct comparison can be made.

Although the urban rates appear to be falling more rapidly than the rural, they are still much higher, as may be seen by comparing the expectation in large cities with the expectation in the States in which they are located. This is done in Table 3.

<sup>&</sup>lt;sup>8</sup> It should be noted that the life table specific mortality rates used in this paper were obtained by the Census Bureau by smoothing the figures for the actual number of persons living in each age group and for the actual number of deaths occurring in each age group. They are distinct from the average annual death rate per 1,000 of population in current and all older age intervals, based on a stationary population-a rate used in most life tables, but not employed in this paper.



Average number of y of life-		of years		Average number of years of life—					
Cities.	Expected in city.	Expected in State in which city is located.	Excess of State expecta- tion over city.	Cities.	Expected in city.	Expected in State in which city is located.	Excess of State expecta- tion over city.		
Los Angeles Cleveland Chicago St. Louis Philadelphia Detroit	53. 5 52. 5 52. 4 52. 3 52. 2 52. 1	54. 5 56. 2 55. 2 50. 8 53. 3 55. 1	1.0 3.7 2.8 4.5 1.1 3.0	San Francisco New York. Baltimore Boston Buffalo Pittsburgh	51. 8 51. 6 51. 5 50. 6 49. 6 47. 2	54. 5 52. 8 53. 8 54. 1 52. 8 53. 3	2.7 1.2 2.3 3.5 3.2 6.1		

TABLE 3.—Expectation of life among white persons in certain cities <sup>1</sup> and in the States in which they are located, 1919–20.<sup>3</sup>

<sup>1</sup> New Orleans omitted, since there are no data for the whole State. Washington, D. C., also omitted. <sup>2</sup> Data from United States Abridged Life Tables.

Possibly an important reason why the rural rates are not falling so rapidly is that they are already closer to a minimum rate—i. e., a decline from 11 to 10 deaths per 1,000 will clearly be more difficult than a decline from 15 to 14, and such gains will become increasingly difficult as the minimum is approached.

## INCREASE IN FEMALE MORTALITY RATES AT CERTAIN AGES.

As pointed out by recent writers, the improvement in expectation at each age noted in the case of males, is not so evident in the data for females. In fact, except for expectation at birth, only slight progress would appear to have been made in the past decade, if the years 1919-1920 are taken to be representative.

Returning to Figure 2, we note that the expectation of life for white females shows very little change from 1910 to 1920 at most ages. Some improvement may be observed after the 30-year mark, but the tendencies manifested from 1900 to 1910 have not continued. The expectancy for colored females has improved slightly since 1910; but, except for childhood, they have failed entirely to recover the ground lost from 1900 to 1910. The two lower curves indicate that the traditional advantage held by the females over the males in longevity has been considerably reduced.

Expectation curves are cumulative, and a more precise view of the relations at each age is observable from the smoothed specific annual mortality rates from which the expectation curves were calculated. The Census volume also gives these rates. It is clear that a reverse relation will hold here—a fall in the curve from one period of time to another will mean an increase in length of life. Table 4, therefore, gives the life table mortality rates for 1919–20, by color, sex, and age, using, as before, the rates at certain exact ages.

**TABLE 4.—Specific life table annual mortality rates per 1,000 in the original registration States at certain exact ages, by color and sex, 1900–1902, 1909–11, and 1919–20.**<sup>1</sup>

	White.					Colored.								
Exact age in years.		Male.			Female	male.			Male.			Female.		
	1900- 1902	<b>1909</b> - 1911	1919- 20	1900- 1902	1 <b>909</b> 1911	1919- 20	1900- 1902	1909- 1911	1919- 20	1900- 1902	1909- 1911	191 <b>9-</b> 20		
0	133. 5 34. 5 15. 8 2. 6 4. 3 6. 7 7. 3 8. 5 9. 9 11. 2 4. 8 13. 7 17. 1 24. 2 8 48. 2 68. 6 104. 4 155. 4	123. 3 28. 2 12. 7 3. 4 2. 3 3. 5 4 5. 8 7. 3 9. 2 11. 0 113. 8 17. 2 25. 1 135. 4 50. 2 72. 3 108. 0 108. 3	92.4 18.8 9.1 3.3 2.3 3.9 5.9 6.9 7.7 9.1 11.1 14.9 21.9 30.5 46.1 102.1 150.8	$\begin{array}{c} 110.6\\ 31.1\\ 14.8\\ 3.9\\ 2.4\\ 4.3\\ 6.2\\ 7.1\\ 8.1\\ 8.7\\ 11.6\\ 15.0\\ 21.3\\ 7\\ 42.5\\ 63.0\\ 94.9\\ 141.2\end{array}$	102.3 25.8 11.4 3.1 2.0 3.3 4.7 5.5 6.5 7.5 6.5 7.5 8.6 10.9 14.1 21.0 44.0 66.3 914.1	$\begin{array}{c} 73.\ 6\\ 16.\ 9\\ 8.\ 2\\ 8\\ 1.\ 9\\ 3.\ 5\\ 5.\ 4\\ 6.\ 6\\ 9\\ 6.\ 9\\ 6.\ 9\\ 7.\ 8\\ 10.\ 0\\ 13.\ 4\\ 19.\ 3\\ 27.\ 5\\ 43.\ 1\\ 64.\ 6\\ 139.\ 4\\ 193.\ 4\\ 19.\ 3\\ 27.\ 5\\ 43.\ 1\\ 64.\ 6\\ 139.\ 4\\ 19.\ 3\\ 19.\ 5\\ 10.\ 10\ 10\\ 10\ 10\ 10\\ 10\ 10\ 10\ 10\ 10\ 10\ 10\ 10\ 10\ 10\$	253. 3 77. 3 34. 3 1. 6.5 10. 1 12. 5 13. 2 13. 6 15. 8 24. 3 28. 3 43. 2 61. 3 84. 7 114. 1 159. 1	219.3 66.8 32.1 6.2 5.6 9.7 12.5 12.8 16.2 18.4 22.5 26.5 34.2 44.2 25.8 70.9 93.9 93.9 124.8 146.1	144. 9 46. 9 18. 3 5. 4 4. 9 10. 9 13. 0 11. 7 13. 1 15. 3 18. 0 20. 9 27. 3 36. 4 48. 7 65. 7 88. 9 103. 1 151. 3	$\begin{array}{c} 214.\ 7\\ 70.\ 2\\ 35.\ 3\\ 8.\ 5\\ 8.\ 4\\ 11.\ 1\\ 11.\ 0\\ 12.\ 5\\ 14.\ 2\\ 17.\ 1\\ 23.\ 3\\ 24.\ 7\\ 37.\ 3\\ 42.\ 9\\ 60.\ 9\\ 71.\ 5\\ 95.\ 5\\ 117.\ 4\end{array}$	$185.1 \\ 58.8 \\ 24.5 \\ 5.8 \\ 6.4 \\ 10.6 \\ 10.6 \\ 10.3 \\ 13.1 \\ 15.1 \\ 19.0 \\ 23.1 \\ 27.8 \\ 40.3 \\ 50.0 \\ 66.5 \\ 75.7 \\ 98.4 \\ 136.8 \\$	$\begin{array}{c} 120.3\\ 44.0\\ 16.1\\ 5.7\\ 4.9\\ 10.8\\ 10.7\\ 11.4\\ 12.5\\ 14.3\\ 20.3\\ 28.7\\ 41.5\\ 59.2\\ 60.0\\ 80.2\\ 95.9\\ 95.9\\ 120.7\\ \end{array}$		

<sup>1</sup> Data for 1900-02 and 1909-11 from 1890-1910 United States Life Tables; data for 1919-20 from United States Abridged Life Tables.

The data are shown in Figure 4 on a semilogarithmic scale, in order to place the changes on a percentage basis. The curves on the left compare the two sexes for each period, and the same curves are repeated on the right to compare the three periods for each sex. The extraordinary elevation in the 1919-20 curve for females for the ages 20 to 30 is quite marked, and centers attention on these 10 years.

The Metropolitan Life Insurance Company calls attention to this phenomenon among their policy-holders.<sup>9</sup> The Census Bureau has also observed the changed relation <sup>10</sup> and publishes in the Abridged Life Tables, 1919–1920, a special table giving by age the excess mortality rate of one sex over the other, by States, in 1919–20, together with the data for the original registration States for 1909– 1911 and 1919–20. Table 5 reproduces the data for the whole group of States, using, however, percentage differences instead of excess rates.

Statistical Bulletin, Metropolitan Life Insurance Company, May, 1923.

<sup>&</sup>lt;sup>10</sup> Cf also, Changes in mortality in the last two decades in New England, New York, New Jersey, Michigan, Indiana, and the District of Columbia. By Elbertie Foudray, U.S. Bureau of the Census. American Journal of Public Health, Vol. XIII, No. 8, August, 1923.



	28 St	ates. <sup>2</sup>	Original registration states.									
Exact age in years.	s. 1919–20		1919-20 1900-02			9–11	191	9–20				
	Male excess.	Female excess.	Male excess.	Female excess.	Male excess.	Female excess.	Male excess.	Female excess.				
0	20. 2		17.2		17.0		20.3					
1	10.1		9.9		8.5		10.1					
2.:	8.4		6.3		10.2		9.9					
7	13.6		7.1		8.8		15.2					
12	14.1		7.7		13.0	1	13.0					
17	12 2				57		10.3	····••				
99	12.2	8 0	75		12 0		10.0	7.7				
22		11 2	27		5.0		•••••	10.6				
29		15.9	47		11 0			.10.0				
04		10.0	10 1		11.0		10 4	·····				
01	10 7	•••••	12. 1		18.0		10.4	<b>-</b>				
42	14.1		14.0		21.8		13.2	•••••••••				
4/	10.3		15.3	• • • • • • • • • • •	21.0		9.9	<b></b>				
52	10.3		12.3		18.0		10.1					
57	11.9		12.0		16.3		11.9	<b>. </b>				
62	10.9		12.5		15.3		9, 5	<b></b>				
67	8.7		11.8		12.4		6.7					
72	81		8,2		8.3		7.5					
77	6.5		9.1		11.0		7.3					
82	7.0		9.1		5.8		7.6					
87	63		84		6.2		7 5					

TABLE 5.—Percentage by which the white mortality rate in one sex exceeds that in the other sex, 1900-02, 1909-11, and 1919-20, for the original registration States, and 1919-20 for a group of States as a whole.

<sup>1</sup> Excess for 28 States computed from data given in 1919-20 U. S. Abridged Life Tables; that for original registration States computed from data in Table 6 of this paper. <sup>3</sup> Including the District of Columbia. The States are Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Virginia, North Carolina, South Carolina, Tennessee, Kentucky, Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Missouri, Kansas, Utah, California, Oregon, and Washington.

It is manifest not only that there is at present an excess of mortality among young adult females, but also that this excess is a phenomenon of the present tables and did not show itself in 1900-02 or 1909-1911.

Table 6 was prepared to indicate the geographical distribution of this excess.

TABLE 6.—Ratio of mortality among white females to that among white males, by age, for each of 23 States, 1919-20.1

[Mortality of males at the given ago = 100. Ratios below 100 therefore indicate a male excess and are in bold face type.]

State	Average of ratios	Age.									
blate.	22, 27, and 32.	12	17	22	27	32	37	42	47	52	57
Kentucky	134	97	100	128	140	134	115	105	104	102	102
Indiana	131	99	97	134	131	128	105	101	109	102	92
Tennessee	129	95	101	124	137	125	121	106	116	104	96
Michigan	127	90	93	130	138	113	108	102	109	103	93
North Carolina	118	83	100	117	116	120	140	109	109	97	96
Wisconsin	114	84	77	118	122	102	102	95	97	94	94
Ohio	113	83	87	118	117	104	93	86	91	89	89
Kansas	112	93	81	106	116	115	112	105	107	102	- 99
Minnesota	112	84	87	112	121	102	102	97	96	93	93
Missouri	111	93	85	108	117	109	97	92	89	89	82
Maryland	110	85	100	121	110	99	88	86	85	82	87
Illincis	109	87	-85	111	116	99	90	86	83	87	86
Oregon	108	83	77	127	102	96	90	103	100	90	88
Massachusetts	108	85	91	113	106	105	94	90	92	92	86
South Carolina	108	76	85	93	115	115	116	95	89	92	87
Utah	105	88	85	114	100	101	98	84	69	88	76
Pennsylvania	104	86	89	107	107	99	86	81	82	87	86
Virginia	103	79	81	99	111	99	118	96	103	107	95
New Jersey	102	86	93	100	114	92	86	81	80	88	84
Connecticut	101	75	73	101	103	98	84	80	84	87	81
New York	98	86	87	98	105	91	80	81	84	84	86
California	92	74	80	98	92	85	73	71	78	75	72
Washington	91	90	83	89	93	90	94	93	97	88	99

<sup>1</sup> Computed from life table mortality rates, 1919-20, United States Abridged Life Tables.

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It is evident that there is a wide variation, from California and Washington, with no excess at all, to Kentucky with an excess at each age from 17 to 57 years. If we consider the three ages, 22, 27, and 32, at the period when the excess is most marked, we find that it is greatest in the central and Lake States (cf. fig. 5). New England and other Eastern States and also the far Western States have but slight tendency for an excess of the female rate over the male at these ages.



FIG. 5.—Ratio of mortality among white females to that among white males, in 23 States, 1919-20 (average of ratios for ages 22, 27, and 32).

This phenomenon is reflected in a number of causes of death, as is indicated in Table 7, based on the age group  $20-24.^{10}$  All causes showed a female excess rate of 31 per 100,000 in 1920; but in 1910 the male rate was in excess by 74 per 100,000. Hence, the change in the 10-year period is best indicated by subtracting algebraically the 1910 figures from the 1920 figures, as is done in the last column.

<sup>&</sup>lt;sup>10</sup> The special rate volume of the Census Bureau, 1910-1920, from which these data were taken, does not give the age group 25-29 separately. Therefore, for this preliminary study, it was thought advisable to limit the table to the age group 20-24.

		Rate pe	r 100,000.		Excess rate per 100,000.			
	1910		19	920	1910 (Male	1920 (Male	Alge-	
	Male.	Female.	Male.	Female.	ex- cess+).	ex- cess+).	differ- ence. <sup>2</sup>	
All causes. Violent causes (except suicide) Tuberculosis (all forms) Typhoid fever. Influenza and pneumonia	571 150 181 47 39	497 17 199 26 25	517 114 141 9 111	548 21 182 7 116	+74 + 133 - 18 + 21 + 14	$ \begin{array}{r} -31 \\ +93 \\ -41 \\ +2 \\ -5 \\ -5 \\ -5 \\ -5 \\ -5 \\ -5 \\ -5 \\ -5$	-105 -40 -23 -19 -19	
Puerperal conditions. Children's diseases <sup>3</sup> Cancer. Acute nephritis and Bright's disease. Heart, organic. Diabetes.	6 4 15 21 4	68 8 18 23 4	5 5 10 21 6	82 7 5 13 22 5	$\begin{array}{r} -68 \\ -2 \\ \hline \\ -3 \\ -2 \end{array}$	$-82 \\ -2 \\ -3 \\ -1 \\ +1 \\ +1$	14 +1 +1	
Cerebral hemorrhage and softening All other	3 97	3 99	3 90	2 85	-2	$^{+1}_{+5}$	+1 +7	

TABLE 7.-Mortality rates, 1910 and 1920, for the age group 20-24, by sex and cause, with excess rates, registration States of 1910.1

From mortality rates, 1910-1920. U. S. Bureau of the Census, Table IV.
 1920 excess minus 1910 excess.
 Measles, scarlet fever, whooping cough, and diphtheria.

Violent causes and typhoid fever have only an adventitious relation to the phenomenon. In both, the male rates are greatly in excess, and in both there has been a marked decline in the last 10 years. On the other hand, there has been an increase in a condition limited to females-puerperal causes. Tuberculosis and influenza-pneumonia are the two other conditions evidently involved in the excess female mortality in the age group 20-24. This method of treatment does not relate the excesses among young adult females to the remainder of the age curve, but it may be stated that such a comparison does not change the relations to any great extent. In other words, in general, conditions showing an excess for the ages 20-24 do not show an excess throughout all ages, and are therefore involved in bringing about the peculiar rise in the female mortality curve from 20 to 30.

