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CURRENT WORLD PREVALENCE OF COMMUNICABLE DISEASES¹

United States, March 11–April 7, 1928

The mortality in large cities increased during March, the average death rate in 68 large cities (annual basis) rising from 14.3 per 1,000 in the week ended March 10 to 15.3 in the week ended March 31, and to 15 in the week ended April 7. The seasonal increase continued unusually late, as the maximum mortality normally is expected by the middle of March, and the average death rate in the cities for the two weeks ended April 7 was higher than that for the corresponding weeks in any of the preceding seven years except 1926, when influenza was epidemic. Nevertheless, as a result of the unusually favorable mortality in January and February, the average death rate in the 68 cities in the first 14 weeks of the current year (14.2) is as low as that in 1924 and lower than that in any recent years except 1927 and 1921.

Influenza and pneumonia.—Reported cases of influenza increased continuously up to the first week in April, when 31 states reported 3,386 cases, as compared with 2,163 cases in the week ended March 3. Some increase occurred in most of the States reporting, which are distributed throughout all sections of the United States. The mortality from influenza and pneumonia combined increased during the first half of March and in the week ended March 17, the latest available, the mortality was higher than in the corresponding week of 1927 in the cities reporting in each of the geographical districts except in the South Atlantic and Pacific States.

The excess mortality over the corresponding week of a year ago was especially marked in the East and West South Central States and in the Mountain States.

Meningococcus meningitis.—More cases of meningococcus meningitis have been reported during 1928 than in the corresponding weeks of either of the preceding two years. The number of cases increased quite sharply during March, as is shown in the accompanying table, and the cases reported in the four weeks ended April 7 indicate a prevalence more than twice that of a year ago.

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

Number of cases of meningococcus meningitis reported by 42 States and the District of Columbia

Four weeks ended—	1926	1927	1928
Mar. 10.....	223	228	382
Apr. 7.....	215	255	577

Although some seasonal increase in the disease in the winter and spring months is normally expected, the rise in recent weeks has been unusually rapid; and it has been very general, about one-half of the States reporting 50 to 100 per cent increase in cases in the four weeks ended April 7 over the preceding four weeks. The highest incidence rate for the first 12 weeks of 1928¹ occurred in the Mountain States and the next highest in the Pacific Coast States, while a low incidence is indicated for the South Central and South Atlantic States and New England. The average rate (annual basis) for the 42 States was 4.9 per 100,000 population. Apparently, it is a characteristic of the disease that widely separated places are often simultaneously affected and that only a rather small proportion of the population contract it.

Smallpox.—The number of cases of smallpox reported by 42 States and the District of Columbia has varied about a level of 1,100 cases weekly since early in January. For the four weeks ended April 7, the reported cases numbered 4,743, as compared with 3,933 in the corresponding period of 1927 and 3,370 in 1926. Several States reported an increase in the number of cases in the four weeks ended April 7 over the preceding four-week period; these include Arkansas, New Mexico, Colorado, California, Kansas, Missouri, Indiana, New Jersey, and West Virginia. In each of these States, except Indiana, the prevalence of smallpox was greater in the first quarter of 1928 than in 1927, as was true also of Arizona, Connecticut, Illinois, Iowa, Louisiana, Montana, Nebraska, North Carolina, Oklahoma, Oregon, Tennessee, Utah, Wyoming, and Wisconsin.

Marked improvement is indicated in the smallpox situation in Alabama, Florida, Georgia, and Virginia, where the disease was widely prevalent in 1927.

Scarlet fever.—The reported incidence of scarlet fever during March was approximately the same as it was in February, but the number of cases reported in the first week of April showed a slight decline. In a number of States, especially in those west of the Mississippi River, the seasonal decline was quite definite, but in others it was not yet apparent. In general, a gradual decrease in the number of cases may be expected throughout the spring months.

¹ See Public Health Reports for April 6, 1928, p. 807.

Diphtheria.—The number of cases of diphtheria reported each week by 42 States continued to decline during March, and in the first week of April the reported cases numbered approximately 1,400, as compared with about 1,700 in the week ended March 10. The decline has been general and is normal for the season of the year.

Measles.—Measles incidence continued on a high level throughout March and in the first week of April, with the number of cases reported each week by 38 States averaging about 18,000. In a number of southern States in which the disease has been quite prevalent, the maximum incidence appeared to have been passed, notably in Alabama, Arkansas, Louisiana, Maryland, North Carolina, and South Carolina; but for Massachusetts, New York, New Jersey, Pennsylvania, Michigan, and Missouri the latest reports had shown no decline in the number of cases.

Poliomyelitis.—One or more cases of poliomyelitis were reported during the four weeks ended April 7 by 34 States, which reported 122 cases in this period. Although the number of cases is fewer than that reported in the preceding four-week period, it is still more than double the number for the corresponding weeks a year ago. In these four weeks, California reported 12 cases, New York 15, Ohio 10, Massachusetts and South Dakota 7 each, and Oregon 6 cases.

Typhoid fever.—The typhoid fever incidence has been lower throughout the first quarter of the current year than in either of the preceding two years. Cases reported by 41 States in the two weeks ended April 7 were somewhat more numerous than in the preceding two weeks—340 as compared with 270. The increase was due to very small increases in a number of States.

Foreign Countries¹

The general prevalence of certain epidemic diseases in most foreign countries during January and February is summarized below.

Cholera.—Cholera was reported during the four weeks ended February 25 from very few towns in the Far East. One case was reported at Singapore, 1 at Karikal, 8 cases were reported at Saigon, 102 at Bangkok, and cases were reported from several ports in India. The incidence at Bangkok was slightly higher than in the preceding four weeks; and the same was true at Calcutta, where 147 deaths occurred in these four weeks.

The cholera incidence in India continued to decline in January, but the disease was still widespread in two areas—Bengal and the Madras Presidency. Of the 10,154 cases reported in the first three weeks of 1928, 7,787 occurred in the Bengal-Assam-Orissa areas, 2,236 in Madras Presidency, and only 131 elsewhere in India.

¹ Data from the Monthly Epidemiological Report of the Health Section of the League of Nations' Secretariat, Mar. 15, 1928, supplemented by information published in the PUBLIC HEALTH REPORTS.

The cholera outbreak in Annam, reported last month, declined sharply in February; 59 cases were reported in the period February 1-20 as compared with 188 cases in the preceding 20 days. In Cochin-China the number of cholera cases was still increasing at the beginning of February, but the maximum seemed to have been passed in the first 10 days, when 178 cases were reported. The disease is not prevalent in the remainder of French Indo-China; a few cases were reported in Cambodia and none in Laos or Tonkin.

Plague.—No plague cases were reported in February in Mediterranean ports. At Suez 15 cases were reported between January 1 and February 20; all occurred inland 2 miles or more from the port.

The plague outbreak in Aden increased early in February, but no further increase was indicated by the reports for the latter part of the month. Up to March 3, 382 cases and 218 deaths were reported—figures much in excess of those for any previous outbreak since that of 1900. It is reported that the first cases occurred among the coal coolies and that the European quarters and wharves were free from infection up to February 6. Infected rats have been found, but not in large numbers.

The plague incidence in India as a whole during the first three weeks of 1928 was higher than during the corresponding period of the preceding year, but lower than in the years from 1923 to 1925. In the Punjab the plague situation remains very favorable, and only once before, in 1922, has the incidence been so low. More cases were reported, on the other hand, in the United Provinces than during either of the two preceding years. Two areas of these provinces are chiefly affected, one in the north around Bareilly, and another larger area in the east, including the districts of Azamgarh, Ghazipur, Fyabad, and Basti. Plague is present also in Muzaffarpur and other districts of Bihar, to the east of this area, but the incidence is well below the normal.

Deaths from plague in the Provinces of India during three weeks in January in the years 1924-1928

Provinces	1924	1925	1926	1927	1928
	Dec. 30- Jan. 19	Jan. 4-24	Jan. 3-23	Jan. 2-22	Jan. 1-21
North-West Frontier Province.....	88	90	0	0	0
Punjab, Delhi, and Punjab States.....	1,992	2,648	1,426	392	200
United Provinces.....	1,918	3,479	1,920	1,134	2,203
Bihar and Orissa.....	806	711	380	326	199
Bengal and Assam.....	1	1	0	0	0
Central Provinces.....	1,134	1,041	344	413	366
Madras Presidency.....	575	541	259	210	197
Hyderabad.....	416	1,012	348	91	1,854
Mysore.....	191	50	329	151	58
Bombay Presidency.....	996	571	598	135	308
Burma.....	1,048	206	438	157	890
Other Indian States.....	139	140	162	63	21
Total.....	9,306	10,493	6,204	3,072	6,206

Hyderabad city is the scene of a more severe plague outbreak than has occurred there for many years past. The number of cases began to increase in November and appeared to have reached its maximum about the middle of January, which is usually the season of greatest prevalence in Hyderabad. Plague was prevalent also in the adjacent cantonment of Secundarabad.

Plague cases and deaths reported in Hyderabad City and suburbs by fortnightly periods, November 6, 1927, to January 14, 1928

Date	Cases	Deaths
November 6-19.....	96	71
November 20-December 3..	197	125
December 4-17.....	407	251
December 18-31.....	900	683
January 1-14.....	1,393	1,108

In the Bombay Deccan, where epidemics normally reach their height in September or October, plague was unusually prevalent in January. The prevalence was high also in the Madura district in the extreme south of India.

Plague is more prevalent than usual in Upper Burma, which in the past has suffered much less than Lower Burma from this disease. During the first three weeks of January, 175 deaths from plague were reported in Lower Burma and 715 in Upper Burma. The last relatively severe epidemic in Upper Burma was in 1924, when the city of Mandalay was seriously affected.

The winter rains have been much in excess of the normal in most parts of India, and particularly over a wide belt stretching from the United Provinces in the north to the Deccan in the south. In northwestern India they have been about normal, i. e., scanty; and in Bengal, Assam, and Orissa, where there is no plague, they have been much less than usual. It has been long observed that a very wet winter favors the development of plague outbreaks in the following months. The plague incidence, which last autumn was unusually low, seems to have been unfavorably influenced in several areas, and especially in the eastern part of the United Provinces, in Hyderabad, the Bombay Deccan, and Upper Burma, by the humidity resulting from this increased rainfall.

Yellow fever.—Matadi, in Belgian Congo, was officially declared free from yellow fever on February 19; no fresh case had been reported since February 2.¹ The outbreak lasted from December 22 to February 2, and 19 cases with 10 deaths were notified among the white population and 18 cases with 14 deaths among negroes. There were 3 cases with 2 deaths at Boma. No yellow fever case has been reported elsewhere in Africa since the beginning of 1928.

¹ A case of yellow fever was reported at Matadi Feb. 24, 1928.—Ed.

Smallpox.—No change in the prevalence of smallpox in England and Wales occurred in February; 1,516 cases were reported in the four weeks ended February 25, as compared with 1,460 cases in the preceding four weeks, and 1,810 cases during the corresponding period of 1927. The chief centers of infection were still in the north of England and in South Wales. During the first eight weeks of the year seven deaths from smallpox occurred in the large towns, five of these being at Bradford.

On the European Continent, smallpox cases have occurred only sporadically for the most part. In Spain, 53 deaths were reported for November, 1927, and in Portugal 143 smallpox cases with 22 deaths were reported in January. Eleven cases of smallpox were reported in France in January. Smallpox is fairly widespread in the eastern part of the Union of Soviet Socialist Republics, in the Tartar, Bashkir, and Votyak Republics and in Viatka and the Ural area.

The smallpox situation in Algeria and Morocco improved markedly in January. Fifty-five cases were reported in Morocco and 57 in Algeria in January, as against 398 and 209, respectively, in December. The outbreak of virulent smallpox which began in June, 1927, in northern Rhodesia increased during the last months of the year; 1,079 cases and 182 deaths were reported during the whole of 1927, as compared with 305 cases and 8 deaths the preceding year.

Influenza.—Up to the end of February there had been no influenza outbreaks reported in Europe. Deaths from influenza in large towns of England and Wales averaged 94 a week between January 22 and March 3, and show no tendency to increase or decrease. Deaths ascribed to influenza in large German towns averaged 51 during the first six weeks of the year; their number did not increase during this period.

The number of cases reported in January in Denmark, Sweden, and Finland was about normal for nonepidemic years. In Leningrad 63 deaths were attributed to influenza in January, which is not indicative of epidemic prevalence. In Hungary, only 35 deaths were ascribed to influenza in January, as against 223 during the corresponding month of the preceding year.

Influenza was very prevalent in Japan in January and February, but on March 17 conditions were reported to have greatly improved. From January 1 to February 10, 1928, there were 27,411 cases of influenza and 395 deaths, according to a statement from the Home Office of Japan.

Acute poliomyelitis.—Poliomyelitis was more prevalent in 1927 than in any of the preceding three years in Germany, Austria, Rumania, and Canada. There was a decrease in the incidence in England, France, Denmark, and Australia, and not much change

in other countries. The number of cases reported in countries where this disease is notifiable by law is shown in the accompanying table.

Poliomyelitis cases reported in various countries, 1924-1927

Country	Number of cases			
	1924	1925	1926	1927
EUROPE				
Germany.....	498	386	1,614	2,740
England and Wales.....	860	422	1,297	899
Austria.....	19	15	47	149
Denmark.....	152	113	64	34
Finland.....	45	28	12	52
France.....	216	222	214	156
Italy.....	250	760	388	335
Norway (towns).....	13	87	15	27
Netherlands.....	38	32	49	43
Rumania.....				2,161
Sweden.....	653	517	338	385
Switzerland.....	108	93	97	132
AMERICA				
Canada.....	217	167	113	610
United States.....	5,078	5,429	2,543	9,737
AUSTRALASIA				
Australia.....	238	261	174	67
New Zealand.....	73	1,319	29	43

The Rumanian epidemic began at Bucharest and was most widespread there and in the neighboring departments. Three-fourths of the cases occurred in 7 of the 76 departments into which the country is divided. Poliomyelitis had theretofore been very rare in Rumania. The proportion of very young children attacked was unusually large. At Bucharest 90 per cent of the cases were under 4 years of age, and the maximum incidence was between 1 and 2 years of age.

Diphtheria.—The diphtheria incidence was higher than usual during the latter part of 1927 and the beginning of 1928 in nearly all European countries.

The incidence of diphtheria in Poland and Italy was higher this winter than at any time during the past five years. The number of cases reported in Italy during the last quarter of 1927 was 6,924, as compared with 4,342 during the corresponding period of the preceding year. In Germany the incidence was about the same as that during the winter 1924-25, but was lower than in 1921-22. In England the number of cases was about the same as in 1922. A general increase of diphtheria also affected North Africa. In Egypt 1,251 cases were reported during the last quarter of 1927, as compared with 533 during the corresponding period of 1926.

The increase of diphtheria in Australia, which began during the fourth quarter of 1926 and reached its maximum in April, 1927, subsided toward the end of that year; 1,537 cases were reported during the last quarter of 1927, as compared with 2,270 during the corresponding period of the preceding year. The number of cases reported in 1927 was about the same as in 1923 and 1924, but less than half the number reported in 1921.

CURRENT STATE MORTALITY STATISTICS

For the information of public health officials and others interested, the data in the following tables have been taken from the monthly mortality reports of State health departments for the latest month for which published records are available. Statistics of most communicable diseases are not included, since they are available in other tabulations in the Public Health Reports. Statistics of deaths from other causes are limited for the most part to those causes which appear in the State reports. In the case of States which publish detailed mortality reports each month, the record of only the principal groups of causes and certain important specific causes have been used.

For purposes of comparison, the mortality records for the corresponding month in a few preceding years have been compiled. The rates have been computed upon the populations as estimated for July 1 of each year represented.

These tabulations will be enlarged as the current data on mortality from additional States become available.

Summaries of annual mortality statistics for 1927 are appended whenever the data are available from the States, and comparisons with several prior years are included when practicable.

Monthly Mortality Statistics
ALABAMA

Death classification, by cause or age	January					
	1928	1927	1926	1928	1927	1926
	White			Colored		
	Annual rate per 1,000					
All causes.....	10.4	7.9	9.6	14.6	12.6	15.4
	Rate per 1,000 live births					
Infant mortality.....	80.3	56.8	(1)	126.2	89.6	(1)
	Annual rate per 100,000					
Influenza.....	89.1	29.9	61.3	86.0	39.5	81.5
Tuberculosis, all forms.....	58.1	49.6	62.1	136.9	126.3	139.3
Cancer, all forms.....	46.8	44.5	39.2	41.2	36.8	27.6
Diabetes, mellitus.....	12.8	5.8	11.1	14.5	5.3	10.5
Cerebral hemorrhage, apoplexy.....	42.3	46.6	39.9	58.1	71.0	61.8
Diseases of heart.....	114.7	84.5	93.9	124.8	105.3	153.8
Pneumonia, all forms.....	167.6	86.0	161.9	191.4	126.3	219.5
Diarrhea and enteritis (under 2 years).....	11.3	5.8	11.1	4.8	5.3	7.9
Chronic nephritis.....	74.7	52.5	61.3	92.1	97.4	107.8
Puerperal state.....	9.1	11.7	16.3	18.2	15.8	22.3
Congenital malformation and other diseases of early infancy.....	67.2	62.7	70.2	69.0	52.6	64.4
Automobile accidents.....	14.3	9.5	11.8	10.9	5.3	9.2
	Number of deaths					
Under 1 year.....	242	174	207	178	145	166
1 to 4 years.....	88	55	75	54	47	53
5 to 14 years.....	57	51	35	42	30	32
15 to 44 years.....	269	212	245	384	327	384
45 to 64 years.....	257	206	253	291	226	283
65 years and over.....	457	377	467	243	177	252
Age not stated.....	9	6	12	12	7	16

¹ Not available.