The reasons for this heavy mortality among young adult females, however, are obscure, and the table is meant merely to be suggestive. Extended study is required.

#### CONCLUSIONS.

The recently published life tables, then, reveal the following tendencies:

(1) Continuation of the general improvement previously noted in expectation at birth.

(2) A somewhat greater improvement in expectation at birth among colored persons of each sex than among white.

(3) An increased length of life among persons of mature age-a group which in 1910 had shown a decrease in longevity.

(4) A more rapid decline in mortality in cities than in rural districts.

(5) A relatively greater mortality among women, especially at the ages from 20 to 30, than in 1910.

# A METHOD FOR THE ESTIMATION OF TOTAL SULPHUR IN NEOARSPHENAMINE AND SULPHARSPHENAMINE.

By ELIAS ELVOVE, Chemist, Hygienic Laboratory, United States Public Health Service.

In a previous communication ' the writer described a simplified procedure for the estimation of sulphate in neoarsphenamine. As indicated in that paper, the primary object of the determination of sulphate in neoarsphenamine is to obtain figures which, together with other analytical data, will enable us to calculate the distribution of the sulphur in the neoarsphenamine. These other analytical data, as pointed out by Raiziss and Falkov,<sup>2</sup> include a determination of total sulphur. For determining the total sulphur, Raiziss and Falkov use the method of Carius. It seemed desirable to find another method for determining the total sulphur in neoarsphenamine which would be more suitable for routine work.

Hoffman and Gortner<sup>3</sup> have recently pointed out that one may overcome the objection to the Carius method that it is "a difficult determination" and the objection to the peroxide fusion method that it "is disagreeable, demands extreme care," etc., by adapting the Benedict-Denis method for determining sulphur in urine. In dealing with arsenic compounds containing sulphur, however, it would be a distinct advantage if we could utilize one oxidation process for quantitatively oxidizing the sulphur to sulphate and also the arsenic to arsenate under conditions which would permit the utilization of the very convenient iodometric method for determining the arsenic. This means, therefore, that the Benedict-Denis reagent ' probably could not be used for this purpose, since the comparatively large amount of copper in the solution would probably interfere with the iodometric determination of the arsenic. Besides, the possibility that some nitrate or a small amount of nitrite might occasionally remain in the final solution would introduce another factor prejudicial to an accurate iodometric determination of the arsenic, even if we were able to control the interfering effects of the copper.

In this connection it occurred to the writer that the oxidation of the neoarsphenamine by means of permanganate as is done by the Lehmann method <sup>5</sup> for determining the arsenic in neoarsphenamine might be so modified that it would also oxidize quantitatively the sulphur in neoarsphenamine to sulphate. If, instead of using the Lehmann mixture of potassium permanganate and sulphuric acid, we were to use permanganate and hydrochloric acid, we would

<sup>&</sup>lt;sup>1</sup> Jour. Ind. Eng. Chem., 14, 624-625 (1922).

<sup>&</sup>lt;sup>2</sup> Jour. Biol. Chem., 46, 209-221 (1921).

<sup>&</sup>lt;sup>3</sup> Jour. Amer. Chem. Soc., 45, 1033-1036 (1923).

<sup>&</sup>quot;This reagent is prepared by dissolving 25 gms. of crystalline copper nitrate, 25 gms. of sodium chloride. and 10 gms. of ammonium nitrate in enough water to make 100 c. c. Hoffman and Gortner use 10 c. c. of this reagent for a determination.

<sup>&</sup>lt;sup>6</sup> Public Health Reports, 33, 1012 (1918).

not only obtain the oxidizing action of the permanganie acid but could also have the advantage of the very powerful oxidizing action of nascent chlorine, with the additional advantage that the same oxidation process would enable us to determine both the arsenic and the sulphur. As a result of some preliminary experiments it appears that this plan is quite feasible. The procedure was as follows:

Placed 0.4 gm. of the neoarsphenamine (or sulpharsphenamine) in a wide, 400 c. c. beaker of Pyrex glass and dissolved 6 in 20 c. c. of 25 per cent sodium chloride.<sup>7</sup> Mixed with 150 c. c. of N/2 potassium permanganate.<sup>8</sup> Added 15 c. c. 5N HCl, mixed, and allowed to stand at room temperature for half an hour; then placed the beaker in a boiling water bath and kept it therein until the contents of the beaker evaporated to dryness.<sup>9</sup> Allowed the residue to cool to room temperature and then treated with 5 c. c. 5N HCl, followed by 50 c. c. distilled water. Detached the residue from the beaker with the aid of a stirring rod and mixed well. Carefully added 6 c. c. of 3 per cent hydrogen peroxide and carefully mixed the contents of the beaker with the stirring rod. Allowed to stand at room temperature, mixing the contents of the beaker with the stirring rod at frequent intervals until the reaction with the peroxide was nearly complete. Carefully heated to boiling and titrated the hot solution with N/2 KMnO<sub>4</sub>, finally adding a small but distinct excess of the permanganate. Heated again carefully to boiling and added N/2 oxalic acid slowly, drop by drop, until the solution became colorless. Filtered <sup>10</sup> into a 100 c. c. flask, finally making up to the mark with distilled water and mixing well. Pipetted out 50 c. c. into a 500 c. c. Erlenmeyer flask and reserved for the arsenic determination.

The remaining 50 c. c. of the solution (representing 0.2 gm. of the original sample) was transferred into a 400 c. c. beaker and diluted with distilled water to about 150 c. c., using the dilution water appropriately for washing out the 50 c. c. pipette and the flask. Heated the contents of the beaker to boiling and added slowly, drop by drop, 5 c. c. of 10 per cent barium chloride solution. Allowed

<sup>&</sup>lt;sup>6</sup> Occasionally a sample was encountered which did not dissolve completely, but, by thoroughly mixing with the reagents, satisfactory results were obtained.

<sup>&</sup>lt;sup>7</sup> 25 gms. NaCl to 100 c. c. of the solution.

<sup>&</sup>lt;sup>9</sup>This solution was prepared by dissolving 15.8 gms. of the pure crystals per liter without any further standardization. By using hot water and finely powdering the solid, the latter readily goes into solution.

<sup>•</sup> The time required depends to some extent on how actively the water is boiling and on how deeply the beakers are immersed in the bath. In the case of the water bath which was available for this work, it usually required about five hours. Some determinations were purposely begun late in the atternoon so as to take advantage of the evening hours. The beakers were placed in the water bath just before leaving the laboratory and next morning they were all ready for the sulphur and arsenic determinations. It was found that in this way one could easily carry out twelve simultaneous determinations besides the controls.

<sup>&</sup>lt;sup>10</sup> Since there is usually very little undissolved matter remaining at this point, the filtering can be carried out with little difficulty and seems preferable to using more peroxide and boiling until all is dissolved.

the precipitate to settle over night and then collected it in a Gooch crucible, dried, ignited, and weighed as BaSO<sub>4</sub> in the usual way.

The 50 c. c. portion of the solution in the Erlenmeyer flask was used for determining the arsenic iodometrically as in the Lehmann method. This was carried out<sup>11</sup> by mixing with 10 c. c. concentrated  $H_2SO_4$ , cooling to room temperature, adding 2.5 gms. powdered potassium iodide, stoppering the flask and mixing until the iodide was dissolved, allowing to stand in a dark closet for an hour, and then titrating the liberated iodine with N/10 Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> as in the Lehmann method.<sup>12</sup>

In Table 1 are given the comparative results for total sulphur in samples of neoarsphenamine by the above method and by the sodium-peroxide method. The latter was carried out in a Parr bomb,<sup>13</sup> using potassium chlorate <sup>14</sup> as accelerator.

 TABLE 1.—Comparison of results for total sulphur in neoarsphenamine by the sodium

 peroxidc method and by the writer's method.

Manufacturer.	Total sulphur by sodium peroxide method.	Total sulphur by writer's method.	Difference.
"A" "B"	Per cent. 8. 76 7. 32 11. 02 9. 78 5. 84	Per cent. 8.79 7.40 10.97 9.69 5.82	Per cent. +0.03 + .08 05 09 02

<sup>1</sup> The comparative results in the case of the sample from manufacturer "E" were obtained by Mr. C. G. Remsburg of the Hygienic Laboratory.

The results given in Table 1 show a good agreement between the percentages for total sulphur by the peroxide method and by the writer's method. The slight differences are both plus and minus, and the magnitudes of these differences are quite within what may

<sup>13</sup> The experience in this laboratory with the bomb method has been that it is likely to produce an explosion, especially after the fusion cup has been used a number of times. The determinations by means of the Parr bomb were carried out by Mr. C. G. Remsburg of the Hygienic Laboratory.

14 J. Assoc. Official Agri. Chemists 5, 138 (1921).

<sup>&</sup>lt;sup>11</sup> It appears that instead of adding 10 c. c. concentrated  $H_2SO_4$  and 2.5 gms. solid KI, equally good results may be obtained by using correspondingly more of a diluted  $H_2SO_4$  and a strong solution of KI. Thus in some of the experiments the titration was carried out by adding 20 c. c. of a diluted sulphuric acid (1 vol.  $H_2SO_4$  to 1 vol.  $H_2O$ ) and 10 c. c. of a 25 per cent solution of KI; but since the final acid concentration is thus made lower than in the Lehmann method, it appears preferable until further work has been done along this line, to use an acid concentration as nearly equal as possible to that used in the Lehmann method.

<sup>&</sup>lt;sup>12</sup> A control determination was carried out simultaneously, with the object of ascertaining what correction to make for the possible presence of small amounts of sulphur in the reagents used. This control contained the same amounts of all of the reagents as were used in the actual determination, excepting that 25 c. c. 5N HCl were used instead of 15 c. c. This was done in order not to leave more of the unreduced manganese residue in the control than could well be worked up with the 6 c. c. hydrogen peroxide. Since the HCl was free from appreciable amounts of sulphur and arsenic, the use of this larger quantity of HCl could not appreciably affect the correction to be applied. This control received the same treatment as was accorded the solution containing the neoarsphenamine, with the result that one control solution was finally divided into two portions as in the actual determination and thus served both as control in the sulphur determination and slso as control in the arsenic determination.

be regarded as reasonable experimental errors. In Table 2 are given the comparative results for arsenic as determined by the ordinary Lehmann method and by the modification here proposed.

 
 TABLE 2.—Comparison of results for arsenic in neoarsphenamine by the Lehmann method and by the modified method.

Manufacturer.	Percentage of arsenic by Leh- mann method.	Percentage of arsenic by modi- fied method.	Difference.
"A" "B" "C" "D"	19. 40 18. 37 18. 43 19. 26	19. 49 18. 29 18. 46 19. 36	Per cent. +0.09 08 +.03 +.10

The results given in Table 2 show that the agreement in the figures for arsenic by the two methods was as good as that obtained in the case of the sulphur determinations. In Table 3 are given the comparative results for total sulphur by the two methods when these were applied to samples of sulpharsphenamine.

**TABLE 3.**—Comparison of results for total sulphur in sulpharsphenamine by the sodium peroxide method and by the writer's method.

Manufacturer.	Total sul- phur by sodium peroxide method.	Total sul- phur by writer's method.	Difference.
"A" "B"	Per cent. 11. 62 9. 21 10. 59 10. 23 12. 72	Per cent. 11. 48 9. 25 10. 76 10. 19 12. 64	Per cent. -0. 14 +. 04 +. 17 04 08

The results given in Table 3 show that the proposed method for the determination of total sulphur is applicable to sulpharsphenamine as well as to neoarsphenamine. In Table 4 are given the comparative results for arsenic as determined by the ordinary Lehmann method and by the proposed modification when these were applied to sulpharsphenamine.

 
 TABLE 4.—Comparison of results for arsenic in sulpharsphenamine by the Lehmann method and by the modified method.

Manufacturer.	Percentage of arsenic by Lebmann method.	Percentage of arsenic by modified method.	Difference.
"A" "B" "C" "D"	22. 15 19. 81 22. 53 22. 58 20. 67	21. 89 19. 42 22. 06 22. 72 20. 67	Per cent. -0. 26 39 47 +. 14 0. 00

90162°-24-2

The results given in Table 4 show a few differences by the methods compared which are a little larger than those encountered in the preceding tables. But such differences apparently have been encountered by others. Thus, on comparing the Lehmann method with a gravimetric method, Myers and DuMez<sup>15</sup> obtained figures which, in some cases, differed by as much as 0.41 (20.34–19.93) and 0.42 (20.35– 19.93) per cent. Likewise, in the comparative work carried out under the auspices of the Association of Official Agricultural Chemists,<sup>16</sup> the maximum and minimum figures for arsenic obtained on the same sample of neoarsphenamine by the Lehmann method were 19.5 and 18.6 per cent, or a difference of 0.9 per cent. It is difficult to tell whether the observed differences are due to the same causes as those in the Lehmann method <sup>17</sup> or to some variable factor which has not yet been sufficiently controlled. In using this method in its present form, therefore, one should bear in mind its possible limitations.

#### SUMMARY.

A method is described for determining total sulphur in neoarsphenamine and sulpharsphenamine which depends on the oxidation of the sample by means of permanganate and hydrochloric acid. The results obtained by this method agreed closely with those obtained by the sodium peroxide method. In addition to the advantage that it is more suitable than either the Carius or sodium peroxide method as a routine method for the simultaneous determination of total sulphur in a comparatively large number of samples, this method apparently has also the advantage that the required treatment of the sample is closely similar to that which is used in connection with the routine determination of arsenic, so that the same treatment prepares the sample for both the total sulphur and arsenic determinations.

## INCREASE IN AUTOMOBILE FATALITIES IN OHIO.

Returns compiled by the Bureau of the Census show that during 1922 there were 11,666 deaths resulting from accidents caused by automobiles and other motor vehicles (excluding motor cycles) in the death registration area of the United States (exclusive of Hawaii), that area comprising 85 per cent of the total population of continental United States in 1922. The death rate from this cause was 12.5 per 100,000 population in 1922, 11.5 in 1921, 10.4 in 1920, 9.4 in 1919,

<sup>&</sup>lt;sup>15</sup> Pub. Health Reports, 33, 1015 (1918).

<sup>&</sup>lt;sup>16</sup> Jour. Assoc. Official Agr. Chemists, 6, 463 (1923).

<sup>&</sup>lt;sup>17</sup> Carrying out eight determinations on the same sample of neoarsphenamine by the Lehmann method, Mr. C. G. Remsburg, of this laboratory, obtained the following figures: 19.77, 19.96, 20.24, 20.33, 20.05, 20.05, 20.05, and 20.05 per cent, or a maximum difference of 0.56 per cent. In the case of another sample he obtained the following figures: 19.3, 19.11, 19.21, 18.83, 18.27, 18.46, 19.11, and 19.3 per cent, or a maximum difference of 1.03 per cent.

9.3 in 1918, and 9 in 1917. In the 27 States for which data for 1917 are available, the actual number of deaths from this cause increased from 6,014 in that year to 9,581 in 1922, the corresponding rates for these two years being 8.7 and 12.9, respectively, or an increase during the period of very nearly 50 per cent.

In a recent issue of Public Health Reports <sup>1</sup> the number of deaths from automobile accidents for continental United States for 1923 was estimated at 15,700. This estimate was based on an increase in 1923 over 1922 of 13.2 per cent in the death rate from this cause among a group of 15,000,000 insured persons.

The above figures, while showing the mortality from automobile accidents to be increasing at an alarming rate, do not relate the increase in the number of automobiles in use to the increased number of fatalities. The factor of increased number of automobiles evidently has two functions in the problem—one, that of increasing the number of fatalities in the same ratio as that of the increase in the number of automobiles; the other function involving an increase in fatalities due to the increased congestion of traffic.

These relationships as obtaining in the State of Ohio are graphically presented by means of a chart recently issued by the Ohio Public Health Association of Columbus, in a campaign directed against this appalling waste of life. The figures for that State for the years 1922 and 1923 are given as follows:

Total automobiles, 1923         1, 070, 636           Total automobiles, 1922         858, 743	Total fatalities, 1923
Increase in number of automobiles 211, 893	Increase in fatalities 245
Percentage increase in automobiles	<sup>2</sup> 24 29

These figures show a percentage increase in automobile fatalities in 1923 over 1922 considerably larger than the percentage increase in the number of automobiles.

The Ohio Health News of March 28, 1924, published by the Ohio Public Health Association, contains the following statements:

"According to statistics compiled by the State bureau of vital statistics for 1923, Ohio's death rate due to automobile accidents was 17.6 per hundred thousand population as against a rate of 13.8 for 1922.

"There were 1,078 killed in automobile accidents in Ohio in 1923, as against 833 killed in 1922, an increase of 245. And this does not include 157 killed in automobile collisions with trains and interurban cars which are charged to railroad accidents.

"Higher mortality from automobile accidents has been a factor in increasing the general death rate of Ohic during the past year. "Voluntary health agencies are urged to cooperate with public authorities and civic bodies in safety campaigns and any other measures designed to curb this new menace. If a controllable disease were causing an increase in the death rate equal to the automobile death rate, quarantine would be resorted to and radical measures taken to safeguard human lives. This may not be a health function, but the health agency is at least justified in calling attention to the problem."

# **RESOLUTION ON LEGITIMATE NEEDS FOR OPIUM ADOPTED** BY THE HEALTH COMMITTEE OF THE LEAGUE OF NATIONS.

The following is taken from a recent report of the first session of the new Health Committee of the League of Nations, held at Geneva in February, 1924, and relates to the "legitimate" needs of the various countries with respect to opium and its derivatives. The report was adopted by the Council of the League of Nations.

"The Committee has considered the report presented by the Mixed Subcommittee, composed of two members of the Advisory Committee on Opium and two members of the Provisional Health Committee. This report deals with the question of the legitimate needs of various countries in respect of opium and its derivatives; it is drawn up on the basis of the replies submitted by the Governments and the special enquiries undertaken by the Health Committee.

"The Committee has adopted the following resolution:

'The Health Committee having taken note of a report on the work of the Mixed Subcommittee on Opium and of the enquiries which it has set on foot with a view to determining the legitimate requirements of the various countries of opium and opium derivatives, it being understood that legitimate requirements are to be taken as meaning medical and scientific requirements alone;

'Notes that it is impossible, with the data now available, to determine accurately any figure representing legitimate requirements;

'Considers that, in fact, the estimate of 600 mgrs. of raw opium per head per annum adopted by the Mixed Subcommittee considerably exceeds the quantities necessary for those requirements,

'And considers that this estimate ought to be reduced to 450 mgrs., it being understood that this figure represents a maximum and that, as it has been established solely on the basis of the estimate given by countries which have a highly developed system of medical aid, it can only be applied to countries in which similar conditions exist.

'The Committee further considers that since this figure is required essentially in order to arrive at a reduction in the world production of opium and the manufacture of its derivatives, it should be regarded exclusively from this point of view and not as a guide to the legitimate consumption of any given country.'

"The Committee decides to refer to a later session the consideration of the remaining conclusions of the Opium Mixed Subcommittee (as to cocaine, heroin, etc.)."

## "HEALERS" OF TUBERCULOSIS.

"For some time past, tuberculosis victims or suspects have been exploited by so-called 'healers' (becoming every day more numerous), who offer alleged remedies, vaccines or serums, the mode of preparing which is kept secret," writes the Paris correspondent of the Journal of the American Medical Association. Owing to the advertisement of Gabrilovitch tuberculin, offered as "the truly curative and truly specific remedy," and to discussion in the press concerning the Spahlinger treatment, two leading French tuberculosis associations have published a protest stating that there does not exist at present any remedy. chemical or biologic, or any serum or vaccine, whose effectiveness in the treatment of tuberculosis has been demonstrated. They caution patients against the dangers to which they expose themselves by wasting money and losing precious time in trying therapeutic agents that are useless and often actually harmful. (-Reprinted from the Baltimore Health News for April, 1924, published by the Baltimore City Health Department.)

## DEATHS DURING WEEK ENDED MARCH 29, 1924.

Summary of information received by telegraph from industrial insurance companies for week ended March 29, 1924, and corresponding week of 1923. (From the Weekly Health Index, April 1, 1924, issued by the Bureau of the Census, Department of Commerce.)

	Wcek ended March 29, 1924.	Corresponding week, 1923.
Policies in force	56, 792, 140	52, 684, 286
Number of death claims	11, 996	11, 462
Death claims per 1,000 policies in force, annual rate_	11. 0	11. 3

Deaths from all causes in certain large cities of the United States during the week ended March 29, 1924, infant mortality, annual death rate, and comparison with corresponding week of 1923. (From the Weekly Health Index, April 1, 1924, issued by the Bureau of the Census, Department of Commerce.)

		Week ended Mar. 29, 1924.		Death under 1 year.		Infant mor- tality
Cit <b>y</b> .	Total deaths.	Death rate. <sup>1</sup>	1,000, corre- sponding week, 1923.	Week ended Mar. 29, 1924.	Corre- sponding week, 1923.	rate, week ended Mar. 29, 1924. <sup>3</sup>
Total (64 cities)	7, 710	14. 9	¥ 14. 4	992	3 893	
Akron	33			10	4	105
Albany 4	43	18.9	17.3	3	2	66
Atlanta	89	20.4	13.8	11	5	
Baltimore 4	274	18.2	15.2	28	29	81
Birmingham	63	16.4	17.3	7	9	
Boston	231	15. 5	18.7	32	32	89
Bridgeport	40			4	5	63
Buffalo	140	13.4	14.1	33	21	140
Cambridge	26	12.1	13.6	3	1	52
Camden	42	17.3	13.4	4	4	63
Canton	18	9.1	6.8	4	3	84

<sup>1</sup> Annual rate per 1,000 population. <sup>2</sup> Deaths under 1 year per 1,000 births—an annual rate based on deaths under 1 year for the week and estimated births for 1923. Cities left blank are not in the registration area for births.

Data for 64 cities

Deaths for week ended Friday, Mar. 28, 1924.

## April 11, 1924

# 758

Deaths from all causes in certain large cities of the United States during the week ended March 29, 1924, infant mortality, annual death rate, and comparison with corresponding week of 1923. (From the Weekly Health Index, April 1, 1924, issued by the Bureau of the Census, Department of Commerce)—Continued.

	Week Mar. 2	: ended 29, 1924	Annual death rate per	Death under 1 year.		Infant mor- tality
City.	Total deaths.	Death rate.	1,000, corre- sponding week, 1923.	Week ended Mar. 29, 1924.	Corre- sponding week, 1923.	rate, week ended Mar. 29, 1924.
Chicago 4 Cincinnati Cleveland Columbus Dallas Dayton Dervor Dervor Dervor Detroit Duluth Erie - Fall River 4 Flint Fort Worth Grand Rapids Houston Indianapolis Jacksonville, Fla. Jacksonville, Fla. Jacksonville, Fla. Jacksonville, Fla. Jacksonville, Fla. Jacksonville, Fla. Jacksonville, Fla. Jacksonville, Fla. Jacksonville, Lowell Lowell Lowell Lynn Memphis Nashville 4 New Bedford New Haven. New Gelford New Haven. New Gelford New Haven. New York. Bronx Borough. Bronk Borough. Richmond Borough. Newark, N.J. Norfolk. Oakland Oklahoma City. Omaha. Providence. Richmond. San Antonio. San Francisco. Schenectady. Spokane. Syracuse. Synacuse. Syracuse. Synacuse. Syra	$\begin{array}{c} 749\\ 139\\ 227\\ 80\\ 55\\ 400\\ 88\\ 39\\ 281\\ 28\\ 28\\ 28\\ 28\\ 27\\ 23\\ 36\\ 40\\ 112\\ 112\\ 41\\ 85\\ 104\\ 232\\ 70\\ 996\\ 33\\ 31\\ 191\\ 1,699\\ 207\\ 76\\ 996\\ 33\\ 31\\ 191\\ 1,699\\ 207\\ 72\\ 68\\ 33\\ 33\\ 51\\ 191\\ 1,699\\ 207\\ 70\\ 582\\ 742\\ 122\\ 122\\ 85\\ 599\\ 266\\ 68\\ 33\\ 599\\ 266\\ 68\\ 33\\ 599\\ 266\\ 68\\ 33\\ 32\\ 77\\ 47\\ 53\\ 256\\ 61\\ 127\\ 266\\ 58\\ 599\\ 266\\ 61\\ 35\\ 87\\ 256\\ 61\\ 36\\ 58\\ 599\\ 266\\ 61\\ 35\\ 87\\ 256\\ 61\\ 35\\ 87\\ 256\\ 61\\ 35\\ 87\\ 256\\ 61\\ 35\\ 87\\ 256\\ 61\\ 35\\ 87\\ 256\\ 35\\ 87\\ 35\\ 35\\ 35\\ 35\\ 35\\ 35\\ 35\\ 35\\ 35\\ 35$	$\begin{array}{c} 13.3\\ 17.8\\ 13.0\\ 17.8\\ 13.0\\ 17.8\\ 12.3\\ 14.0\\ 13.5\\ 12.3\\ 14.0\\ 13.5\\ 11.6\\ 13.5\\ 11.6\\ 13.5\\ 11.6\\ 14.2\\ 15.1\\ 12.7\\ 16.1\\ 12.7\\ 14.2\\ 15.1\\ 14.2\\ 15.1\\ 14.2\\ 15.1\\ 14.2\\ 15.1\\ 14.2\\ 15.1\\ 14.7\\ 12.4\\ 13.8\\ 17.1\\ 15.1\\ 12.3\\ 11.5\\ 18.4\\ 14.7\\ 12.4\\ 13.8\\ 17.1\\ 11.5\\ 18.4\\ 14.2\\ 13.3\\ 11.2\\ 13.3\\ 11.5\\ 18.4\\ 14.6\\ 15.1\\ 13.5\\ 16.5\\ 15.0\\ 15.1\\ 13.5\\ 18.5\\ 18.4\\ 14.6\\ 15.1\\ 13.5\\ 18.5\\$	13. f         17. 2         10. 6         18. 2         12. 9         10. 7         11. 8         12. 12. 9         10. 7         11. 8         12. 3         12. 3         12. 3         12. 3         12. 3         12. 3         12. 3         12. 3         12. 3         12. 3         12. 3         12. 3         12. 3         12. 3         13. 7         11. 1         13. 2         24. 5         13. 2         24. 5         13. 2         24. 5         13. 2         24. 5         13. 1         12. 0         15. 4         11. 1         12. 0         15. 4         11. 1         12. 0         15. 6         13. 1         18. 6         15. 0         15. 0         15. 0         15. 0         15. 0         15. 0	$\begin{array}{c} & & & \\$	$\begin{array}{c} 101\\ 109\\ 21\\ 8\\ 3\\ 4\\ 11\\ 6\\ 8\\ 2\\ 3\\ 7\\ 3\\ 3\\ 3\\ 7\\ 9\\ 5\\ 22\\ 11\\ 4\\ 4\\ 7\\ 7\\ 9\\ 5\\ 12\\ 12\\ 18\\ 8\\ 10\\ 5\\ 12\\ 18\\ 8\\ 10\\ 5\\ 12\\ 18\\ 8\\ 10\\ 5\\ 5\\ 7\\ 4\\ 1\\ 10\\ 8\\ 6\\ 16\\ 9\\ 10\\ 8\\ 6\\ 16\\ 10\\ 8\\ 6\\ 16\\ 10\\ 10\\ 8\\ 6\\ 16\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10\\ 10$	91 113 81 133 81 134 
Wilmington, Del. Yonkers Youngstown	30 30 46	13. 0 14. 3 15. 5	15. 5 12. 6 12. 5	3 8 6	5 5 7	65 175 87

<sup>4</sup> Deaths for week ended Friday, Mar. 28, 1924.

# 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 STATE SUMMARIES.

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

Reports for Week Ended April 5, 1924.

ALABAMA.		ARKANSAS—continued.	
	Cases.		Cases,
Chicken pox	90	Scarlet fever	5
Diphtheria	6	Smallpox	. 14
Influenza	62	Trachoma	. 1
Malaria	12	Tuberculosis	13
Measles	497	Typhoid fever	6
Mumps	96	Whooping cough	37
Pellagra	3	CALIFORNIA	
Pneumonia	119		
Scarlet fever	6	Cerebrospinal meningitis—San Francisco	4
Smallpox	64	Diphtheria	207
Tuberculosis	35	Influenza	19
Typhoid fever	8	Lethargic encephalitis:	
Whooping cough	45	Berkeley	1
4 B120N4		Oakland	1
ARIZONA.		San Francisco	1
Dimbtharia	4	Sonoma County	1
	( E	Measles	1, 106
Innuenza	150	Scarlet fever	239
Measles	150	Smallpox:	
Mumps	8	Long Beach	10
Pneumonia	3	Los Angeles	127
Scarlet lever	14	Los Angeles County	43
Smallpox	2	National City	8
Trachoma	63	Scattering	57
Tuberculosis	13	Typhoid fever:	
Whooping cough	2	Santa Ana	59
ARKANSAS.		Orange County	10
Chicken pox	35	Scattering	11
Diphtheria	2	Typhus fever—Los Angeles	1
Hookworm disease	1	COLORADO	
Influenza	102	CONTRACT	
Malaria	33	(Exclusive of Denver.)	
Measles	434	Chicken pox	19
Mumps	30	Diphtheria	24
Paratyphoid fever	2	Influenza	3
Pellagra	2	Measles	246
	(75	<b>9</b> ;	

Cases.

### COLORADO-continued.

Mumps	41
Pneumonia	12
Scarlet fever	26
Smallpox	2
Trachoma	2
Tuberculosis	53
Typhoid fever	2
Whooping cough	29

#### CONNECTICUT.

Cerebrospinal meningitis	1
Chicken pox	50
Conjunctivitis (infectious)	2
Diphtheria	38
German measles	9
Influenza	17
Measles	154
Mumps	170
Pneumonia (lobar)	54
Poliomyelitis	1
Scarlet fever	156
Septic sore throat	1
Smallpox	5
Trichinosis	2
Tuberculosis (all forms)	22
Whooping cough	29

#### DELAWARE.

Chicken pox	_
Diphtheria	
nfluenza	
Aeasles	
Jumps	-
neumonia	-
carlet fever	
uberculosis	•
Vhooping cough	

#### DISTRICT OF COLUMBIA.

Chicken pox
Diphtheria
influenza
Lethargic encephalitis
Measles
Scarlet fever
Smallpox
Fuberculosis
Typhoid fever
Whooping cough

#### FLORIDA.

12010241	
Diphtheria	9
Influenza	5
Malaria	13
Pneumonia	5
Scarlet fever	8
Smallpox	10
Typhoid fever	5

#### GEOBGIA.

Chicken pox	25
Dengue	1
Diphtheria	. 9
Dysentery (bacillary)	4
German measles	11
Hookworm disease	37
Influenza	31

#### GEORGIA-continued.

	Cases
Malaria	31
Measles	106
Mumps	30
Pneumonia	46
Scarlet fever	11
Septic sore throat	11
Smallpox	167
Tuberculosis (all forms)	19
Typhoid fever	10
Whooping cough	29

#### ILLINOIS.

Cerebrospinal meningitis-Will County	
Diphtheria:	
Cook County	81
Scattering	45
Influenza	34
Lethargic encephalitis—Cook County	3
Measles	707
Pneumonia	401
Scarlet fever:	
Cook County	130
De Kalb County	9
Kane County	26
Macon County	11
Scattering	91
Smallpox:	•-
Chicago	9
Scattering	ğ
Tuberculosis	275
Typhoid fever	10
Whooping cough	110
	-10

#### INDIANA.

Chicken pox	126
Diphtheria:	
Allen County	10
Marion County	15
Scattering	53
Influenza	57
Measles	1,007
Pneumonia	42
Scarlet fever:	
Elkhart County	14
Lake County	26
Marion County	12
Montgomery County	20
St. Joseph County	31
Scattering	65
Smallpox:	
Delaware County	35
Fayette County	8
Marion County	57
Scattering	56
Tuberculosis	45
Typhoid fever:	
Lake County	15
Scattering	2
Whooping cough	101

#### IOWA,

Diphtheria	4
Scarlet fever	52
Smallpox.	18
Typhoid fever	1

#### RANSAS.

· RENGED.	<b>1</b> 0000
Constructional annual anti-	_ascs.
Cerebrospinal meningitis	4
Chicken pox	110
Diphtheria	38
German measles	1
Influenza	7
Lethargic encephalitis	1
Measles	1,005
Mumps	369
Pneumonia	32
Scarlet fever	78
Smallpox	49
Tuberculosis	55
Typhoid fever	9
Whooping cough	67

#### LOUISIANA.

Diphtheria	20
Hookworm disease	58
Influenza	14
Leprosy	1
Malaria	15
Mensles	238
Pneumonia	64
Scarlet fever	8
Smallpox	20
Tuberculosis	23
Typhoid fever	11
Whooping cough	6

#### MAINE.

Cerebrospinal meningitis	1
Chicken pox	26
Diphtheria	13
German measles	17
Measles	169
Mumps	46
Pneumonia	8
Scarlet fever	33
Tuberculosis	7
Typhoid fever	1
Vincent's angina	1
Whooping cough	24

#### MARYLAND.1

Cerebrospinal meningitis	1
Chicken pox	127
Diphtheria	31
German measles	85
Influenza	64
Malaria	3
Mcasles	318
Mumps	39
Pneumonia (all forms)	127
Scarlet fever	129
Septic sore throat	2
Smallpox	4
Tuberculosis	63
Typhoid fever	2
Vincent's angina	2
Whooping cough	50

Week ended Friday.