Monthly Mortality Statistics—Continued

CONNECTICUT

Death classification, by cause or age	January					
	1928	1927	1926	1925	1924	1923
	Annual rate per 1,000					
All causes.....	11.7	12.0	12.4	12.8	12.1	14.5
	Rate per 1,000 live births					
Infant mortality.....	68.4	69.8	78.3	88.7	86.4	92.9
	Annual rate per 100,000					
Influenza.....	28.5	37.9	38.5	36.2	18.8	57.5
Tuberculosis, all forms.....	63.5	74.2	60.4	79.3	79.2	87.8
Cancer.....	113.8	115.8	89.1	99.3	98.0	102.2
Diseases of the heart.....	168.5	203.3	177.5	194.7	176.3	(1)
Pneumonia, all forms.....	140.8	127.7	159.4	177.8	134.0	256.2
Diarrhea and enteritis (under 2 years).....	9.5	11.9	12.1	12.3	16.5	14.4
Puerperal diseases.....	9.5	12.6	9.8	4.6	20.4	12.0
	Number of deaths					
Under 1 year.....	163	166	193	233	220	237
1 to 4 years.....	31	53	77	64	90	113
5 to 64 years.....	779	760	747	729	704	777
65 years and over.....	628	644	631	640	532	695

¹ Not available.

INDIANA

Death classification, by cause or age	January					
	1928	1927	1926	1925	1924	1923
	Annual rate per 1,000					
All causes.....	12.4	12.3	13.2	11.8	12.7	13.8
	Rate per 1,000 live births					
Infant mortality.....	68.7	76.7	75.7	65.5	67.9	92.8
	Annual rate per 100,000					
Influenza.....	48.1	51.6	63.7	38.0	34.2	75.7
Tuberculosis, all forms.....	67.8	79.2	74.6	79.9	79.5	76.1
Cancer.....	99.3	97.6	101.8	85.6	87.9	93.6
Apoplexy.....	121.5	93.8	101.8	114.1	(1)	(1)
Organic heart disease.....	198.5	186.5	177.1	154.1	(1)	(1)
Pneumonia, lobar and broncho.....	137.0	135.3	175.6	122.1	154.8	217.5
Diarrhea and enteritis (under 2 years).....	7.0	6.4	13.2	11.0	8.1	14.0
Bright's disease.....	70.4	91.6	75.4	79.9	(1)	(1)
Puerperal causes.....	11.9	16.1	14.3	9.5	2 2.3	2 5.4
	Number of deaths					
Under 1 year.....	341	372	390	343	378	489
1 to 4 years.....	108	132	154	100	144	206
5 to 14 years.....	85	65	97	75	104	90
15 to 64 years.....	1,281	1,280	1,343	1,261	1,264	1,331
65 years and over.....	1,535	1,435	1,509	1,332	1,425	1,425

¹ Not available.² Puerperal septicemia.

Monthly Mortality Statistics—Continued

NEW JERSEY

NOVEMBER

Death classification, by cause or age	1927	1926	1925	1924	1923	1922
	Annual rate per 1,000					
All causes.....	11.4	11.0	11.6	11.8	11.4	12.4
	Annual rate per 100,000					
Influenza.....	8.4	10.6	12.2	11.4	4.6	5.8
Tuberculosis, all forms.....	68.2	71.1	71.3	77.4	82.0	87.7
Cancer.....	104.5	101.5	105.8	105.7	90.9	95.3
Diseases of the nervous system.....	110.7	129.6	122.0	139.6	124.6	149.5
Diseases of the circulatory system.....	254.1	213.9	242.7	215.9	229.7	229.5
Diseases of the respiratory system (pneumonia and tuberculosis excepted).....	45.1	52.2	65.9	47.7	58.2	73.1
Pneumonia.....	48.7	57.9	67.9	58.4	59.6	66.6
Diseases of the digestive system.....	165.2	155.9	156.4	166.7	157.2	167.3
Infantile diarrhea.....	16.6	10.6	18.6	27.3	25.2	31.6
Bright's disease.....	104.8	102.8	89.6	102.6	98.0	108.0
Automobile accidents.....	33.4	26.4	(?)	(?)	(?)	(?)
	Number of deaths					
Under 1 year.....	351	358	353	422	408	464
1 to 4 years.....	112	127	133	152	141	202
5 to 59 years.....	1,607	1,465	1,536	1,604	1,411	1,446
60 years and over.....	1,446	1,376	1,396	1,247	1,252	1,290

DECEMBER

	Annual rate per 1,000					
All causes.....	11.5	13.1	12.3	12.7	11.4	13.7
	Annual rate per 100,000					
Influenza.....	9.7	15.7	11.8	21.4	11.3	14.1
Tuberculosis, all forms.....	72.9	84.5	75.9	79.9	76.6	104.2
Cancer.....	102.7	113.6	114.5	104.0	90.4	96.1
Diseases of the nervous system.....	123.1	145.3	152.4	132.4	128.5	146.8
Diseases of the circulatory system.....	256.6	272.9	255.1	234.0	228.5	264.3
Diseases of the respiratory system (pneumonia and tuberculosis excepted).....	55.3	76.5	60.5	85.2	62.9	98.2
Pneumonia.....	61.2	76.8	79.8	83.6	65.3	96.4
Diseases of the digestive system.....	157.2	162.1	159.9	169.2	158.4	163.4
Infantile diarrhea.....	9.4	15.4	12.8	16.7	17.2	17.6
Bright's disease.....	111.5	108.5	109.2	119.7	97.6	109.1
Automobile accidents.....	31.7	29.4	(?)	(?)	(?)	(?)
	Number of deaths					
Under 1 year.....	374	436	411	508	406	464
1 to 4 years.....	114	171	127	171	168	248
5 to 59 years.....	1,642	1,824	1,662	1,678	1,411	1,635
60 years and over.....	1,543	1,650	1,574	1,454	1,319	1,523

¹ Infantile diarrhea excepted.² Not available.

Monthly Mortality Statistics—Continued
NEW YORK STATE (EXCLUSIVE OF NEW YORK CITY)

Death classification, by cause or age		January				
		1928	1927	1926	1925	1924
		Annual rate per 1,000				
1-205	All causes.....	13.6	14.3	14.8	15.0	14.8
		Rate per 1,000 live births				
	Infant mortality.....	68	78	78	74	83
		Annual rate per 100,000				
11	Influenza.....	20.0	27.9	24.9	24.3	17.0
31-37	Tuberculosis, all forms.....	66.5	84.2	84.9	95.1	84.3
43-49	Cancer and other malignant tumors.....	127.5	124.7	128.6	139.1	123.1
57	Diabetes mellitus.....	27.6	27.4	28.4	27.8	30.1
70-86	Diseases of the nervous system and of the organs of special sense.....	159.1	170.1	184.4	203.3	197.0
74	Cerebral hemorrhage, apoplexy.....	121.0	127.3	147.8	158.5	148.6
87-96	Diseases of the circulatory system.....	375.0	372.4	383.5	366.8	326.9
	Diseases of the heart.....	328.3	322.7	326.1	313.6	277.1
97-107	Diseases of the respiratory system.....	137.8	167.8	192.7	158.0	156.7
100, 101	Pneumonia (broncho and lobar).....	120.4	146.5	164.9	135.8	132.1
108-127	Diseases of the digestive system.....	69.0	81.2	80.5	83.7	91.1
113	Diarrhea and enteritis (under 2 years).....	10.9	11.1	15.1	16.7	20.4
128-142	Nonvenereal diseases of the genito-urinary system.....	137.4	139.3	123.5	132.6	138.0
128, 129	Nephritis, all forms.....	121.8	127.7	113.9	116.9	124.1
143-150	The puerperal state.....	10.9	10.1	12.9	11.6	12.1
151-158	Diseases of the skin and of the bones and organs of locomotion.....	4.8	3.6	5.0	4.4	7.0
159-163	Malformations and diseases of early infancy.....	65.2	66.0	74.9	81.3	87.4
165-203	External causes.....	88.8	76.3	85.3	86.1	98.1
188c	Automobile accidents.....	17.0	9.4	10.3	7.5	15.3
		Number of deaths				
	Under 1 year.....	535	607	637	598	695
	1 to 4 years.....	170	172	165	156	256
	5 to 64 years.....	2,881	2,857	2,910	2,748	2,641
	65 years and over.....	2,866	3,040	3,061	2,689	2,492

Monthly Mortality Statistics—Continued

PENNSYLVANIA

Death classification, by cause		December				
		1927	1926	1925	1924	1923
		Annual rate per 1,000				
1-205	All causes.....	11.8	12.8	12.9	12.9	12.5
		Rate per 1,000 live births				
	Infant mortality.....	67.6	80.8	80.6	(1)	(1)
		Annual rate per 100,000 ²				
	Influenza.....	26.6	29.7	29.7	34.9	19.6
31-37	Tuberculosis, all forms.....	63.3	67.4	77.4	78.1	81.2
43-49	Cancer.....	100.0	93.7	98.2	85.6	90.6
57	Diabetes.....	21.5	21.6	20.7	16.7	(1)
74, 83	Apoplexy, softening of brain.....	97.2	97.8	74.4	(1)	(1)
87-90	Heart disease.....	239.0	240.0	221.0	(1)	(1)
100-101	Pneumonia, all forms.....	103.0	151.0	157.0	163.0	147.6
113	Enteritis, under 2 years.....	16.9	17.6	15.2	25.2	22.8
128-129	Nephritis, all forms.....	110.0	115.0	114.0	124.0	(1)
143-150	The puerperal state ³	5.5	5.3	5.1	4.8	(1)
159-163	Congenital malformations and diseases of early infancy ⁴	36.1	40.1	40.6	(1)	(1)
188c	Automobile accidents.....	19.6	18.4	15.1	12.1	16.8

¹ Not available.

² Except the puerperal state and diseases of early infancy.

³ Rate per 1,000 total births.

⁴ Rate per 1,000 live births.

Annual Mortality Statistics, 1927

CONNECTICUT, 1923-1927

The following statistics are taken from the Connecticut Health Bulletin of March, 1928, published by the State department of health:

Mortality in Connecticut in 1927 compared with previous years

Death classification, by cause	1927	1926	1925	1924	1923
	Rate per 1,000				
All causes.....	10.6	11.8	11.6	11.3	12.0
	Rate per 1,000 live births				
Infant mortality.....	58.8	71.9	73.0	68.5	76.3
	Rate per 100,000				
Typhoid fever.....	1.1	1.8	2.5	2.5	2.6
Measles.....	1.3	12.5	2.5	3.1	10.8
Scarlet fever.....	1.4	2.2	2.9	3.9	3.6
Whooping cough.....	2.5	6.1	7.3	5.2	9.0
Diphtheria.....	5.9	5.3	8.2	11.2	12.7
Influenza.....	18.8	35.9	26.6	19.2	38.1
Tuberculosis, all forms.....	66.8	78.2	75.3	81.5	89.3
Pneumonia, all forms.....	84.8	108.6	109.3	101.8	127.3
Cancer.....	106.8	106.7	107.6	104.1	98.2
Poliomyelitis.....	1.0	.4	1.2	1.5	.7
Cerebrospinal meningitis.....	.6	.6	.8	1.5	3.1
Diarrhea and enteritis (under 2 years).....	11.2	16.0	18.6	19.8	21.3
Puerperal state ¹	5.7	6.4	4.9	5.7	5.9
Suicide.....	12.0	13.9	12.6	10.3	13.3
Accidents.....	66.8	70.8	72.6	70.6	71.6

¹ Rate per 1,000 living births.

KANSAS 1925-1927

Bulletin No. 7, March 19, 1928, published by the Kansas State Department of Health, comments as follows on the 10 principal causes of death in Kansas in 1927:

Eighteen thousand seven hundred and thirteen deaths were recorded in the State of Kansas during the year 1927, and of that number, 11,251 resulted from 10 diseases, or, as we may term them, the "Ten principal causes of death." Listed in order of their occurrence, they are as follows:

Mortality from 10 principal causes of death in Kansas in 1927

Disease	1927		1926		1925	
	Death rate per 100,000	Rank	Death rate per 100,000	Rank	Death rate per 100,000	Rank
Organic heart disease.....	143.1	1	131.9	1	116.3	1
Cancer, all forms.....	100.6	2	91.9	3	84.3	3
Apoplexy.....	100.2	3	101.1	2	95.7	2
Bright's disease.....	83.9	4	89.1	4	78.1	4
Pneumonia, all forms.....	50.9	5	59.1	5	66.0	5
Tuberculosis, all forms.....	35.3	6	41.0	7	43.0	6
Premature births.....	30.9	7	32.6	8	32.7	8
Influenza.....	28.8	8	49.6	6	30.2	9
Diarrhea and enteritis.....	21.1	9	29.5	9	37.0	7
Senility.....	20.7	10			20.9	10
Arteriosclerosis.....			15.7	10		

* * * The 10 principal causes were the same for the three years, except in 1926, arteriosclerosis replaced senility, or old age. * * *

Organic heart disease caused 2,616 deaths, or 14.2 per cent of the total deaths, the rate being 142.3 per 100,000 population. Deaths from heart disease have shown a steady increase from year to year, and this has been especially so the past five years. The comparison from year to year since 1912, the first year for which accurate vital statistics are available, should be interesting:

Mortality from organic heart disease in Kansas

Year	Number of deaths	Rate per 100,000	Per cent of total deaths	Year	Number of deaths	Rate per 100,000	Per cent of total deaths
1912.....	1,489	89.1	8.6	1925.....	2,286	126.0	12.2
1917.....	2,003	115.3	9.5	1926.....	2,491	136.6	12.9
1922.....	1,952	108.0	10.3	1927.....	2,616	142.3	14.2
1924.....	2,134	116.3	11.9				

It will be noticed that heart-disease deaths have shown a more than 1 per cent increase in 1927 over the year 1926. In 1925, 73 per cent of heart-disease deaths were in the age group 60 to 80 years.

Cancer ranked second with 1,839 deaths, or 9.8 per cent of the total. The rate was exactly 100 per 100,000 population. This is the largest number of deaths and also the highest rate on record in the State. This disease has shown a steady increase in the number of deaths. In both 1925 and 1926, cancer ranked third with 1,529 and 1,674 deaths respectively. In 1912, there were 1,056 deaths or 6.1 per cent of the total. Cancer occurs infrequently prior to 30 years of age, and the great majority of deaths occur after 50.

Apoplexy, with 1,832 deaths, showed a decrease of 9 from the previous year, but an increase of approximately 100 over the year 1925; 9.7 per cent of deaths in 1927 resulted from this disease. The number of deaths, the rate, and the per cent of total deaths, as in the previous diseases listed, are the highest on record.

Bright's disease deaths totaled 1,534, 8.1 per cent of the total, and the rate was 83.4. There were 89 fewer deaths than in the year 1926, and the rate was 5.6 less per 100,000.

Pneumonia deaths totaled 931, the second-lowest number on record, 870 deaths occurring in 1909. The rate, however, was the lowest on record, the difference being readily explained by the greater population in 1927. There were 146 fewer deaths than in 1926 and 265 fewer than in 1925.

Tuberculosis with 645 deaths ranked sixth, the same as in 1925. This disease, however, ranked seventh in 1926. Tuberculosis caused only 3.4 per cent of the total deaths.

Premature births totaled 564, a decrease of 30 from the preceding year, and 31 fewer than in 1925.

Influenza, with 526 deaths, ranked eighth in 1927, sixth in 1926, and ninth in 1925.

MICHIGAN 1922-1927

Michigan Public Health for March, 1928, published by the Michigan State Department of Health, shows the general and infant mortality rates for 1927 for the State. The rates for previous years are shown for purposes of comparison.

Mortality in Michigan in 1927, and comparison with previous years

	1927	1926	1925	1924	1923	1922
	Death rate per 1,000					
All causes.....	11.5	12.7	11.8	12.2	12.8	11.2
	Rate per 1,000 live births					
Infant mortality.....	67.8	77.6	75.6	72.2	80.4	74.7

NEW JERSEY

The Public Health News, of January-February, 1928, published by the department of health of the State of New Jersey, makes the following comment on mortality in 1927 in New Jersey:

The New Jersey death rate for 1927 is the lowest in the 50-year records of vital statistics in this State. Provisional figures show that there were 11.43 deaths per thousand population, a slight improvement over the previous low rate of 1921, which was 11.49. Despite the increased population since the State department was organized in 1878, there were fewer deaths from typhoid fever and measles than during any preceding year—typhoid fever, 51; measles, 21. Tuberculosis and cancer show a slightly increased death rate.

The number of deaths of infants under one year per thousand live births was 61. The infant death rate has shown a steadily downward trend; 14 years ago it was exactly double the present rate, and for 1926 the rate was 70, or nine points higher than the rate for 1927.

Unfortunately, a similar decline is not evident in the number of mothers who died during childbirth. The rate this year of 6.1 is an increase over last year's rate of 5.4.

During 1927 approximately 72,800 births were reported, which is a rate of 20 per thousand inhabitants. The total number of births increased 428 over the previous year, but the larger estimated population of the State caused the rate to decline a fourth of a point. The birth rate has declined almost without exception since 1921.

In brief, the year shows the lowest general and infant death rate ever recorded.

NEW YORK STATE (EXCLUSIVE OF NEW YORK CITY) 1923-1927

Since the publication in the Public Health Reports for March 30, 1928, of annual figures from the Health News, the following provisional data are given in the Supplement to the Vital Statistics Review, March, 1928, because they are more complete for New York State (exclusive of New York City).

Mortality in New York State (exclusive of New York City) in 1927 compared with previous years

Death classification, by cause or age		1927	1926	1925	1924	1923
		Rate per 1,000				
1-205	All causes.....	12.8	14.0	13.3	13.3	14.8
		Rate per 1,000 live births				
	Infant mortality.....	64	74	71	71	79
		Rate per 100,000				
11	Influenza.....	13.8	29.9	14.7	11.0	29.7
31-37	Tuberculosis, all forms.....	77.3	84.8	88.7	91.4	100.9
43-49	Cancer and other malignant tumors.....	123.8	122.0	121.2	119.9	123.6
57	Diabetes mellitus.....	24.4	23.8	22.6	21.4	24.5
70-86	Disease of the nervous system and of the organs of special sense.....	149.0	165.0	171.5	169.6	183.7
74	Cerebral hemorrhage, apoplexy.....	112.5	121.2	119.6	130.6	135.2
87-96	Diseases of the circulatory system.....	332.3	350.5	315.8	301.8	330.6
87-90	Diseases of the heart.....	286.8	302.8	273.4	261.3	266.7
97-107	Diseases of the respiratory system.....	103.5	137.4	117.3	110.5	148.4
100-101	Pneumonia (broncho and lobar).....	86.6	113.9	97.7	91.9	121.3
108-127	Diseases of the digestive system.....	78.5	83.4	90.1	86.7	101.2
113	Diarrhea and enteritis (under 2 years).....	13.9	18.5	24.7	21.0	29.1
128-142	Nonvenereal diseases of the genitourinary system.....	127.2	133.5	121.6	124.8	132.5
128-129	Nephritis (all forms).....	124.4	123.8	118.2	111.8	117.3
143-150	The puerperal state.....	² 59.4	² 58.7	² 59.1	² 57.8	13.3
151-158	Diseases of the skin and of the bones and organs of locomotion.....	4.1	4.8	4.7	5.7	6.5
159-163	Malformation and diseases of early infancy.....	68.3	73.2	73.7	78.2	87.5
165-203	External causes.....	103.2	103.3	106.0	104.9	112.2
188c	Automobile accidents.....	24.8	23.4	21.8	21.2	22.7
		Number of deaths				
	Under 1 year.....	6,294	7,229	7,209	7,339	8,056
	1-4 years.....	1,841	2,277	2,151	2,229	2,643
	5-64 years.....	32,109	33,365	32,008	31,292	31,929
	65 years and over.....	30,300	32,397	29,317	28,069	29,031

¹ International list, 88-90.