#### MASSACHUSETTS.

	Cases.
Cerebrospinal meningitis	. 1
Chicken pox	. 213
Conjunctivitis (suppurative)	. 6
Diphtheria	171
German measles	85
Influenza	. 14
Lethargic encephalitis	. 1
Measles	. 999
Mumps	410
Ophthalmia neonatorum	. 21
Pneumonia (lobar)	. 152
Scarlet fever	. 463
Septic sore throat	. 12
Tetanus	. 2
Trachoma	. 2
Trichinosis	. 1
Tuberculosis (all forms)	137
Typhoid fever	. 6
Whooping cough	. 111

#### MICHIGAN.

#icitio.in.	
Diphtheria	140
Measles	1078
Pneumonia	223
Scarlet fever	412
Smallpox	154
Tuberculosis	236
Typhoid fever	11
Whooping cough	109

#### MINNESOTA.

Chicken pox.	85
Diphtheria	53
Influenza	1
Measles	229
Pneumonia	10
Scarlet fever	213
Smallpox	50
Tuberculosis	144
Typhoid fever	4
Whooping cough	10

#### MISSISSIPPI.

Diphtheria	9
Scarlet fever	7
Smallpox	10
Typhoid fever	9

#### MISSOURI.

31	Cerebrospinal meningitis	2
85	Chicken pox	33
64	Diphtheria	38
3	Influenza	23
318	Measles	463
39	Mumps	164
127	Pneumonia	21
129	Rabies	1
2	Scarlet fever	134
4	Smallpox	18
63	Trachoma	1
2	Tuberculosis	35
2	Typhoid fever	3
50	Whooping cough	75

Cases.

#### MONTANA

Diphtheria	11
Scarlet fever	30
Smallpox	27
Typhoid fever	1

#### NEBBASKA.

Chicken pox	16
Diphtheria	8
Influenza	2
Measles	316
Mumps	1
Pneumonia	2
Scarlet fever	21
Smallpox	13
Tuberculosis	3

#### NEW JERSEY.

Cerebrospinal meningitis	3
Chicken pox	233
Diphtheria	113
Influenza	28
Malaria	2
Measles	654
Pneumonia	<b>2</b> 21
Scarlet fever	203
Trachoma	1
Typhoid fever	3
Whooping cough	109

#### NEW MEXICO.

Cerebrospinal meningitis	1
Chicken pox	21
Conjunctivitis	1
Diphtheria	10
Measles	293
Mumps	5
Pneumonia	11
Scarlet fever	6
Tuberculosis	20
Whooping cough	2

#### NEW YORK.

#### (Exclusive of New York City and Rochester.)

Cerebrospinal meningitis	2
Diphtheria	102
Influenza	43
Lethargic encephalitis	1
Measles	1,462
Pneumonia	331
Poliomyelitis	1
Scarlet fever	439
Smallpox	4
Typhoid fever	20
Whooping cough	341

### NORTH CAROLINA.

Cerebrospinal meningitis	2
Chicken pox	201
Diphtheria	18
German measles	1
Measles	1,992
Scarlet fever	77
Septic sore throat	6
Smallpox	169
Typhoid fever	6
Whooping cough	410
Deaths.	

#### OREGON.

Cases.

Chicken por	23
Diphtheria:	
Portland	15
Scattering	10
Influenza	9
Measles	186
Mumps	8
Pneumonia	15
Scarlet fever:	
Portland	8
Scattering	8
Smallpox:	
Portland	10
Scattering	4
Tuberculosis	7
Typhoid fever	4
Whooping cough	3
SOUTH DAKOTA.	

Chicken pox	
Diphtheria	
Measles	
Pneumonia	
Scarlet fever	
Smallpox	
Tuberculosis	
Typhoid fever	
Whooping cough	

#### TEXAS.

Chicken pox
Diphtheria
Influenza
Lethargic encephalitis
Measles
Mumps
Ophthalmia neonatorum
Pellagra
Pneumonia
Scarlet fever
Smallpox
Trachoma
Tuberculosis
Typhoid fever
Whooping cough

### VERMONT.

Chicken pox	2
Diphtheria	
Measles	13
Mumps	
Scarlet fever	1
Whooping cough	2

#### WASHINGTON.

Chicken pox	67
Diphtheria	28
Measles	156
Mumps	18
Pneumonia	2
Scarlet fever:	
Spokane	18
Scattering	17
Smallpox:	
Spokane	26
Scattering	23

WASHINGTON—continued.		wisconsin-continued.	
	Cases.	Scattering:	Cases.
Tuberculosis	- 78	Chicken pox	117
Typhoid fever	. 2	Diphtheria	38
Whooping cough	. 8	German measles	29
		Influenza	37
WEST VIRGINIA.		Lethargic encephalitis	1
Cerebrospinal meningitis-Charleston	. 1	Measles	373
Diphtheria	. 6	Ophthalmia neonatorum	1
Scarlet fever	. 8	Pneumonia	36
Smallpox	. 1	Scarlet fever	224
Typhoid fever	. 4	Smallpox	. 32
		Tuberculosis	26
WISCONSIN.		Typhoid fever	- 5
Corobrospinal maningitis	1	Whooping cough	. 119
Chiekan por	61		
Diphthonia	15	WYONNA	
Cormon mooslos	. 10	wioming.	
Monsier		Chicken por	1-
Onhthelmia neonatomum	. 41	Dinhthonia	. 10
	10	Lathania manhalitia	. 1
Pheumonia	10	Letnargic encephantis	1
Scarlet lever	22	Measles	_ 114
Smallpox	. 1	Mumps	_ 23
Tuberculosis	22	Pneumonia	- 8
Typhoid fever	1	Scarlet fever	- 5
Whooping cough	30	Whooping cough	- 7

## Report for week ended March 29, 1924.

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NORTH DAKOTA.		NORTH DAKOTA-continued.					
	Cases.						
Chicken pox	. 23	Pneumonia	. 21				
Diphtheria	. 18	Scarlet fever	. 48				
German measles	. 11	Smallpox	. 5				
Measles	234	Tuberculosis	. 2				
Mumps	. 10	Whooping cough	. 8				

## SUMMARY OF CASES REPORTED MONTHLY BY STATES.

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

State.	Cerc- bro- spinal menin- gitis.	Diph- theria.	Influ- enza.	Ma- laria.	Measles	Pella- gra.	Polio- mye- litis.	Scarlet fever.	Small- pox.	Ty- phoid fever.
February, 1924. Colorado Hawaii North Carolina Ohio Pennsylvania Virginia March, 1924.	12 1 4 10 5	128 28 157 723 1, 449 219	9 147 	 0 0 75	2, 340 10 8, 098 1, 122 2, 981 3, 235	 0 0 11	 2 1 5	228 1 185 1, 751 2, 298 213	6 686 514 11 33	17 12 9 47 127 41
Connecticut District of Columbia	7 0	196 31	49 16		782 59	0	2	806 169	29 40	13 7

## SMALLPOX IN DETROIT, MICH.

The following table gives a summary of the number of cases of smallpox reported in Detroit, Mich., from September 1, 1923, to March 15, 1924:

	Cases.	Deaths.
September, 1923. October, 1923. November, 1923. December, 1923. January, 1924. February, 1924. Mar. 1 to 15, 1924.	11 20 51 82 139 267 140	  1 2 1
Total	710	4

The average number of cases reported in Detroit for the past five years was as follows:

December	52
January	53
February	58
March (entire month)	79

The January death was a case complicated with pneumonia. The February deaths were hemorrhagic cases, one of which was a member of the same family in which so many cases and deaths occurred in Windsor, Ontario. The other February death was a paralytic woman who had not been out of her house for about a year. The source of infection was not established. The patient dying in March was the husband of the Windsor infection case dying in February.

The situation in Windsor, Ontario, is briefly summarized as follows:

From the beginning of the outbreak in Windsor, about December 12, until March 15, there were 67 cases of smallpox in Windsor and vicinity. Of these 67 cases, 22 resulted in death. All of the deaths occurred in unvaccinated persons.

Vaccination campaigns have been conducted in Windsor and adjacent municipalitics. From February 27 to March 17 officers of the Public Health Service operated free vaccination stations at the wharves.

## MORBIDITY REPORTS FROM CITIES.

Reports of the prevalence of communicable diseases in 105 cities, having an aggregate population of nearly 29,000,000, for the week ended March 22, 1924, show little change from the preceding week. Five hundred and sixty-five cases of smallpox were reported for the week by these cities, more than half of these cases being reported from four cities—Indianapolis, Atlanta, Detroit, and Los Angeles. The estimated expectancy for the 105 cities, based on reports for the last nine years, was only 193 cases. During the corresponding week of last year these cities reported only 100 cases.

The reports for the week indicate that diphtheria was slightly more prevalent in the cities than it was during the corresponding week of last year.

The number of cases of scarlet fever reported for the week was more than 16 per cent higher than the number reported for the corresponding week of last year and 78 per cent higher than the estimated expectancy.

Deaths, all causes.—The Bulletin of the Metropolitan Life Insurance Co. for the week ended March 15, 1924, says:

"That the public health situation of 1924, to date, is without precedent becomes more and more evident each week. \* \* \*

"Decreases [from the corresponding period of 1923] have been recorded for all of the diseases of numerical importance. The greatest drops in the death rate have been those for organic heart disease, pneumonia, and influenza, but very considerable decreases have been recorded for tuberculosis, cerebral hemorrhage, and chronic nephritis. Even the cancer rate, so far this year, shows improvement. A favorable record is in evidence, also, for the diseases of chief public health interest, namely, typhoid fever, measles, diphtheria, and puerperal causes. There has been a slight rise in the scarlet fever rate.

"In the field of violent deaths slight declines are in evidence for suicides and homicides. The cumulative death rate for accidents still exceeds that recorded at this time in 1923, but the excess is small, and the mortality in recent weeks has been much more favorable than in January and February. The rate for automobile fatalities is now 10.4 per 100,000, which is 8.3 per cent in excess of that for the same weeks of 1923."

### City reports for week ended March 22, 1924.

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

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1915 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

		Diph	theria.	Influ	enza.			Pneu- monia, deaths re- ported.	Scarlet fever.		
Division, State, and city.	Chick- en pox, cases re- ported.	Cases, esti- mated expect- ancy.	Cases re- ported.	Cases re- ported.	Deaths re- ported.	Mea- sles, cases re- ported.	Mumps, cases re- ported.		Cases, esti- mated expect- ancy.	Cases re- ported.	
New England:											
Lewiston Portland New Hamp-	0 10	2 1	0 3	0 1	0	9 1	0 30	0 5	1 3	10	
shire— Concord Manchester	0	02	0	0	0	58 13	0	1	1	0	
Vermont-	1	-	-	0	0	3	0	0	1	-	
Burlington.	î	ĩ	ŏ	ŏ	ŏ	1 1	ŏ	2	Ô	2	
Boston	49	63	78	4	1	197	· 29	21	58	115	
Fall River. Springfield Worcester	6 5	4 4 5	7 3 18	2 1 3	2 1 0	18 90 8	2 5	6 2 5	3 6 8	16 27 28	
Pawtucket		1	3	0	0	1		0	· 1	2	
Providence. Connecticut—	0	11	6	0	0	0	0	10	8	66	
Bridgeport . Hartford New Hayen.	0	7 8 2	6 9 2	0 0	0 0 1	1 46 7	0 67	0 7 10	5 6 4	9 62 12	
Middle Atlantic:	_	_	_						_		
Buffalo	0	14	8		1	33	<b>0</b> 250	16	18	19	
Rochester Svracuse	270 3 38	281 9 7	205	83 0 0	12 0 0	2, 091 7 43	239 8 8	242 12 1	202 12 17	307 22 42	
New Jersey-		3	13	0	0	0		7	9		
Newark	55	21	15	15	Ŏ	86	142	8	26	20	
Pennsylvania— Philadel-	2	Э	10	0	U	00	U	3	4	3	
phia Pittsburgh	126 63	73 21	117 34	2	87	139 31	0 130	89 117	61 20	76 36	
Reading	0	3	52	0	0	4	0	0	3	4	
East North Central:		-	- [		-				-	•	
Cincinnati.	12	13	12	1	1	134	25	9	11	11	
Columbus.	5	4	4	ŏ	ő	2	295	7	8	14	
Toledo Indiana	53	4	10		1	38	2	5	12	13	
FortWayne .		3	2	0	0	12		1	2	6	
lis South Bend		10	2 -		1	72		14	14	5 10	
Terre	9				0	6	0	2	4		
Illinois-			~			100			101	100	
Cicero	164	2	98	33 0	· õ	136	36	0	3	139	
Springfield _ Michigan—	11	1	2	1	1	3	0	1	2	0	
Detroit	74	61	55	2	0	187 27	105	44	71	94 9	
Grand Rap-	15	2	2		i	ĩ	47	2	ğ	17	
Saginaw	ol	1	0	o	o	13	3	4	2	47	

<b></b>		Diph	theria.	Influ	ienza.				Scarle	t fever.
Division, State, and city.	Chick- en pox, cases re- ported.	Cases, esti- mated expect- ancy.	Cases re- ported.	Cases re- ported.	Deaths re- ported.	Mea- sles, cases re- ported.	Mumps, cases re- ported.	Pneu- monia, deaths re- ported.	Cases, esti- mated expect- ancy.	Cases re- ported.
East North Cen- tral—Continued. Wisconsin—										
Madison Milwaukee. Racine	13 39 15	1 14 1	4 14 1	0000	0000	1 26 0	1 13 0	0 14 2	33	7 22 18
Superior West North Cen-		1	0	0	0	U		2	2	4
Minnesota Duluth		1	0	0	0	1		1	5	12
Minneapo- lis St. Paul	72	15 13	13 21	0	0	41 37	8	57	27 23	70 67
Iowa- Davenport_		1	1	0		ņ			3	1
Des Moines Sioux City_ Waterloo	0 1	3 1 0	1 1	0 0		1 4	0 26		9 3 4	3
Missouri- Kansas City	16	9	5	2	2	100	20	24	9	17
St. Joseph. St. Louis NorthDakota—	0 30	1 50	0 32	1	0	64 64	4 46		28 28	90
Fargo Grand	0	2	0	0	0	0	. 0	2	3	0
South Dakota	U	1	0	0	0	2		0	3	1
Nebraska— Lincoln Omaha	0	2	53	0	0	30 128	0	1 5	4 10	2 0
Kansas— Topeka Wichito	13	1	2	0	0	339 171	1 154	3	2	07
South Atlantic: Delaware		•	Ŭ	Ů	Ŭ			, ,	-	
Wilmington Maryland— Baltimore		2 24	5 28	0 26	0 6	2 225	27	4 39	3 34	8 108
Frederick. Dist. of Col		1	0	0	0	16 19		0	0 20	10
Wasnington Virginia— Lynchburg.	1	1	0	3 0	0	2	2	20 0	. 0	1
Norfolk Richmond Roanoke	21 10 5	1 2 1	0 3 1	0	0 1 2	72 38 1	6 0 2	7 6 2	2 2 1	2 4 4
West Virginia- Charleston.	8	1	2	0	0	1	0	4	1	0
Wheeling North Caro-	1	2	1		2	3	2	4	i	ĭ
Raleigh Wilmington	20 6	0	0 0	0 0	0 0	9 77	0 14	2 1	0 1	0 0
Salem South Caro-	1	0	0	0	0	50	7	7	1	20
Charleston. Columbia	1 11	0	2	0	1 0	3 32 60	5 19 5	7 4 2	0	0 0 3
Greenville. Georgia— Atlanta	0	2	6	10	0	14	10	24	4	9
Brunswick. Savannah. Florida—	6	0 0	0 2	0 1	0 1	30 14	0	2 7	1	0 2
St. Peters- burg Tampa	32		1	0	0	2 6	o	1	0	7 0