² Rate per 10,000 total births (including stillbirths).

PENNSYLVANIA, 1927

The following statistics are taken from the Vital Statistics Bulletin for April, 1928, published by the Pennsylvania State Department of Health:

Mortality in Pennsylvania 1927, compared with preceding years

Death classification, by cause		1927	1926	1925
		Rate per 1,000		
All causes.....		11.4	12.5	12.2
		Rate per 1,000 live births		
Infant mortality.....		70	82	82
		Rate per 100,000 ¹		
1	Typhoid fever.....	2.7	3.7	4.8
6	Smallpox.....	0	0	.3
7	Measles.....	2.5	11.0	5.3
8	Scarlet fever.....	2.6	2.8	3.6
9	Whooping cough.....	4.5	0.6	6.8
10	Diphtheria.....	8.6	8.3	10.3
11	Influenza.....	24.5	44.0	29.2
16	Dysentery.....	.5	.8	1.3
22	Anterior poliomyelitis.....	1.0	.5	.7
23	Encephalitis, epidemic.....	.9	1.2	1.4
24	Cerebrospinal meningitis, epidemic.....	.5	.9	.8
31	Tuberculosis, pulmonary.....	61.1	66.2	65.7
32-37	Tuberculosis, other forms.....	8.8	10.8	11.2
38, 72, 76	Syphilis, locomotor ataxia, general paralysis of insane.....	14.2	14.5	14.4
43-49	Cancer.....	95.3	95.4	91.8
57	Diabetes.....	19.0	19.6	18.2
66	Alcoholism.....	5.5	5.0	5.2
74, 83	Apoplexy, softening of brain.....	86.7	88.7	88.2
87-90	Heart disease.....	214.0	216.0	198.0
100-101	Pneumonia, all forms.....	68.1	133.0	126.0
113	Enteritis, under age 2.....	22.7	31.5	42.0
122	Cirrhosis of liver.....	9.0	8.9	8.9
128-129	Nephritis, all forms.....	102.0	107.0	104.0
146	Puerperal septicæmia ²	2.3	2.4	2.6
143-145	Puerperal, other forms ²	3.8	3.7	3.5
147-150	Congenital malformations ³	7.9	7.8	8.3
159	Diseases of early infancy ³	26.9	27.8	27.7
160-163	Suicide.....	12.1	12.4	10.5
165-174	Conflagration.....	1.3	1.5	1.0
178	Drowning.....	4.4	4.4	4.7
182	Mine and quarry accidents.....	9.2	9.6	8.1
186	Railroad accidents.....	7.6	8.0	8.2
183A	Automobile accidents.....	19.3	18.0	16.6
183C	Excessive cold.....	.4	.3	.2
193	Excessive heat.....	1.4	.8	3.2
194	Homicide.....	5.6	5.5	6.0
197-199	All other causes.....	209.0	223.0	228.0

¹ Except the puerperal state and diseases of early infancy.

² Rate per 1,000 total births.

³ Rate per 1,000 live births.

The 1927 rates both for births and deaths are the lowest ever recorded in Pennsylvania, and the death rates for a number of the more important causes of death have also established new low records. The only important high record set in 1927 was for automobile deaths on the basis of 100,000 population, but when the automobile death rate is computed on the basis of 1,000 registered motor vehicles in the State, even this becomes a new low record of 1.1 as compared with 1.2 in 1925 and 1926.

The 1927 birth rate as given in the table is the same as in 1926; but if the computation were carried out one more decimal place it would be slightly lower than in 1926, which was the previous low record. But the general death rate, and particularly the infant death rate, shows such a remarkable drop that the population increase in 1927 from the excess of births over deaths was well above the average of the past 22 years.

The low death rate of 11.4 per 1,000 inhabitants, was due largely to the relatively low prevalence of disease of the respiratory system. The decrease in deaths from pneumonia and influenza alone account for 55 per cent of the total reduction in the deaths as compared with 1926. The death rate from pneumonia was only 98.1 per 100,000 population, as compared with a previous low record of 128 in 1925. Tuberculosis also shows a new low record, both for pulmonary tuberculosis and for other forms of the disease. The rate of 69.9 per 100,000 for all forms of tuberculosis may be compared with the rate of 150.9 in 1906. In these 22 years tuberculosis has declined from the first to the sixth cause of death.

Typhoid fever, with a new low rate of 2.7 per 100,000, is no longer an important factor in the mortality statistics of Pennsylvania. Smallpox, once the terror of mankind, has claimed no victims in Pennsylvania in more than two years. Measles shows a low death rate in 1927; but this disease comes in cycles, so it may be expected to return in 1929. Scarlet fever and whooping cough also will probably return again as they have in the past after years of light incidence. Diphtheria, was the only one of the acute infections of childhood to show an increase in 1927 over 1926, but this increase was slight and came after five successive years in which new low records for diphtheria deaths were established.

For the diseases of advanced years the record of 1927 was not so good. Heart disease, now the leading cause of death, dropped very slightly from the high record of 1926. Likewise the death rates for cancer and diabetes were exceeded only by those of 1926. For nephritis and cerebral hemorrhage the death rates were above the average of 22 years.

The maternal mortality rate still stands at 6.1 per 1,000 total births. This rate is the same as for 1926 and 1925, and is but slightly below the average of the preceding 21 years. Likewise the death rates from violent causes show little change. There was a slight decrease in the rates for accidents on railroads and in mines and quarries, but these decreases were offset by increases in automobile deaths and accidents of other sorts. The rates for homicides, suicide, and accidental drowning show no material changes.

WISCONSIN 1920-1927

The October-December, 1927, State Board of Health Bulletin of Wisconsin, publishes the following statistics for Wisconsin for 1927 and comparison with previous years:

Mortality in Wisconsin in 1920-1927

Death classification, by cause or age	1927	1926	1925	1924	1923	1922	1921	1920
	Rate per 1,000							
All causes.....	10.3	10.6	10.5	10.2	10.7	10.0	10.1	11.1
	Rate per 100,000							
Typhoid fever.....	1.4	1.4	2.0	1.0	2.2	3.0	2.9	2.6
Smallpox.....	.2	.03	4.5	.4	.07	.07	.6	3.3
Measles.....	3.3	5.0	2.2	2.6	7.1	1.6	1.5	8.3
Scarlet fever.....	2.1	2.6	3.7	7.3	8.7	6.3	8.9	9.5
Whooping cough.....	2.5	5.5	4.0	4.6	5.9	3.7	6.1	11.1
Diphtheria.....	4.4	5.4	6.1	7.3	13.0	9.1	14.8	14.3
Influenza.....	20.4	35.6	31.8	15.1	39.0	22.5	7.6	79.6
Erysipelas.....	3.1	2.8	2.3	2.9	3.1	2.5	3.6	3.3
Tuberculosis, all forms.....	59.3	64.8	61.0	62.9	65.8	69.6	74.9	84.7
Cancer.....	101.0	106.4	103.4	98.9	91.6	92.3	96.7	87.8
Meningitis.....	4.0	4.0	3.8	4.0	4.5	4.6	4.6	5.7
Pneumonia, all forms.....	64.8	82.5	88.7	89.4	106.3	90.5	107.8	109.6
Diarrhea (under 2 years).....	13.8	15.1	20.1	14.6	18.6	18.5	28.3	24.4
Puerperal septicemia.....	2.3	3.5	2.5	4.5	4.5	3.7	4.5	4.6
Suicide.....	12.7	13.6	13.2	13.1	11.3	11.2	13.2	10.0
Accidental deaths.....	62.7	60.0	59.8	55.9	54.5	51.5	50.8	47.9
Automobile accidents.....	20.3	14.9	13.0	11.9	9.1	8.7	7.6	5.3
Homicide.....	2.2	2.3	2.1	1.6	2.2	1.8	2.1	1.5
	Number of deaths							
Under 1 year.....	3,356	3,799	3,728	3,689	4,059	4,043	4,381	4,267
1-4 years.....	762	922	956	857	1,142	927	1,103	1,377
5-64 years.....	12,858	12,997	12,919	12,498	12,781	11,839	12,048	13,956
65 years and over.....	12,264	12,106	11,284	10,741	10,962	10,280	9,762	9,837

THE PRACTICAL APPLICATION OF TWO QUALITATIVE TESTS FOR HCN IN SHIP FUMIGATION

By G. C. SHERRARD, Acting Assistant Surgeon, United States Public Health Service

This investigation was undertaken with the idea of establishing a simple chemical test for the detection of HCN in practical ship fumigation, first, as an aid in determining when a vessel is safe for habitation of its crew and workers after the fumigation procedure is completed, and, second, to establish the earliest moment when it would be safe for members of a fumigating crew to enter a hold or compartment of a vessel for the purpose of further ventilation and to search for rats.

As a criterion for these tests the following basic principles were laid down to which a chemical test should conform in order to be of practical value:

1. The test should be definite under all conditions, at or above the predetermined danger point to human life.

2. It should be such as can be applied without attendant danger to those making it.

3. The time factor of its reaction should be slow enough to permit of accurate computation with an ordinary watch in the hands of the usual personnel engaged in this work.

4. The test should be efficient within at least a 10 per cent of error as to time.

5. The varying atmospheric conditions at seaports should not materially affect the application of the test.

Both tests herein described depend upon change in color of filter paper which has been previously immersed in certain solutions.

BENZIDINE COPPER ACETATE

This test is certain proof of the presence of hydrocyanic acid gas in the air in all cases where no disturbing constituents can come into question (oxidizing gases such as chlorine and nitric acid) and is completed by dipping a strip of filter paper in a solution of benzidine and copper acetate and exposing the moist paper to the air of the compartment to be tested. In the presence of HCN the filter paper turns blue in periods varying from three to thirty seconds, depending upon the concentration of HCN. The test was originated by Sieverts and Hemsdorf and consists of two solutions, as follows:

(1) 2.86 gms. copper acetate per liter of water.

(2) 475 c. c. saturated benzidine acetate solution with 525 c. c. of water.

Mix equal parts of (1) and (2) just before using. Slips of filter paper are dipped into this reagent and taken into the compartment to be tested in closed tubes. Upon exposure the paper will show from a very faint to an intense blue, indicating from 20 mgs. to 80 mgs. HCN per cubic meter.

A large number of tests were made with reagents, using many variations of the original formula. The most satisfactory was found to be that in which the original solutions were both diluted with equal parts of water. This gave a pale blue color on 10 seconds' exposure to 2.8 grams HCN per 1,000 cubic feet of air space. This modification of the original test was used in testing the holds and compartments of vessels during routine fumigation, and when used by those familiar with the test through laboratory experience it was found to be about 75 per cent efficient as compared with the results obtained in the usual method, that is, through the sense of smell, taste, and the exposure of white rats.

The benzidine copper acetate test requires that the test papers be read for a change in color after an exposure of from 7 to 10 seconds, which necessitates entering the compartment or hold before making the test (a procedure not without danger). An error of three seconds in reading the time factor would mean an error of 30 per cent or greater in the efficiency of the test. The results must be read while

the color is rapidly changing and the operator is in the presence of HCN. The color changes, in widely varying concentrations of HCN, are so slight that it requires considerable laboratory experience with known concentrations of HCN in order to make accurate determinations.

METHYL ORANGE-MERCURIC CHLORIDE MIXTURE

This test depends for its perception on a change of color of No. 40 Whatman filter paper which has been immersed in a mixture of methyl orange and mercuric chloride solutions, to which has been added a specified amount of glycerine, and then drained and hung up to dry. This paper, which is an orange color, turns pink upon exposure to HCN gas.

Experiments with this reagent were begun by using a concentration of solution^s as specified by chemists of the R. & H. Chemical Co., which is as follows:

Solution No. 1. Mercuric chloride gms. 5 dissolved in 250 c. c. distilled water.

Solution No. 2. Methyl orange gms. 2.5 dissolved in 250 c. c. distilled water.

These solutions are mixed in the proportion of two parts mercuric chloride and one part methyl orange, and to the mixture is added 0.5 c. c. glycerine for every 15 c. c. of the mixture. The sheets of filter paper are immersed in this solution and hung up to dry in air which is free from any trace of acid, and when dry they are cut in strips $\frac{1}{4}$ inch wide and preserved in glass tubes protected from the light.

In conducting these tests a fairly gas-tight room containing 1,267 cubic feet of air space was used, having two outside windows which permitted the admittance of outside air so that the relative humidity of the room was approximately that of the outside. No artificial heat was used. Before being used, the filter papers were exposed to the outside air for a period of two hours or more with an approximate relative humidity of 74 per cent. The HCN was introduced in the liquid form containing 20 per cent CNCl which, being previously measured, was distributed in shallow glass dishes at various points in the room, and 10 minutes were allowed to elapse for complete diffusion before beginning the tests.

In order to determine the exact length of exposure necessary to complete the reactions, the writer remained in the test compartment, wearing a gas mask, when the concentration was 2.8 grams per 1,000 cubic feet or over, and without a mask when a lesser quantity of HCN was used. Two glass tubes, each containing a strip of the paper to be tested, were taken into the test room, one being opened after the 10-minute diffusion period and the paper exposed to the HCN, the other vial being kept stoppered for comparison. This method enabled the operator to make notes as to the time of the color changes during the test.

As previous experiments with white rats had established the fact that 3.35 grams of HCN per 1,000 cubic feet of air space was the mini-

imum lethal dose in a gas-tight compartment in an exposure of 12 hours, this concentration was taken as that in which a chemical test should give a definite reaction.

As the original test gave a reaction in 30 seconds, which was too fast for practical purposes in ship fumigation, a systemic series of tests was undertaken with lesser concentrations of the solutions, first diluting all reagents equally and then each reagent separately. Following this procedure a dilution of one-fourth the original concentration for methyl orange and mercuric chloride with double the original quantity of glycerine proved to give the most satisfactory results. This amended formula is given below, and the combined results of repeated tests are shown in the table.

Solution No. 1. Mercuric chloride, gms. 1.25; distilled water, c. c. 250.

Solution No. 2. Methyl orange, gms. 0.60; distilled water, c. c. 250.

Mix 10 c. c. of solution No. 1 with 5 c. c. of solution No. 2 and add 1 c. c. of glycerine.

Grams HCN per 1,000 cubic feet	Pro- por- tion of stand- ard ¹	Duration of test in minutes				
		½	1	1½	2	3
6.7	1/10	Slight pink at edge	Faint pink	Definite pink	Red	Red
3.35	1/20	No change	Slight pink at edge	Faint pink	Definite pink	Do.
1.675	1/40	do	No change	Brownish orange	Faint pink	Faint pink
.8375	1/80	do	do	No change	Slight pink	Very faint pink
.4187	1/160	do	do	do	No change	No change
.2093	1/320	do	do	do	do	Do.

¹ The word "standard" indicates 2 ounces HCN per 1,000 cubic feet air space.

A study of this table shows that there is an approximate ratio between the concentration of HCN and the time of exposure. Two minutes' exposure to 1.67 grams of HCN per 1,000 cubic feet of air gives the same reaction as 1½ minutes' exposure to 3.35 grams, and a 1-minute exposure to 6.7 grams of HCN. It will also be seen that the minimum lethal concentration for white rats, namely, 3.35 grams per 1,000 cubic feet, is the lowest that produces a definite pink color within 2 minutes and that one-fourth that concentration (0.84 gram per 1,000 cubic feet) is the lowest concentration producing any change. In 2 minutes, 6.7 grams per 1,000 cubic feet, which is one-tenth the usual fumigation concentration, produces a distinct red.

From the test room in the laboratory the field of operations was transferred to vessels undergoing routine fumigation in New York Harbor, and a comparison was made with the live white rats which are used in testing holds. By means of a paper clip and string (a fishing line and reel is excellent), strips of the test paper were lowered into the holds for a 2-minute exposure, and upon withdrawal

of the paper, white rats were immediately lowered into the hold in an open cage and in the same locality in which the test paper had been exposed. A series of 55 comparative tests were made on 10 vessels. In 42 of the tests in which the test papers did not show a definite pink in 2 minutes, the white rats gave no symptoms of HCN poisoning in the 10-minute exposure period. In 10 of 13 tests in which the papers turned a definite pink in 2 minutes, the white rats showed the effect of HCN by agitation or prostration in from 1 to 5 minutes. In three tests in which the paper turned pink within the 2-minute exposure, the rats did not become agitated or exhibit signs of HCN poisoning in 10 minutes' exposure. These three tests were performed during a light mist, and excessive moisture probably accelerated the reaction of the test papers. Following all negative tests the holds were immediately entered by members of the fumigating crew in the usual manner and in no case was excessive concentration of gas encountered.

As most of the tests undertaken in these experiments were made from the practical standpoint, and considerable variation had been noted between various reagents, in filter papers, and in the moisture content of the papers, it was believed advisable to have the work checked by experienced chemists. Through the courtesy of Mr. L. M. White, of the Roessler & Hasslacher Chemical Co., two of the company's expert chemists, Mr. F. S. Pratt and Mr. Mark Walker, undertook, in the California laboratory of the company, to check the work and elaborate certain details. The result of this detailed check by experienced chemical research workers confirmed the writer's work as outlined, and in addition showed that 1 cubic centimeter of glycerin in the solution gave better constant results than the 0.5 cubic centimeter previously used. It also emphasized the importance of humidifying the test papers to a moisture content of between 7 and 8 per cent and maintaining them at this point until used. The effects of chloro-picrin, which in small amounts is an ingredient of zyklon-B, was tested by these same chemists and it was shown that a rather high concentration of 0.02 per cent of this gas, by weight in the air, did not affect the test paper upon exposure for six minutes to the gas.