# City reports for week ended March 22, 1924-Continued.

		Diph	theria.	Influ	lenza.				Scarle	t fever.
Division, State, and city.	Chick- en pox, cases re- ported.	Cases, esti- mated expect- ancy	Cases re- ported.	Cases re- ported.	Deaths re- ported.	Mea- sles, cases re- ported.	Mumps cases re- ported.	Pneu- monia, deaths re- ported.	Cases, esti- mated expect- ancy.	Cases re- ported.
East South Central:										
Kentucky Covington	0	1	1	0	0	4	0	2	2	
Lexington	Ĭ	Ō	Ō	Ŏ	0	55	Ŏ	2	Ĩ	Ŏ
Tennessee	4	1 '	4	0	0	0	8	11	4	4
Memphis	33	6	9		1	32	49	13	4	3
Alabama —	0	1	<b>1 2</b>			10	l v		· ·	1 1
Birming-	20	9	Ι,	0	4	151	48	21	1	.
Mobile	0	ĩ	Ô		. i	15	0	2	Ó	) ă
Montgom. erv		1	6	2	0	7		5	0	6
West South Cen-		-	ľ	-	ľ	i i		Ĩ	Ì	"
tral: Arkansas										1
Fort Smith.	5	1	1	0		154	3	<b>-</b> -	1	
Louisiana—	1	. 1		, v		40	10		1	
New Or-	2		14		7	164	<u>ا</u>	15	2	
Shreveport.	ŏ		14	Ő	ó	6	l ĭ	2		ŏ
Oklahoma Tulsa	2	1	1	0		11	6		0	2
Texas-	-		-	Ĭ						
Dallas Galveston	4	3		<u>0</u>		49		82		
Houston	Ŏ	ž	Ŏ	Ŏ	Ŏ	54	Ŏ	12	ľ	3
San An- tonio	2	2	3	0	0	34	0	17	1	0
Mountain:										
Billings	1	1	0	0	0	3	0	0	1	0
Great Falls.	4	1	4	0	0	26	0	0	0	4
Missoula	ŏ	1	1	ŏ	ŏ	33	ŏ	ŏ	1	1
Idaho		0	0	0		194		0	1	0
Colorado-		Ň	Ŭ	U		124		Ū	1	
Denver	31	8	18			125	13	13	9 1	14
New Mexico-	Ů	-	-	Ŭ			10	Ű	-	
A I buquer-	2	0	2	0	0	40	0	3	3	· 0
Utah-	-	-	-	-					-	
City	18	3	0		1	240	12	4	3	0
Nevada-				0		- 16				•
Pacific:	°	v	U	Ű	Ů	10	U	U	Ű	. 0
Washington-			10	0						10
Spokane	39	2	8	ŏ		12	ő		5	11
Tacoma	9	1	1	0		30	9		3	6
Portland	8	3	16	0	0	12	· 3	5	6	5
California— Los An-		1								
geles		23	65	5	- O	302		18	14	71
Sacramento San Fran-		1	U	•••••	2	0		3	2	0
cisco	47	22	38	4	0	92	13	13	16	42
1	1		1	1						

# City reports for week ended March 22, 1924-Continued.

Citu	reports	for	week	ended	March	22.	1924-Continued.
Cuy	reports	<i>j01</i>	weer	cincu	muu	~~,	1324

		8	mallpo	x.	eaths	Typhoid fever.			cases	
Division, State, and city.	Popula- tion July 1, 1923, estimated.	Cases, estimated expectancy.	Cases reported.	Deaths reported.	Tuberculosis, de reported.	Cases, estimated expectancy.	Cases reported.	Deaths reported.	Whooping cough reported.	Deaths, all causes
New England:										
Maine— Lewiston Portland Now Homoshim	33, 790 73, 129	0 0	0 0	0 0	0 2	0 0	0 0	、 0 0	0 4	16 24
Concord	22, 408 81, 383	0	0	0	0	0	0	0	1	7
Vermont Barre	<sup>1</sup> 10, 008	0	0	0	2	0	0	Ů	1	7
Burlington Massachusetts—	23, 613	0	i	Ō	Ō	Ó	Ō	Ŏ	Ō	10
Boston. Fall River	770, 400 120, 912 144, 227 101, 027	0 0 0	0000	0000	16 2 3	1 1 0	1 0 0	0 0 0	8 10 2	227 46 35
Rhode Island— Pawtucket	68, 799	0	0	0	0	0	0	0		- 49 20
Providence Connecticut—	242, 378	Ō	Ŏ	Ō	5	ĩ	Ŏ	Ŏ	1	82
Bridgeport Hartford New Haven	<sup>1</sup> 143, 555 <sup>1</sup> 138, 036 172, 967	0 0 0	0 0 0	0 0 0	2 0 3	0 0 0	0 0 0	0 0 0	0 1	26 48 49
Middle Atlantic: New York—										
Buffalo New York Rochester	536, 718 5, 927, 625 317, 867	0 1 0	00000	00000	11 2120 5	1 7 0	2 11 0	1 2 0	33 138 3	136 1, 575 88
New Jersey—	104, 011	0	0		2		1	1	2	29
Newark Trenton	438, 699 127, 390	0	00	Ŏ O	8 3	0 0	1 0	0	18 1	110 40
Pennsylvania— Philadelphia Bittaburgh	1, 922, 788	0	0	Ő	44 12	4	3	1	60 50	565 291
Reading Scranton	110, 917 140, 636	00	ő	00	0 1	1 0	0 2	0 0	6 0	35
Cincinneti	406 219				15				24	199
Cleveland Columbus	888, 519 261, 082 268, 338	215	1 2 19	0	15 15 8 7	2 0 0	3 0 0	. 2 0	29 4 33	- 128 205 82 68
Indiana Fort Wayne	93, 573	2	5	0	1	0	0	0		17
Indianapolis South Bend Terre Haute	342, 718 76, 709 68, 939	4 1 1	84 0 0	0 0 0	9 0 1	0 0 0	0 0 0	1 0 0	6	137 6 27
Illinois— Chicago	2, 886, 121	3	8	0	67	4	1	3	26	724
Cicero Springfield	55, 968 61, 833	2	Ö	0	1	0	0	0	ő	$\frac{4}{15}$
Michigan- Detroit	995, 668	3	60	1	17	3	0	1	19	272
Grand Rapids	117, 968	2	õ	0	4	1	1	ŏ	2	25 32
Saginaw Wisconsin—	69,754	U I						1		21
Madison Milwaukee Racine	42, 519 484, 595 64, 393	5	1	0	8	1	0	0	55 0	94 12
Superior West North Central: Minnesota—	<sup>1</sup> 39, 671	2	9	0	0	0	0	0		16
Duluth Minneapolis St. Paul	106, 289 409, 125 241, 891	1 20 9	12 6 36	1 0 0	1 10 1	1 2 0	1 2 0	0 . 0 0	0	19 101 67
<sup>1</sup> Population Jan.	1, 1920.			Pulm	onary	only.				

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# City reports for week ended March 22, 1924-Continued.

		5	mallpo	ox.	eaths	Туј	phoid f	ever.	cases	
Division, State, and city.	Popula- tion July 1, 1923, estimated.	Cases, estimated expectancy.	Cases reported.	Deaths reported.	Tuberculosis, de reported.	Cases, estimated expectancy.	Cases reported.	Deaths reported.	Whooping cough, reported.	Deaths, all causes
West North Central-Continued										
Davenport	61, 262	4	9			0	Ð			
Des Moines	140, 923	3	2			0	θ		0	
Waterloo	39,667	ō	0			Ö	0		8	
Missouri-	051.010									
St. Joseph	78, 232	5	Ŭ	ŏ		<b>H</b>	0 0	6	2	123
St. 1is	803, 853	5	3	0	-15	.2	2	-0	28	255
Fargo	24, 841	1	0	0	1	0	0	0	0	8
Grand Forks	14, 547	1	0			Ó	0		0	
South Dakota- Sigux Falls	29, 206	2	0	0	1	0	0	0		4
Nebraska—										-
Lincoln Omaha	58, 761 204, 382	2 9	0	0	4	9	0	0	0	17
Kansas-				Ĵ			, i	, i		
Topeka Wichita	52, 555 79, 261	3 6	18	0	1	0 0	- 10	0	14	21
South Atlantic:	,			Ĩ				•		
Wilmington	117.728	0	0	0	3	0	0	0		28
Maryland-										
Frederick	11, 301	0	0	0	45 0	4	19 10	0	28	232
District of Columbia-	1 497 571		10		10	.			77	100
Virginia-	1 437, 571	1	10	U	13	1	1	U	1	160
Lynchburg	30, 277	0	0	0	1	0	0	0	19	11
Richmond	159,089	ō	1	ŏ	4	1	0	0	21	52
Roanoka	55, 5 <b>02</b>	1	0	0	0	0	0	0	4	13
Charleston	45, 597	0	3	0	4	0	0	0	0	19
Huntington	57,918	0	0	0	2	0	.0	0		20
North Carolina—	- 30, 208	°	0	"	1	• •	U	1	5	24
Raleigh	29, 171	0	12	0	3	0	Ð	0	7	10
Winston-Salem	56, 230	5	4	Ð	8	ŏ	Ð	Ö	ō	26
South Carolina—	71 945		,		,				- 1	
Columbia	39,688	ŏ	3	ŏ	1	1	ŏ	õ	ō	40
Greenville	25, 789	1	3	0	0	0	0	0	5	9
Atlanta	222, 963	4	85	1	5	1	0	1	0	106
Brunswick	15,937	0	0	0	0	0	0	0		3
Florida-	00, 110	1	-	<b>v</b>		v	v		1	10
St. Petersburg	24, 403  . 56, 050	····.	0	0	9	3	0	0	1	11
East South Central:	00,000	Ŭ.	Ĩ	Ĩ	-	Ů	Ĩ		-	10
Covington	57.877	0	1	0	1	Ð	A	A	0	11
Lexington	43, 673	Ŏ	Ō	ŏ	2	Õ	Ő	Ŏ	2	20
Tennessee-	257, 671	1	0	0	8	0	3	0	Ð	90
Memphis	170, 067	2	0	Q	3	Ð	2	0	3	54
Alabama—	121, 128	1	0	U	5	1	1	0	0	58
Birmingham	195, 901	1	24	0	3	1	7	0	7	79
Montgomerv	63, 858 45, 383		0	0	3	0	0	0	<b>e</b>	26 14
West South Central:	,	-	Ĩ	-	Ĩ	Ĩ	-	-		
Fort Smith	30, 635	ol	0		1	0	0		7	
Little Rock	70, 916	2	0 l	1	]	Ō	õ l		2	

<sup>1</sup> Population Jan. 1, 1920.

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $			s	mallp	ox.	eaths	Typhoid fever.				.
West South Central—Continued. Louisiana— New Orleans	Division, State, and city.	Popula- ticn July 1, 1923, estimated.	Cases, estimated expectancy.	Cases reported.	Deaths reported.	Tuberculosis, d reported.	Cases, estimated expectancy.	Cases reported.	Deaths reported.	Whooping cough, reported.	Deaths, all causes
New Orleans	West South Central—Continued. Louisiana—										
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	New Orleans Shreveport	404, 575 54, 590	6	06	0	12	2	0	0	10	151 22
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Oklahoma— Tulsa	102, 018	3	7			0	0	Ì	3	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Dallas	177, 274	7	0	.0	5	0	0	0	1	55
Houston       134, 970       1       0       0       3       0       0       0       0       5         Mountain:       184, 727       0       0       0       1       1       1       0       2       7         Montana-       Billings       16, 927       1       0       0       0       0       0       0       2       7         Great Falls       27, 787       1       0	Galveston	46, 877	1	0	0	0	1	0	0	Ō	8
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Houston	154,970		l v		11	1 1	1		2	58. 72
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Mountain:	101,121		ľ	ľ	1	-	-	ľ	-	12
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Montana-	10.007									
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Billings	16,927		N N		Ň	U 0	0	0		4
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Helena.	1 12, 037		ŏ	ŏ	ŏ		ŏ	ŏ	ŏ	5
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Missoula	<sup>1</sup> 12, 668	1	2	1	0	0	0	0	1	3
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Idaho	22 806	0	2	0	0	0	0	0		5
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Colorado-	<i>22</i> ,000		-	Ŭ	Ŭ	Ů	v	Ŭ		J
Parebo       Parebo       43,519       1       0       0       0       1       0       0       1       0       0       1       0       0       1       0       0       1       0       0       1       0       0       1       0       0       1       0       0       1       0       0       1       0       0       1       0       0       1       0       0       1       0       0       0       1       0       0       0       1       0       0       0       1       0       0       0       1       0       0       0       1       0       0       0       1       0       0       0       1       1       0       0       0       1       1       0       0       0       1       1       0       0       0       1       1       0       0       0       1       1       0       0       0       1       1       0       0       0       1       1       0       0       0       1       0       0       0       1       0       0       0       1       1       1       1	Denver	272, 031	11	0	0	12	1	0	0	6	71
Action       16, 648       0       0       2       0       0       0       10         Athongarque       126, 241       9       0       0       3       0       0       5       44         Nevada Reno       12, 429       0       0       0       0       0       0       0       5       44         Pacific:       12, 429       0       0       0       0       0       0       0       2       2       0       0       0       2       34       44         Pacific:       12, 429       0       0       0       0       0       0       0       0       2       34	Pueblo	43, 519	1	0	U U	U	U	1	U	U	14
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Albuquerque	16, 648	0	0	0	2	0	0	0	0	16
Salt Lake City       126, 241       9       0       0       3       0       0       0       5       44         Nevada- Reno       12, 429       0       1	Utah—	100 041									
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Salt Lake City	126, 241	9	U	U	3	U	U	U	5	46
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Reno	12, 429	0	0	0	0	0	0	0	0	2
Washington Sectile       1 315, 685 104, 573       5 11       2       0       1       5         Spokane       104, 573       11       31       0       0       11       5         Tacoma       101, 731       2       1       0       0       0       11       11         Oregon- Portland       273, 621       6       15       0       0       0       2       1       0       64	Pacific:	-									
Spokane         104,573         11         31	Washington-	1 215 895	5	9			0	1		5	
Document         101,731         2         1         0	Spokane	104, 573	บ้	31			ŏ	Ô		11	
Oregon         Portland         273, 621         6         15         0         0         2         1         0         66           California         273, 621         6         15         0         0         2         1         0         66	Tacoma	101, 731	2	ĩ			Ō	Ō		Ō	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Oregon-										
	Portland	273, 621	6	15	0	0	U	2	1	U	66
Los Angeles 666 853 2 110 0 37 3 7 1 266	Los Angeles	666 853	2	110	0	37	3	7	1		266
	Sacramento	69, 950	õ	-10	ŏ	4	ĭ	ö	ô		22
San Francisco	San Francisco	539, 038	3	Ő	Ó	14	2	í	Ő	1	153

## City reports for week ended March 22, 1924--Continued.

	Cerebrospinal meningitis.		Letl encep	hargic halitis.	Pell	agra.	Poliomyelitis (infantile paralysis).			
Division, State, and city.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases, est. ex- pectan- cy.	Cases.	Deaths.	
New England:										
Massachusetts-		· · ·		1						
Boston	1	1	1	1	0	0	0	1	0	
Worcester	1	0	0	0	0	0	0	0	0	
Rhode Island			•							
Providence	0	0	0	1	U	0	U	U	0	
Connecticut-	•		•		•		•	0		
Bridgeport	U		U	1	U	•	U	U	U U	
Middle Atlantic:										
New York	1	2	12	5	0	0	1	0	0	
Pennsylvania-	•	-		Ű	•	-	-		-	
Philadelphia	0	0	1	0	0	0	0	0	0	
East North Central:										
Ohio								-		
Cleveland	0	0	1	0	0	0	0	0	0	
Columbus	0	0	0	1	0	0	0	0	. 0	
Illinois-					•					
Chicago	3	1	1	01	U	្របា	11	1	1 1	

<sup>1</sup> Population Jan. 1, 1920.