SUMMARY

Two chemical tests for the detection of HCN were given practical trials in the fumigation of vessels and in the laboratory. One of these, the benzidine copper acetate test, is too rapid and too sensitive for practical purposes. The other, the methyl orange-mercuric chloride test has been modified to meet fumigating conditions.

The methyl orange-mercuric chloride test is very much slower than the benzidine copper acetate test and is sensitive to a concentration very much lower than the minimum lethal concentration of HCN.

It requires two minutes to complete its reaction, which allows for an error of a few seconds in reading the time factor without materially affecting the calculations. It is made with a comparatively dry filter paper which can be prepared in advance at a convenient place and which will keep under proper conditions of humidity for 30 days. The test can be accomplished by lowering a strip of the test paper into a hold by means of a clip and string, thus avoiding danger to the operator through exposure to HCN gas. The only apparatus necessary is a string and clip, a dark container with a supply of test papers, and two small glass vials, one carrying the immediate supply of test paper and one containing a single test paper for comparison. When desirable the test paper can be carried into a room or compartment in a small vial and then exposed for the desired length of time. In this test a 10 per cent error in noting the time of exposure would not materially affect the resultant conclusions.

Chloro-picrin reacting slowly with the test paper will not interfere with the practical operation of the test when fumigants containing this ingredient are used.

As the time exposure necessary to produce a reaction is shortened as the humidity increases, and vice versa, too much credence should not be placed in this test if used during rain or fog; otherwise a definite pink color at the end of two minutes' exposure indicates a dangerous concentration of HCN gas in the air.

It is apparent that this test depends upon a judgment of color for its accuracy, and considerable laboratory care is essential in preparing and maintaining the test papers at a fairly constant moisture content. For these reasons it is not believed that the test can completely replace the tests of smell, taste, and lachrymation as now used. (Under laboratory conditions, working with known quantities of HCN, it was established that the sense of smell could detect 0.25 cubic centimeter of liquid HCN per 1,000 cubic feet of air space, or approximately $\frac{1}{36}$ of the standard concentration used in ship fumigation.) However, this test is of value and can replace the use of white rats for testing holds, and, in conjunction with the sense of smell, taste, and lachrymation, is valuable as a further aid of safety in the final clearing of a vessel. Owing to the fairly high atmospheric humidity at most seaports an error in this test will probably be on the side of safety, which would result only in a slight delay in the clearing of vessels.

Practical work at the New York Quarantine Station has shown that test papers under atmospheric conditions of between 70 and 75 per cent relative humidity, and preserved in tightly stoppered bottles with air of the same humidity, will give good practical results for a period of two weeks. Under these conditions a majority of the quarantine stations should be able to prepare their own test paper

by using the wet and dry bulb method of ascertaining humidity or consulting the local United States Weather Bureau for data.

This test is of value and has been used at the New York Quarantine Station for the detection of leaking gas containers in storerooms and to establish the source of leakage from compartments undergoing fumigations.

DEATH RATES IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death, February, 1928

The accompanying table is taken from the Statistical Bulletin for March, 1928, issued by the Metropolitan Life Insurance Co., and presents the mortality experience of the industrial insurance department of the company, by principal causes of death, for February, 1928, as compared with January and with February, 1927. The rates are based on a strength of approximately 18,000,000 insured persons in the United States and Canada.

A new low death rate for the month of February was established this year for this group of persons, the rate this year being 9.4 per 1,000 as compared with 9.6, which was recorded in both 1927 and 1921.

The Bulletin states:

The most important single factor in reducing last month's death rate to this new minimum was a drop in the mortality from tuberculosis to 89.5 per 100,000, as compared with 99.7 during the same month of 1927. Early indications point to a considerable reduction, for the year as a whole, from the previous minimal figure for tuberculosis which was established only last year. The year-to-date tuberculosis death rate among these policyholders for the first 12 weeks of 1928 was only 90.5 per 100,000, as compared with 97.7 for the same weeks of 1927. It should be borne in mind that the season of highest mortality from tuberculosis extends from January to May. If, therefore, the reduced death rate continues during March, April, and May, the end of 1928 will be almost sure to be signalized by still another new low record in the mortality from tuberculous disease.

Other diseases and causes of death to show improved mortality records over February of last year are typhoid fever, measles, scarlet fever, whooping cough, influenza, Bright's disease, conditions incidental to pregnancy and childbirth, suicide, and homicide.

On the other hand, the death rate in February was higher than last year for diphtheria, organic heart disease, and automobile fatalities. The rise in the diphtheria rate follows an increase in January over last year's figure for that month, and points strongly to a further rise in the diphtheria death rate this year. January and February are two of the months in which the diphtheria death rate runs much above the average.

The course of the automobile-accident death rate has been steadily upward for two decades, but no previous year has begun as badly as has 1928. Following a January death rate that had never been even approached by any previous figure for that month, no less than 228 policyholders were killed by automobiles in February, with a death rate of 15.8 per 100,000, which is higher by 37.4 per cent than the previous February maximum of 11.5 per 100,000, as recorded only last year.

Death rates (annual basis) for principal causes per 100,000, February, 1928, as compared with January and with February, 1927

(Industrial insurance department, Metropolitan Life Insurance Co.)

Causes of death	Death rate per 100,000 lives exposed ¹			
	February, 1928	January, 1928	February, 1927	Year, 1927 ²
Total, all causes.....	943.5	944.9	956.6	885.4
Typhoid fever.....	1.7	1.8	3.1	4.6
Measles.....	4.2	3.8	5.5	4.1
Scarlet fever.....	4.4	3.6	5.2	3.1
Whooping cough.....	4.1	4.3	5.3	6.4
Diphtheria.....	12.6	14.8	11.3	10.5
Influenza.....	25.6	25.4	30.0	17.7
Tuberculosis (all forms).....	89.5	84.8	99.7	93.3
Tuberculosis of respiratory system.....	78.6	74.2	88.5	81.7
Cancer.....	76.3	74.3	75.5	74.0
Diabetes mellitus.....	18.6	19.0	18.9	16.7
Cerebral hemorrhage.....	57.9	59.4	57.1	54.9
Organic diseases of heart.....	149.4	150.7	136.7	132.2
Pneumonia (all forms).....	117.4	111.2	118.0	77.6
Other respiratory diseases.....	18.2	18.9	18.6	15.4
Diarrhea and enteritis.....	14.0	13.0	14.3	24.5
Bright's disease (chronic nephritis).....	75.5	79.4	80.2	69.3
Puerperal state.....	13.3	13.7	14.9	15.4
Suicides.....	7.0	7.4	7.8	8.3
Homicides.....	5.6	6.2	7.2	7.2
Other external causes (excluding suicides and homicides).....	55.6	62.4	54.0	63.7
Traumatism by automobiles.....	15.8	16.1	11.5	18.3
All other causes.....	192.6	190.9	193.5	186.7

¹ All figures include infants insured under 1 year of age.

² Based on provisional estimate of lives exposed to risk in 1927.

COURT DECISIONS RELATING TO PUBLIC HEALTH

Presumption of violation of antinarcotic act because of absence of appropriate tax-paid stamps.—(United States Supreme Court; *Casey v. United States*; decided April 9, 1928.) The petitioner was convicted of violating the Harrison Antinarcotic Act, the charge being that he had purchased morphine, not in or from the original stamped package, at Seattle, within the jurisdiction of the court. The conviction was sustained by the circuit court of appeals. There was no testimony directly concerning the purchase, and the Government relied in part at least upon the presumption of a violation, created by section 1 of the antinarcotic act (act of December 17, 1914, 38 Stat. 785, as amended by the act of February 24, 1919, 40 Stat. 1130). The amended section 1 made the purchase, sale, etc., of narcotic drugs unlawful except in or from the original stamped package, and the absence of the required stamps from any of the said drugs "shall be prima facie evidence of a violation of this section by the person in whose possession same may be found." The petitioner argued that the presumption thus created did not and, consistently with the sixth amendment to the Federal Constitution, could not extend so far as to show a purchase within the district and thus bring the case within the jurisdiction of the trial court. The conviction, however, was affirmed by the Supreme Court, which said:

* * * But we are of opinion that upon the facts of this case the court was right. If the jury believed that the defendant, long established in Seattle, said

that he had not the drug but would, and shortly thereafter did, furnish it, the inference that he bought it in Seattle is strong, and it is reasonable to suppose that if attention had been called to the point the inference could have been made stronger still. * * *

With regard to the presumption of the purchase of a thing manifestly not produced by the possessor, there is a "rational connection between the fact proved and the ultimate fact presumed." (*Luria v. United States*, 231 U. S. 9, 25; *Yee Hem v. United States*, 268 U. S. 178, 183.) Furthermore there are presumptions that are not evidence in a proper sense but simply regulations of the burden of proof. (*Greer v. United States*, 245 U. S. 559.) The statute here talks of prima facie evidence, but it means only that the burden shall be upon the party found in possession to explain and justify it when accused of the crime that the statute creates. (4 Wigmore, Evidence, sec. 2494.) It is consistent with all the constitutional protections of accused men to throw on them the burden of proving facts peculiarly within their knowledge and hidden from discovery by the Government. (4 Wigmore, Evidence, sec. 2486.) In dealing with a poison not commonly used except upon a doctor's prescription easily proved, or for a debauch only possible by a breach of law, it seems reasonable to call on a person possessing it in a form that warrants suspicion to show that he obtained it in a mode permitted by the law. * * *

Garbage ordinance upheld.—(California Third District Court of Appeal; *Ex parte Santos*, 264 P. 281; decided January 28, 1928.) The petitioner had been convicted of unlawfully transporting garbage through the streets of the city of Sacramento in violation of a city ordinance. He sought his discharge by habeas corpus proceedings, alleging that section 1 of said ordinance was unconstitutional in that it deprived a private person of his property without due process of law. The ordinance, which regulated the collection and removal of garbage, provided, among other things, for the disposal of garbage and its transportation through the streets of the city only by duly authorized persons, and contained in section 1 the following definition:

Garbage, as the said word is made use of in this ordinance, consists of dead animals, of not more than 10 pounds weight each, and of every accumulation of animal, vegetable, and other matter that attend the preparation, consumption, decay or dealing in, or storage of, meats, fish, fowls, birds, fruits, or vegetables. The term "garbage" does not include dish water or waste water.

In denying the writ of habeas corpus, the district court of appeal stated:

We need consider only section 1 of the act in question, as all the other provisions are merely regulatory. * * *

All the authorities agree that the preservation of health of the inhabitants is one of the most important purposes of municipal governments. And the police power in this respect is coextensive with the necessities of the situation. That the collection and removal of garbage is one of these necessities requires no argument. Its disposal within a very limited period of time is of prime importance. Whether it is disposed of by cremation or by other methods is wholly immaterial. Its collection, transportation and removal from the limits of the

municipality are the fundamental purposes for the exercise of the police power regulating and requiring the same in order to protect the public health.

That the garbage in question may have some value as food for hogs does not in any wise limit the police power of municipalities. * * *

* * * In every city there is more or less ignorance, more or less willful disregard of all health laws, and much avarice which renders police regulations, such as we are here considering, absolutely indispensable, against which the so-called property right must yield to the general good. That such ordinances are not unconstitutional as violating any property rights is distinctly held by the United States Supreme Court in the case of *California Reduction Co. v. Sanitary Reduction Co.* (199 U. S. 306, 26 S. Ct. 100, 50 L. Ed. 204) and *Gardner v. Michigan* (199 U. S. 325, 26 S. Ct. 106, 50 L. Ed. 212).

* * * We find no modern authority which would justify our holding that section 1 of ordinance No. 146, fourth series, of the city of Sacramento, is invalid either as invading any property right or for any other reason suggested upon this hearing.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Sanitary Engineering Progress in the Middle West.—Wynkoop Kiersted. Proceedings Tenth Texas Water Works Short School, January, 1928. (Abstract by Jane H. Rider.)

The author reviews the changes in engineering practice which have occurred in the Middle West. He advocates the use of gumbo for a waterproofing material and describes the impounding reservoir constructed at Council Bluffs in 1882. The upstream face of the dam and the settling basins were lined with gumbo from the Missouri River bottoms, over which bricks were laid on edge in a 2-inch cushion of sand. After being in use 25–30 years, borings made into these linings showed the gumbo to be 18–28 inches thick. The courses of brick lining the dam were fairly straight, but those in the settling basin had been somewhat disarranged and had been patched with concrete.

Gumbo can also be used to fill the joints between concrete slabs, as an expansion joint in joining some types of concrete walls, and for packing the annular space around cast-iron pipe where it passes through a concrete wall.

Sedimentation and sterilization show the most marked improvements in water purification. The Kansas City water supply is given as an example that safe, potable water can be produced by sedimentation and chlorination alone. Filtration is entirely dependent upon the efficiency of settling basins. Changes in methods of sedimentation are described.

Sewage must be prepared for filtration or land treatment with the same thoroughness with which water is prepared for filtration. It is difficult to combine sedimentation, which is mechanical, with sludge digestion, which is biological, without mutual interference. The more thoroughly suspended solids are removed from sewage, the more easily it may be purified by natural processes on trickling filters or land without becoming offensive. Solids should be caught in a preliminary basin and conveyed to a separate tank for digestion. Only organic matter in solution should be allowed on filters or applied to the land.

The Legislation of 1927 in Relation to Municipal Engineering.—J. B. R. Conder. *The Surveyor* (British), vol. 73, No. 1879, January 27, 1928, pp. 137–138. (Abstract by H. W. Streeter.)

Two (British) legislative acts, included under those of 1927, though passed in December, 1926, of special interest to sanitarians, were the housing (rural workers) act and the public health (smoke abatement) act. The former is designed to

promote the provision and improvement of housing accommodation for agricultural workers and persons of like economic status. It provides for the submission to the Minister of Health of schemes for reconstructing and improving houses or buildings and for subsidies or loans in respect to approved schemes, where the estimated cost of the dwelling, after execution of the proposed works, does not exceed £400, or the estimated cost of the works is less than £50 (or where the works will constitute an improvement to two or more dwellings for the provision of water, drainage, or other works for a joint benefit not less than £100).

The public health (smoke abatement) act extends the provisions of an act of 1875 relating to smoke nuisances. A chimney (other than that of a private dwelling) sending forth smoke in such quantity as to be a nuisance, is liable to be dealt with summarily, whether or not the smoke is black, the term "smoke" including soot, ash, grit, and gritty particles. The act also provides that the powers of an urban authority under the act of 1875 and of the London County Council are to extend to the making of by-laws requiring the provision of smoke prevention or reduction devices in new buildings not private dwellings. The act became operative July 1, 1927.

Moscow Sewage Disposal.¹ Anon. *The Surveyor*, vol. 73, No. 1876, January 6, 1928, p. 2.

"The fifth report of the commission appointed to investigate the question of the disposal of the sewage of Moscow describes the method of disposal by land treatment which has been in operation since 1914. Separate sections are devoted to the engineering, agricultural, and chemical sides of the subject, and details are given of the results obtained on one of the two large farms used for the purpose.

"The area available for irrigation is about 2,000 acres, of which about 1,509 acres were in use in 1924. The soil is sand and clayey sand, and the area is divided into sections of 1 to 4 acres, to which the sewage is conveyed in the usual manner, by brick and earthen channels. Subdrains are arranged at a depth of 5 to 6 feet, and 35 feet apart. Various kinds of crops are cultivated, but the best results are obtained with hemp. This crop produces two to three times as much as under ordinary cultivation, and does not reduce the volume of sewage that can be treated per acre. The area occupied by this crop can be irrigated for 11 months in the year, as the work of cultivation does not take more than 4 weeks, and weeds are prevented from growing, as they are choked by the hemp.

"In spite of the fact that the river into which the final effluent is discharged has a flow of practically the same volume as the sewage effluent, the purification of the sewage is so satisfactory that the river water is not adversely affected."

Separate Sludge Digestion at Antigo, Wis. Anthony J. Fischer. Proceedings Tenth Texas Water Works Short School, January, 1928. (Abstract by Jane H. Rider.)

This plant consists of a two-section grit chamber, a bar screen, a clarifier with Dorr mechanism, a Dorco pressure pump, a sludge digestion tank with heating coils and a Dorr digester mechanism, four sludge drying beds, a wet well, two siphon chambers, and two trickling filters. It was designed for an ultimate flow of 900,000 gallons per day and a contributing population of 10,000. The filter effluent discharges into a small creek of low flow.

The plant began operating in December, 1926. No ripe sludge was available for seeding, and so 5 feet of raw sewage was run into the digestion tank and the heating system was started. Raw sludge was then pumped into the tank daily. It was necessary to add milk of lime the first three months to adjust

¹ See also PUBLIC HEALTH REPORTS for Apr. 13, 1928, pp. 886 and 887.

the pH value; a sludge circulation system prevented the formation of a lime sludge at the bottom of the tank.

After 8 months' operation there was 4 feet of well-digested sludge in the tank averaging 8.9 per cent solids and 55.5 per cent ash. The supernatant liquid was clear and there was no scum. Fifty-nine per cent of raw solids are digested, giving an average of 11.5 cubic feet of gas per pound of volatile matter added. About 0.8 cubic foot of gas per capita per day is produced, which is burned under a Bryant boiler to heat the water used in the heating coils. Difficulties with gas collection were overcome by using a high separate seal dome, a well-insulated gas pipe, and a small gas holder.

Cyanide Waste Poured into Stream Poisons Livestock. A. H. Wieters. *Water Works Engineering*, vol. 81, No. 4, February 15, 1928, p. 204. (Abstract by H. E. Miller.)

Cattle died soon after drinking water from a small stream into which was discharged the effluent from an Imhoff tank of an intermittent sand filter disposal plant. Investigation disclosed that on this particular day a 600-gallon vat of electrolyte, which, among other salts, contained 2 pounds of sodium cyanide per gallon, had been dumped into the sewer by mistake. The question arises as to what effect small amounts of this substance will have upon the bacterial flora of sewage disposal systems.