	Cerebr meni	ospinal ngitis.	Leth encep	argic halitis.	tic Pellagra. Poliomyelitis (infantile paralysis).		Poliomyelitis paralysi		nfantile ).
Division, State, and city.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases, est. ex- pectan- cy.	Cases.	Deaths.
East North Central—Contd.									
Detroit	1	0	0	0	0	0	0	0	0
Saginaw West North Central:	0	1	0	0	0	0	0	0	0
St Paul	0	0	0	0	0	0	0	1	0
Missouri-	v		v	v	, v	Ů	Ŭ	-	
Kansas City	0	0	1	1	0	0	0	0	0
St. Louis	3	1	U	U	U	0	U	U	U
Maryland-							•		
Distinct of Columbia-	U	U	4	1	U	U	U	U	U U
Washington	0	0	1	1	0	0	0	0	0
Virginia-									
Lynchourg	. 0	0	0	0	. 0	0	0		0
North Carolina-	U		-		, v	U U	v	v	v
Raleigh	0	0	0	0	0	1	0	0	0
Winston-Salem	0	0	0	0	. 1	1	0	0	0
Chatleston	0		0	0	0	2	0	۵	0
Columbia	ŏ	ŏ	ŏ	ŏ	ŏ	4	ŏ	ŏ	ŏ
E at South Central:						_			
Tennessee	0				· .		•	0	•
Nashville	ŏ	ŏ	ŏ	ŏ	ō	1	ŏ	ŏ	ŏ
Alabama—	Ĩ	-	-			- 1	-	-	•
Birmingham	0	0	1	0	2	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
Mountain:									
Denver	0	0	0	2	0	0	0	0	0
Utah—				-	-				
Salt Lake City	0	0	0	1	0	0	0	0	0
California-					1				
San Francisco	0	0	1	1	0	0	0	0	0
	1					l		i	

City reports for weck ended March 22, 1924-Continued.

The following table gives a summary of the reports from 105 cities for the eight-week period ended March 22, 1924. The cities included in this table are those whose reports have been published for all eight weeks in the Public Health Reports. Eight of these cities did not report deaths. The aggregate population of the cities reporting cases was estimated at nearly 29,000,000 on July 1, 1923, which is the latest date for which estimates are available. The cities reporting deaths had more than 28,000,000 population on that date. The number of cities included in each group and the aggregate population are shown in a separate table below.

## Summary of weekly reports from cilies, January 27 to March 22, 1924.

	1924, week ended—									
	Feb. 2.	Feb. 9	Feb. 16.	Feb. 23.	Mar. 1.	Mar. 8.	Mar. 15.	Mar. 22.		
Total	1, 288	1, 305	1, 226	1, 075	1, 103	1, 024	1,052	1, 115		
New England	161	136	115	109	125	86	110	135		
Middle Atlantic	410	490	434	394	388	351	401	415		
East North Central	291	284	247	225	230	218	234	229		
West North Central	125	97	128	102	<sup>2</sup> 86	<sup>2</sup> 110	<sup>2</sup> 76	188		
South Atlantic	59	50	57	31	54	43	37	61		
East South Central	19	13	17	13	11	9	12	17		
West South Central	38	33	37	34	34	34	<b>` 18</b>	21		
Mountain	21	21	23	27	19	24	24	25		
Pacific	164	181	168	140	156	149	3 140	124		

#### MEASLES CASES.

						a set of a set of a second second set of a second set of a second second set of a second set of a second set of a second set of a second second set of a secon		
Total	5, 908	5, 794	6, 577	6, 002	7, 258	7, 101	7, 155	7,024
New England	227	265	334	294	469	353	460	430
Middle Atlantic	899	1.004	1, 183	1.388	1.838	1.971	2,258	2,467
East North Central.	330	292	378	322	476	541	604	659
West North Central.	522	643	814	835	2 1,056	2 1.045	2 1. 112	1 923
South Atlantic	556	508	655	578	683	801	579	675
East South Central.	118	98	118	163	263	155	196	231
West South Central.	564	511	710	738	781	693	410	514
Mountain	1,005	975	1,216	871	879	819	739	634
Pacific	1,687	1, 498	1, 169	813	813	723 :	\$ 797	491

SCARLET FEVER CASES.

Total	1, 858	1, 934	1, 798	1, 677	1, 873	1, 928	1, 921	1, 927
New England	368	307	276	301	330	388	413	337
Middle Atlantic	492	572	525	450	519	532	520	532
East North Central	405	426	383	317	380	347	349	376
West North Central	227	248	258	272	2 250	2246	2249	1269
South Atlantic	145	183	157	142	188	209	175	221
East South Central	12	18	14	12	12	28	22	17
West South Central	19	19	12	8	9	11	19	13
Mountain	24	27	41	24	30	25	27	22
Pacific	166	134	132	151	155	142	3147	140

#### SMALLPOX CASES.

Total	368	427	473	486	521	483	521	565
New England Middle Atlantic East North Central South Atlantic East South Central West South Central Mountain Pacific	0 3 74 36 58 5 5 12 2 178	0 87 59 118 8 6 4 145	0 0 143 49 117 5 12 3 144	0 0 101 65 117 9 14 2 178	0 0 145 2 51 121 35 4 11 154	0 1 160 2 56 117 35 2 11 106	0 2 125 276 144 25 5 3 2 141	0 0 186 177 123 25 6 4 144

 Figures for Sioux City, Iowa, estimated. Reports not received at time of going to press.
 Figures for Kansas City, Mo., estimated. Report not received at time of going to press.
 Figures for Seattle, Spokane, and Tacoma, Wash., estimated. Reports not received at time of going to press.

#### April 11, 1924

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# Summary of weekly reports from cities, January 27 to March 22, 1924—Contd. TYPHOID FEVER CASES.

	1924, week ended—									
	Feb. 2.	Feb. 9	Feb. 16.	Feb. 23.	Mar. 1.	Mar. 8.	Mar. 15.	Mar. 22.		
Total	78	76	74	52	49	46	57	60		
New England Middle Atlantic East North Central West North Central South Atlantic East South Central West South Central Mountain	5 26 14 5 18 1 1 1	0 24 8 7 15 2 10 1	3 23 18 2 7 2 3 4	5 8 0 11 4 6 2	8 11 9 *1 7 4 3 1	7 16 \$ 3 3 1 2 2	3 20 11 *1 8 7 3 0	2 19 8 15 1 13 2 1		

#### INFLUENZA DEATHS.

$\begin{array}{c c c c c c c c c c c c c c c c c c c $	sector se								
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Total	82	100	92	99	96	119	107	85
Pacific	New England Middle Atlantic East North Central West North Central South Atlantic East South Central West South Central Pacific	3 29 18 5 5 7 10 0 5	3 33 19 6 14 13 7 2 3	5 30 13 6 17 6 11 0 4	4 36 18 4 10 12 8 2 5	3 33 14 22 13 10 15 2 4	5 45 19 22 15 15 15 12 4 2	10 37 23 23 7 16 8 1 3 2	5 28 13 1 3 15 9 8 2 2

#### PNEUMONIA DEATHS.

Total	1, 120	1, 064	1, 125	1, 191	1, 165	1, 217	1, 194	1, 171
New England Middle Atlantic East North Central West North Central South Atlantic East South Central West South Central Pacific	73 463 222 64 123 62 64 21 28	73 421 216 46 134 63 53 24 34	79 407 255 52 146 65 59 30 32	87 461 226 50 171 65 71 27 33	84 469 235 249 166 55 55 55 19 33	$73 \\ 516 \\ 221 \\ 259 \\ 177 \\ 61 \\ 62 \\ 14 \\ 34$	85 466 240 2 66 161 55 61 31 8 29	67 495 226 1 52 152 69 56 20 34

Number of cities included in summary of weekly reports and aggregate population of cities in each group, estimated as of July 1, 1923.

Group of cities.	Number of cities reporting cases.	Number of cities reporting deaths.	Aggregate population of cities report- ing cases.	Aggregate population of cities report- ing deaths.
Total	105	97	28, 998, 350	28, 140, 934
New England	12	12	2,098,746	2, 098, 746
East North Central.	10	17	7,032,535	7, 032, 535
South Atlantic East South Central	22 7	22 7	2, 566, 991 911, 885	2, 566, 901 911, 885
West South Central	8 9	6 9	1, 124, 564 546, 445	1, 023, 013 546, 445
Pacific	6	3	1, 797, 830	1, 275, 841

# FOREIGN AND INSULAR.

## CANARY ISLANDS.

#### Plague-Santa Cruz de Teneriffe.

A case of plague was reported at Santa Cruz de Teneriffe, Canary Islands, March 15, 1924.

### CHINA.

## Epidemic Influenza—Antung.

Information received under date of February 29, 1924, shows the presence of epidemic influenza in virulent form at Antung, China. The disease was stated to affect particularly the Japanese population of the city.

### CUBA.

## Communicable Diseases-Habana.

Communicable diseases have been notified at Habana, Cuba, as follows:

	March 1	Remain-	
Disease.	New cases.	Deaths.	treatment Mar. 20, 1924.
Cerebrospinal meningitis	43		1 1 66
Diphtheria Leprosy	7		1
Maleria Measles Scarlet fever	20 11 1		6 21
Typhoid fever	10		32

<sup>1</sup> Isolated in the penitentiary (Presidio), 50.

<sup>3</sup> From the interior, 13.

#### ECUADOR.

## Plague-Smallpox-February 16-29, 1924.

During the period February 16 to 29, 1924, 19 cases of plague with two deaths were reported at Guayaquil, Ecuador. Plague was reported present at Santa Rosa.

During the same period a case of smallpox was reported at Guayaquil.

## Plague—Infected Rats—Guayaquil.

During the period under report 18,409 rats were reported taken at Guayaquil, of which 59 rats were found plague infected.

## GERMANY.

### Goiter-Spread in Wurttemberg.

Information received under date of March 1, 1924, shows spread of goiter in Wurttemberg, Germany.

## GREAT BRITAIN.

## Births and Deaths in Scotland, 1923.

The following tables were compiled from information contained in the "Quarterly Return of Births, Deaths, and Marriages Registered in Scotland" for the quarter ended December 31, 1923, which was issued by the Registrar General of Scotland:

		Numbers. Rates per 1,000 population.			Deaths under 1	
	Births.	Total deaths.	Deaths under 1 year.	Births.	Total deaths.	year per 1,000 births.
Scotland	111, 901	63, 284	8, 825	22.8	12.9	79
Larger burghs Smaller burghs County districts	57, 649 19, 875 34, 377	32, 300 12, 135 18, 849	4, 909 1, 523 2, <b>393</b>	24. 1 21. 1 21. 9	13. 5 12. 9 <b>12. 0</b>	85 77 70

Scotland—Births and deaths during the year 1923.

Causes of deaths in Scotland during year 1923.

Cause of death.	Number of deaths.	Deaths per 100,000 population.
Typhoid fever         Typhoid fever         Typhus fever         Scarlet fever         Whooping cough         Diphtheria         Influenza         Cerebrospinal meningitis         Other epidemic diseases         Tuberculous meningitis         Tuberculous diseases         Maignant tumors         Malegnatic fever         Malignant tumors         Mater alisease         Maingitis (not cerebrospinal or tuberculous)         Apoplexy         Heart disease         Diseases of arteries         Bronchitis         Other culous diseases	of deaths. 67 1 1, 1, 11 3, 552 989 492 529 125 3, 994 664 6, 373 174 550 6, 888 802 3, 573 8, 673 8, 673 8, 673 8, 774 8, 898 8, 803 8, 873 8, 673 8, 774 8, 898 8, 898 8, 893 8, 773 8, 774 8, 898 8, 898 8, 893 8, 873 8, 875 8, 875 8	population. 20,000 22,74 20,120 10,01 10,76 22,74 7,161 20,120 10,01 10,76 3,54 11,87 12,37 129,65 3,54 11,19 117,55 3,54 11,19 117,55 3,54 11,29 1
Other diseases of respiratory system. Appendicitis All diseases of liver (not malignant) Nephritis, acute and chronic Puerperal sepsis. Other diseases and accidents of pregnancy and parturition. Diseases (acry) informed and malformations	790 515 453 1,798 216 498 4 249	17.13 16.07 10.48 9.22 26.58 4.39 10.13
Other defined diseases Causes il-defined or unknown	<sup>1</sup> , 245 325 2, 146 11, 699 1, 153 63, 284	60. 41 6. 61 43. 66 238. 00 23. 46
A11 vausts	00, 204	1, 401. 99

### HAWAII.

## Plague-Infected Rat-Honokaa.

A plague-infected rat was found March 14, 1924, at Honokaa, Hawaii.

### MADAGASCAR.

## Plague Progression-July 1, 1923-January 15, 1924.

Plague was not recognized as epidemic in Madagascar during the year 1923 nor in the first two weeks of the year 1924. Reported cases and deaths from July 1, 1923, to January 15, 1924, occurring in the town and province of Tananarive, show continuous progression as follows:

Date	Cases.	Deaths.
July 1-15	1	1
Aug. 1-15 Aug. 16-31 Sept. 1-15	6 13 7	5 13 7
Sept. 16-30 Oct. 1-15 Oct. 16-31	34 54 40 39	30 50 38 35
Nov. 16-30 Dec. 1-15 Dec. 16-31	50 67 114	40 49 96
Jan. 1-15	100	88

## MALTA.

### Communicable Diseases-February 16-29, 1924.

Communicable diseases were reported in the Island of Malta during the period February 16 to 29, 1924, as follows: Chicken pox, 1 case; influenza, 183 cases; malaria, 1 case; pneumonia, 5 cases; undulant fever, 10 cases; whooping cough, 21 cases.

#### MEXICO.

#### Smallpox-Monterey.

On March 24, 1924, 11 cases of smallpox were officially reported present at Monterey, Mexico. The public health department was stated to be taking active preventive measures.

## POLAND.

#### Communicable Diseases-December 9-15, 1923.

During the period December 9 to 15, 1923, communicable diseases were reported in Poland as follows:

Disease.	Cases.	Deaths.	Districts showing greatest number of deaths.
Cerebrospinal meningitis Diphtheria Measles Scalet fever Smallpox Tuberculosis Typhoid fever Typhus fever, recurrent Whooping cough	6 90 620 448 23 73 405 84 6 5	3 10 10 40 11 194 44 9 13	Silesia. Lodz. Lwow. Do. Krakow Warsaw. Lwow. Stanislawow. Warsaw.

#### Dysentery-Malaria.

During the period under report, 22 cases of dysentery with three deaths, with greatest mortality occurring in the district of Stanislawow, and 12 cases of malaria, were reported in Poland.