Hydrants for Coach Yards and General Service and Methods for Supplying Water to Coaches. Report of the Committee on Water Service, A. R. E. A. *Railway Age*, vol. 84, No. 9B, March 7, 1928, pp. 560-D65-66. (Abstract by A. L. Dopmeyer.)

The report of the committee was divided into the following three sections: (1) Hydrants for coach yards and passenger station platforms where coaches are watered; (2) methods of supplying water to coaches from hydrants, including care and handling of hose, nozzles, and connections; (3) hydrants for general service such as ash pits, stock yards, small stations, and similar facilities.

Under the first section, the committee obtained information from representative railroads in all parts of the United States and the features of what are believed to be the most satisfactory type of hydrants for this purpose are listed in this article. It is concluded that the most suitable type of hydrants for this purpose is a quick-opening, self-draining, nonfreezing valve in a pit or box flush with the surface.

Under the second section it was concluded that the method of conveying drinking water from hydrants to coaches is satisfactory in practically every respect except the important one of sanitation, and that no method of protecting nozzles and hose ends yet devised has proved entirely satisfactory.

Under the third section, it was stated that some type of high top hydrant is preferred, which should be rugged in construction and have no parts which can be easily damaged or removed.

Sodium Aluminate as an Aid to Water Softening. Report of the Committee on Water Service, A. R. E. A. *Railway Age*, vol. 84, No. 9B March 7, 1928, pp. 560-D64-D65. (Abstract by A. L. Dopmeyer.)

In the addition of from 1 to 3 grains per gallon of aluminum or ferrous sulphate in the lime-soda treating process, it has been found that the aluminum hydrate or ferrous hydrate formed in the reaction weighs down the light particles of magnesium hydrate and causes them to settle more quickly, and also acts to free the softened water from the grain or so of calcium or magnesium carbonate, which is slow to come out of solution and causes "after-precipitation" and scale in the pipe lines.

However, if sodium aluminate is used instead of ferrous or aluminum sulphate, the results are usually found to be more speedy and complete. About $1\frac{1}{2}$ grains of sodium aluminate per gallon of water are used.

Chlorination of Water Supplies in Assam. R. T. Sen. Proc. Assam Branch Brit. Med. Assoc. Annual Meeting, Silchar, March 1 and 2, 1926, pages 43-45. Abstract by Guy T. P. Tatham in *Bulletin of Hygiene*, vol. 2, No. 8, August, 1927, p. 649.

"Chlorination of the Sylhet water was started in July, 1922. Results were unsatisfactory at first and this was ascribed to improper dosage. With experience the defects were remedied, the total count was low and except for one occasion in February, 1925, lactose fermenters were absent from 20 c. c. In Silchar, chlorination was begun in May, 1924, and the results obtained were good from the start. Tables are given showing the bacterial improvement in the water supplied as compared with prechlorination figures. The author calls attention to certain disadvantages and difficulties in the use of chlorine to purify a water supply, viz, the unpleasant taste of free chlorine in the water, its possible injurious physiological effects, and the action on the water mains, also to the necessity for allowing adequate time of contact for the chlorine to exert its sterilizing effect. (If adequate time of contact is allowed at the waterworks it should not be necessary to give so high a dose that more than a trace of free chlorine—say 0.1 p. p. m. or less—passes into supply, and this will not give a taste of chlorine per se or injure the water mains. If a heavy dose is needed it is advisable to dechlorinate the water after allowing sufficient time of contact. Installation of a chlorinator (and a dechlorinator if necessary) by a firm of repute gets over the difficulties of effecting uniform dosage at known rate.)"

A Note on the Purification of Water from Rivers Polluted by Sisal Effluent. F. C. Kelly. Kenya M. J. 1926, v. 3, 212-15, Abstract by Guy T. P. Tatham in *Bulletin of Hygiene*, vol. 2, No. 8, August, 1927, p. 651.

"Samples of water were taken from and near a river flowing through three sisal estates in Kenya. The introduction of sisal waste at the factories results in marked deterioration of the quality of the river water, as judged by the oxygen absorbed and albuminoid nitrogen figures. The oxygen absorbed seems a very convenient test for the extent of pollution by sisal effluent, as the latter contains some as yet unidentified compound which exerts marked reducing properties. The water from two wells in the zone of pollution was examined. One, formed by a barrel sunk in the ground, was known to be polluted by human excreta, and the analytical results confirm this by the high figure for chlorides and the presence of nitrites and nitrates. The other, which is not subject to such pollution, shows a much better analysis. Fish can not live in water polluted by sisal effluent; frogs, however, are found in this well. The water from the river receives natural filtration on its way to the well and the conclusion is drawn that sisal pollution is removed by filtration."

Quality of the Surface Waters of New Jersey. W. D. Collins and C. S. Howard. Water Supply Paper 596-E, U. S. Geological Survey, Dept. of the Interior, 119 pages.

"The surface waters of New Jersey are one of the most valuable natural resources of the State. They are used for public water supplies of nearly all the larger cities, and they furnish the great quantities of water required for some of the leading industries. Where unpolluted, these waters are generally clear and contain only moderate quantities of dissolved mineral constituents. The waters in the southern part of the State are softer but more highly colored than the waters in the northern part."

Report of an Outbreak of Illness at Poplar Suspected to be Due to Local Pollution of the Water Supply. G. C. Hancock. *Bulletin of Hygiene*, vol. 2, No. 12, December, 1927, p. 982. (Abstract by C. R. Cox.)

An outbreak of illness characterized by very severe diarrhea of sudden onset, accompanied by fever, occurred in Poplar, England. Nervous symptoms manifested by convulsions or fits preceded the attacks in some cases. Generally speaking, the symptoms were very alarming at the onset, but subsided in 24 hours, leaving the patients weak.

The cases occurred in a relatively small area. Records of the analyses of samples of tap water examined by the Metropolitan Water Board of London indicated that locally the tap water was of an inferior quality. Further investigation disclosed the presence of a cross connection of a private water supply of a gas plant and the public mains. No check valves were used on this cross connection.

Use Watersheds for Recreation? W. L. Stevenson and H. E. Moses. *Water Works Engineering*, vol. 81, No. 2, January 18, 1928, pp. 81-82 and 109. (Abstract by Frank Raab.)

The article draws attention to the wide use made of watersheds for recreation, the danger which is involved therein, and the persistent demand by the public to be allowed the use of watersheds that furnish public supplies. New Jersey passed a law over the governor's veto permitting bathing in any fresh water of the State, provided no trespass is committed by such use. The article also discusses the rights of riparian owners of streams, etc. Pennsylvania establishes three zones on State forestry lands that serve as watersheds for public supplies. No camping is permitted "within 1 mile by stream above intake on a watershed"; within second mile leases are granted under stringent sanitary conditions. In the third zone, which comprises the remainder of the watershed, camping is permitted under stringent sanitary regulations. Another measure that is taken is the posting signs calling attention to the fact that the area is a watershed of a public supply and warning against any act that would jeopardize the purity of the supply.

Establishing Classifications of Public Water Supplies of West Virginia—First Official Classification. E. S. Tisdale. *Quarterly Bulletin West Virginia State Department of Health*, vol. 15, No. 1, January, 1928, pp. 15-19. (Abstract by H. B. Foote.)

The State sanitary engineering division has been at work for 12 years. The grading of the public water supplies is based upon yearly bacteriological records and knowledge obtained by periodic inspection by trained sanitary engineers. There are three classifications established:

- (1) "Good," 82 of 154 supplies, or 53.2 per cent.
- (2) "Doubtful," 44 of 154 supplies, or 28.6 per cent.
- (3) "Bad," 28 of 154 supplies, or 18.2 per cent.

A large map is included which shows the location of each of the public supplies with its proper classification.

Can Filters Be Operated Satisfactorily at Variable Rates? Harry N. Jenks, *The American City*, vol. 38, No. 2, February, 1928, p. 128. (Abstract by W. L. Havens.)

Conclusions reached after actual operation of the Sacramento, Calif., filtration plant, with respect to effects of filter overloading, were as follows: (1) Provided overload rates are kept within proper limits, operation at variable rates has of itself no deleterious effect on the quality of the effluent; (2) variations in the rate of filtration to correspond to the curve of water consumption may result in reducing the size of storage reservoirs; (3) filter runs are shortened more by duration of overload rates than by the amount of such overload; (4) the permissible duration of overload decreases rapidly with increase in filtration rates above normal.

Water Purified by Electricity. Anon. *Water Works Engineering*, vol. 81, No. 3, February 1, 1928, p. 173. (Abstract by Chester Cohen.)

Description of a new method for purifying water accomplished through the electrolysis of the foreign matters in the water by the application of electric currents. The apparatus looks like a collapsed steam radiator and is composed of a group of connected cells through which the water passes successively, the electric voltage being stepped up in successive cells. The removal of waste matter takes place in the last cells mostly where the voltage is highest.

The apparatus is being used in Austria and Germany and experiments are under way to adapt the method to American waters.

Potassium Permanganate Purifies Water. John H. D. Blanke. *Water Works Engineering*, vol. 81, No. 6, March 14, 1928, p. 338.

"A deep well water supply system was contaminated with the seeping through of surface water. The supply water acquired a yellowish color, first still clear, and later opalescent and dull. As an immediate remedy potassium permanganate was used as a radical means. The success was surprising, since it was possible to break the organic iron combinations within a short time and to discolor the water at the same time. Potassium permanganate, if applied in such a quantity that the water still has a rose color after about two hours, always kills the *Bacterium coli* and nearly effects sterility even if the water is badly contaminated. *Wasser und Gas* of 1927, No. 18, pp. 933-937, states further that a small addition of chloride of lime of a high percentage, increases the bactericide effect."

Recent Developments in Water Treatment and Filtration. John R. Baylis. *Water Works*, vol. 67, No. 1, January, 1928, pp. 37-39. (Abstract by D. E. Kepner.)

Public opinion in years past against the so-called "doping" of water has to-day largely given way to indifference, leaving the water chemist unhampered in developing the types of treatment best suited to the particular waters at hand.

Among recent water treatment developments of note are the following: The prevention of corrosion and also the prevention of calcium carbonate deposition by proper chemical balance of the water; the use of pH tests for optimum coagulation control; the use of mechanical stirring devices for hastening chemical reactions and floc formation; the continuous removal of sludge, economical where the volume is over 0.05 per cent of the volume of water treated; the use of aeration to reduce the CO₂ content of water treated with aluminum sulphate; and the use of excess lime and recarbonation for treating hard waters.

"Experiments on the use of jets of water thrown into the filter sand while it is raised in washing, from a system of piping just above the sand surface, seem to work very well." An attempt, with partial success, has been made to develop a recording hydrogen ion machine, and work is also under way on devices for automatically recording the residual chlorine in water.

An Unusual Water Works. Willem Rudolfs. *Water Works*, vol. 67, No. 1, January, 1928, pp. 7-8. (Abstract by D. E. Kepner.)

At the Philips Glow Lamp Works, a water supply of about 2,000,000 gallons daily, having very little CO₂ and iron, and no manganese, is required for manufacturing use. The raw water, obtained from 42 driven wells, 60 feet apart and alternating 120 and 240 feet deep, contains 20 to 25 p. p. m. CO₂, 2 to 3 p. p. m. iron, and 0.3 to 0.4 p. p. m. manganese. The treatment plant comprises opposed jet aerators, a contact basin, filled with crushed lava, two settling tanks with detention of one hour, and two sand filters apparently arranged in series. KMnO₄ is added between the two filters to remove manganese. The effluent contains 2 to 4 p. p. m. CO₂, 0.1 p. p. m. iron, and no manganese. The filters are washed with air, as well as water. The neatness and attractive appearance of the plant are mentioned.

Zeolite Process of Water Softening. A. S. Behrman. *Water Works*, vol. 67, No. 1, January, 1928, pp. 26-28. (Abstract by D. E. Kepner.)

The recently developed gel-type zeolite has greater softening capacity and gives less trouble from disintegration than natural green sand and the older synthetic bare-exchange minerals. The gel type likewise permits greater rates of softening, and gives greater salt economy.

DEATHS DURING WEEK ENDED APRIL 14, 1928

Summary of information received by telegraph from industrial insurance companies for the week ended April 14, 1928, and corresponding week of 1927. (From the Weekly Health Index, April 18, 1928, issued by the Bureau of the Census, Department of Commerce)

	Week ended Apr. 14, 1928	Corresponding week, 1927
Policies in force.....	70, 634, 185	67, 347, 002
Number of death claims.....	16, 955	12, 654
Death claims per 1,000 policies in force, annual rate.....	12. 6	9. 8

Deaths from all causes in certain large cities of the United States during the week ended April 14, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, April 18, 1928, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Apr. 14, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Apr. 14, 1928 ²
	Total deaths	Death rate ¹		Week ended Apr. 14, 1928	Corresponding week 1927	
Total (67 cities).....	8, 428	14. 7	13. 6	1, 000	830	82
Akron.....	62			10	4	109
Albany ³	41	17. 8	17. 9	5	2	102
Atlanta.....	83	17. 1	16. 5	11	10	
White.....	40		13. 1	4	4	
Colored.....	43	(⁴)	24. 7	7	6	
Baltimore ³	284	17. 9	14. 1	31	24	96
White.....	229		12. 2	22	13	88
Colored.....	55	(⁴)	25. 1	9	11	141
Birmingham.....	62	14. 6	18. 0	11	8	94
White.....	26		13. 3	3	3	41
Colored.....	36	(⁴)	25. 2	8	5	180
Boston.....	245	16. 0	14. 7	39	31	108
Bridgeport.....	34			5	1	92
Buffalo.....	176	16. 6	11. 3	22	10	94
Cambridge.....	29	12. 1	16. 0	4	5	71
Camden.....	47	18. 1	14. 5	1	4	16
Canton.....	24	10. 7	13. 3	3	6	71
Chicago ³	784	13. 0	13. 1	108	87	93
Cincinnati.....	170	21. 5	18. 5	20	14	121
Cleveland.....	212	11. 0	11. 3	22	22	60
Columbus.....	83	14. 6	15. 4	8	6	75
Dallas.....	52	12. 5	10. 1	9	8	
White.....	42		9. 3	7	7	
Colored.....	10	(⁴)	15. 2	2	1	
Dayton.....	44	12. 5	11. 8	5	5	83
Denver.....	96	17. 1	14. 4	10	10	
Des Moines.....	31	10. 7	9. 1	1	2	17
Detroit.....	358	13. 6	12. 2	58	59	90
Duluth.....	24	10. 7	15. 5	5	3	117
El Paso.....	45	20. 0	9. 6	14	5	
Erie.....	29			2	3	41
Fall River ³	32	12. 5	13. 0	7	10	120
Flint.....	36	12. 6	8. 0	9	3	115
Fort Worth.....	45	14. 0	8. 9	6	1	
White.....	33		8. 3	3	1	
Colored.....	12	(⁴)	13. 3	3	0	
Grand Rapids.....	43	13. 7	10. 0	6	5	90
Houston.....	67			12	7	
White.....	45			9	2	
Colored.....	22	(⁴)		3	5	
Indianapolis.....	118	16. 1	13. 5	15	6	114
White.....	107		12. 7	14	5	122
Colored.....	11	(⁴)	19. 8	1	1	61
Jersey City.....	91	14. 7	16. 2	9	8	67
Kansas City, Kans.....	37	16. 4	18. 6	4	4	84
White.....	26		15. 7	1	2	25
Colored.....	11	(⁴)	32. 0	3	2	436

(See footnotes at end of table)

Deaths from all causes in certain large cities of the United States during the week ended April 14, 1928, infant mortality, annual death rate, and comparison with corresponding week of 1927. (From the Weekly Health Index, April 18, 1928, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended Apr. 14, 1928		Annual death rate per 1,000 corresponding week 1927	Deaths under 1 year		Infant mortality rate, week ended Apr. 14, 1928 ¹
	Total deaths	Death rate ¹		Week ended Apr. 14, 1928	Corresponding week 1927	
Kansas City, Mo.	99	13.2	12.8	9	6	64
Knorrville	20	9.9	16.3	2	2	43
White	17		16.2	2	2	48
Colored	3	(²)	17.1	0	0	0
Los Angeles	241			25	24	72
Lowell	28	13.3	16.5	4	5	84
Lynn	28	13.9	16.4	2	3	50
Memphis	74	20.3	25.4	13	8	152
White	36		19.9	4	1	75
Colored	38	(²)	35.4	9	7	282
Milwaukee	148	14.2	11.6	25	10	111
Minneapolis	138	15.8	12.8	14	8	84
Nashville	55	20.7	14.8	7	3	110
White	29		12.1	3	0	64
Colored	26	(²)	21.4	4	3	240
New Bedford	29	12.7	11.3	4	5	87
New Haven	25	7.0	12.1	3	4	42
New Orleans	138	16.8	14.6	12	17	58
White	75		11.6	8	7	58
Colored	63	(²)	23.2	4	10	58
New York	1,763	15.3	14.1	196	177	79
Bronx Borough	235	12.9	12.7	20	14	60
Brooklyn Borough	564	12.8	12.5	75	68	75
Manhattan Borough	730	21.8	18.7	81	79	96
Queens Borough	174	10.6	9.0	14	13	56
Richmond Borough	60	20.8	18.9	6	3	108
Newark, N. J.	116	12.8	13.7	11	13	57
Oklahoma City	34			3	2	
Omaha	51	12.0	13.1	2	6	23
Paterson	27	9.7	14.1	2	5	35
Philadelphia	659	16.7	14.0	64	43	86
Pittsburgh	206	16.0	12.3	26	18	85
Portland, Oreg.	77			4	3	43
Providence	92	16.8	11.9	10	9	87
Richmond	47	12.6	14.4	4	7	52
White	23		10.3	3	3	61
Colored	24	(²)	24.4	1	4	37
Rochester	99	15.8	13.2	12	9	97
St. Louis	235	14.5	12.8	23	15	77
St. Paul	40	8.3	11.9	1	5	10
Salt Lake City ³	24	9.1	12.3	4	2	65
San Antonio	75	18.0	16.5	21	16	
San Diego	51	22.3	17.2	5	3	95
San Francisco	186	16.6	11.7	10	9	65
Schenectady	23	12.9	11.7	4	2	125
Seattle	87	11.9	11.3	2	6	21
Somerville	15	7.6	13.3	2	2	69
Spokane	23	11.0	14.8	5	3	129
Springfield, Mass.	37	12.9	12.4	4	4	63
Syracuse	54	14.2	9.0	8	3	97
Tacoma	26	12.3	13.6	1	2	26
Toledo	54	9.0	11.6	5	2	48
Trenton	59	22.2	17.2	10	5	170
Washington, D. C.	141	13.4	15.3	7	14	40
White	91		13.6	4	7	33
Colored	50	(²)	20.3	3	7	55
Waterbury	26			4	3	116
Wilmington, Del.	31	12.6	16.5	5	5	132
Worcester	72	19.1	17.3	8	6	97
Yonkers	21	9.1	9.2	4	1	91
Youngstown	40	12.0	13.2	6	9	80

¹ Annual rate per 1,000 population.