## SPAIN.

## Installation of Sanitary and Disinfecting Stations at Various Ports.

By Royal Decree dated February 25, 1924, instructions were given regarding the specifications for, and early completion of, port sanitary stations. The following is taken from the Decree:

## "ARTICLE 1.

"The material and buildings at present in use by port sanitary stations, shall be completed within the shortest possible period of time so as to attain the specifications hereinafter given:

"(a) For the sanitary stations of Barcelona, Tarragona, Valencia, Alicante, Cartagena, Almeria, Malaga, Cadiz, Seville, Huelva, Vigo, Coruña, Gijon, Santander, Bilbao, Pasajes, Teneriffe, Las Palmas, Ceuta, Melilla, Mahon, Palma de Mallorca and Algeciras: A building for offices; a laboratory for clinical and hygienic analyses; a disinfecting room furnished with a gas chamber, a stove, and washing apparatus; an isolation ward for infectious patients in connection with port traffic; a consulting office for the treatment of sailors of the national and foreign merchant marines and of any sailors of the fleet who may request treatment, furnished with an emergency outfit for accidents in connection with maritime labor; an installation of baths and showers for cleansing laborers working on ships and subject to treatment and for the removal of parasites when necessary; apparatus for exterminating rats and insects and for disinfection on board ships; a gasoline or steam tender and its nautical accessories and such material for landing patients as may be necessary for all cases. "(b) The remaining port sanitary stations shall have a building for offices; a disinfecting room; an emergency outfit; a tender and apparatus for exterminating rats and insects and for disinfection on board. The installation may be increased if the necessities of the service should demand it."

The remaining articles relate to administrative matters.

## UNION OF SOUTH AFRICA.

## Summary of Plague Occurrence-Infection in Rodents.

In a public statement made under date of February 21, 1924, the minister of public health of South Africa stated that plague infection was recognized as existing among the veld rodents, with consequent infection of human beings. The total number of human cases occurring from September 16, 1923, to February 16, 1924, was stated to be 66, of which 18 were of Europeans, and the number of deaths 36, 5 of which occurred among Europeans.

## Preventive Measures at Ports.

Active measures were stated to be in operation at ports for destroying rats chiefly by trapping and poisoning and preventing the migration of rats to and from vessels. It was stated that no plague in man or rodents had occurred at or near a port in the Union since 1912.

## WEST AFRICA.

#### Plague.

Information received under date of April 2, 1924, by way of Dakar, Senegal, shows the presence of plague in West Africa.

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

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

### Reports Received During Week Ended April 11, 1924.<sup>1</sup>

#### CHOLERA.

Place.	Date.	Cases.	Deaths.	Remarks.
India				Jan. 20-26, 1924: Cases, 2,075; deaths, 469.

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

## Reports Received During Week Ended April 11, 1924-Continued.

PLAGUE.

Place.	Date.	Cases	. Deaths.	Remarks.
Cevlon:		-	•	
Colombo	- Feb. 17-23	. (	8 5	One plague rodent.
Guayaquil	- Feb. 16-29	- 19	2	Rats taken, 18,409; found in- fected, 59.
India Karachi	Feb. 24-Mar. 1		1	Jan. 20-26, 1924; Cases, 5,383; deaths, 3,930.
Madras Presidency Iraq:	do	- 47	30	
Bagdad Madagascar: Tananariya	- Feb. 10-16	- 3		July 1-Dec 31 1022: City and
1 (11((11))))				Province: Cases, 429; dcaths, 367.
Do		-		Jan. 1-15, 1924: City and Prov- ince: Cases, 100; deaths, 88.
Straits Settlements: Singapore	Feb. 10-16	. 1		
West Africa				<ul> <li>Sept. 16, 1923-Fcb. 16, 1924;</li> <li>Cases, 66; deaths, 36. (European cases, 18; deaths, 5.)</li> <li>Apr. 2, 1924; Reported present in one locality.</li> </ul>
	I SMAI	LPOX.	1	!
		1	1	
Canada: Alberta— Calgary	Mar. 16-22	8		
Manitoba— Winnipeg	Mar. 16–29	11		
Ceylon: Colombo	Feb. 17-23	2	1	
Valparaiso	Jan. 13–19		. 2	
Canton Chungking Manchurja—	Jan. 13–Feb. 23 Feb. 3–16			Present. Do.
Harbin Shanghai	Feb. 19-25 Feb. 9-Mar. 1	7 8	24	Cases, foreign; deaths, Chinese and foreign.
Dominican Republic: La Romana	Feb. 24-Mar. 1	1		
Guayaquil	Fcb. 16-29	1		
Egypt: Cairo Gibraltar	Jan. 1–7 Mar. 3–9	1 1	1	
India Karachi Madras	Feb. 24-Mar. 1	6 22	3	Jan. 20–26, 1924: Cases 2,075; deaths, 469.
Iraq: Bagdad	Feb. 10-16	1	1	
Japani: Kobe Taiwan Island	Mar. 3–9 Feb. 20–29	<b>2</b> 1		
Mexico: Guadalajara Mexico City Montorey	Mar. 9-15. Feb. 24-Mar. 1	5	2	On Mon 94 1924 11 corres
San Luis Potosi	Mar. 16-22		1	officially announced. Dec. 9–15, 1923: Cases, 23; deaths,
Portugal: Oporto	Mar. 9-15	8	4	11.
Siam: Bangkok	Feb. 3-9	2	1	
Berne	Feb. 24-Mar. 1	2		
Damascus Tunis:	Feb. 18-24	2		
Tunis	Mar. 4-10		2	

Reports Received During Week Ended April 11, 1924-Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Chile:	J 12 00			
China: Chungking	Feb. 3-16		0	Present.
Mexico: Mexico City	Mar. 6-12	7		
Netherlands: Amsterdam	Mar. 2-8	2		`
Palestine: Jaffa	Feb. 26	1		
Poland				Dec. 9-15, 1923: Cases, 84; deaths, 9. Recurrent typhus, 6 cases.
Yugoslavia: Croatia— Zagreb	Feb. 17-23	1		· · · · · · · · · · · · · · · · · · ·

### TYPHUS FEVER.

### Reports Received from December 29, 1923, to April 4, 1924.<sup>1</sup>

CHOLERA.

China:				
Hongkong	Nov. 18-24	1		
India				Oct. 14-Dec. 22, 1923; Cases, 14,-
				117: deaths, 9,148.
Do				Dec. 30, 1923-Jan. 19, 1924: Cases.
Bombay	Dec. 23-29	1	1	3.714: deaths, 2.379.
Do	Feb. 3-16	17	17	o,, aca, 2,0,0,
Calcutta	Nov. 11-Dec. 29	85	69	
Do	Dec 30-Feb 23	177	149	
Madros	Nov 25-Dec 29	15	110	
Do	Dec 30-Feb 16	99	10	
Bangoon	Nov 11-Dec 20		10	
Do	Feb 2-16	2	2	
Indo Chine:	reo. 5-10	3	0	
Soigon	Dec 21-Jon 5		•	Including 100 coupre bilometers
baigon	Dec. 31-3an. 5	1	1	in summanding country
Philippine Islands				in surrounding country.
Finippine Islands.	Esh 20			
Maima	reb. 3-9	1	1	
Siam:	N IN D			
Bangkok	Nov. 18-Dec. 8	4	2	
Do	Dec. 31-Jan. 19	6	4	
Turkey:				
Constantinople	Dec. 2-8		1	
-	j			•

#### PLAGUE.

Azores: St. Michael Island	Oct. 20-Nov. 10	9	5	At localities 3 to 9 miles from port of Ponta Delgada.
Bolivia:				
La Paz	Oct. 1-31		3	
Brazil:			1	
Bahia	Nov. 11-Dec. 22	5	3	•
Do	Dec. 30-Jan. 19	4	5	
Porto Alegre	Feb. 10-16		1	
Rio de Janeiro	Jan. 20-26	1	1	
British East Africa:			1	
Kenya-				
Mombasa	Oct. 14–20	1	1	Infected rats, 2. Dec. 9-15, 1923:
Do	Dec. 30–Jan. 5	1	1	Cases, 4; deaths, 2; removed
				from vessel arrived Dec. 11,
				1923.
Nairobi	Nov. 1-21	40		In rural districts, several hun-
_				dred.
Tanganyika				To Nov. 24, 1923: Cases, 29;
Uganda	Aug. 1-Oct. 31	734	719	deaths, 25.
Entebbe	Oct. 1-Nov. 30	191	183	

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

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## Reports Received from December 29, 1923, to April 4, 1924-Continued.

**PLAGUE**—Continued.

Place.	Date.	Cases	. Deaths	Remarks.
Canary Islands: Las Palmas	Oct. 15-Nov. 15.	1	1	
Santa Cruz de Teneriffe San Juan de la Rambla	Feb. 19.	-	2	Locality 52 km. from Teneriffe
Celebes Island Ceylon:	Nov. 30			- Epidemic.
Do	Dec. 30-Feb. 16.	- 62		Plague rodents, 24. Plague rodents, 28.
Nanking	Dec. 16-29	-		Present.
Ecuador: Guayaquil	Nov. 16-Dec. 31	. 45	5 13	Rats taken, 53,240; found in-
Do	Jan. 1-31	. 50	16	fected, 133. Rats taken, 36,650; found in-
Do	Feb. 1-15	. 21	7	Rats taken, 20,479; found in-
Jipijapa Quevedo	Nov. 16-Dec. 15	3	2	Present.
Quito Vino del Milagro	Nov. 1-30 Dec. 1-15		ī	
Egypt City—				Jan. 1-Dec. 31, 1923: Cases, 1,519; deaths, 725. Jan. 1-Feb. 28,
Alexandria Cairo	Year 1923do	65	33	1924: Cases, 39; deaths, 24.
· Suez	do Jan 2-Feb 16	. <b>4</b> 6	29	1024
Province- Assiout	Year 1923	370	211	1041.
Beni-Souef Charkieh	do Jan. 31	63	23	1924.
Dakhalich Fayoum	Year 1923 do	34	9	1004
Gharbieh Girgeb	Year 1923	23	9	1924.
Do Gizah	Jan. 17–Feb. 11 Year 1923	33		1924.
Kalioubiah Do	do Jan. 6	76 1	10	1924.
Kena Mcnoufieh	Year 1923	50 290	34 98	1094
Minia	Year 1923	106	44	1924.
Hawaii: Honokaa				Jan. 8-10, 1924: Three plague-in-
Paauhau				fected rodents. Dec. 14, 1923: One plague rat,
India				Feb. 14, 1924: One plague rat. Oct. 14-Dec.29, 1923:Cases, 34, 542;
Do				Dec. 30, 1923–Jan. 19, 1924: Cases, 11.425: deaths. 8.385.
Bombay Do	Oct. 28-Dec. 22 Dec. 30-Feb. 2	5 6	5 5	
Calcutta Do	Dec. 23–29. Jan. 6–Feb. 23	1	1 2	
Karachi Do	Nov. 11-Dec. 29 Dec. 30-Feb. 23	42 5	33 2 1 021	
Do	Jan. 27-Feb. 23 Jan. 27-Feb. 16	1,057 504 20	313 15	
Do Indo-China:	Dec. 30-Feb. 16	50	48	
Saigon	Oct. 28-Dec. 8	. 19	6	Including 100 square kilometers in surrounding country.
Do Iraq:	Jan. 27-Feb. 2	1		Do.
Bagdad Do	Jan. 6-21	8 9	6 3	Oct 1-Dec 31 1923 Deaths
Province- Diokiakarta	Oct. 1-Dec 31		146	2,908.
Kedoe Pckalongan	do		1, 287 150	

## Reports Received from December 29, 1923, to April 4, 1924-Continued.

PLAGUE-Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Tama Continued				
Province-Continued.				
Samarang	Oct. 1-Dec. 31		430	
Soerabaya	do		9	
Do	Dec. 26-Jan. 19	23	23	
Madagascar:			000	
Tananarive Province	Oct. 1-Dec. 31	324	272	Bubonic, pneumonic, septicemic.
Tananarive town	do	74	74	
D0	F 6D. 4			stated to be ploque infected
Paraguay:				stated to be plague infected.
Asuncion	Dec. 18	6	4	
Peru				Nov. 1-Dec. 31, 1923: Cases, 38;
Callao	Jan. 1-31	2		Cases, 37: deaths, 15
Canete	Nov. 1-30	ī	1	Cubos, 01, ucums, 10.
Chancay	Dec. 1-31	2		
Chepen	Nov. 1-30			
Childo	NOV. 1-Dec. 31		1	
Huarmey	do	Â		
Lima (city)	Nov. 1-Dec. 31	22	15	
Do	Jan. 1-31	25	14	
Lima (country)	Nov. 1-Dec. 31	8	7	
Do	Jan. 1-31	3	1	
Lurin	do	2		
Lishon	Dec. 13-21	7		
Do	Dec. 31-Jan. 6		1	
Portuguese West Africa:				
Angola—				
Loanda	OctNov	59	23	• • • • • • • • • • • • • • • • • • •
Ru'sla: Bukeevo Province				Oct 1 1023-Feb 4 1024 Cases
DURGEVE I TOVINCE				319: deaths, 294, 66 plague
				centers.
Ural Provinces		•		Oct. 1, 1923-Feb. 4, 1924: Cases,
Ciama.				441. 4 plague centers.
Bangkok	Nov 4-Dec 8	3	9.	
Do	Jan. 13-19	1 I	ĩ	
Siberia:			-	2
Transbaikalia—				
Chita	Jan. 27	2	2	Pneumonic. Occurring in vet-
Spain				elinary laboratory workers.
Malaga	Dec. 1-31	4		
Straits Settlements:				
Singapore	Nov. 11-Dec. 22	4	. 4	
D0	Dec. 30-Feb. 9	10	8	1 · · · · · · · · · · · · · · · · · · ·
Beirut	Nov 1-Dec. 10	3		
Do.	Jan. 1-10	ĭ		
Turkey:				- -
Constantinople	Dec. 2-22	6	3	
Cape Province-				
Uitenhage district	Dec. 9-15			Plague rodent found in visinity
				Haarhoff's Kraal farm.
Orange Free State				Jan. 27-Feb. 9, 1924: Cases, 30;
				deaths, 13. (White cases, 6;
				colored cases, 24; deaths, 13).
	•			previously reported Tratel
				Dec. 16. 1923-Feb. 9. 1924:
				Cases, 54; deaths, 29. (White
				cases, 17; deaths, 5. Colored
Hoopstad district	Feb 3-0		·	cases, 37; dealos, 24.)
Kroonstad district	Dec. 16-27	7		Cases, 24: deaths, 15, reported
Do.	Jan. 6-Feb. 9	43	20	since outbreak.
Winburg district	Feb. 3-9	ĩ		
Wonderfontein farm	Dec. 2-8	4		Vicinity of Hoopstad. At Hoop-
				stad, Dec. 9-15, 1923, one death
On vessels:				or case previously reported.
	Dec. 11	4	2	At Mombasa, British East Africa.
	Jan. 24	$\hat{2}$		At Varna, Bulgaria, from Syrian
1				port.

# Reports Received from December 29, 1923, to April 4, 1924-Continued.

SMALLPOX.