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

³ Deaths for week ended Friday, Apr. 13, 1928.

⁴ In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Kansas City, Kans., 14; Knorrville, 15; Memphis, 38; Nashville, 30; New Orleans, 26; Richmond, 32; Washington, D. C., 25.

PREVALENCE OF DISEASE

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

UNITED STATES

CURRENT WEEKLY STATE REPORTS

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

Reports for Weeks Ended April 23, 1927, and April 21, 1928

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 23, 1927, and April 21, 1928

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928
New England States:								
Maine.....	5		5	6	116	22	1	0
New Hampshire.....		3				107		0
Vermont.....	1	2			139	30	0	0
Massachusetts.....	81	75	14	11	327	1,384	1	1
Rhode Island.....	10	5				299	0	0
Connecticut.....	31	24	1	5	58	363	1	0
Middle Atlantic States:								
New York.....	466	349	137	194	701	3,197	2	37
New Jersey.....	150	103	25	21	98	1,574	0	3
Pennsylvania.....	185	183			705	2,337	0	4
East North Central States:								
Ohio.....		65		54		915		3
Indiana.....	26	23	26	29	206	313	0	0
Illinois.....	118	140	133	124	1,694	234	6	10
Michigan.....	82	51		5	351	1,486	0	9
Wisconsin.....	34	21	33	1,146	538	125	11	7
West North Central States:								
Minnesota.....	38	18	10	33	226	90	6	2
Iowa.....	43	7			195	31	0	0
Missouri.....	52	35	10	46	367	468	1	8
North Dakota.....	12	3		16	157	12	0	7
South Dakota.....	4	1	6	20	88	36	1	0
Nebraska.....	2	6	1	42	528	131	2	1
Kansas.....	8	10	8	5	1,193	84	2	2
South Atlantic States:								
Delaware.....	2				13	14	0	0
Maryland ¹	47	26	64	22	16	1,014	0	1
District of Columbia.....	29	11	2	3	11	190	0	0
Virginia.....								
West Virginia.....	18	21	28	11	151	168	0	2
North Carolina.....	30	26			1,079	1,525	1	1
South Carolina.....	10	9	1,088	613	138	578	0	0
Georgia.....	10	10	102	82	177	114	1	0
Florida.....	10	7	39	6	143	92	1	0

¹ New York City only.

² Week ended Friday.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 23, 1927, and April 21, 1928—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928
East South Central States:								
Kentucky.....		7		107		314		0
Tennessee.....	4	7	106	242	84	322	0	0
Alabama.....	31	18	103	278	275	393	1	6
Mississippi.....	4	8						
West South Central States:								
Arkansas.....	4	4	41	250	135	247	0	0
Louisiana.....	16	22	21	91	63	200	0	1
Oklahoma ¹	18	19	83	640	433	390	1	1
Texas.....	14	29	25	65	60	282	1	0
Mountain States:								
Montana.....	3	5			27	5	2	5
Idaho.....	4				37		0	
Wyoming.....	1			4	81	14	0	4
Colorado.....	4	10	1	2	175	102	2	5
New Mexico.....		7		3	117	238	1	0
Arizona.....	1	9			21	56	0	0
Utah ²	10	6		4	48	1	0	2
Pacific States:								
Washington.....	10	8	4		402	119	5	2
Oregon.....	3	16	34	44	355	107	1	2
California.....	135	97	38	36	2,619	159	10	5

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928
New England States:								
Maine.....	0	0	24	26	0	0	4	1
New Hampshire.....				15		0		2
Vermont.....	0	0	3	2	0	0	0	9
Massachusetts.....	0	1	462	244	0	0	3	3
Rhode Island.....	0	0	25	42	0	0	0	0
Connecticut.....	0	0	106	47	0	0	0	1
Middle Atlantic States:								
New York.....	0	1	1,069	621	3	6	18	14
New Jersey.....	0	1	387	259	0	20	6	4
Pennsylvania.....	0	2	522	439	0	8	16	8
East North Central States:								
Ohio.....		1		233		55		4
Indiana.....	0	0	174	94	142	128	3	1
Illinois.....	0	0	264	339	23	23	12	4
Michigan.....	0	1	226	248	41	24	6	3
Wisconsin.....	0	1	143	162	8	11	1	3
West North Central States:								
Minnesota.....	0	0	166	155	1	0	1	2
Iowa.....	0	0	28	56	11	32	1	2
Missouri.....	0	0	122	86	14	52	3	5
North Dakota.....	0	0	60	44	6	0	4	0
South Dakota.....	0	0	33	27	6	4	0	0
Nebraska.....	0	0	47	96	28	42	1	0
Kansas.....	1	1	99	198	20	71	2	0
South Atlantic States:								
Delaware.....	0	0	21	9	0	0	0	0
Maryland ¹	0	0	63	66	0	0	8	6
District of Columbia.....	0	0	27	30	0	0	0	1
Virginia.....	1	0				1		
West Virginia.....	0	0	31	67	13	79	1	8
North Carolina.....	0	2	16	22	48	96	3	6
South Carolina.....	0	0	8	15	23	9	6	11
Georgia.....	0	0	8	16	45	0	13	3
Florida.....	0	0	12	16	76	4	13	10
East South Central States:								
Kentucky.....		0		73		26		12
Tennessee.....	0	0	8	11	9	23	13	4

¹ Week ended Friday.

² Exclusive of Tulsa.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended April 23, 1927, and April 21, 1928—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928	Week ended Apr. 23, 1927	Week ended Apr. 21, 1928
East South Central States—Contd.								
Alabama.....	1	2	18	10	30	5	17	5
Mississippi.....	0	0	3	6	2	2	6	10
West South Central States:								
Arkansas.....	0	0	5	21	7	4	5	4
Louisiana.....	0	0	9	6	3	29	11	17
Oklahoma ¹	1	2	48	54	45	154	29	7
Texas.....	0	0	26	52	49	53	3	2
Mountain States:								
Montana.....	0	1	42	14	1	18	4	1
Idaho.....	0	0	14	8	7	5	2	0
Wyoming.....	0	0	15	36	0	0	1	1
Colorado.....	0	0	34	85	4	8	2	1
New Mexico.....	0	0	11	21	2	2	0	1
Arizona.....	1	0	4	9	0	6	0	0
Utah ²	0	0	19	5	6	10	0	0
Pacific States:								
Washington.....	0	2	55	37	62	56	2	1
Oregon.....	0	1	28	12	14	56	1	3
California.....	3	1	180	130	36	20	18	5

¹ Week ended Friday.² Exclusive of Tulsa.

Reports for Week Ended April 14, 1928

DIPHTHERIA		POLIO MYELITIS	
	Cases		Cases
District of Columbia.....	14	Mississippi.....	2
Mississippi.....	5		
		SCARLET FEVER	
INFLUENZA		District of Columbia.....	27
District of Columbia.....	4	Mississippi.....	11
		SMALLPOX	
MEASLES		District of Columbia.....	1
District of Columbia.....	157	Mississippi.....	5
		TYPHOID FEVER	
MENINGOCOCCUS MENINGITIS		Mississippi.....	5
District of Columbia.....	1		

SUMMARY OF MONTHLY REPORTS FROM STATES

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

State	Menin-gococ-cus menin-gitis	Diph-theria	Influ-enza	Ma-laria	Meas-les	Pel-lagra	Polio-mye-litis	Scarlet fever	Small-pox	Ty-phoid fever
<i>January, 1928</i>										
Delaware.....	0	10	6		64		0	16	0	0
<i>February, 1928</i>										
Delaware.....	1	6	4		37		0	18	0	1
Florida.....	2	58	41	5	66	2	2	53	19	20
Hawaii Territory...	3	48	8		34		0	4	0	5
<i>March, 1928</i>										
Alabama.....	8	108	1,425	76	2,321	38	2	76	67	51
Georgia.....	3	59	755	101	1,091	29	0	101	70	19
New Jersey.....	8	57	131	1	5,345		3	1,303	24	18

<i>January, 1928</i>		Cases	Conjunctivitis:	Cases
Delaware:			Georgia	1
Chicken pox		46	Dengue:	
Mumps		41	Alabama	1
Scabies		1	Georgia	6
Whooping cough		15	Dysentery:	
	<i>February, 1928</i>		Georgia	11
Chicken pox:			German measles:	
Delaware		24	New Jersey	541
Florida		317	Hookworm disease:	
Hawaii Territory		31	Georgia	15
Conjunctivitis:			Lead poisoning:	
Hawaii Territory		115	New Jersey	3
Dengue:			Leprosy:	
Florida		1	New Jersey	1
Dysentery:			Lethargic encephalitis:	
Florida		2	Alabama	1
Hawaii Territory (amebic)		1	Mumps:	
Hookworm disease:			Alabama	223
Florida		82	Georgia	140
Leprosy:			Ophthalmia neonatorum:	
Hawaii Territory		4	New Jersey	4
Mumps:			Paratyphoid fever:	
Delaware		41	Georgia	3
Florida		49	Septic sore throat:	
Hawaii Territory		49	Georgia	57
Plague:			Trachoma:	
Hawaii Territory		1	New Jersey	6
Tetanus:			Trichinosis:	
Florida		1	New Jersey	1
Trachoma:			Tularaemia:	
Hawaii Territory		83	Georgia	6
Typhus fever:			Typhus fever:	
Florida		2	Alabama	1
Whooping cough:			Whooping cough:	
Delaware		21	Alabama	103
Florida		38	Georgia	58
Hawaii Territory		9	New Jersey	568
	<i>March, 1928</i>			
Chicken pox:				
Alabama		365		
Georgia		330		
New Jersey		862		

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 100 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 31,575,000. The estimated population of the 95 cities reporting deaths is more than 30,900,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended April 7, 1928, and April 9, 1927

	1928	1927	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
43 States.....	1,487	1,799	-----
100 cities.....	801	1,187	886
Measles:			
42 States.....	19,472	15,764	-----
100 cities.....	7,719	5,104	-----
Poliomyelitis:			
44 States.....	25	18	-----
Scarlet fever:			
43 States.....	4,390	5,469	-----
100 cities.....	1,652	2,341	1,347
Smallpox:			
42 States.....	1,261	770	-----
100 cities.....	108	155	118
Typhoid fever:			
43 States.....	186	204	-----
100 cities.....	27	47	46
<i>Deaths reported</i>			
Influenza and pneumonia:			
95 cities.....	1,472	1,078	-----
Smallpox:			
95 cities.....	0	0	-----

City reports for week ended April 7, 1928

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

If the reports have not been received for the full nine years, data are used for as many years as possible but no year earlier than 1919 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1926, estimated	Chick-en pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland.....	76,400	6	0	1	0	0	5	11	4
New Hampshire:									
Concord.....	122,546	0	0	0	0	0	0	0	2
Manchester.....	84,000	0	2	0	0	0	0	0	1
Vermont:									
Barre.....	110,008	4	0	0	0	0	0	0	0
Burlington.....	124,089	0	0	0	0	0	1	0	1
Massachusetts:									
Boston.....	787,000	22	40	23	8	2	353	6	37
Fall River.....	131,000	4	3	3	0	0	11	0	2
Springfield.....	145,000	6	3	8	0	1	0	43	0
Worcester.....	193,000	5	4	3	3	1	64	36	5
Rhode Island:									
Pawtucket.....	71,000	3	1	1	0	0	1	9	0
Providence.....	275,000	0	8	5	0	1	230	3	7
Connecticut:									
Bridgeport.....	(?)	0	6	3	1	1	1	0	6
Hartford.....	164,000	19	6	6	1	0	21	4	6
New Haven.....	182,000	13	3	2	0	1	129	86	9

¹ Estimated, July 1, 1925.² No estimate made.

City reports for week ended April 7, 1928—Continued

Division, State, and city	Population July 1, 1925, estimated	Chick-en pox, cases re-ported	Diphtheria		Influenza		Mea-sles, cases re-ported	Mumps, cases re-ported	Pneu-monia, deaths re-ported
			Cases, es-timated ex-pectancy	Cases re-ported	Cases re-ported	Deaths re-ported			
MIDDLE ATLANTIC									
New York:									
Buffalo.....	544,000	2	10	17	1	0	138	35	20
New York.....	5,924,000	203	245	285	77	37	1,676	0	309
Rochester.....	321,000	13	10	1	-----	0	32	26	7
Syracuse.....	185,000	18	5	1	-----	0	156	16	7
New Jersey:									
Camden.....	131,000	3	6	7	1	1	34	4	11
Newark.....	459,000	25	11	22	15	0	433	15	17
Trenton.....	134,000	0	4	7	0	0	13	0	6
Pennsylvania:									
Phladelphis.....	2,008,000	58	69	39	1	20	500	60	88
Pittsburgh.....	637,000	28	13	7	0	5	101	59	33
Reading.....	114,000	12	2	-----	0	0	4	0	2
EAST NORTH CENTRAL									
Ohio:									
Cincinnati.....	411,000	2	7	11	0	9	91	2	24
Cleveland.....	960,000	56	26	38	18	2	43	154	20
Columbus.....	285,000	8	4	0	0	6	45	9	5
Toledo.....	295,000	17	3	0	0	0	230	8	7
Indiana:									
Fort Wayne.....	99,900	3	2	2	0	0	0	0	3
Indianapolis.....	367,000	19	5	1	0	1	78	49	16
South Bend.....	81,700	1	1	0	0	0	0	0	3
Terre Haute.....	71,900	7	0	0	0	1	0	0	0
Illinois:									
Chicago.....	3,048,000	87	74	104	79	29	34	45	189
Springfield.....	64,700	5	1	0	2	2	0	9	2
Michigan:									
Detroit.....	1,290,000	44	52	17	13	6	1,151	20	68
Flint.....	136,000	31	3	1	0	0	91	83	5
Grand Rapids.....	156,000	1	3	0	0	1	33	16	1
Wisconsin:									
Kenosha.....	52,700	28	1	0	0	0	5	0	0
Milwaukee.....	517,000	61	15	9	4	4	9	31	20
Racine.....	69,400	4	2	2	0	1	6	6	2
Superior.....	139,671	3	0	0	0	0	0	0	1
WEST NORTH CENTRAL									
Minnesota:									
Duluth.....	113,000	4	0	0	0	0	0	3	2
Minneapolis.....	434,600	78	14	13	0	1	50	37	18
St. Paul.....	248,600	14	12	2	0	1	1	24	10
Iowa:									
Davenport.....	152,469	1	1	1	0	-----	1	0	-----
Des Moines.....	146,000	0	2	0	0	-----	0	0	-----
Sioux City.....	78,000	1	1	0	0	-----	14	19	-----
Waterloo.....	36,900	0	0	0	0	-----	3	13	-----
Missouri:									
Kansas City.....	375,000	20	5	4	1	4	25	94	18
St. Joseph.....	78,400	3	1	0	0	1	1	9	3
St. Louis.....	830,000	19	38	30	4	1	287	7	-----
North Dakota:									
Fargo.....	126,403	3	1	0	0	0	0	4	1
Grand Forks.....	114,811	0	0	0	0	0	0	0	-----
South Dakota:									
Aberdeen.....	115,036	4	0	0	0	-----	0	0	-----
Sioux Falls.....	130,127	0	0	0	0	-----	0	0	-----
Nebraska:									
Lincoln.....	62,000	3	1	3	0	0	0	18	0
Omaha.....	216,000	6	2	0	0	0	2	1	3
Kansas:									
Topeka.....	56,500	19	1	3	2	0	0	13	1
Wichita.....	92,500	17	2	0	0	0	8	0	4
SOUTH ATLANTIC									
Delaware:									
Wilmington.....	124,000	2	2	3	0	0	6	1	2
Maryland:									
Baltimore.....	808,000	61	28	26	13	5	609	15	40
Cumberland.....	133,741	0	1	0	0	0	0	0	0
Frederick.....	112,035	0	0	0	0	0	7	0	0

1 Estimated, July 1, 1925.

City reports for week ended April 7, 1928—Continued

Division, State, and city	Population July 1, 1928, estimated	Chick- en pox, cases re- ported	Diphtheria		Influenza		Meas- les, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths re- ported
			Cases, es- timated ex- pectancy	Cases re- ported	Cases re- ported	Deaths re- ported			
SOUTH ATLANTIC—con.									
District of Columbia:									
Washington.....	528,000	12	11	15	2	3	234	0	20
Virginia:									
Lynchburg.....	30,500	1	1	0	0	0	37	0	1
Norfolk.....	174,000	24	0	0	0	0	55	0	4
Richmond.....	189,000	1	2	1	0	2	180	2	6
Roanoke.....	61,900	6	0	0	0	0	3	1	3
West Virginia:									
Charleston.....	50,700	1	1	1	0	0	1	0	1
Wheeling.....	156,208	3	1	0	0	0	7	3	4
North Carolina:									
Raleigh.....	130,371	1	0	1	0	0	39	0	3
Wilmington.....	37,700	8	0	0	0	0	3	0	2
Winston-Salem.....	71,900	8	0	0	0	0	63	7	4
South Carolina:									
Charleston.....	74,100	1	0	0	21-	0	10	0	0
Columbia.....	41,800	13	6	0	0	0	8	22	2
Greenville.....	127,311	0	0	0	0	0	1	4	0
Georgia:									
Atlanta.....	(?)	19	2	3	19	0	32	12	6
Brunswick.....	116,809	0	0	0	0	0	5	1	0
Savannah.....	94,900	5	0	0	3	1	3	0	3
Florida:									
Miami.....	169,754	20	5	3	1	0	1	7	3
St. Petersburg.....	126,847		0			0			1
Tampa.....	102,000	9	0	0	0	0	0	1	1
EAST SOUTH CENTRAL									
Kentucky:									
Covington.....	58,500	0	1	1	0	2	3	0	8
Louisville.....	311,000	2	4	0	5	2	107	5	39
Tennessee:									
Memphis.....	177,000	13	4	2	0	5	33	7	12
Nashville.....	137,000	1	1	1	0	1	36	3	10
Alabama:									
Birmingham.....	211,000	0	1	0	0	2	0	0	6
Mobile.....	66,800	0	0	1	0	2	1	0	1
Montgomery.....	47,000	8	0	0	0		12	0	
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith.....	131,643	0	0	0	0		0	0	7
Little Rock.....	75,900	0	0	1	0	4	7	0	
Louisiana:									
New Orleans.....	419,000	10	7	16	7	4	2	0	11
Shreveport.....	59,500	1	0	0	0	0	35	0	7
Oklahoma:									
Oklahoma City.....	(?)	0	1	2	21	1	42	6	7
Texas:									
Dallas.....	203,600	11	4	5	0	7	7	0	7
Fort Worth.....	159,090	8	2	2	0	0	6	3	7
Galveston.....	49,100	0	1	2	0	0	7	0	0
Houston.....	1164,954	1	2	6	0	2	39	2	8
San Antonio.....	265,000	1	1	3	0	9	12	0	5
MOUNTAIN									
Montana:									
Billings.....	117,971	0	1	0	0	0	0	0	0
Great Falls.....	129,883	3	0	0	0	1	0	0	0
Helena.....	112,037	0	0	0	0	0	0	0	0
Missoula.....	112,668	0	0	0	0	0	0	0	0
Idaho:									
Boise.....	123,042	1	0	0	0	0	0	1	0
Colorado:									
Denver.....	285,000	45	9	4		8	72	166	6
Pueblo.....	43,900	9	1	0	0	0	2	0	2
New Mexico:									
Albuquerque.....	121,000	6	0	0	0	0	29	1	1

¹ Estimated, July 1, 1925

² No estimate made.

City reports for week ended April 7, 1928—Continued

Division, State, and city	Population, July 1, 1926, estimated	Chick-en pox, cases re-ported	Diphtheria		Influenza		Meas-les, cases re-ported	Mumps, cases re-ported	Pneu-monia, deaths re-ported
			Cases, esti-mated expect-ancy	Cases re-ported	Cases re-ported	Deaths re-ported			
MOUNTAIN—continued									
Utah:									
Salt Lake City.....	133,000	24	3	1	0	0	6	3	3
Nevada:									
Reno.....	12,665	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle.....	(¹)	20	5	0	0	-----	105	4	-----
Spokane.....	109,000	3	2	0	0	-----	0	0	-----
Tacoma.....	106,000	10	1	1	0	0	11	21	3
California:									
Los Angeles.....	(¹)	59	41	16	13	1	26	40	19
Sacramento.....	73,400	7	2	0	0	0	-----	1	2
San Francisco.....	567,000	68	20	13	0	1	33	50	7

Division, State, and city	Scarlet fever		Smallpox			Tuber-culosis, deaths re-ported	Typhoid fever			Whoop-ing cough, cases re-ported	Deaths, all causes
	Cases, esti-mated expect-ancy	Cases re-ported	Cases, esti-mated expect-ancy	Cases re-ported	Deaths re-ported		Cases, esti-mated expect-ancy	Cases re-ported	Deaths re-ported		
NEW ENGLAND											
Maine:											
Portland.....	4	4	0	0	0	3	0	0	0	5	26
New Hampshire:											
Concord.....	1	0	0	0	0	1	0	0	0	0	14
Manchester.....	3	0	0	0	0	1	0	0	0	0	10
Vermont:											
Barre.....	0	0	0	0	0	1	0	0	0	0	1
Burlington.....	1	0	0	0	0	1	0	0	0	0	6
Massachusetts:											
Boston.....	77	74	0	0	0	15	1	0	0	51	269
Fall River.....	4	3	0	0	0	2	0	1	1	1	26
Springfield.....	6	16	0	0	0	1	0	0	0	10	30
Worcester.....	10	6	0	0	0	7	0	0	0	23	81
Rhode Island:											
Pawtucket.....	1	7	0	0	0	0	0	0	0	0	17
Providence.....	9	27	0	0	0	2	1	0	0	0	88
Connecticut:											
Bridgeport.....	12	3	0	0	0	4	1	0	0	2	40
Hartford.....	5	2	0	0	0	1	0	0	0	8	-----
New Haven.....	11	2	0	0	0	4	0	0	0	19	42
MIDDLE ATLANTIC											
New York:											
Buffalo.....	24	51	0	0	0	9	0	0	1	26	157
New York.....	281	486	0	0	0	124	9	1	1	114	1,862
Rochester.....	16	10	0	0	0	5	0	0	0	6	80
Syracuse.....	13	13	0	0	0	2	1	0	0	32	58
New Jersey:											
Camden.....	6	6	0	0	0	1	0	0	0	1	56
Newark.....	30	38	0	0	0	8	0	1	0	36	129
Trenton.....	4	1	0	0	0	1	1	0	0	0	39
Pennsylvania:											
Philadelphia.....	96	103	0	0	0	25	3	0	0	38	591
Pittsburgh.....	30	24	0	0	0	7	0	0	0	23	210
Reading.....	4	20	0	0	0	1	0	0	0	8	26

¹ Estimated, July 1, 1925.

² No estimate made.

City reports for week ended April 7, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
EAST NORTH CENTRAL											
Ohio:											
Cincinnati.....	19	22	1	0	0	16	0	1	1	5	171
Cleveland.....	37	21	0	0	0	20	1	0	0	40	241
Columbus.....	10	14	2	1	0	4	0	0	0	8	93
Toledo.....	14	4	2	1	0	5	1	1	0	7	85
Indiana:											
Fort Wayne.....	7	0	3	3	0	0	0	2	0	3	17
Indianapolis.....	9	9	10	2	0	10	0	0	0	3	121
South Bend.....	4	0	1	0	0	0	0	0	0	0	15
Terre Haute.....	2	0	0	12	0	1	0	0	0	0	29
Illinois:											
Chicago.....	123	120	2	2	0	68	2	0	1	70	957
Springfield.....	2	18	0	1	0	0	1	0	0	0	26
Michigan:											
Detroit.....	93	110	1	3	0	34	1	1	0	61	375
Flint.....	7	16	1	11	0	1	1	0	0	6	23
Grand Rapids.....	8	3	0	0	0	0	0	0	0	4	28
Wisconsin:											
Kosha.....	3	0	0	1	0	0	0	0	0	6	6
Milwaukee.....	26	43	2	0	0	8	1	0	0	16	131
Racine.....	4	0	0	0	0	0	0	0	0	4	10
Superior.....	3	9	1	0	0	0	0	0	0	0	6
WEST NORTH CENTRAL											
Minnesota:											
Duluth.....	8	3	1	0	0	2	0	2	0	0	25
Minneapolis.....	50	32	5	0	0	4	0	0	0	5	103
St. Paul.....	33	8	4	0	0	5	1	0	0	19	71
Iowa:											
Davenport.....	1	5	4	0	0	0	0	0	0	0	0
Des Moines.....	5	4	2	15	0	0	0	0	0	0	0
Sioux City.....	2	2	2	1	0	0	0	0	0	1	1
Waterloo.....	2	4	0	1	0	0	1	0	0	0	0
Missouri:											
Kansas City.....	13	38	3	8	0	5	0	0	0	7	113
St. Joseph.....	3	1	0	4	0	0	0	0	0	0	23
St. Louis.....	38	31	4	1	0	5	1	0	0	28	232
North Dakota:											
Fargo.....	2	1	0	0	0	0	0	0	0	13	4
Grand Forks.....	1	2	0	0	0	0	0	0	0	0	0
South Dakota:											
Aberdeen.....	3	0	0	0	0	0	0	0	0	3	0
Sioux Falls.....	4	5	1	0	0	0	0	0	0	0	0
Nebraska:											
Lincoln.....	3	1	0	4	0	0	0	0	0	2	14
Omaha.....	3	5	7	6	0	4	0	0	0	2	54
Kansas:											
Topeka.....	4	5	0	3	0	1	0	0	0	3	11
Wichita.....	4	5	1	19	0	1	0	0	0	11	34
SOUTH ATLANTIC											
Delaware:											
Wilmington.....	5	0	0	0	0	3	0	0	0	0	28
Maryland:											
Baltimore.....	37	28	0	0	0	13	2	3	1	37	254
Cumberland.....	0	0	0	0	0	0	0	0	0	0	16
Frederick.....	0	0	0	0	0	0	0	0	0	0	0
District of Col.:											
Washington.....	23	40	2	2	0	13	1	0	1	16	137
Virginia:											
Lynchburg.....	1	0	0	0	0	0	0	0	0	4	15
Norfolk.....	1	5	0	0	0	2	0	0	0	3	0
Richmond.....	2	4	0	0	0	5	0	0	0	0	49
Roanoke.....	1	1	1	0	0	0	0	0	0	0	18
West Virginia:											
Charleston.....	1	4	4	0	0	0	0	1	0	0	14
Wheeling.....	2	2	0	0	0	1	0	0	0	0	26
North Carolina:											
Raleigh.....	0	2	0	3	0	0	0	0	0	0	12
Wilmington.....	0	0	1	0	0	0	1	0	0	5	13
Winston-Salem.....	1	0	5	0	0	1	0	0	0	0	24

City reports for week ended April 7, 1928—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
SOUTH ATLANTIC—continued.											
South Carolina:											
Charleston.....	0	0	0	0	0	1	0	0	0	5	14
Columbia.....	0	2	1	1	0	1	0	0	0	2	13
Greenville.....	0	0	1	0	0	1	0	0	0	1	8
Georgia:											
Atlanta.....	4	14	5	1	0	4	1	0	0	3	62
Brunswick.....	0	0	0	0	0	0	0	0	0	0	4
Savannah.....	0	0	0	0	0	3	0	1	0	0	40
Florida:											
Miami.....	1	1	1	0	0	1	0	0	0	0	20
St. Petersburg.....	0	0	0	0	0	1	1	0	0	0	12
Tampa.....	0	0	0	1	0	2	1	2	0	0	-----
EAST SOUTH CENTRAL											
Kentucky:											
Covington.....	2	4	0	0	0	3	1	0	0	0	45
Louisville.....	6	7	1	0	0	6	1	0	0	0	110
Tennessee:											
Memphis.....	5	7	3	2	0	8	1	0	0	2	70
Nashville.....	2	0	1	0	0	4	0	0	1	0	64
Alabama:											
Birmingham.....	2	0	8	0	0	7	1	0	0	0	80
Mobile.....	1	2	1	0	0	0	0	3	1	0	15
Montgomery.....	0	0	0	0	0	0	0	0	0	0	-----
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith.....	1	0	0	0	0	0	0	0	0	2	-----
Little Rock.....	1	10	0	0	0	5	1	0	0	0	-----
Louisiana:											
New Orleans.....	6	4	1	0	0	18	2	2	1	0	156
Shreveport.....	0	0	1	0	0	1	0	0	0	1	40
Oklahoma:											
Oklahoma City.....	3	4	3	16	0	0	0	0	0	0	30
Texas:											
Dallas.....	2	20	3	1	0	2	1	0	0	5	60
Forth Worth.....	2	13	2	12	0	5	0	0	0	0	39
Galveston.....	1	0	1	0	0	1	1	0	0	0	12
Houston.....	1	1	1	0	0	5	1	2	0	0	68
San Antonio.....	0	2	1	0	0	9	1	0	0	0	70
MOUNTAIN											
Montana:											
Billings.....	1	0	1	0	0	0	0	0	0	4	9
Great Falls.....	1	3	1	2	0	0	0	0	0	4	6
Helena.....	0	1	0	2	0	0	0	0	0	0	4
Missoula.....	1	0	0	0	0	0	0	0	0	0	6
Idaho:											
Boise.....	0	0	0	0	0	0	0	0	0	0	7
Colorado:											
Denver.....	11	21	2	0	0	9	0	0	0	33	92
Pueblo.....	2	0	0	2	0	0	0	0	0	0	14
New Mexico:											
Albuquerque.....	1	1	0	0	0	5	0	0	0	0	14
Utah:											
Salt Lake City.....	2	2	1	6	0	1	0	0	0	5	25
Nevada:											
Reno.....	0	0	0	0	0	0	0	0	0	0	3
PACIFIC											
Washington:											
Seattle.....	9	9	3	0	0	0	3	0	0	3	-----
Spokane.....	6	8	5	6	0	0	0	0	0	0	-----
Tacoma.....	2	2	5	0	0	0	0	0	0	0	23
California:											
Los Angeles.....	25	15	4	0	0	26	1	0	1	28	277
Sacramento.....	1	2	0	0	0	2	1	0	0	0	22
San Francisco.....	17	16	4	1	0	20	1	0	0	12	154

City reports for week ended April 7, 1928—Continued

Division, State, and city	Meningo- coccus meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infan- tile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, esti- mated expect- ancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Boston ¹	0	0	1	0	0	0	0	0	0
Connecticut:									
Bridgeport.....	1	0	0	0	0	0	0	0	0
MIDDLE ATLANTIC									
New York:									
New York.....	34	17	4	1	0	0	1	1	0
New Jersey:									
Newark.....	3	0	2	0	0	0	0	1	0
Pennsylvania:									
Philadelphia.....	1	1	1	1	0	0	0	0	0
Pittsburgh.....	2	4	0	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland.....	1	1	0	0	0	0	0	0	0
Indiana:									
Indianapolis.....	0	1	0	0	0	0	0	0	0
Illinois:									
Chicago ¹	11	3	1	1	0	0	0	0	0
Michigan:									
Detroit.....	0	7	0	1	0	0	0	0	0
Wisconsin:									
Milwaukee.....	2	3	0	0	0	0	0	0	0
WEST NORTH CENTRAL									
Minnesota:									
Minneapolis.....	2	0	0	0	0	0	0	0	0
Missouri:									
Kansas City.....	6	5	0	0	0	0	0	0	0
St. Louis.....	1	1	0	0	0	0	0	1	0
North Dakota:									
Fargo.....	0	1	0	0	0	0	0	0	0
Nebraska:									
Omaha.....	2	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
Maryland:									
Baltimore.....	1	0	0	0	0	0	0	0	0
District of Columbia:									
Washington.....	1	0	0	0	0	0	0	0	0
Georgia:									
Atlanta.....	2	1	0	0	0	0	0	0	0
EAST SOUTH CENTRAL									
Tennessee:									
Nashville.....	0	0	0	0	0	1	0	0	1
Alabama:									
Birmingham.....	0	0	0	0	0	1	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans.....	0	0	0	0	3	1	0	0	0
Shreveport.....	0	0	0	0	0	3	0	0	0
Texas: ¹									
Houston.....	2	2	0	0	0	0	0	0	0
MOUNTAIN									
Colorado:									
Denver.....	2	0	0	0	0	0	0	0	0
Pueblo.....	1	0	0	0	0	0	0	0	0
Utah:									
Salt Lake City.....	3	1	0	0	0	0	0	0	0
Washington:									
Spokane.....	2	0	0	0	0	0	0	0	0
California:									
Los Angeles.....	1	1	0	0	0	0	0	0	0
Sacramento.....	0	0	0	0	1	0	0	0	0
San Francisco.....	0	0	0	1	0	0	0	0	0

¹ Rabies (human): 1 case and 1 death at Boston, Mass.; 1 case and 1 death at Chicago, Ill.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended April 7, 1928, compared with those for a like period ended April 9, 1927. The population figures used in computing the rates are approximate estimates as of July 1, 1927 and 1928, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 31,050,000 in 1927 and 31,657,000 in 1928. The 95 cities reporting deaths had nearly 30,370,000 estimated population in 1927 and nearly 30,961,000 in 1928. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, March 4 to April 7, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927¹

DIPHTHERIA CASE RATES

	Week ended—									
	Mar. 12, 1927	Mar. 10, 1928	Mar. 19, 1927	Mar. 17, 1928	Mar. 26, 1927	Mar. 24, 1928	Apr. 2, 1927	Mar. 31, 1928	Apr. 9, 1927	Apr. 7, 1928
101 cities.....	183	172	176	158	178	158	190	² 139	200	132
New England.....	128	145	137	136	130	124	137	110	181	126
Middle Atlantic.....	230	214	240	212	226	222	263	181	269	188
East North Central.....	165	171	157	135	178	148	159	146	169	121
West North Central.....	133	131	127	115	121	132	159	³ 85	170	101
South Atlantic.....	155	124	141	139	146	112	157	121	117	88
East South Central.....	112	85	30	105	41	60	61	85	66	25
West South Central.....	190	168	161	136	174	116	178	108	335	132
Mountain.....	197	97	126	106	81	80	108	115	170	44
Pacific.....	198	171	165	125	193	105	170	⁴ 78	125	77

MEASLES CASE RATES

	952	1, 131	929	1, 349	943	1, 326	837	² 1, 390	867	1, 277
101 cities.....	952	1, 131	929	1, 349	943	1, 326	837	² 1, 390	867	1, 277
New England.....	198	1, 657	212	2, 277	198	1, 536	205	2, 014	270	1, 874
Middle Atlantic.....	80	970	93	1, 213	114	1, 393	127	1, 491	159	1, 504
East North Central.....	1, 169	965	1, 233	1, 063	1, 138	1, 009	925	1, 023	957	1, 034
West North Central.....	1, 241	489	1, 560	590	1, 514	725	1, 821	³ 756	1, 300	762
South Atlantic.....	783	2, 784	1, 010	2, 972	972	2, 893	1, 091	2, 905	936	2, 285
East South Central.....	314	1, 307	441	1, 855	436	1, 426	284	1, 696	608	958
West South Central.....	1, 187	1, 800	1, 026	1, 323	1, 754	1, 120	935	836	2, 114	436
Mountain.....	9, 091	283	5, 397	345	5, 074	504	3, 443	752	2, 788	708
Pacific.....	3, 252	904	2, 923	830	3, 163	807	2, 761	⁴ 550	3, 051	447

SCARLET FEVER CASE RATES

	446	303	431	300	423	309	440	² 304	394	273
101 cities.....	446	303	431	300	423	309	440	² 304	394	273
New England.....	591	377	546	402	479	411	530	405	367	331
Middle Atlantic.....	583	358	572	352	580	374	612	398	594	366
East North Central.....	369	292	353	296	347	306	329	266	272	252
West North Central.....	471	290	426	271	400	292	467	³ 254	433	263
South Atlantic.....	193	268	220	223	179	224	197	221	177	179
East South Central.....	279	259	208	160	152	234	172	204	177	100
West South Central.....	120	128	62	208	58	124	54	144	99	148
Mountain.....	1, 112	195	1, 336	248	1, 130	177	1, 210	186	941	239
Pacific.....	285	192	253	217	360	202	340	⁴ 213	243	133

¹ The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1927, and 1928, respectively.