Place.	Date.	Cases.	Deaths.	Remarks.
Algeria:	NT. 1.00			
Algiers	Nov. 1-30		<u> </u>	· ·
A den	Jan. 13–19			Imported.
Brussels	do	10		• .
La Paz Do	Oct. 1-Dec. 31 Jan. 1-31	45 6	15 2	
Brazil: Bahia	Jan. 6-12	2		
Do	Jan. 6-Feb. 16		. 7	
Do	Dec. 23-29		1	
Rio de Janeiro Do	Nov. 18-24 Jan. 6-26	3	4	
Sao Paulo British East Africa:	Sept. 3-9	1		
Tanganyika Territory Do	Sept. 30-Oct. 27 Nov. 25-Dec. 29	14 8	1	
Uganda Entebbe	Sept. 1-30 Oct. 1-Nov. 30	6 4		
Zanzibar	Sept. 1-Oct. 31	116	18	Sept. 1-30, 1923: In areas 27 miles from town of Zanzibar. Oct.
				1-31, 1923: In vicinity, 1 case, 1 death. In Mikotoni dis- trict, 30 cases, 14 deaths re-
Canada:				ported.
Alberta— Calgary British Columbia	Jan. 27–Mar. 15	27		
Vancouver	Dec. 22-29	10		
Do Victoria	Dec. 30-Feb. 23 Feb. 10-Mar. 1	54 2		
Winnipeg	Nov. 25-Dec. 29	21		
New Brunswick-	Dec. 50-Mai. 6			Fab 1-90 1094: Cases 8
Gloucester County	Mar. 2-8	1		Feb. 1-20, 1924. Cases, 6.
Madawaska County Restigouche County	Dec. 8–15	1		Jan. 1-Feb. 29, 1924; Cases, 3,
Victoria County	Feb. 10-16	23		
Ontario Fort William and Port	Dec. 16-29	3		Jan. 1-Feb. 29, 1924: Cases, 176. Occurring at Fort William.
Arthur. London	Feb. 3-Mar. 15	3		
North Bay	do	1		
Toronto	Jan. 17-Mar. 22	0 4		
Windsor Quebec—	Feb. 1-Mar. 15	52	11	
Montreal	Nov. 30-Feb. 23	7		
Regina	Dec. 9-15	1		
Ceylon:	Dec. 30-reb. 23	0	1	
Colombo Do	Nov. 11–17 Jan. 20–Feb. 2	1 5	ĩ	Port case.
Antofagasta	Jan. 6-19	4	1	
Talcahuano	Nov. 26-Dec. 2	3		Dec. 22, 1923: Five cases present.
Valparaiso China:	Dec. 9-15		1	
Amoy Do	Nov. 18-Dec. 8 Jan. 6-Feb. 16		9	Present. Including Kulangsu, 14 deaths; and in hospital, Feb. 9, 1924, more than 30 cases stated to be present
Antung	Dec. 31-Feb. 3	2	2	Dessant
Canton Chungking	Dec. 23-Jan. 13 Nov. 4-Dec. 29			Present and endemic.

# Reports Received from December 29, 1923, to April 4, 1924-Continued.

SMALLPOX—Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
China—Continued. Chungking	Dec. 30-Feb. 2			Present.
Foochow	Nov. 4-Dec. 15			Do.
Do	Dec. 31-Feb. 2	719	620	Do.
Hongkong	Dec 30-Jan 19	202	322	
Manchuria	Dec. 00-9all. 10	202	022	× ×
Dairen	Dec. 31-Jan. 20	2	l	
Harbin	Nov. 12-Dec. 22	36		
Do	Jan. 1-Feb. 18	9	5	De
Do	Dec. 2-15			Do.
Shanghai	Dec. 29			Prevalent.
Do	Jan. 6-Feb. 9	19	41	Cases, foreign.
Chosen (Korea):	T 1 01			
Chemulpo	Jan. 1-31	1		
Colombia:	NOV. 1-30	1		
Buenaventura	Nov. 18-Dec. 15	8		
Costa Rica:				
Port Limon	Feb. 18-24	1		
Crasherlanshia				Oct 1-Dec 21 1022 Cones 1.
Czechoslovakia				deaths, 1: occurring in Slovakia
Dominican Republic:				
La Romana	Jan. 27-Feb. 2	8		
Ecuador:				
Ksmeraldas	NOV. 16-30	4		
Do	Jan 1-Feb 15	2		
Quito	Nov. 1-30	167	26	
Egypt:				
Port Said	Nov. 24-Dec. 2	1		N 1 D 01 1000 G
Esthonia				NOV. 1-Dec. 31, 1923: Cases, 38, Jap 1-31 1924: Cases, 0
France.				Jan. 1-51, 1924. Cases, 9.
Cherbourg	Feb. 9-15	1		British seaman.
Great Britain:				
Liverpool	Mar. 2-8	1		In family of seaman recently re-
Greece'				tumed nom oporto, rortugal.
Saloniki	Oct. 22-Dec. 30		11	
Do	Dec. 31-Jan. 27	2	1	
Guadeloupe (West Indies)	Fab 10			Jan. 2-16, 1924: Present.
A bymes	Feb. 16			Present. Vicinity of Point a
Basse Terre	Dec. 18			Present.
Do	Jan. 12-Feb. 16			Do.
Marie Galante Island	Dec. 18			Off shore island; present.
D0 Moulo	FeD. 16			Present. Estimated 60 cases.
Point à Pitre	Dec. 18			Present in vicinity.
Haiti:				·····
Cape Haitien	Feb. 3-9	3		
Hinche	Feb. 10-16	1		Developed at Limba Haiti
India	reb. 17-Mat. 1	-	1	Oct. 14-Dec. 29, 1923; Cases.
				9,720; deaths, 2,241.
Do				Dec. 30, 1923-Jan. 19, 1924: Cases,
Bombon	Oct 28 Dec 20		05	4,235; deatns, 1,341.
Do	Dec. 30-Feb. 16	210	98	
Calcutta	Dec. 16-29	4	4	
Do	Dec. 30-Feb. 9	5	5	
Karachi Madras	Dec. 30-Feb. 23	18	2	
Do	Dec 30-Feb 23	74		
Rangoon	Nov. 4-Dec. 29	12	4	
Ďo	Dec. 30-Feb. 16	7	ī	
Indo-China:	1			
Saigon	Nov 4-Dec 20	133	74	Including 100 square kilometers
Do.	Dec. 31-Jan. 16	284	168	of surrounding country.
001600 04 4				• • • •
90162~244				

## Reports Received from December 29, 1923, to April 4, 1924-Continued.

SMALLPOX-Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Iraq: Bagdad Do	Oct. 24-Dec. 29 Dec. 30-Jan. 28	46 43	28 32	
Italy: Trieste Turin	Feb. 17-23 Feb. 18-24	4		Nov 25-Dec 20 1022: Cases 115
Do Kingston Do	Nov. 25-Dec. 29 Dec. 30-Feb. 2	36		Dec. 30, 1923-Feb. 16, 1924: Cases, 153. Reported as alastrim.
Japan: Kobe Taiwan	Feb. 14-29 Jan. 1-10	7670	2	
Java: East Java Soerabaya	Oct. 23-Dec. 29	348	60	
Do West Java— Batavia	Dec. 30-Jan. 19 Oct. 27-Dec. 28	67 65	13 13	
Latvia	Dec. 29-Jan. 18		•	Oct. 1-31, 1923: Cases, 3. Nov. 1-30, 1923: Cases, 1. Dec. 1-31, 1923: Cases, 2.
Mexico: Guadalajara Manzanillo Mexico City	Jan. 27-Feb. 23 Dec. 4-10	5	. 3 1	Including municipalities in Fed.
Do Salina Cruz	Jan. 30-Feb. 23 Jan. 1-31	70 1	23	eral District. Do.
Tampico Vera Cruz Do	Jan. 21-Feb. 29 Nov. 3-Dec. 30 Jan. 6-27	24 1	4 2	From Irapuato, 9; La Barra, 1.
Rotterdam Palestine:	Jan. 20-26 Jan. 15-28	3		
Jerusalem Persia: Teheran	Feb. 18-25 Sept. 24-Dec. 23	ĭ		
Poland	No. 11 Dec 00			Sept. 23-Dec. 8, 1923: Cases, 41 deaths, 7.
Do Oporto Do	Dec. 31-Mar. 1 Nov. 25-Dec. 29 Dec. 30-Mar. 8	67 39 65	10 10 23 39	Confected report.
Portuguese East Africa: Lourenco Marques Russia: Ukraine	Dec. 30-Jan. 5	2		August. 1923: Cases. 77. Sen-
Siam: Bangkok	Oct. 28-Dec. 8	33	18	tember, 1923: Cases, 66. Nov. 25-Dec. 1, 1923: Epidemic.
Do Siberia: Dauria Station	Dec. 30-Jan. 12 Oct. 21	2	1	Present. Locality on Chita Rail- way, Manchurian frontier.
Sierra Leone: Sherbro District— Tagbail	Nov. 1-15	3		
Spain: Barcelona Do	Nov. 15-Dec. 26 Jan. 3-9.	180	2 2 10	
Straits Settlements: Singapore	Dec. 30-Mar. 8 Dec. 16-29	233 233	12 25 1	
Do Switzerland: Basel	Dec. 30-Jan. 26 Jan. 27-Feb. 9	3 4		Corrected.
Berne Do Lucerne	Nov. 17-Dec. 22 Jan. 6-Feb. 16 Nov. 1-30	15 11 34		
Zurich	Jan. 27-Feb. 2	26 1		

## Reports Received from December 29, 1923, to April 4, 1924-Continued.

SMALLPOX-Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Syria: Aleppo Beirut Damascus Do	Nov. 25-Dec. 1 Jan. 21-31 Nov. 16-Dec. 15 Jan. 29-Feb. 12	1 1 7 15		In vicinity, at Djisr Choughour.
Tunis: Tunis Do	Oct. 27-Nov. 2 Jan. 8-Feb. 4	5 3	1 2	`
Turkey: Constantinople Do	Nov. 11-Dec. 8 Jan. 6-Feb. 16	3 1	1	
Union of South Africa Cape Province	Oct. 28-Dec. 8			Oct. 1-31, 1923: Colored, cases, 41; deaths, 2; white, cases, 3. Outbreaks.
Do Natal Northern Rhodesia Do	Jan. 20-Feb. 9 Oct. 28-Nov. 3 Dec. 4-31	40	5	Do. Do. Jan. 1-31, 1924: Cases, 50; deaths, 11: reported from Baloyale.
Orange Free State Do Transvaal	Oct. 28-Nov. 24 Jan. 20-Feb. 2 Nov. 18-Dec. 1			Kalabo, and Mankoya dis- tricts. Outbreaks. Do. Do.
Johnannesburg Do	Nov. 25-Dec. 15 Feb. 3-9	3 1		Do.
Montevideo Venezuela: Caracas	Oct. 1-31 Jan. 22	1		Epidemic.
On vessels: S. S. Torres	Jan. 14	1		At New Orleans quarantine sta- tion from Tampico, Mexico, via ports. Case in seaman signed on et Calencter Ter
S. S. Tupper S. S. Vasari	Jan. 20–28 Dec. 31	1 1		signed on at Gaveston, Tex., on outward voyage. At Gonaives, Haiti. At Trinidad, West Indies, from Buenos Aires, Argentina. Ves- sel left Buenos Aires Dec. 15, 1923 for New York via Santos
Sch. Annie M. Parker	Jan. 23	3		Rio de Janeiro, Trinidad, Bar- bados. At sea. Vessel abandoned and crew removed to vessel bound for Rotterdam. Patients re- moved at Liverpool. Feb. 28, bound for Newfoundland.
TYPHUS FEVER.				
Algeria: Algiers Do Polizier	Nov. 1–Dec. 31 Jan. 1–Feb. 10	7 8	3 5	
La Paz Do Bulgaria:	Oct. 1-Dec. 31 Jan. 1-31	43 4	5 1	Nov 18-Dec 15 1923. Paraty.
Conory Islands:				phus fever, cases, 17. Jan (– Feb. 9, 1924: Paratyphus fever, cases, 6.
Chile:	Jan. 14-Feb. 17		2	
Antonagasta Concepcion Do Iquique	Oct. 1-Nov. 30 Jan. 8-28 Jan. 20-26	2	4 2 1	Dec. 11-24, 1923: Deaths, 3. In district, at 12 localities, 92 cases.
Do Valnaraiso	Dec. 31-Feb. 23	4		ment. Jan. 12, 1924: 1 case under treatment. Dec. 24, 1923: In hospital. 34
Do	Dec. 30-Jan. 12		15	cases. Reports from two districts of the <b>Province of Valparaiso</b> .

## Reports Received from December 29, 1923, to April 4, 1924-Continued.

TYPHUS FEVER-Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
China: Antung Chungking Do Czechoslovakia Donzig-Polish frontier:	Nov. 12-Dec. 30 Nov. 18-24 Dec. 16-29 Dec. 30-Jan. 26	5		Present. Endemic. Do. OctDec., 1923: Cases, 21.
Mühlbanz	Mar. 6		·	Present. Origin stated to be focus at Mallinia.
Ecuador: Quito	Nov. 1-30 Nov. 19-Dec. 23 Jan. 8-Feb. 25 Sept. 10-Dec. 31	14 3 4 39	1 	Nov. 1-30, 1923: Paratyphus
Finland				fever, cases, 8. Dec. 1-31, 1923: Typhus fever, cases, 15 Para- typhus, cases, 4. January, 1924: Paratyphus fever, 6 cases. Dec 1-15, 1923: Paratyphus fever, cases, 15.
Coblenz Greece: Athens Saloniki	Jan. 27-Feb. 2 Jan. 11-Feb. 20 Nov. 26-Dec. 30	1 7	73	
Hungary Budapest	Jan. 27-Feb. 23		7	July 1-Aug. 31, 1923: Cases, 24.
Java: East Java— Soerabaya Do Latvia	Dec. 9–29 Dec. 30-Jan: 5	12 2	  	Oct. 1-31, 1923: Cases, 12; para- typhus fever, 7; recurrent ty- phus, 3. Nov. 1-30, 1923: Case, 1; paratyphus fever, 2 cases. Dec. 1-31, 1923: Cases, 9; para- typhus, cases. 3.
Mexico: Durango Do. Guadalajara Mexico City Do. San Luis Potosi	Dec. 1-31 Jan. 1-Feb. 29 Jan. 27-Feb. 16 Nov. 25-Dec. 29 Dec. 30-Feb. 23 Jan. 17-23	86 36	2 3 2 	Including municipalities in Fed- eral district. Do.
Torreon Norway: Stavanger Palestine: Jaffa Jerusalem Parsia:	Feb. 1-29 Dec. 25-31 Jan. 1-21 Feb. 19-25	1 3 1	2	
Teheran Poland	Sept. 24-Oct. 23		1	Sept. 23-Dec. 8, 1923: Cases, 581; deaths, 49; recurrent typhus,
Portugal: Oporto Rumania: Kishineff District	Jan. 27-Feb. 2 Nov. 1-Dec. 31	2 15		Casco, 19, UC2(115, 1,
Kussia: Ukraine				August, 1923: Cases, 454. Sep- tember, 1923: Cases, 314. Re- current typhus: August, 1923; cases, 1366. September, 1923; cases, 941.
Spain: Barcelona Do Madrid Syria:	Nov. 29-Dec. 12 Jan. 3-Feb. 13 Dec. 1-31		2 5 7	
Damascus Tunis: Tunis	Jan. 27-Feb. 2	1		
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## Reports Received from December 29, 1923, to April 4, 1924-Continued.

TYPHUS FEVER-Continued.

Place.	Date.	Cases.	Deaths.	Remarks.
Turkey:	N			
Constantinople	Nov. 11-Dec. 29	15	1 1	
Union of South Africa	Dec. 30-Jan. 20	0		.) Oct. 1–31, 1923: Colored. 287
		1		cases, 58 deaths; white, 2 cases;
Cape Province.				Oct 1-31 1993: Colored coses
Cupe 1101.1100.1100.1100.1100.1100.1100.110				245: deaths. 47.
Do	Oct. 28-Dec. 8			Outbreaks.
Do	Jan. 27-Feb. 9			Do.
Natal				Oct. 1-31, 1923: Colored, cases,
2				4; deaths, 3.
Do	Oct. 28-Nov. 3			Outbreaks.
D0	Jan. 27-Feb. 2			D0.
Duroan	Nov. 24-Dec. 1	73		Cases occurring among native stevedores in the harbor area of the port and confined to one barracks.
Orange Free State				Oct. 1-31, 1923: Colored, cases ,25;
De	Dec 15			deaths, 8.
Do	Feb 2-0			Outbreaks.
Kroonstad District	Ian 20-26			Outbreaks on two forms
Transvaal	Jun 20 20			Oct 1-31 1923 Colored cases 13
Do	Oct. 28-Dec. 1			Outbreaks.
Do	Jan. 1-31	4	1	outoreal.
Johannesburg	Oct. 1-Dec. 31	3	4	
Do	Jan. 6-Feb. 16	7		
Potschefstrom District.	Jan. 20-26			Outbreaks on seven farms.
Venezuela:				
Maracaibo	Dec. 16-22		1	
D0	Feb. 17–Mar. 1		2	
Yugoslavia:				
Croatia	Dec 0.15	~		
Aagreu	Dec. 2-15	3		
Belgrade	Nov. 25-Dec. 1	1		

#### YELLOW FEVER.

Brazil: Pernambuco City	Nov. 16	3	2	