² Fargo, N. Dak., and Tacoma, Wash., not included.

³ Fargo, N. Dak., not included.

⁴ Tacoma, Wash., not included.

Summary of weekly reports from cities, March 4 to April 7, 1928—Annual rates per 100,000 population compared with rates for the corresponding period of 1927—Continued

SMALLPOX CASE RATES

	Week ended—									
	Mar. 12, 1927	Mar. 10, 1928	Mar. 19, 1927	Mar. 17, 1928	Mar. 26, 1927	Mar. 24, 1928	Apr. 2, 1927	Mar. 31, 1928	Apr. 9, 1927	Apr. 7, 1928
101 cities.....	30	22	31	21	30	25	28	25	26	18
New England.....	0	0	0	0	0	0	2	0	0	0
Middle Atlantic.....	0	0	0	0	0	0	0	0	0	0
East North Central.....	34	14	33	26	29	18	33	24	37	24
West North Central.....	53	92	49	64	69	125	30	65	42	84
South Atlantic.....	54	25	51	33	41	23	61	68	25	14
East South Central.....	81	20	132	20	106	25	122	30	86	10
West South Central.....	70	36	45	44	74	36	62	36	103	4
Mountain.....	0	115	90	53	18	62	9	142	27	106
Pacific.....	94	69	84	38	99	61	68	24	55	18

TYPHOID FEVER CASE RATES

101 cities.....	8	4	7	4	8	4	8	5	8	4
New England.....	12	2	5	7	5	9	12	5	7	2
Middle Atlantic.....	8	3	6	2	7	4	6	4	6	1
East North Central.....	1	4	4	3	4	3	1	2	5	3
West North Central.....	4	2	0	4	4	0	2	2	2	6
South Atlantic.....	11	9	11	11	13	11	16	21	9	12
East South Central.....	30	5	20	10	41	5	20	10	35	15
West South Central.....	17	4	12	12	29	8	25	12	37	16
Mountain.....	0	0	9	0	0	0	0	0	0	0
Pacific.....	10	3	13	5	10	5	24	3	8	8

INFLUENZA DEATH RATES

95 cities.....	27	22	31	25	27	32	22	29	23	34
New England.....	12	21	19	7	7	9	12	11	7	16
Middle Atlantic.....	25	19	31	26	26	22	21	29	26	31
East North Central.....	16	16	18	12	16	35	15	24	9	40
West North Central.....	14	12	21	16	14	16	4	19	17	16
South Atlantic.....	70	25	79	19	65	39	38	21	40	19
East South Central.....	80	42	90	84	96	89	106	78	74	73
West South Central.....	47	74	21	115	25	98	30	86	51	107
Mountain.....	54	62	18	80	27	133	27	53	36	80
Pacific.....	7	20	14	10	28	7	24	15	17	7

PNEUMONIA DEATH RATES

95 cities.....	188	191	184	221	167	213	163	222	162	215
New England.....	188	265	172	239	156	182	156	225	140	179
Middle Atlantic.....	222	221	226	258	198	245	186	264	198	244
East North Central.....	157	156	142	194	141	211	147	207	131	241
West North Central.....	81	96	114	139	101	118	93	132	137	122
South Atlantic.....	272	214	262	214	218	240	225	230	150	179
East South Central.....	186	272	191	335	197	240	133	288	218	397
West South Central.....	161	254	195	263	136	275	161	242	140	185
Mountain.....	170	265	161	203	170	168	161	106	242	97
Pacific.....	148	122	93	125	110	101	123	109	117	105

¹ Fargo, N. Dak., and Tacoma, Wash., not included.

² Fargo, N. Dak., not included.

⁴ Tacoma, Wash., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1927 and 1928, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1927	1928	1927	1928
Total.....	101	95	31,050,300	31,657,000	30,369,500	30,960,700
New England.....	12	12	2,242,700	2,274,400	2,242,700	2,274,400
Middle Atlantic.....	10	10	10,594,700	10,732,400	10,594,700	10,732,400
East North Central.....	16	16	7,820,700	7,991,400	7,820,700	7,991,400
West North Central.....	12	10	2,634,500	2,683,500	2,518,500	2,566,400
South Atlantic.....	21	21	2,890,700	2,981,900	2,890,700	2,981,900
East South Central.....	7	6	1,028,300	1,048,300	980,700	1,000,100
West South Central.....	8	7	1,260,700	1,307,600	1,227,800	1,274,100
Mountain.....	9	9	581,600	591,100	581,600	591,100
Pacific.....	6	4	1,996,400	2,046,400	1,512,100	1,548,900

FOREIGN AND INSULAR

CHOLERA ON VESSEL

Steamship Hawaii Maru—At Singapore from Saigon and ports—April 3, 1928.—The steamship *Hawaii Maru* was reported April 3, 1928, at Singapore, Straits Settlements, from Saigon, French Indo-China, with cholera on board. The *Hawaii Maru* sailed March 20, from Nagasaki, and from Hong Kong March 23, 1928.

THE FAR EAST

Report for the week ended March 24, 1928.—The following report for the week ended March 24, 1928, was transmitted by the Eastern Bureau of the Health Section of the Secretariat of the League of Nations, located at Singapore, to the headquarters at Geneva:

Plague, cholera, or smallpox was reported present in the following ports:

PLAGUE	SMALLPOX
<i>Egypt.</i> —Suez.	<i>Ceylon.</i> —Colombo.
<i>Aden Protectorate.</i> —Aden.	<i>Iraq.</i> —Basra.
<i>India.</i> —Bassein, Bombay, Rangoon.	<i>India.</i> —Bombay, Calcutta, Madras, Moulmein
<i>Straits Settlements.</i> —Singapore.	Rangoon.
CHOLERA	<i>French India.</i> —Pondicherry.
<i>India.</i> —Bassein, Calcutta, Madras, Moulmein,	<i>Dutch East Indies.</i> —Banjermasin.
Rangoon.	<i>China.</i> —Canton, Shanghai, Hong Kong.
<i>Siam.</i> —Bangkok.	<i>Japan.</i> —Shimonoseki.
<i>French Indo-China.</i> —Saigon.	
<i>China.</i> —Canton.	
<i>Straits Settlements.</i> —Singapore.	

Returns for the week ended March 24 were not received from the following ports:

Dutch East Indies.—Balikpapan, Samarinda.
Kwantung.—Port Arthur, Dairen.

Towns of the South Manchurian Railway Zone.

ARABIA

Aden Protectorate—Plague.—A total of 848 cases of plague with 549 deaths has been reported in the Aden Protectorate from the date of the outbreak, January 9, to March 20, 1928.

BOLIVIA

La Paz—Mortality Statistics—1927.—The Municipal Institute of Hygiene, Health, and Social Research of La Paz has reported deaths in the city of La Paz for the year 1927 as follows:

Disease	Deaths	Disease	Deaths
Bronchitis.....	178	Pneumonia.....	156
Dysentery.....	112	Tuberculosis.....	127
Gastroenteritis.....	215	Typhoid fever.....	54
Influenza.....	85	Typhus fever.....	34
Measles.....	294	Whooping cough.....	739
Smallpox.....	176	Other diseases.....	1,150

Estimated population, 110,000.

BRAZIL

Sao Paulo—Vital statistics, 1927.—The following table gives vital statistics for the city of Sao Paulo, Brazil, for the year 1927:

Population.....	934,185	Deaths from—Continued.	
Marriages.....	7,014	Leprosy.....	64
Births.....	27,703	Measles.....	95
Still-births.....	1,559	Plague.....	1
Deaths.....	14,106	Poliomyelitis.....	1
Deaths under 1 year.....	4,621	Rabies.....	6
Deaths from—		Scarlet fever.....	10
Cancer.....	496	Suicides.....	84
Cerebrospinal meningitis.....	11	Syphilis.....	273
Diphtheria.....	59	Tetanus.....	51
Dysentery (amebic).....	46	Tuberculosis.....	1,623
Dysentery (bacillary).....	58	Typhoid fever.....	185
Dysentery (other).....	137	Whooping cough.....	77
Influenza.....	241	Other communicable diseases.....	203
Lethargic encephalitis.....	5		

CANADA

Provinces—Communicable diseases—Week ended March 31, 1928.—The Canadian Ministry of Health reports cases of certain communicable diseases from five Provinces of Canada for the week ended March 31, 1928, as follows:

Disease	Nova Scotia	New Brunswick	Ontario	Manitoba	Alberta	Total
Influenza.....	41					41
Smallpox.....			20		7	27
Typhoid fever.....	1		6	4	6	17

Nova Scotia—Vital statistics—Year ended September 30, 1927.—The following data were taken from the annual report of the provincial health officer of Nova Scotia for the year ended September 30, 1927:

Population.....	523,837	Deaths per 1,000 population.....	11.9
Births.....	11,134	Deaths of infants under 1 year.....	1,011
Births per 1,000 population.....	21.2	Infant mortality.....	90.8
Deaths.....	6,259		

Communicable diseases in Nova Scotia, year ended September 30, 1927

Disease -	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis.....		11	Smallpox.....	11	
Diphtheria.....	200	25	Tuberculosis (pulmonary).....		518
Measles.....	1,152	15	Tuberculosis (other forms).....		99
Pneumonia.....		670	Typhoid fever.....	62	9
Scarlet fever.....	684	20	Whooping cough.....	351	47

¹ From vessel in harbor.

Quebec—Communicable diseases—Week ended April 7, 1928.—The Bureau of Health of the Province of Quebec reports cases of certain communicable diseases for the week ended April 7, 1928, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	21	Smallpox.....	15
Diphtheria.....	35	Tuberculosis.....	36
German measles.....	11	Typhoid fever.....	12
Measles.....	242	Whooping cough.....	7
Scarlet fever.....	86		

ECUADOR

Guayaquil—Plague—February, 1928.—During the month of February, 1928, six cases of plague with three deaths were reported at Guayaquil, Ecuador.

Plague-infected rats.—During the same period, 24,565 rats were examined at Guayaquil, and 31 rats were found plague infected.

Duran—Guayaquil—Smallpox.—During the period under report four cases of smallpox were reported at Duran (Eloy Alfaro) and five cases at Guayaquil.

ESTONIA

Communicable diseases—February, 1928.—During the month of February, 1928, communicable diseases were reported in the Republic of Estonia as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis.....	13	Scarlet fever.....	380
Diphtheria.....	42	Tuberculosis.....	137
Measles.....	78	Typhoid fever.....	26

Population, estimated: 1,114,630.

GREAT BRITAIN

Birth, death, and infant mortality rates in England and Wales, 1841–1925.—The following figures are taken from the annual report of the Registrar General of England and Wales for the year 1926. They show the decrease in the birth, death, and infant mortality rates over a period of 85 years.

Period	Births per annum per 1,000 population	Deaths per annum per 1,000 population	Deaths of infants under 1 year per 1,000 births	Period	Births per annum per 1,000 population	Deaths per annum per 1,000 population	Deaths of infants under 1 year per 1,000 births
1841-1845.....	32.3	21.4	148	1886-1890.....	31.4	18.9	145
1846-1850.....	32.8	23.3	157	1891-1895.....	30.5	18.7	151
1851-1855.....	33.9	22.7	156	1896-1900.....	29.3	17.7	156
1856-1860.....	34.4	21.8	152	1901-1905.....	28.2	16.0	138
1861-1865.....	35.1	22.6	151	1906-1910.....	26.3	14.7	117
1866-1870.....	35.3	22.4	157	1911-1915.....	23.6	14.3	110
1871-1875.....	35.5	22.0	153	1916-1920.....	20.1	14.4	90
1876-1880.....	35.3	20.8	145	1921-1925.....	19.9	12.2	76
1881-1885.....	33.5	19.4	139				

LATVIA

Communicable diseases—February, 1928.—During the month of February, 1928, communicable diseases were reported in the Republic of Latvia as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis.....	8	Puerperal fever.....	5
Diphtheria.....	44	Scarlet fever.....	228
Erysipelas.....	20	Smallpox.....	1
Influenza.....	35	Trachoma.....	42
Leprosy.....	2	Typhoid fever.....	65
Measles.....	320	Typhus fever.....	1
Mumps.....	42	Whooping cough.....	72

Population, estimated: 1,950,000.

NETHERLANDS

Communicable diseases—Year 1927—Average 1922-1926.—During the year 1927, cases of certain communicable diseases and deaths from these diseases were reported in the 11 provinces of the Netherlands as shown in the following table, which gives also the annual averages for the five-year period 1922 to 1926, inclusive. The figures for 1927 are provisional.

Disease	1927		Average 1922-1926	
	Cases	Deaths	Cases	Deaths
Cerebrospinal meningitis.....	108	46	111	63
Diphtheria.....	3,619	250	4,335	250
Dysentery.....	63	11	68	8
Lethargic encephalitis.....	101	64	180	153
Poliomyelitis.....	50	14	231	115
Scarlet fever.....	14,940	122	7,961	69
Smallpox.....	0	0	4	
Typhoid fever.....	776	87	1,218	148
Typhus fever.....	0	0	3	

¹3 years only.

²4 years only.

SALVADOR

Republic of Salvador—San Salvador—Mortality from malaria—Years 1925–1927.—During the period 1925 to 1927, inclusive, mortality from malaria was reported in the Republic of Salvador and the city of San Salvador, as follows:

Republic of Salvador			City of San Salvador		
Year	Population	Malaria deaths	Year	Population	Malaria deaths
1925.....	1,634,000	3,643	1925.....	86,000	172
1926.....	1,657,000	4,066	1926.....	87,000	209
1927.....	1,688,000	3,356	1927.....	88,000	186

SWITZERLAND

Lucerne (Canton)—Communicable diseases—January–February, 1928.—Communicable diseases were reported in the Canton of Lucerne, Switzerland, during the months of January and February, 1928, as follows:

Disease	Cases		Disease	Cases	
	January, 1928	February, 1928		January, 1928	February, 1928
Cerebrospinal meningitis.....	1	.....	Measles.....	46	39
Diphtheria.....	7	18	Scarlet fever.....	10	13
Influenza.....	.....	5	Typhoid fever.....	.....	1
Lethargic encephalitis.....	.....	3	Whooping cough.....	26	21

Population: 45,700.

Saskatchewan.....	14	68	31	34	58	12	13	15	12	39	15	9	34	7	8	7	14	7	.....
Moose Jaw.....	10	16	3	1	1	1	1	2	1	4	2	3	2	2	6	5	2	5	.....
Regina.....	8	5	1	1	2	8	4	1	1	13	1	1	1	2	2	3	5	1	.....
Saskatoon.....	1	2	1	1	2	1	1	1	1	1	1	1	2	2	1	3	1	1	.....
Ceylon: Colombo.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	.....
China:																			.....
Antung.....									1								2	3	.....
Canton.....									1								2	3	.....
Chefoo.....																			.....
Foochow.....																			.....
Hong Kong.....																			.....
Manchuria—																			.....
Changchun.....																			.....
Dairen.....																			.....
Fushun.....																			.....
Habin.....																			.....
Mukden.....																			.....
Penshin.....																			.....
Shanghai—																			.....
Foreigners only.....																			.....
Including natives.....																			.....
Tientsin.....																			.....
Curacao (alastrim).....																			.....
Dominican Republic: Santo Domingo.....																			.....
Dutch East Indies:																			.....
Borneo—																			.....
Samarinda district.....																			.....
South and East Borneo Residency.....																			.....
Java—																			.....
Batavia and West Java.....																			.....
East Java and Madura.....																			.....
Sumatra: Medan.....																			.....
Egypt.....																			.....
Cairo.....																			.....
Great Britain:																			.....
England and Wales.....																			.....
Birmingham.....																			.....
Bradford.....																			.....
Bristol.....																			.....
Cardiff.....																			.....
Leeds.....																			.....
New Brunswick during the week ended Sept. 24, 1927, which has been published in prior issues of the PUBLIC HEALTH REPORTS, was erroneous. No smallpox was reported in New Brunswick during September, 1927.																			.....

1 The report of 2 cases of smallpox in New Brunswick during the week ended Sept. 24, 1927, which has been published in prior issues of the PUBLIC HEALTH REPORTS, was erroneous. No smallpox was reported in New Brunswick during September, 1927.

Place	July-September	October	November	December	January	February
Argentina: Rosario.....	C		1	1	1	
China: Shanghai.....	D		1	1	1	
Chosen.....	D	16	26	38	183	
Chernulpo.....	D	8	1	3	19	
Gensan.....	C	3	1	1	1	
Seoul.....	D	2	1	1	1	
Czechoslovakia.....	D	1	1	2		
Greece: Athens.....	C	12	1	6	2	
Japan.....	C	3	1	1	20	
Latvia.....	O	1	1	1	5	1
Lithuania.....	C					
Mexico.....	D					
Peru:	D					
Arequipa.....	D					
Lima.....	D					
U. S. S. R.:	C					
Railways, etc.....	C					
Transcaucasia, Siberia, and	C					
Central Asia.....	C					
Ukraine.....	C					
Other territories in Europe.....	C					
Yugoslavia.....	D					

Place	July-September	October	November	December	January	February
Lithuania.....	69	9	18	27	86	137
Mexico.....	14	1	1	1	10	12
Peru:	64	36	29			
Arequipa.....	3	2		1	2	
Lima.....	8					
U. S. S. R.:						
Railways, etc.....	77	23	33	46		
Transcaucasia, Siberia, and						
Central Asia.....	208	61	49	80		
Ukraine.....	295	151	198	282		
Other territories in Europe.....	1,839	521	1,403			
Yugoslavia.....	5	1	1		7	3

